

City of Monroe

Greenway/Bikeway Master Plan

Adopted: April 2005

Historic District



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Introduction

The City of Monroe adopted a Parks, Recreation, Greenways and Open Space Master Plan in December 2002 to guide the direction of parks and recreation facility planning in Monroe through the year 2012. Subsequently, the City of Monroe Land Development Plan was updated in December 2003 to guide the overall development of land use in Monroe. A major component of both documents is to plan for the development of pedestrian and bikeway corridors (greenways) for the city. The City of Monroe engaged *HadenStanziale* to prepare a Greenway Master Plan to guide the planning and implementation of a greenway/bikeway system for the next ten years.

Context

The City of Monroe is centrally located in Union County, approximately seven miles southeast of Charlotte, North Carolina. 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 thirty (30) square miles, serves as the county seat and is one of fifteen (15) municipalities located in Union County. It is surrounded by five universities, several liberal arts colleges and is served by two (2) 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 (6) miles to the northwest. These major routes provide great access to many resources in and around the City of Monroe.

One of those resources is the collection of historic structures, the City of Monroe has been able to retain and restore in the downtown area. These structures serve as a setting to understanding local history and folklore. The city should continue to preserve this area to the best extent possible as recommended in the Parks, Recreation, Greenways and Open Space Master Plan. This Greenway Master Plan identifies multiple greenway corridors that access the historic downtown area, enabling the community to have direct access this rich history. Other recommendations from the Parks, Recreation, Greenways and Open Space Master Plan include highlighting the historic structures and sites with the installation of historic plaques and identification markers, so residents and visitors can learn about the history of Monroe.

However, Monroe has seen a steady increase in its population over the past fifteen (15) years. In 1990, the population was 16,385, and by 2000 it had increased sixty (60%) percent to 26,228. Most of that growth has been focused in the northwest area of Monroe along the US 74 corridor. This burst in growth is expected to slow down, and by the year 2010 Monroe's population is forecasted to be 30,500, an increase of only fifteen (15%) percent from the year 2000.

Monroe's population will continue to increase and so will the need for recreational facilities. Greenways and bikeways 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/bikeways 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 increase health awareness and attract new residents to the area, which will increase property values and tax revenues.

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

Benefits of Greenways

Greenway systems are being developed throughout the world as more and more communities and their residents realize the benefits of greenways, such as:

- Preserving and creating open space;
- Encouraging physical fitness and healthy life-styles;
- Providing alternative means of transportation;
- Creating new opportunities for outdoor recreation;
- Strengthening local economies;
- Protecting the environment;
- Improving water and air quality;
- Preserving historical and cultural resources;
- Providing connectivity between neighborhoods, parks, schools and businesses;
- Providing animal and plant habitats;
- Creating environments for outdoor classrooms and education;
- Improving the quality of life for everyone

A multi-objective greenway system for the City of Monroe can address and resolve many community issues that affect the future environmental and economic health of the city. The major benefits of a greenway system for Monroe have been listed and defined in more detail below.

Health and Recreation Benefits

- Greenways encourage more people to walk or bike to nearby destinations.
- Studies have shown that as little as sixty (60) minutes a day of moderate-intensity exercise (such as bicycling, walking, or in-line skating) can significantly improve a person's mental and physical health and prevent certain diseases.
- Providing opportunities for participation in these outdoor activities close to where people live and work is an important component of promoting healthy life-styles for Monroe residents.
- Greenways are designed to compliment parks and open space systems, existing and proposed.

Economic Benefits

- Greenways can offer numerous economic benefits to the City of Monroe, including higher real estate property values, increased tourism and recreation related revenues, and cost savings for public services.
- Greenways have been shown to increase the value of adjacent properties by as much as five (5) to twenty (20) percent.
- Home buyers continue to seek walking and biking amenities when considering a purchase of a home. Often, it is the first or second most important amenity in home and neighborhood selection.

Transportation Benefits

- Greenways serve as extensions of the roadway network, offering realistic and viable connections between origins and destinations

such as neighborhoods, schools, libraries, parks, offices, and shopping areas.

- Linked with on-road bicycle facilities and sidewalks, greenways can be a valuable component of the city's transportation network.

Flood Control Benefits

- Greenways preserve wooded open spaces along creeks and streams which absorb flood waters and filter pollutants from storm water.
- As a flood control measure, greenway corridors can serve as a primary storage zone during periods of heavy rainfall.
- Implementation of a greenway system can sometimes result in reduced flood insurance rates.

Water Quality Benefits

- Greenway corridors can also serve to improve the surface water quality of local lakes, rivers and creeks.
- The floodplain forests and wetlands contained within greenway corridors filter pollutants from storm water.
- Improved water quality benefits wildlife that depends on various water bodies for their habitat.

Safety Benefits

- Some of the most successful deterrents to criminal activity have involved increased neighborhood awareness by citizens and participation in community watch programs.
- Greenways have proven to be an effective tool to encourage local residents to participate in neighborhood watch programs. Some greenways have even been developed as part of efforts to deter criminal activity in a neighborhood.
- As a recreation resource, alternative transportation corridor, or fitness areas, most greenways provide a much safer and more user-friendly resource than other linear corridors, such as local roads.
- Greenways typically attract local residents who use the facility frequently and create an environment that is virtually self-policing.
- Crime statistics and reports from law enforcement officials have shown greenways are typically land uses with the lowest incident of reported criminal activity.
- Greenways provide off-road facilities for pedestrian and bicyclists thus reducing on-road accidents and fatalities.

Cultural Benefits

- Successful greenway projects across the United States have served as new "main streets" where neighbors meet, children play, and community groups gather to celebrate.
- Many civic groups adopt segments of greenways for cleanup, litter removal and environmental awareness programs.
- The interpretation of historic and archeological sites along greenways can serve to increase the awareness and appreciation of Monroe and Union County's rich history.
- Greenways can also be a vehicle to provide controlled public access to important cultural sites in a manner that promotes preservation and enhances interpretive opportunities.

Air Quality Benefits

- Availability of greenways encourages people to walk and bicycle more often for shorter trips.
- Greenways help traffic congestion by reducing the number of vehicles on the roadway, helping to improve local air quality.

Plant and Animal Habitat Benefits

- Greenways serve as habitat and breeding ground for many species of plants and wildlife.
- Greenways can function as primary migratory corridors for aquatic, avian and terrestrial wildlife, serving to help maintain the integrity of plant and animal gene pools.
- Programs can be established to not only protect the valuable existing forested and wetland areas of the city, but also to reclaim and restore streams to support higher quality habitat.

What is 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. Or quite simply a greenway can be a quiet place from which to draw strength.

Types of Greenway Facilities

There are six types of greenway trail facilities that can be developed in various corridors throughout a greenway system. A single corridor can be comprised of multiple types of facilities. The Monroe Greenway System will be comprised of each of the following types of greenway facilities (except for blueways at this point of time):

I. No Facility Development

Greenway corridors that contain environmentally sensitive areas, wetlands, steep topography and/or other constraints that might make greenway development facility difficult, undesirable or even impossible; predominately remain in a natural state with limited trail development, if any at all.

II. Low Impact Uses / Limited Development

Greenway corridors that contain environmentally sensitive areas or wetlands that limit some greenway facility development to a more natural type of trail surface such as pit gravel or dirt. Trail width is typically four (4) to six (6) feet wide. Boardwalks may be necessary to cross through wetlands and environmentally sensitive areas.

III. Multi-Use Unpaved Trail Development

Greenway corridors located in upland or non-flood prone areas can be surfaced with compacted crushed stone or pit gravel. Trail width is typically six (6) to eight (8) feet wide. Benches, signage and picnic tables will be sited as needed and where appropriate.

IV. Multi-Use Paved Trail Development

Greenway corridors that will be located in flood prone areas anticipate and will support high use and will be surfaced with asphalt or concrete. Trail width is typically ten (10) feet minimum. Asphalt is the most commonly used paved surface, but concrete will hold up better in areas prone to frequent flooding. Benches, signage and picnic tables will be sited as needed and where appropriate.

V. On-Road Facilities: Sidewalks and Bikeways

Where off-road greenway corridors are not possible or difficult due to urban conditions, on-road trails can be used. On-road greenways are comprised of sidewalks for pedestrian use and bikeways for cyclists. Sidewalk width should be five (5) feet minimum. Bikeways should be striped lanes at four (4) feet minimum.

VI. Water Based Trails or Blueways

Blueways can occur on rivers or streams that can accommodate and/or are designated to support canoeing or kayaking. Put-ins, improved rapids and safety systems should be installed at appropriate locations to make these types of greenway trails more enjoyable for all users.

Site Feasibility and Familiarization

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 Parks, Recreation, Greenways and Open Space Master Plan and other planning efforts, with respect to stream channels, utility easements, road ROW's, existing topography, property boundaries and ownership;
- Identifying boundaries along potential alignments not owned or controlled by the City of Monroe;
- Determining proposed projects, public and private, scheduled to occur along potential alignments;
- Identifying potential stream restoration and/or mitigation areas;
- Identifying potential routing alternatives;
- Identifying potential connections and linkages to adjacent areas;
- Identifying potential utility corridors for possible routings;
- Identifying potential railway corridors for possible routings and ownership;
- Identifying potential streetscapes for widened sidewalks or bicycle lanes;
- Reviewing state and local thoroughfare plans;
- Reviewing existing ordinances dealing with open space and land dedications and parks and recreation fees for development;
- Reviewing existing master plans for parks, recreation, greenways and open space in adjacent communities and municipalities;
- Identifying existing and potential open space for acquisition and/or dedication for greenway/ bikeway use.

Public Involvement

A series of meetings and workshops were conducted with city staff, the parks and recreation advisory committees, and interested residents in both Monroe and Union County to discuss the benefits of greenways, review alternative routing opportunities and establish priorities for implementation. A public survey was prepared and distributed to help determine a needs assessment for greenways in Monroe.

The survey asked participants to provide information regarding their knowledge and usage of greenway/bikeway facilities. Some of the questions and resident responses are listed here. For a complete breakdown of the entire survey, please see the Appendix.

Please indicate the greenway-related activities you enjoy.

- Walking
- Spending time with nature
- Jogging
- Exercise
- Family time
- Bicycling (recreation)
- Wildlife observation

What should be the purpose of a greenway/bikeway in Monroe?

- Provide recreational opportunities
- Preserve 'green space' and natural buffers
- Conserve plant and wildlife habitat
- Improve water quality/reduce flooding impacts

For what reasons will you likely use a greenway/bikeway system?

- Recreation/Fitness
- Trips to a park
- Enjoy the environment

Which of the following types of greenway/bikeway's do you feel are most needed in Monroe?

- Paved paths, trails and greenways
- Unpaved paths, trails and greenways
- Bike Lanes

Do you feel that the development of a greenway system within Monroe will increase or decrease the quality of life in Monroe?

- Most of the participants believed that the development of a greenway system would enhance the quality of life in Monroe

Greenway/Bikeway Planning and Implementation Process

The Monroe Greenway/Bikeway Master Plan identifies a system of greenway/bikeway 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 greenway 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 in this master plan 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 trail development will be described shortly.

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 and costs.

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, 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 County Park and Recreation Department shall 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 trail system development. The property is adjacent to or near a recreation facility and 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 Park and Recreation Department policies.

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

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

Population Served – the parcel of 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 trail 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 Trail 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 Trail Facility Development – an estimate for the project has been completed and it has been determined that it is financially feasible to build the greenway trail facility.

Cost of Trail 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 Park and Recreation Department policies. Additionally, “Adopt-A-Greenway” groups have been identified and have been enlisted to support the future operation of the greenway trail.

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

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

Need for Trail Segment – residents of an area are presently underserved and require the development of the greenway facility. Additionally, the trail 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 and use the property.

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

Population Served – trail development will serve a significant population within a one (1) mile radius.

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

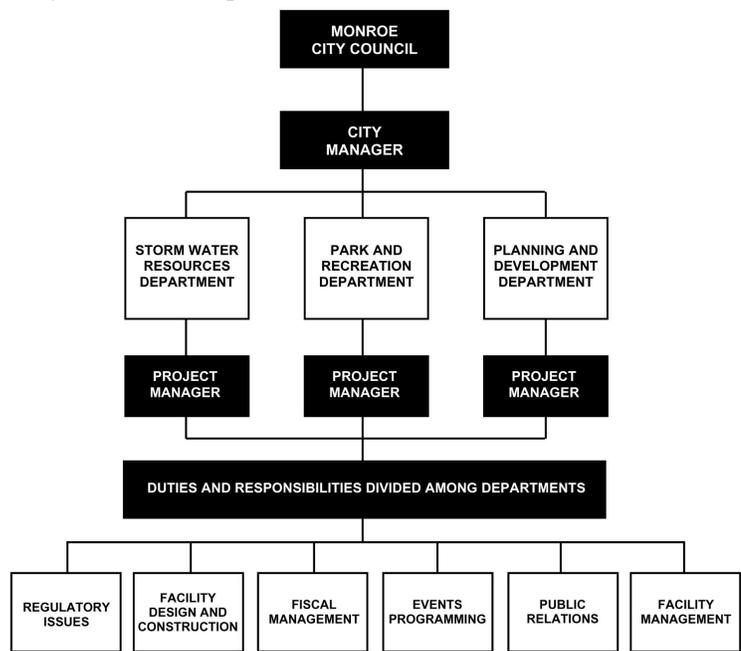
Source of Funding – funds have been committed to the project, other agencies or private sector groups have committed funds in support of the project (i.e. partnerships have been established).

Type of Trail – the type and surface of the proposed trail can be accommodated within the environmental setting of the greenway corridor. Additionally, the proposed trail surface meets the needs of local user groups and will be accessible under appropriate guidelines established by the Monroe Park 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 program 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 program 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 primary 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 to determine the most effective implementation strategy for the city-wide greenway/bikeway 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

The Monroe City Manager is vested with management responsibilities for the community's public resources. As such, the primary role of the 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 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 Park and Recreation Department

The Monroe Park and Recreation Department will direct acquisition of necessary land and preparation of detailed corridor master plans and construction documents for each greenway segment. The park 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 park and recreation department create an “Adopt-A-Greenway” program. This program will enlist the participation and support of the parks and recreation advisory council and other public and private sector organizations in managing and maintaining greenway lands and facilities.

Role of the Park and Recreation Advisory Council (PRAC)

The Monroe Parks and Recreation Advisory Council will promote and support implementation of the Greenway/Bikeway Master Plan and development of other types of recreational trails through:

1. The education of citizens on the objectives of the master plan and multiple trail needs;
2. The coordination with other entities, programs, and departments (including planning and development, water resources, engineering, MUMPO, and the NCDOT) to prioritize greenway development and acquisition through a point-based system;
3. The identification and solicitation of resources to accelerate land acquisition and trail construction;
4. The development of a regional greenway network by working with surrounding municipalities to establish linkages to their recreational and natural resources.

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

Role of the Monroe Planning and Development Department

The Monroe Planning and Development Department will support the Greenway/Bikeway Master Plan and will help with implementation by showing potential greenways in land development plans, notifying Monroe Park and Recreation Department of proposed developments in a greenway area, utilizing the zoning process to encourage dedication of lands, such as sidewalks and bicycle facilities, for the greenway system, and planning transportation improvements in coordination with greenways.

Role of the Water Resources Department

The Monroe Water Resources Department shall assist the park 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 sewer easements 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 and the county to build trail facilities where feasible.

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

PARK & 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	UNIFIED DEVELOPMENT	FACILITY PLANNING
FACILITY CONSTRUCTION	ORDINANCE TEXT	FACILITY DESIGN
FACILITY MAINTENANCE	AMENDMENTS	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 or lockers, 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/Bikeway System. These organizations can play a vital role in building sections of greenway trails, 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 park and recreation departments “Adopt-A-Greenway” program.

Role of Individual Citizens

Local residents who are interested in the development of Monroe’s Greenway/Bikeway system can participate by agreeing to donate their time, labor and expertise to the park 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 a Greenway Program

This master plan represents a new type of the recreation facility, the greenway system. Much of this 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 Park 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 the greenway system that will need to be brought on-line during the first three (3) to five (5) 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 or civil engineering and 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.

Monroe's Greenway/Bikeway System

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

- Location of amenities and destinations
- Existing sidewalks
- Existing and proposed roadways
- Current city and county properties
- Physical settings (streams, utility easements, topography, etc.)

These factors guided the design team in developing a greenway system that provides connectivity between Monroe's schools, parks, neighborhoods, historic downtown district and commercial areas. The master plan is comprised of multiple greenway linkages that are illustrated within this section. The master plan divides the greenway/bikeway system into existing sidewalks, proposed sidewalks, existing trails, proposed trails, proposed bikeways, potential loop trails and proposed greenways along existing utility easements. In order to gain a better understanding of the greenway/bikeway 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/bikeway system is described in more detail. The overall system map illustrates the locations of these areas.

Route Descriptions

Central Monroe

Central Monroe contains many of the city's amenities and destinations. Within this area there are five (5) schools, a career center, a library, the historic downtown area, ten (10) parks and multiple shopping centers. Beginning in downtown, most of the routes utilize the existing sidewalk network. Accessing the Historic Walking Tour within downtown was one of the primary objectives because of the educational opportunities it provides for the citizens of Monroe as well as visitors. The greenway system bisects the Historic Walking Tour that loops around some of Monroe's most historic features. The historic loop is approximately 1.2 miles in length and extends from Church Street, south to Morrow Street and is bound to the west by Stewart Street and Church Street to the east.

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 US 74/US 601. South of Franklin Street the greenway system uses Johnson Street, Charlotte Avenue, Hayne Street and Charles Street. These routes extend south to Houston Street, which is the southern most end of the Historic Walking Tour. Once on Houston Street the greenway moves west toward Lancaster Avenue. The greenway then travels southwest on Lancaster Avenue until it intersects with Griffith Road. At Griffith Road the greenway splits, with one route continuing on

Lancaster Avenue while the other travels along Griffith Road. The Lancaster Avenue route continues southwest accessing Johnson Street, which turns north back toward Franklin Street and Brewer Drive connecting to the career center.

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

Moving north out of downtown, the greenway system travels on Hayne Street/Skyway Drive and Charlotte Avenue. Traveling along Hayne Street/Skyway Drive, the greenway system crosses over the CSX railroad tracks and accesses Bearskin Creek Greenway. Bearskin Creek Greenway connects Belk Tonawanda Park, Don Griffin Park, Creft Park, Dickerson Park and the Community Center.

From Don Griffin Park the greenway system travels north and south along Miller Street. To the south it connects to Winchester Avenue. At Winchester Avenue the greenway turns east connecting to the Winchester Center. Passing the Winchester Center, it continues to Morgan Mill Road where it turns south eventually intersecting with Franklin and Charles Streets.

Traveling north on Miller Street, the greenway continues until it reaches Wolfe Street, where it turns east. The greenway continues to Stafford Street. 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 Avenue for about 0.62 miles where it reaches a sewer easement on the east side of Sutherland Avenue. At this location, the greenway splits, with one route continuing along Sutherland Avenue until it crosses US 74 and intersects with Sunset Drive, while the other route utilizes this sewer easement traveling east. The greenway system travels along this sewer easement connecting to Stafford Street Extension to the north and Sutton Park and the Community Center to the east.

At Dickerson Park, the greenway provides access to two different areas of Monroe. The first trail utilizes a sewer easement located behind the baseball field next to Bearskin Creek. The sewer easement follows the creek, crosses Goldmine Road (SR 1162) and makes its way into the Northwest Monroe/Airport Area. The second greenway trail connects to Icemorlee Street. The greenway travels north on Icemorlee Street until Goldmine Road (SR 1162). It turns west on Goldmine Road for approximately 0.38 miles where it utilizes the proposed Martin Luther King, Jr. Parkway. From there, the route continues north accessing Dickerson Boulevard. Traveling along Dickerson Boulevard, the greenway crosses Commerce Drive and then crosses US 74 where it utilizes a separate road improvement project that connects Dickerson Boulevard with Stafford Street Extension. This route terminates at Concord Avenue.

Traveling along Charlotte Avenue, the greenway crosses under the CSX railroad tracks again on its way to Concord Avenue. At Concord Avenue, the greenway splits, with one route traveling northwest along Charlotte Avenue into the Northwest Monroe/Airport Area. The other turns north along Concord Avenue. The Concord Avenue route travels north until it reaches Patton Avenue where it splits again. One route continues north along Concord Avenue accessing the North Monroe Area, and the other turns west on Patton Avenue. Once on Patton Avenue the greenway travels west until just past Sells Street where it turns north paralleling Sells Street. Continuing in this direction it connects into Commerce Drive going behind Monroe Mall, crossing Dickerson Boulevard and connecting to the Monroe Aquatic and Fitness Center. From here the greenway turns west along Williams Road Extension. The greenway continues along this road until it reaches an area of vacant land at the corner of Williams Road and Williams Road Extension. Utilizing this land, the greenway turns northwest accessing the back entrance of Parks Williams Athletic Complex.

Northwest Monroe/Airport Area

There are two main routes that access this area of Monroe, both of which have already been mentioned. The first route utilizes an existing sewer easement that parallels Bearskin Creek. It 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 travels along the creek it eventually ties into the proposed airport loop trail. The airport loop is a trail that is comprised of existing sidewalks, proposed sidewalks and greenway trails. It will be necessary to coordinate with the airport authority and FAA in order to determine the feasibility of this loop, due to security issues that have arisen over the past few years.

The second route is 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 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 on US 74 for approximately 0.5 miles where it intersects with a sewer easement. Using this easement, provides access to multiple sewer easements that provide connectivity for the neighborhoods to the north of US 74. Utilizing the utility easements, not only provides interconnectivity within these neighborhoods, it also allows them to be safely connected to the downtown area and the greenway system.

North Monroe

Utilizing the sewer easements from the Northwest Monroe Area, the greenway system eventually makes it way to the northwest portion of Rolling Hills Golf Community. Currently, some individuals use Rolling Hills Drive as a loop trail for walking and biking. It was voiced throughout

the public involvement process that it should be included as part of the greenway system. Using the easements, provides safe access to this loop and it also allows the Rolling Hills Community access to the overall greenway system. From there, the sewer easements continue southeast along Stewarts Creek all the way to US 601

In the North Monroe Area there are two proposed bikeways. The first is located along the proposed US 74 Bypass (Monroe Bypass). This project was identified as a NCDOT Improvement Project or a TIP project. It is proposed to be a four lane divided arterial road. It is recommended that NCDOT include a bikeway/trail element to this proposed road improvement project. Coordination with the City of Monroe will ensure that the correct facility will be built. The second bikeway runs along US 601 from US 74 north to the city limits.

East Monroe

This route begins in Sutton Park and runs along Richardson Creek all the way to the Monroe Country Club. From Monroe Country 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 and continues on that course connecting to Jesse Helms Park (future Union County Park).

Another greenway route within this area is the Quarry Road route. This route provides a direct link between east Monroe and central Monroe.

This next route was identified as a potential bikeway in an effort to make connections to surrounding communities. US 601 from US 74 south to the state line has been identified as a TIP project. According to NCDOT US 601 will be widened to multi-lanes. It is recommended that a bikeway facility be considered as part of this project. It will provide a direct, non-motorized route for surrounding communities to Monroe.

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 up until 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.

From Sunset Drive the greenway travels along Griffith Road, until it reaches Victoria Avenue. At Victoria Avenue it turns and travels east until it reaches Crescent Street. The trail then travels south on Crescent Street until it deadends and continues through the parcel of land, connecting to the Parker/Hayne Tract.

Greenway/Bikeway Route Breakdown

Central Monroe

- Bearskin Creek Greenway -- 3.23 miles (consists of existing sidewalks – 0.11 miles, proposed sidewalks – 0.06 miles, existing trails – 0.29 miles and proposed greenway trails – 2.77 miles)
- Bearskin Creek Greenway/Winchester Center Connector -- 0.87 miles (consists of existing sidewalks – 0.79 miles and proposed sidewalks – 0.09 miles)
- Historic Downtown Loop/Winchester Center Connector -- 0.39 miles (consists of existing sidewalks – 0.39 miles)
- Benton Heights/Historic Downtown Loop Connector -- 0.76 miles (consists of existing sidewalks – 0.69 miles and proposed sidewalks – 0.09 miles)
- Sutherland Avenue/Bearskin Creek Greenway Connector - US 74 Crossing -- 1.08 miles (consists of existing sidewalks – 0.63 miles and proposed sidewalks – 0.45 miles)
- Dickerson Park/Dickerson Boulevard Connector -- 0.66 miles (consists of existing sidewalks - 0.21 miles and proposed sidewalks – 0.45 miles)
- Parks Williams/Aquatics and Fitness Center/Benton Heights Elementary -- 1.63 miles (consists of existing sidewalks – 0.27 miles, proposed sidewalks – 0.64 miles and proposed greenway trails – 0.72 miles)
- Sunset Park/Monroe High School Connector - Sunset Drive -- 2.42 miles (consists of existing sidewalks – 2.06 miles and proposed sidewalks – 0.36 miles)
- Dickerson Boulevard -- 1.85 miles (consists of proposed sidewalks along existing roadways and planned roadways)
- Johnson Street -- 0.60 miles (consists of existing sidewalks)
- Lancaster Avenue - Brewer Drive to Houston Street -- 1.07 miles (consists of existing sidewalks– 0.46 miles and proposed sidewalk – 0.60 miles)
- Bearskin Creek Greenway/Historic Downtown Loop Connector - - 0.67 miles (consists of existing sidewalks – 0.62 miles and proposed sidewalks – 0.04 miles)
- Crowell Street - Johnson Street to Hayne Street -- 0.50 miles (consists of existing sidewalks – 0.42 miles and proposed – 0.08 miles)
- Historic Downtown Loop/Sunset Road Connector -- 0.41 miles (consists of proposed sidewalks)
- Franklin Street - West from Historic Downtown Loop -- 1.00 miles (consists of existing sidewalks – 0.47 miles and proposed sidewalks – 0.53 miles)
- Franklin Street - East from Historic Downtown Loop -- 1.06 miles (consists of existing sidewalks -- 0.93 miles and proposed sidewalks – 0.13 miles)
- Franklin Street Bikeway -- 3.04 miles (consists of proposed bikelanes)
- Concord Avenue Bikeway -- 0.79 miles (consists of proposed bikelanes)

East Monroe

- Sutherland Avenue -- 1.81 miles (consists of existing sidewalk – 0.20 miles and proposed sidewalks – 1.60 miles)
- Sutherland Avenue/Sutton Park Connector -- 1.56 miles (consists of proposed greenway trails along sewer easements)
- Sutherland Avenue/Sutton Park Connector to Staffords Street Extension -- 0.61 miles (consists of proposed greenway trails along sewer easements)
- Sutton Park/Monroe Country Club/Jesse Helms Park -- 3.63 miles (consists of proposed sidewalks -- 0.32 miles and proposed greenway trails – 3.31 miles)
- Quarry Road -- 0.70 miles (consists of proposed sidewalks -- 0.61 miles and proposed greenway trails – 0.09 miles)

South Monroe

- Walter Bickett/Sunset Drive/Park/Hayne -- 1.42 miles (consists of existing sidewalks – 0.26 miles, proposed sidewalks -- 0.46 miles and proposed greenway trails – 0.70 miles)
- Parker/Hayne/Richardson Creek Tract Connector -- 1.45 miles (consists of proposed greenway trails)
- Sunset Drive/Richardson Creek Greenway Connector -- 0.63 miles (consists of proposed sidewalks)
- Richardson Creek Greenway -- 1.70 miles (consists of proposed greenway trails)

North Monroe

- Patton Avenue/US 601 Connector -- 1.18 miles (consists of proposed sidewalks)
- Stewarts Creek Greenway -- 9.25 miles (consists of proposed sidewalks – 0.91 miles and proposed greenway trails along sewer easements -- 8.33 miles)
- Park Williams/Rolling Hills Country Club Connector -- 1.05 miles (consists of proposed greenway trails – 0.36 miles; some along sewer easements – 0.69 miles)
- US 601 Bikeway -- 3.51 miles (consists of proposed bikelanes on US 601 north and south of US 74)
- US 74 Bypass Bikeway -- 3.69 miles (consists of a proposed bikeway along planned roadway)

Northwest Monroe / Airport Area

- Bearskin Creek Greenway/Airport Loop Connector -- 3.80 miles (consists of proposed greenway trails – 0.34 miles; some along sewer easements – 3.46 miles)
- Old Charlotte Highway -- 4.01 miles (consists of proposed sidewalks)
- Charlotte Avenue Bikeway -- 5.07 miles (consists of proposed bikelanes)

TRAIL AND BIKE LANE TOTALS

• Existing sidewalks	9.10 miles
• Proposed sidewalks	15.53 miles
• Existing greenway trails	0.29 miles
• Proposed bike lanes	16.10 miles
• Proposed greenway trails	11.42 miles
• Proposed greenway trails along sewer easements	14.65 miles
<i>Total greenway and bikeway linkages --</i>	<i>67.10 miles</i>

POTENTIAL LOOP TRAILS

Since fitness and exercise were identified as an important element, as noted in the surveys, seven greenway/bikeway loops have been identified. These loops not only provide measurable walking and biking routes, they also provide additional educational and recreational opportunities by linking multiple destinations together. The seven (7) loops listed here are comprised of portions of the greenway trails previously described.

- Airport Loop -- 5.1 miles (consists of existing and proposed sidewalks and proposed greenway trails)
- Historic Downtown Loop -- 1.7 miles (consists of existing sidewalks – 1.54 miles and proposed sidewalks – 0.17 miles)
- Rolling Hills Country Club Loop -- 2.4 miles (consists of proposed sidewalks)
- Franklin Street/Sunset Drive Loop -- 7.30 miles (consists of existing sidewalk – 4.76 miles, proposed sidewalks – 0.47 miles and proposed bikeways – 2.07 miles)
- Richardson Creek Greenway/Parker/Hayne Street Parcels/Sunset Drive Loop -- 5.36 miles (consists of existing sidewalks – 1.29 miles, proposed sidewalk – 1.30 miles and proposed greenway trails – 2.77 miles)
- Bearskin Creek Greenway/Sunset Drive Loop -- 6.44 miles (consists of existing sidewalk – 3.66 miles, proposed sidewalks – 2.73 miles and existing path – 0.06 miles)
- Benton Heights Elementary/Monroe Mall Loop -- 6.73 miles (consists of existing sidewalk – 0.79 miles, proposed sidewalks – 3.89 miles and proposed greenway trails – 1.26 miles)

Phasing/Priority Criteria

A. Immediate Acquisition and Development (0-2 years)

1. Bearskin Creek Greenway – extension to Dickerson and Creft Parks (acquisition and development)
2. Downtown Historic District (development)
3. Parks Williams/Aquatics Center/Benton Heights Elementary (acquisition)
4. Sunset/Parker/Hayne/Richardson Tract (acquisition)

B. Near Term Acquisition and Development (3-5 years)

1. Parks Williams/Aquatic Center/Benton Heights Elementary (development)
2. Sunset/Parker/Hayne (development)
3. Airport Loop (acquisition)
4. Parks Williams/Rolling Hills Country Club (acquisition)

C. Long Term Acquisition and Development (6-10 years)

1. Parker/Hayne/Richardson Tract (development)
2. Airport Loop (development)
3. Parks Williams/Rolling Hills Country Club (development)
4. Dickerson Park to Airport (acquisition)

BUDGET ESTIMATES

The Monroe Greenway/Bikeway Master Plan projects several different types of corridors and situations through Monroe. Based on current local and regional averages, greenway construction costs range from around thirty-five dollars (\$35) a lineal foot for unpaved trails to seventy-five dollars (\$75) a lineal foot for asphalt paved trails*. Concrete paved trails will be a bit more. These costs are for a ten-foot wide greenway trail with 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. Boardwalks are currently ranging between 150-180 dollars a lineal foot with toe rails only*. Design and engineering costs typically range from eight (8) to ten (10) percent of the construction costs. *These are 2004 construction numbers.

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 (1) mile standard greenway trail segment within a paved greenway system.

Drainage/storm channel maintenance (4 times a year)	\$1,000
Sweeping/blowing debris off trail tread (20 times a year)	\$2,400
Pick-up and removal of trash (20 times a year)	\$2,400
Weed control and vegetation management (10 times a year)	\$2,000
Mowing of 3 foot grass safe zone along trail (20 times a year)	\$2,400
Minor repairs to trail furniture/safety features	\$1,000
<i>Total maintenance costs per mile of paved trail *</i>	<i>\$11,200</i>

* Standard greenway trail (10' wide with 2' gravel shoulders) does not refer to sidewalks or bike lanes.

It may be possible to lower the cost of maintaining one (1) mile of paved greenway trail with savings of at least fifty (50) percent through the establishment of a well-coordinated, well-managed “Adopt-A-Greenway” program.

Design Guidelines/Cross Sections

Signage

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 or interpretive information. The greenway/bikeway signage should be consistent with Monroe’s Park 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/bikeway crossing. Proper bike lane or “Share the Road” signage should be used on the affected roadways. All signage should be reflective in design, making it easier to see at night. Examples of some of this signage can be found in the Appendix.

Furnishings

Benches should be incorporated along the greenway/bikeway system to allow users the opportunity to rest, congregate or contemplate. They should be located at the primary and secondary access points to the trail and at regular intervals (.25 miles) along each corridor. They should be set back off the shoulder at least three (3) feet so that they do not conflict with moving pedestrian and bicycle traffic. The benches should also be consistent with Monroe’s Park and Recreation design standards.

Trash Receptacles should be located at each access point, at bench seating areas and other areas where trail users will tend to congregate. They should be set back at least three (3) feet from the shoulder and be easily accessible to both the user and the maintenance personnel. Providing trash receptacles along the greenway/bikeway system is necessity. Receptacles should be able to hold twenty-two (22) or thirty-two (32) gallon containers.

Bike Racks or bicycle parking is an essential element in developing and promoting a bikeway program. People are usually discouraged from bicycling if no parking facilities are provided. Bicycle parking facilities should be located at the origination and destination points. There are generally two types of bicycle parking facilities: long-term and short-term. Long-term facilities provide a high degree of security and protection from weather. The intended use is for situations where the bicycle is planned to be left unattended for long periods of time. Facilities of this nature usually include lockers, cages or rooms in buildings.

Short-term facilities are used for locking both wheels and the frame, but do not provide additional security or weather protection, unless they are covered by a structure of some type (building or bus stop shelter). Examples of both types of facilities can be found in the Appendix.

Details and Cross-Sections

To have a comprehensive understanding of greenways/bikeways, details and cross-sections have been included in this report. They represent different scenarios that the city may encounter as they develop the greenway/bikeway network. Detailed analysis and design will have to be completed for each segment of the plan in order to determine the best solution. The details and cross-sections are located in the Appendix.

Zoning Text Recommendations

The current policies for the City of Monroe have begun to address the implementation strategies of this plan. In order to strengthen these policies and provide the city the proper leverage to implement the master plan some changes will be necessary. Two existing city documents were examined, the Land Development Plan and the Unified Development Ordinance (UDO). Recommended changes and/or additions to these documents are shown in italics throughout this section.

In addition to these policies is a brief discussion on joint use agreements, what they are and how they relate to this study.

A. Land Development Plan (2000-2010)

The current version was updated and revised on December 16, 2003. Several objectives and strategies support the redevelopment of greenways in improving the quality of life in Monroe.

1. Residential Uses
 - a. Smart Growth options encourage open space and greenways by rewarding bonus points
2. Natural Resource and Recreation Areas
 - a. Objective:
 1. Maintain and expand open space areas and recreational resources
 - b. Strategy:
 1. Develop a recreation, greenway and open space plan
 2. Require dedication of open space in future residential and planned developments
 3. Encourage use of greenways for connecting neighborhoods / preserving open space
3. Central Business District
 - a. Objective:
 1. Promote a pedestrian-friendly atmosphere in downtown
 - b. Strategy:
 1. Examine feasibility of widening existing sidewalks
 2. Repair existing sidewalks /extend where necessary / provide comprehensive pedestrian network

4. Charlotte Highway Corridor
 - a. Strategy:
 1. Continue to lobby NCDOT for funding to improve Charlotte Avenue, including widening and sidewalk construction
5. Traditional Neighborhood Development
 - a. Development of fully integrated mixed-use pedestrian oriented neighborhoods

**B. Unified Development Ordinance (UDO)
(adopted December 16, 2003)**

ARTICLE XIII: Recreational Facilities and Open Space

The construction and implementation of a greenway/bikeway 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/bikeway master plan. The existing Unified Development Ordinance for the City of Monroe was reviewed and compared with the processes for open space land dedication in other municipalities within North Carolina. Text amendment recommendations are proposed to enhance the language already present in code. These recommendations are meant to further define the type of land that the City of Monroe needs for future recreation, greenway and open space land dedication and how it should be dedicated.

156.148 – USABLE OPEN SPACE

- Open space land dedication is a requirement. (Current – for residential development in conditional districts only)
(Recommend all zoning districts)
- Developers must dedicate usable open space (Current)
(Recommend adding: 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 (thirty (30) foot minimum)*
 - *Topography not to exceed five (5) percent slope for more than a fourth of gross land to be dedicated.*
 - *Usableness of dedicated land for greenway. No more than twenty-five (25) percent of the dedication can be located within the (100 year) floodplain or floodway.*

156.150 – DEDICATION OF OPEN SPACE

- Current: Five (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 a greenway/bikeway system *(Recommend change to “officially adopted greenway/bikeway master plan”)*
- Current: city has the right to attempt more acquisition, if more than five (5) percent lies within designated area
- Current: addresses residential development only *(Recommend including other types of development)*

156.172 – PERMISSIBLE USES WITHIN FLOODWAYS

- Current #4 lists: golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, parks, hiking or horseback riding trails, open space and other similar private and public recreational uses.
(Recommend adding specific listing of greenways and bikeways)

Recommend adding:

156.152 – (Currently Reserved) - PAYMENT IN LIEU OF OPEN SPACE DEDICATION

- *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.*
- *Fees collected shall be held in a special fund for the purposes of acquiring and developing recreation, greenways/bikeways and open space based on the officially adopted Parks & Recreation and/or Greenway/Bikeway Master Plans, not for maintenance or replacement of existing park facilities or equipment.*

ARTICLE XV: 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 nonresidential uses. Encouragement of the use of bicycles and bikeways 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 facilities.

C. Joint Use Agreements

This 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 the master plan because they provide opportunities to link destinations, such as schools, parks and neighborhoods. As the city develops the greenway/bikeway system, it may be necessary to coordinate with the water resources department, as well as other utility companies through joint use agreements. Joint use agreements are commonly used when one agency or entity already owns and/or leases an easement for utility purposes, and another agency, such as a parks and recreation department, wants to share part of that easement for recreational opportunities. There are different types of easements, such as sewer, gas and overhead power lines, which typically are already maintained and cleared, so that maintenance personnel can easily access them. Examples of joint use agreements have been included with this report and can be found in the Appendix.

Alternative Funding Sources

The City of Monroe should pursue a variety of funding sources for future recreation land acquisition and development. The funding sources listed below represent several funding opportunities that can be used.

Bond Referendums

A bond referendum can be placed on a ballot to finance land acquisition and site development 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 onetime charges levied by a local government on new development. Unlike dedication fees required through development, onetime impact fees can be applied to finance nearby greenways.

Partners for Greenways and Bikeways Foundation

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.

Payment in Lieu of Fees

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

Private Funding Sources

Monroe has many local businesses and regional offices and industry 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.

Taxation

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

Sponsorships

“Adopt-A” Series: Monroe can promote greenways and generate interest by developing a local “Adopt-A-Stream”, “Adopt-A-Trail” or “Adopt-A-Greenway” program that identifies the organization for providing a walk through cleanup, litter removal and environmental awareness programs, two (2) to four (4) times a year. Some local communities have constructed greenways with its primary funds coming from private donations and volunteer labor. Donators are identified with plaques and recognition markers.

Greenway Days: Communities sponsor events to celebrate the outdoors and local traditions while gaining public awareness about greenways and their benefits.

Special Events: Underwriting, in-kind gifts and financial support help walking and running events to support charity.

Grants

Monroe should continue to apply for, and access state and federal grant programs as another method of financing land acquisition and greenway development. Several grant programs that should be investigated are listed below:

Be Active North Carolina Grant Recipient Program

This program grants \$2,000 or less for recreation and fitness programs that improve the overall health of a given community and work towards the mission of promotion of physical activity to reduce disease and poor health.

Bikes Belong Coalition

Accepts grants applications of up to \$10,000 to assist local organizations in bicycle facility development, specifically facility, capacity and education programs. They accept applications on a quarterly basis. More information can be found at: (www.bikesbelong.org.)

Land & Water Conservation Fund (LWCF)

Fund provides matching grants to local governments for the acquisition and development of public outdoor recreation areas and facilities. The recreation resources service should be contacted for additional information (919-515-7118). Applications for this grant are usually due in late February/early March.

North Carolina Parks and Recreation Trust Fund

This funding source provides in matching funds annually for local park land acquisition, development and renovation to communities across the state. The funding source, which comes from a real estate transfer tax, requires a 50-50 match from local government and no more than \$500,000 can be requested. The Recreation Resources Service should be contacted for additional information (919-515-7118). Applications for this grant are usually due in late January/early February.

North Carolina's Clean Water Management Trust Fund (CWMTF) was established by the General Assembly in 1996 (Article 13A; Chapter 113 of the North Carolina General Statutes). At the end of each fiscal year, 6.5 percent of the unreserved credit balance in North Carolina's General Fund (or a minimum of \$30 million) will go into the CWMTF. Revenues from the CWMTF will then be allocated in the form of grants to local governments, state agencies and conservation nonprofit groups to help finance projects that specifically address water pollution problems. CWMTF will fund projects that (1) enhance or restore degraded waters, (2) protect unpolluted waters, and/or (3) contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits (land acquisition). There are typically two funding cycles per year, with application due June 1 and December 1. More information can be found at: (www.cwmtf.net)

Transportation Enhancement Funds (TEA-21)

The North Carolina General Assembly enacted legislation (G.S. 136-71.12 Funds) that authorizes the North Carolina Department of Transportation (NCDOT), specifically the Office of Bicycle and Pedestrian Transportation, to spend any federal, state, local or private funds available to the Department and designated for the accomplishment of Article 4A, Bicycle and Bikeway Act of 1974. In addition, the 1998 Transportation Equity Act for the Twenty-First Century (TEA-21) requires the Department to set aside federal funds from eligible categories for the construction of bicycle and pedestrian transportation facilities. (www.ncdot.org or www.enhancements.org)

NC DWQ Wetland Restoration Program

Collects fees from developers for required mitigation for impacting a wetland through development. Funding is available for acquiring land in a degraded watershed or for mitigation on a particular site.

The North Carolina Division of Parks and Recreation Trails Program (DENR)

DENR has two trail grants:

- 1) NC Adopt-A-Trail and
- 2) NC Recreational Trails Program

Both provide funding assistance for acquisition and development of public trails. It offers full funding up to \$5,000, while the recreation trails grant requires 80:20 cost share up to \$50,000. (<http://ils.unc.edu/parkproject/trails/grant.html>)

National Heritage Trust Fund

This is a supplemental funding source for state agencies to acquire and protect important natural areas, preserve the state's ecological diversity and cultural heritage, and to inventory natural heritage resources of the state. (<http://ils.unc.edu/parkproject/heritage/nhtf.html>)

The Trust for Public Land

They are currently working with counties and municipalities in the region to help conserve land for recreation and spiritual nourishment and to improve the health and quality of communities. (www.tpl.org)

Urban Park & Recreation Recovery Program

Provides matching grants and technical assistance to economically distressed urban cities. Three types of grants are available: (1) Rehabilitation (provides capital funding to renovate or redesign existing close-to-home facilities), (2) Innovation (funding aimed at supporting specific activities that increase recreation programs or improve efficiency to operate existing programs), and (3) Planning (funding for development of a recovery action program plan).

Eat Smart, Move More

A statewide initiative that promotes increased opportunities for physical activity and healthy eating through policy and environmental change. Grants for trail enhancement and awareness are available at: (www.eatsmartmovemorenc.com)

Conservation Fund

Administers the American Greenways Kodak Awards Program that targets local greenway planning and offers grants of up to \$2,500. More information can be found at: (www.conservationfund.org)

Environmental Protection Agency

Offers funding through both the Office of Transportation and Air Quality (OTAQ) and Congestion Mitigation and Air Quality (CMAQ). More information can be found at: (www.epa.gov/otaq)

Trails and Greenways Clearinghouse

Catalogues several regional specific grant sources and offers useful technical assistance. Information can be found at: (www.trailsandgreenways.org)

Open Space Acquisition and Dedication

Recreation and open space lands can be acquired by a variety of methods. Land can be donated, purchased outright, acquired through easement, and dedicated through policy such as described in Article XIII: Recreational Facilities and Open Space in the Unified Development Ordinance for the City of Monroe. Additional information and descriptions on land acquisitions methodology can be found at (www.farmlandinfo.org) in the Farmland Protection Toolbox.

Donation

Individuals and organizations can donate land to the city for recreational and open space purposes. In return, the donor is eligible to receive federal and state deductions on personal income tax and may be able to avoid inheritance taxes, capital gains taxes and recurring property taxes.

Fee-Simple Purchase

The city can purchase property outright, obtaining full title to the land.

Easements

The acquisition of an easement entitles the city to only those rights granted in the easement agreement. Easements are typically acquired at the time of final subdivision plat approval and recordation, but can also be solicited independently.

Right of First Refusal

The city can establish an agreement with a property owner to provide the 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 sale to any other agency or person.

Condemnation

Eminent domain for acquisition of open space 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.

Obtain additional easements on already obtained utility easements

Multiple use of existing public property can be pursued as a method of acquiring recreational and conservation land. Water, sewer, gas and electrical easements can be used through negotiation and landowner consent to provide space for public recreation.

Required Dedication

The City of Monroe development regulations require developers of residential subdivisions and planned unit developments to dedicate a percentage of land to the city for usable open space.

References

National

Bicycle Facility Planning, October 1995

Prepared by: American Planning Association (APA)

Guide for the Development of Bicycle Facilities, 1999

Prepared by: American Association of State Highway and Transportation Officials (AASHTO)

Greenways A Guide to Planning, Design and Development, 1993

Prepared by: The Conservation Fund

Manual on Uniform Traffic Control Devices, Part 9 Traffic Control for Bicycle Facilities, 2003 Edition

US Department of Transportation, Federal Highway Administration

Bike Lane Design Guide, 2002 (Chicago's Standards)

The Pedestrian and Bicycle Information Center (<http://www.bicyclinginfo.org/>)

National Center for Bicycling and Walking (<http://www.bikewalk.org/>)

Bike Parking Systems (<http://www.madrax.com>)

The National Bicycling and Walking Study, Transportation Choices for a Changing America, April 1994

US Department of Transportation, Federal Highway Administration

State

North Carolina Department of Transportation - Division of Bicycle and Pedestrian Transportation

(<http://www.ncdot.org/transit/bicycle/default.htm/>)

North Carolina Bicycle Facilities Planning and Design Guidelines, January 1994

North Carolina Department of Transportation (<http://www.ncdot.org/>)

Planning and Designing Local Pedestrian Facilities, February 1997

North Carolina Department of Transportation, Office of Bicycle and Pedestrian Transportation

Local

Monroe Parks, Recreation, Greenways and Open Space Master Plan, December 2002

Prepared by: HadenStanziale

Mecklenburg County Greenways Master Plan, May 1999

Prepared by: HadenStanziale and Greenways Incorporated

Union County Parks and Recreation Master Plan, October 2000

Prepared by: Woolpert, LLC

**CITY OF MONROE
GREENWAY / BIKEWAY SYSTEM MASTER PLAN
CITIZEN SURVEY**

The Monroe Parks & Recreation Dept. wants to hear what its residents want for a quality greenway / bikeway system. We also want to be sensitive to issues such as protecting open space, and preserving environmentally and culturally sensitive areas. **TO DO SO, WE NEED YOUR HELP and INPUT!** Please take a few minutes from your busy schedule and help us improve the quality of life in Monroe by letting us know what you think! When you are finished, please return your survey immediately by placing it in the box, OR you can drop it off at the Parks and Recreation Department, Hanover Drive by 5:00 pm on Wednesday January 5th. **THANK YOU FOR YOUR INPUT!**

- 1) Your Age: (Please circle one): 5-9 10-14 15-19 20-24 25-29 30-34
35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and up
- 2) Sex: M F
- 3) Please indicate the number of individuals residing in your household in the following age groups:
___ 0 - 11 ___ 12 - 18 ___ 19 - 25 ___ 26 - 40 ___ 41 - 54 ___ 55 - 69 ___ 70 and up
- 4) Are you currently a resident of Monroe? (Do you live within the corporate limits and pay city taxes?)
YES NO
- 5) Have you, or members of your household ever been on a greenway?
YES NO
If so, where?

- 6) Have you ridden your bicycle or walked to get to work, school, shopping areas, parks or recreation facilities in the last six months?
YES NO
- 7) If you have been on greenways or bikeways in other communities, how did you hear about them?

- 8) Please indicate the greenway-related activities you enjoy. (Please check all that apply)
 Walking Jogging Rollerblading
 Birdwatching Exercise Historic/Cultural Education
 Spending Time in Nature Family Time Wildlife Observation
 Educational Activities Bicycling (Recreation) Other _____
 Bicycling (Commuting) Bicycling (to shop/visit) Other _____

**CITY OF MONROE
GREENWAY / BIKEWAY SYSTEM MASTER PLAN
CITIZEN SURVEY**

Please indicate which activity from the above list you enjoy the most:

- 9) Do you use any schools or private facilities for greenway-related activities? If so, which ones?

- 10) How often do you exercise a week? (Please Circle One): 1 2 3 4 5 6 7 days
- 11) What activity do you or your family members participate in most frequently for exercise?

- 12) What should be the purpose of greenways / bikeways in Monroe? Check all that apply.
 Improve water quality/reduce flooding impacts Conserve plant and wildlife habitat
 Promote compatible economic development Provide alternative transportation
 Provide recreational opportunities Highlight local history and culture
 Preserve 'green space' and natural buffers
- 13) For what reasons will you likely use a greenway / bikeway system?
 Recreation / Fitness Trips to store/downtown
 Commute to work/school Visiting friends/relatives
 No car/no other choice Enjoy the environment
 Trips to a park Learn about natural/historic resources
- 14) If greenways or bikeways were provided between your home and work, school, shopping, recreational and cultural facilities and/or parks, would you bike or walk to these places?
 Often Occasionally Never
- 15) Which of the following types of greenways / bikeways do you feel are most needed in Monroe?
 Paved paths, trails, greenways Bike Lanes
 Unpaved paths, trails, greenways Sidewalks
- 16) Based on the open house tonight, do you feel that the development of a greenway system within Monroe will increase or decrease the quality of life in Monroe?
 Increase Decrease
- 17) Please list any concerns you may have for a greenway / bikeway system in Monroe.

CITY OF MONROE
GREENWAY / BIKEWAY SYSTEM MASTER PLAN
CITIZEN SURVEY

18) Please list potential linkages for the greenway /bikeway system:

From _____ to _____
(origin) (destination)

Potential corridors that could be used to make this connection:

From _____ to _____
(origin) (destination)

Potential corridors that could be used to make this connection:

From _____ to _____
(origin) (destination)

Potential corridors that could be used to make this connection:

19) Other comments:

Survey Results

City of Monroe Greenway Master Plan Public Meeting Survey Results Public Meeting Totals

1) Your Age

5-9	0	0.0%
10-14	0	0.0%
15-19	2	6.7%
20-24	1	3.3%
25-29	4	13.3%
30-34	2	6.7%
35-39	4	13.3%
40-44	4	13.3%
45-49	2	6.7%
50-54	4	13.3%
55-59	0	0.0%
60-64	0	0.0%
65-69	4	13.3%
70 and up	2	6.7%
N/A	1	3.3%
Total	30	100.0%

2) Gender:

Male	14	46.7%
Female	11	36.7%
N/A	5	16.7%
Total	30	100.0%

3) Please indicate the number of individuals residing in your household in the following age groups:

0-11	18	28.1%
12-18	7	10.9%
19-25	10	15.6%
26-40	9	14.1%
41-54	13	20.3%
55-69	7	10.9%
70 and up	0	0.0%
Total	64	100.0%

4) Are you currently a resident of Monroe? (Do you live within the corporate limits and pay city taxes?)

Yes	22	73.3%
No	8	26.7%
Total	30	100.0%

5) Have you, or members of your household ever been on a greenway?

Yes	21	67.7%
No	10	32.3%
Total	31	100.0%

If so, where? *See Additional Comment Sheet*

6) Have you ridden your bicycle or walked to get to work, school, shopping areas, parks or recreation facilities in the last six months?

Yes	15	53.6%
No	13	46.4%
Total	28	100.0%

7) If you have been on greenways or bikeways in other communities, how did you hear about them?

See Additional Comment Sheet

8) Please indicate the greenway-related activities you enjoy. (Please check all that apply)

Walking	24	16.1%
Birdwatching	7	4.7%
Spending Time in Nature	17	11.4%
Educational Activities	4	2.7%
Bicycling (Commuting)	8	5.4%
Jogging	17	11.4%
Exercise	14	9.4%
Family Time	13	8.7%
Bicycling (Recreation)	17	11.4%
Bicycling (to shop/visit)	7	4.7%
Rollerblading	4	2.7%
Historic/Cultural Education	6	4.0%
Wildlife Observation	11	7.4%
Other	<i>See Additional Comment Sheet</i>	
Total	149	100.0%

Please indicate which activity from the above list you enjoy the most.

See Additional Comment Sheet

9) Do you use any schools or private facilities for greenway-related activities? If so, which ones?

See Additional Comment Sheet

10) How often do you exercise a week? (Circle One): 1 2 3 4 5 6 7 days

1	0	0.0%
2	5	17.2%
3	9	31.0%
4	3	10.3%
5	5	17.2%
6	5	17.2%
7	2	6.9%
Total	29	100.0%

11) What activity do you or your family members participate in most frequently for exercise?

See Additional Comment Sheet

12) What should be the purpose of greenways / bikeways in Monroe? Check all that apply.

Improve water quality/reduce flooding impacts	17	14.7%
Promote compatible economic development	8	6.9%
Provide recreational opportunities	25	21.6%
Preserve 'green space' and natural buffers	23	19.8%
Conserve plant and wildlife habitat	22	19.0%
Provide alternative transportation	11	9.5%
Highlight local history and culture	10	8.6%
Total	116	100.0%

13) For what reasons will you likely use a greenway / bikeway system?

Recreation / Fitness	28	32.9%
Commute to work / school	4	4.7%
No car/no other choice	1	1.2%
Trips to a park	14	16.5%
Trips to store/downtown	5	5.9%
Visiting friends/relatives	3	3.5%
Enjoy the environment	21	24.7%
Learn about natural/historic resources	8	9.4%
Other - Won't Use	1	1.2%
Total	85	100.0%

14) If greenways or bikeways were provided between your home and work, school, shopping, recreational and cultural facilities and/or parks, would you bike or walk to these places?

Often	12	40.0%
Occasionally	13	43.3%
Never	4	13.3%
N/A	1	3.3%
Total	30	100.0%

15) Which of the following types of greenways / bikeways do you feel are most needed in Monroe?

Paved paths, trails, greenways	21	44.7%
Unpaved paths, trails, greenways	11	23.4%
Bike Lanes	11	23.4%
Sidewalks	3	6.4%
Don't Care	1	2.1%
Total	47	100.0%

16) Based on the open house tonight, do you feel that the development of a greenway system within Monroe will increase or decrease the quality of life in Monroe?

Increase	27	96.4%
Decrease	1	3.6%
Total	28	100.0%

17) Please list any concerns you may have for a greenway / bikeway system in Monroe.

See Additional Comment Sheet

18) Please list potential linkages for the greenway /bikeway system:

See Additional Comment Sheet

Survey Comments

5. McAlpine Greenway; Old Dominion, Virginia and many locations in the TN and Washington, DC areas, Tobacco Trail and New River, NC; all greenways in Charlotte- training for last years marathon; Francis Beaty Park- Indian Trail; Lake Johnson- Raleigh, Charleston, SC, Lake Tahoe, NV; Hilton Head, Loveland Colorado; Bloomington, Illinois; Broad River Greenway, Boiling Springs, NC; Wisconsin, Montreal; McAlpine Park, Pee Dee Wildlife Refuge, several in other states; McAlpine Park- Charlotte, Umstead Park- Raleigh, Raleigh, NC; Madison, Wisconsin; Cape Cod, Mass.; Greenville, NC; Florida; Durham
7. visiting cities; through rails and trails and park services; newspaper; info in running periodicals; word of mouth; bill stuffers, road signage, the greenway was outside of my neighborhood, also, I ran cross country and we practiced on the greenway; other runners, online searches; looked for them, friends; TV; radio;
8. jogging; riding horses; exercise; walking to spend time with my fiancé; actually being able to “go somewhere” while running; bicycling (recreation); bicycling (recreational); exercise and family time; walking dogs; historic/culture; bicycling (commuting and recreation); hiking
9. yes, Wingate University, Cane Creek Park trails; none available; cross country (track); no; Forest Hills High School, Marshville Elementary, most have been public park facilities; yes, walk around Monroe Country Club and Monroe High Schools track; aquatic center; Lakeland Cemetery, Belk Park; yes, Rolling Hills CC; yes, NCSU;
11. walking, jogging; riding horses; running; swimming, tennis, Monroe Aquatic Center; bicycling; aerobic; exercise classes; weight training, taichi, yoga, free weights, strength training, bowling
17. safety- people running on the trails by themselves; none; I think it will be a great idea; it would be safer than doing physical activity on the road. So it would be great to have an area to feel safe; that it incorporates Brooks Farms subdivision somehow; not enough connections to existing residential communities, lack of knowledge, lack of use, no future investments in expanding; high quality surface- can mix pavement and good signage, safety- have people patrolling the area- would be a way to make it safer. Also, I worry that the city will not be able to keep it up; personal safety, trash pickup; mugging and crime; need for safe lighting in dark remote areas; safety at street crossings; traffic, will it be done in my lifetime?; interested in having a greenway as an alternative to running in the streets; promote alternative transportation to reduce emissions and cost for road maintenance, improve quality of life and preserve environment, recreation, look ahead and work with developers to build ‘greener communities’ and practice conservation design principals, traditional development vs. cluster development; attitude of motorists toward bicyclist on roadway, personal safety in certain areas; cost

18. Monroe City to Union County Parks and Schools; New Walter Bickett Elementary to anywhere; Marshville to Monroe, Richardson Creek, Highway 74- Acknowledge out of Monroe city limits though consider for future connections; Don Griffin Park to East Elementary School- Winchester are to walkup to Normand Street which dead ends to sidewalk which connects to Elizabeth Avenue; East Elementary School to Monroe High School- East Franklin Street; multiple parks to aquatics center- vary, multiple parks to Monroe Mall or Poplin Place Mall, multiple parks to Downtown or possibly lake; Monroe Country Club to Old Cemetery; Sunset Park to MCC; Monroe CC to Jesse Helms Park, Aquatics Center to Rolling Hills CC; Monroe CC to Jesse Helms Park- south side of 74, Monroe CC to Walk-up Avenue- Richardson Creek; park to park; Marshville to Monroe- I know Marshville is out of the “area”, I have a vision of all Union County being connected by a greenbelt system; Monroe Aquatic center to large greenway for running; Monroe Hospital to large greenway for run/bike/walk- this is great retreat for hospital employees on breaks as well as for patients and families; sewer lines, water lines, creeks

19. excellent place for festivals and art exhibits; great idea; I would love to help, Jay Lanzy 2209 Wheaton Way, Monroe, NC 28112 704-291-2569, I am on my Homeowners Board Brooks Farm Subdivision, please forward info on greenway so I can get it into our newsletter; consider adding an art segment where art sculpture can be displayed; Definitely need bike lanes in the City of Monroe; I think this greenway is a great idea that would benefit a variety of people within the community; use of designated paths around golf courses, buy up disused railway ties and turn into nature trails and bike paths (this works great in Europe); Would really love to see this happen; would really love to have a place to run with good mileage and a good natural view, to relax while you run; nice/ideal if all neighborhoods had access to greenways or some greenspace, connect more, unique habitats and increase connectivity, be sustainable, develop programs that get citizens involved and educated such as speakers/ demonstrators, “get fit”, support local farmers and have cross country/ triathlon races, Grants- preservation, transportation planning, wildlife management;

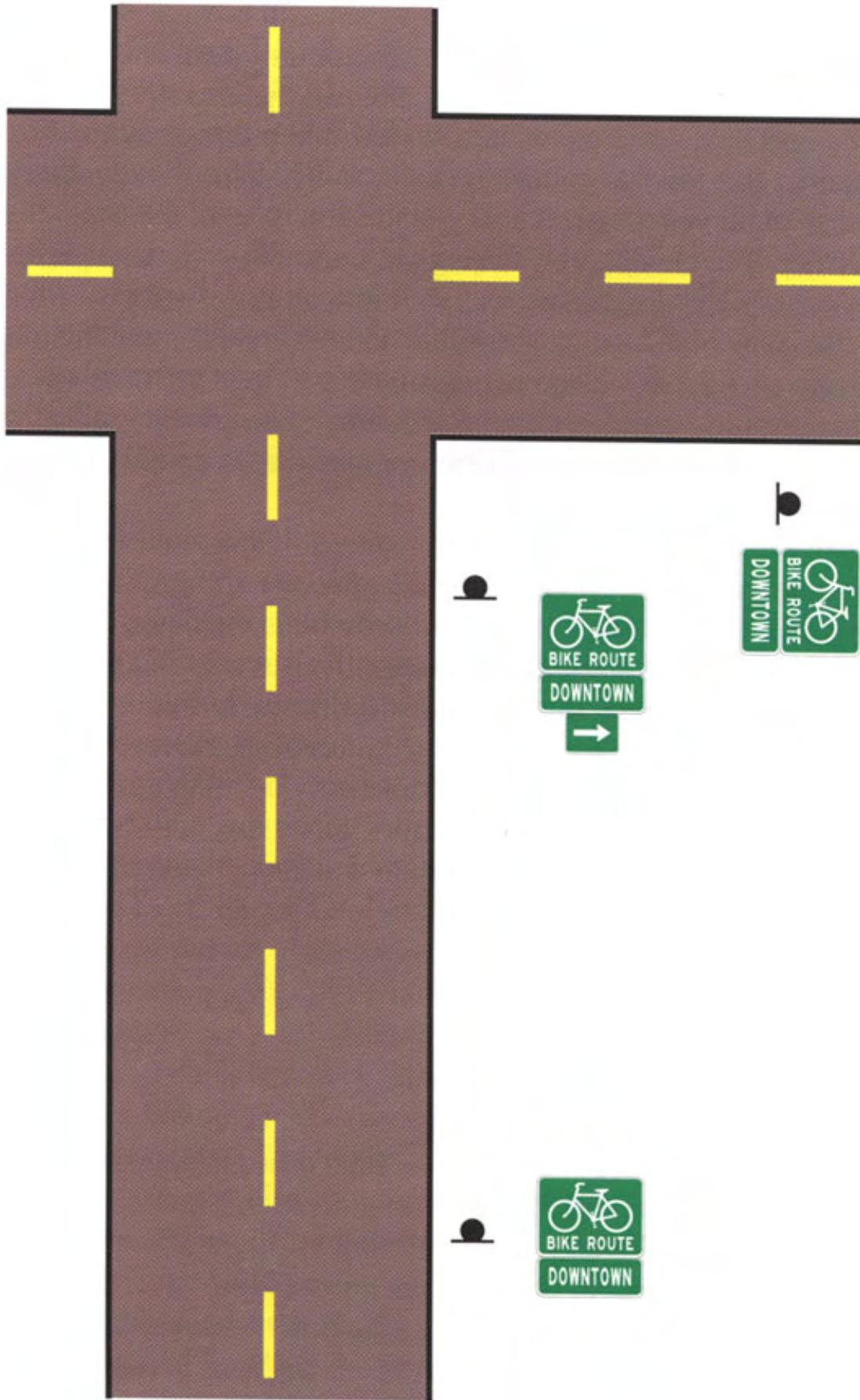
Design Guidelines

Signage Examples



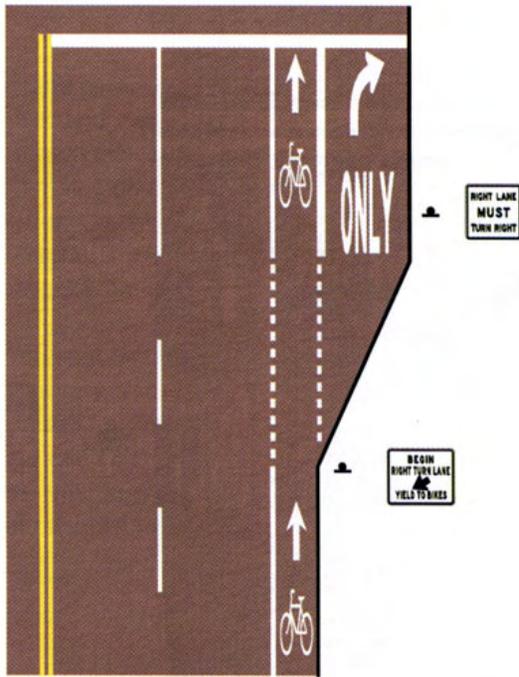
Design Guidelines

Greenway/Bikeway - Route signs and placement

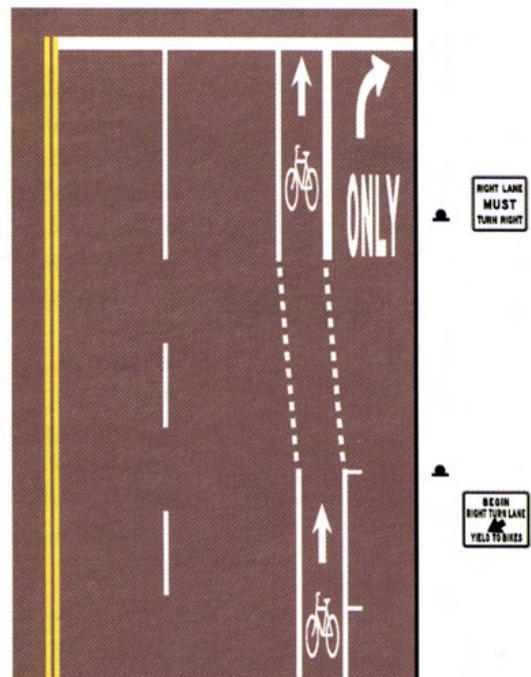


Bike Lane Treatments

Bike Lane Treatments at Intersections

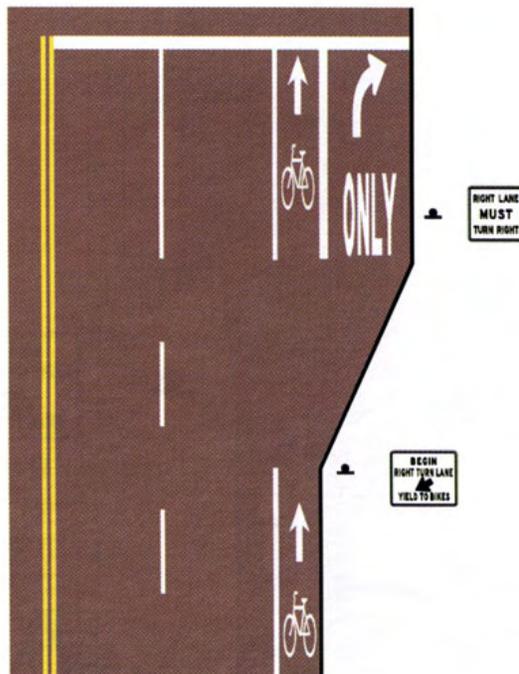


a. Right-turn-only lane

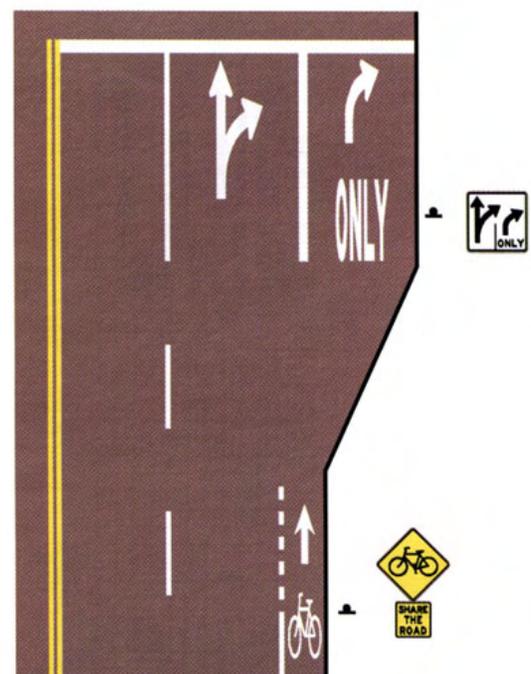


b. Parking lane into right-turn-only lane

NOTE: The dotted lines in cases "a" and "b" are optional (see case "c").



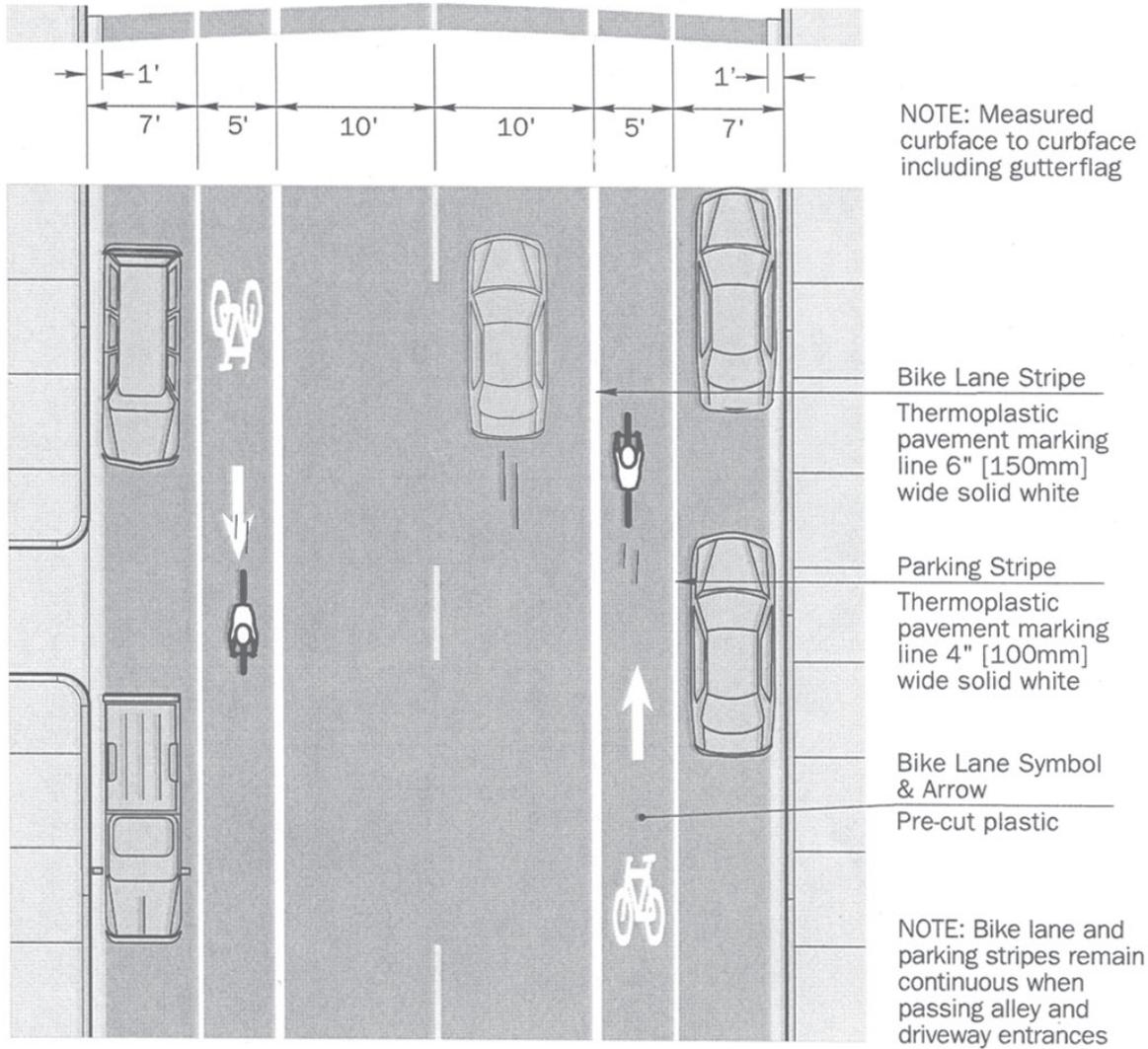
c. Right-turn-only lane



d. Optional right/straight and right-turn-only lane

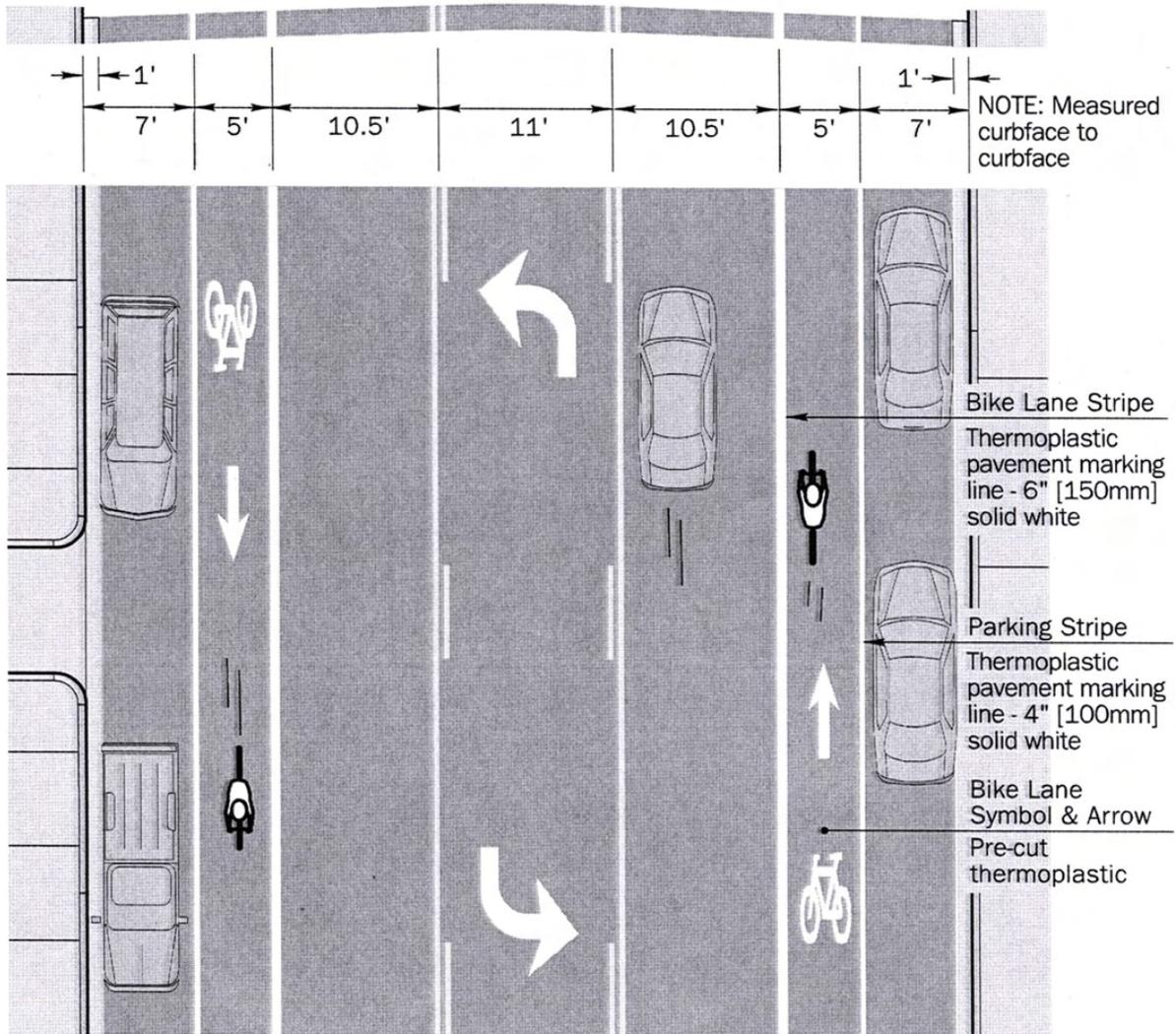
Details and Cross-Sections

Bike Lanes with On-Street Parking (Out of Chicago Standards)



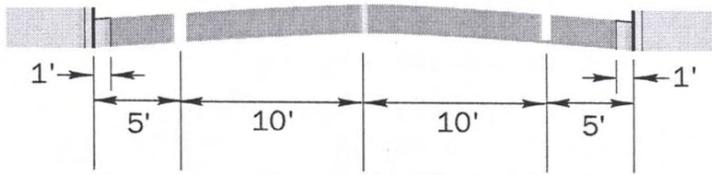
Details and Cross-Sections

Bike Lanes with On-Street Parking and Turn Lane (Out of Chicago Standards)

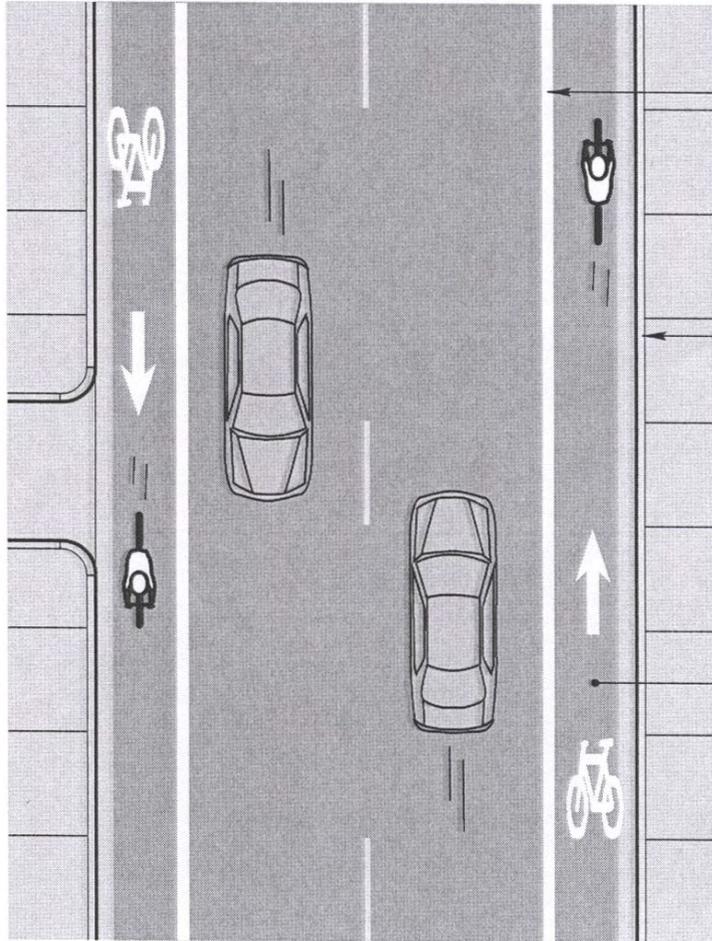


Details and Cross-Sections

Bike Lanes with On-Street Parking (Out of Chicago Standards)



NOTE: Measured curbface to curbface.



Bike Lane Stripe
Thermoplastic pavement marking line
8" [200mm] wide
solid white

No Parking Stripe
Pre-formed Inlay Tape marking line
4" [100mm] wide
solid yellow

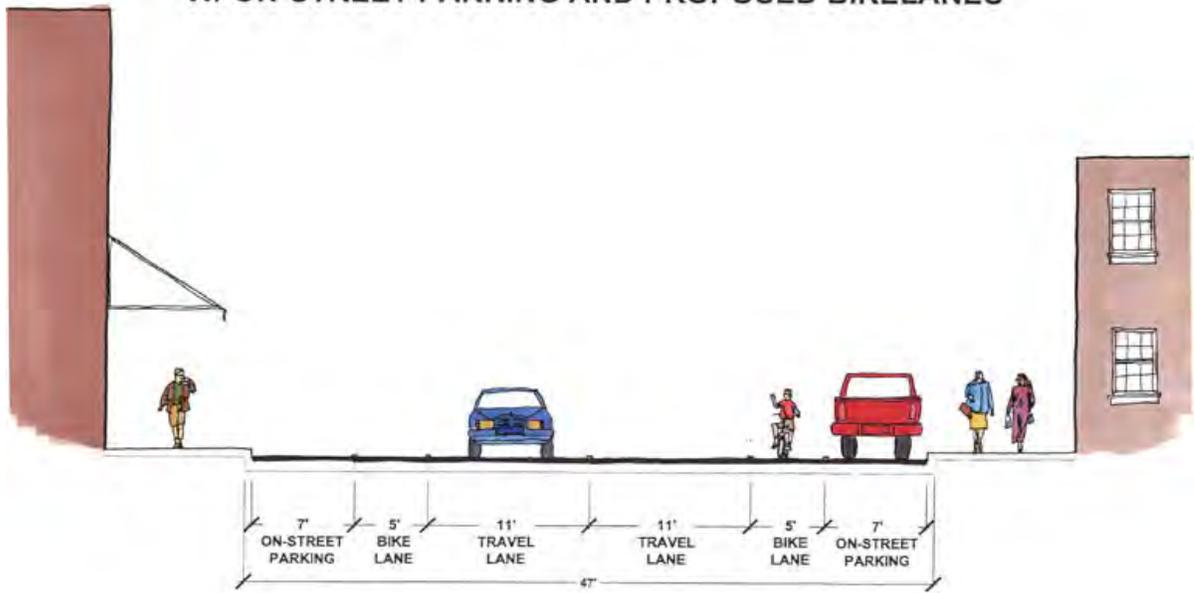
NOTE: Apply to top of curb

Bike Lane Symbol & Arrow
Pre-cut plastic

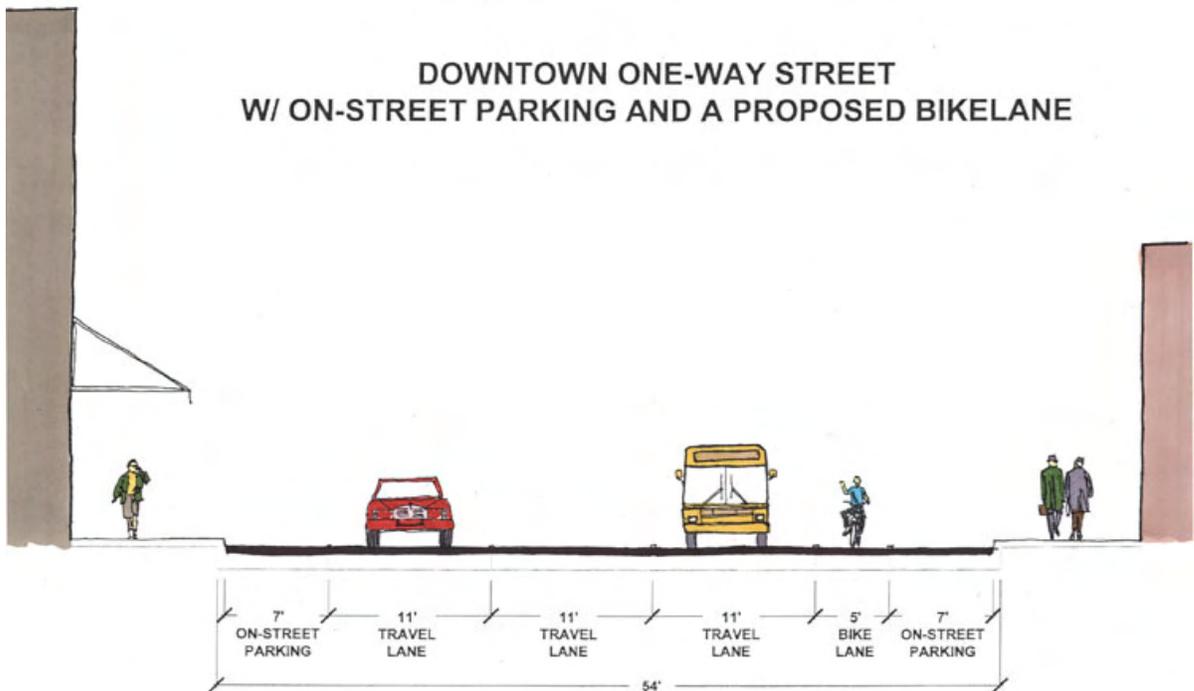
NOTE: Bike lane and parking stripes remain continuous when passing alley and driveway entrances.

Details and Cross-Sections

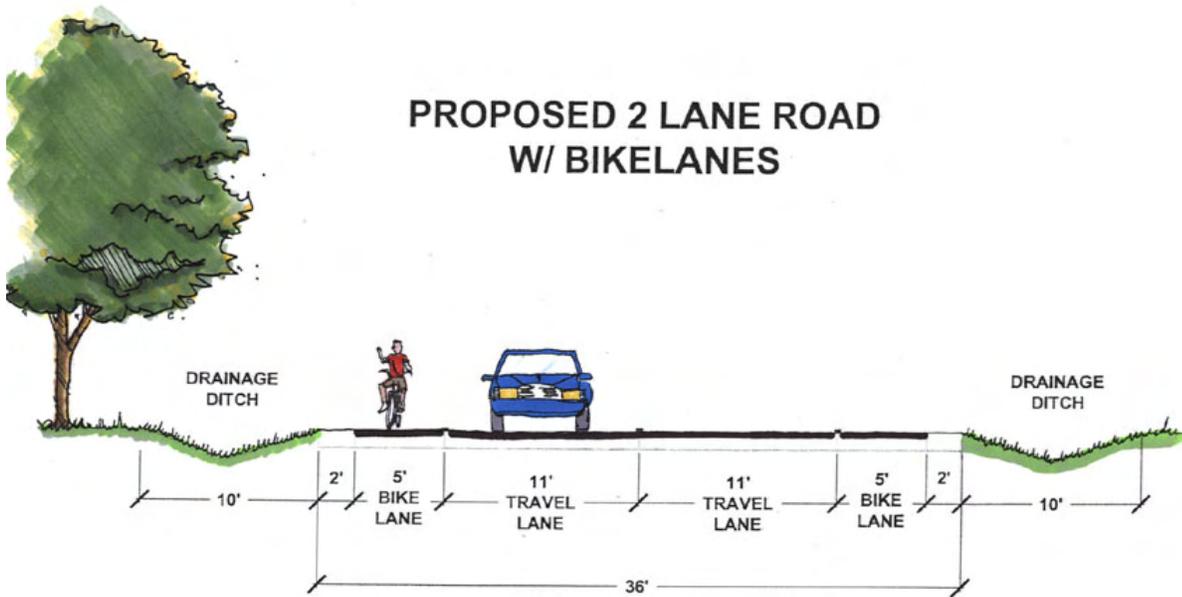
DOWNTOWN 2 LANE STREET W/ ON-STREET PARKING AND PROPOSED BIKELANES



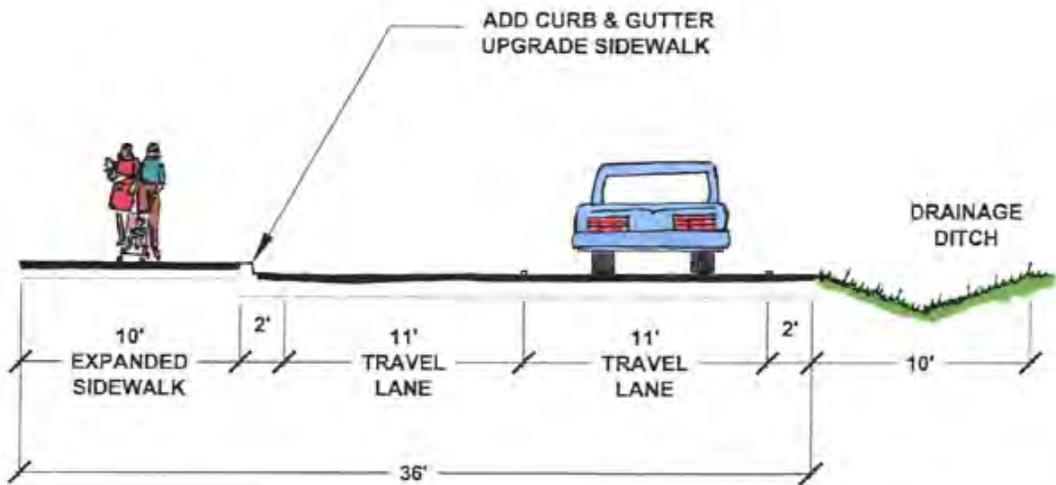
DOWNTOWN ONE-WAY STREET W/ ON-STREET PARKING AND A PROPOSED BIKELANE



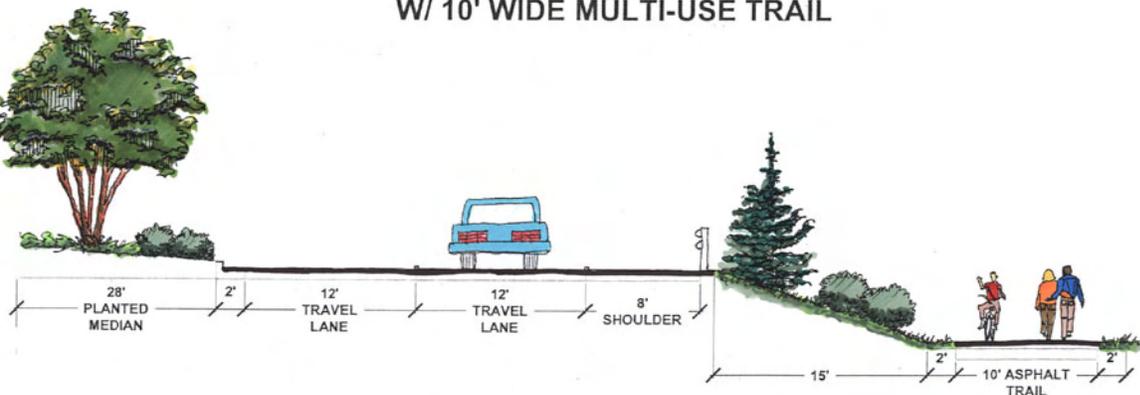
PROPOSED 2 LANE ROAD W/ BIKELANES



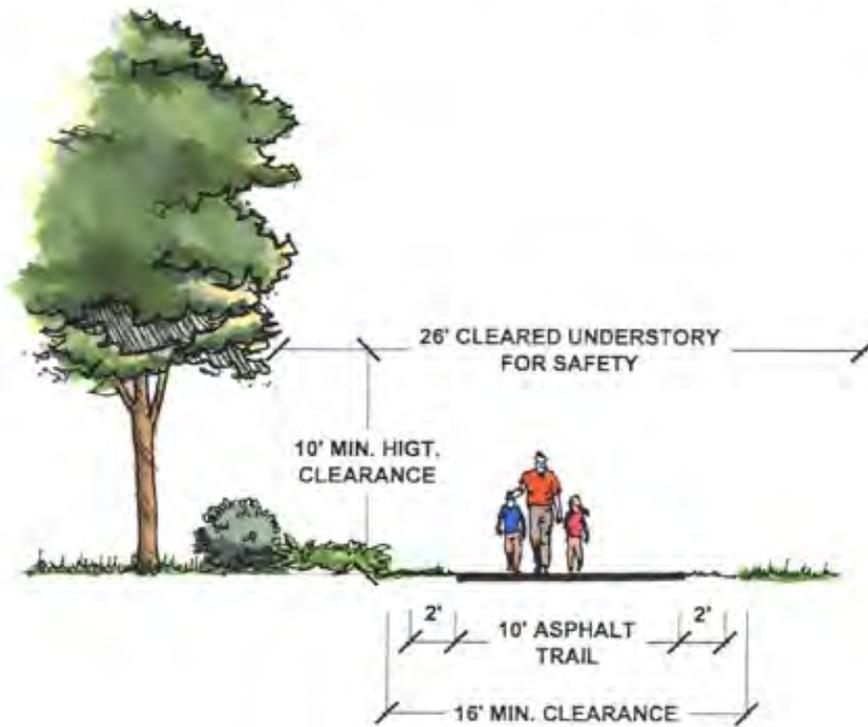
PROPOSED 2 LANE ROAD W/ SIDEWALK ONE SIDE



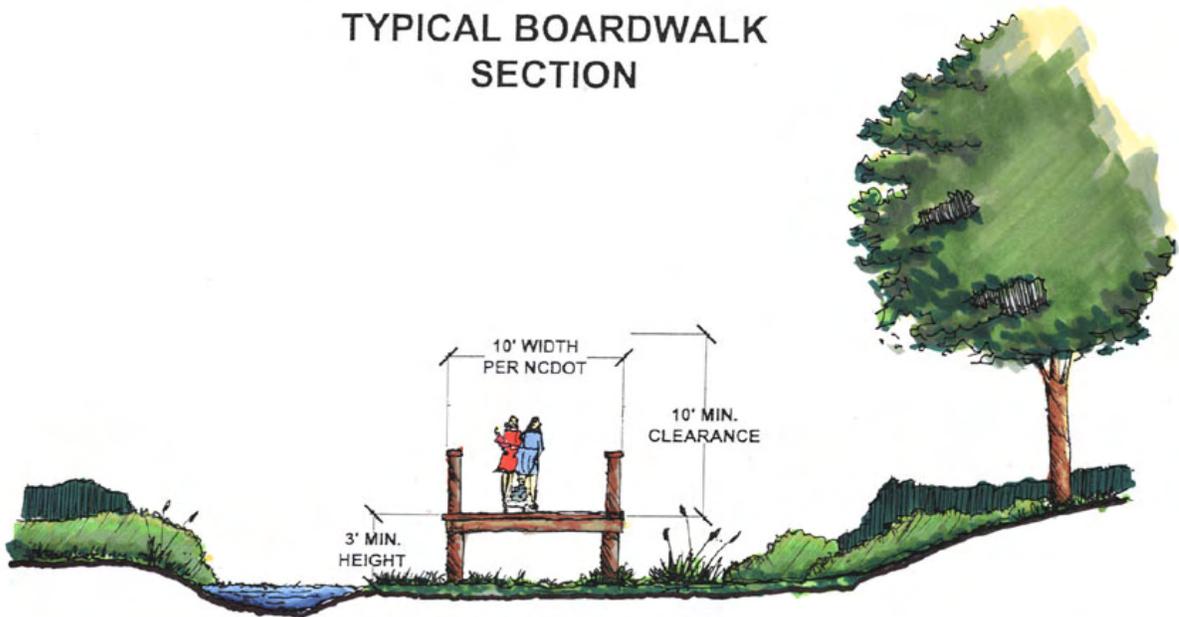
PROPOSED 4 LANE DIVIDED HIGHWAY W/ 10' WIDE MULTI-USE TRAIL



TYPICAL GREENWAY TRAIL SECTION



TYPICAL BOARDWALK SECTION



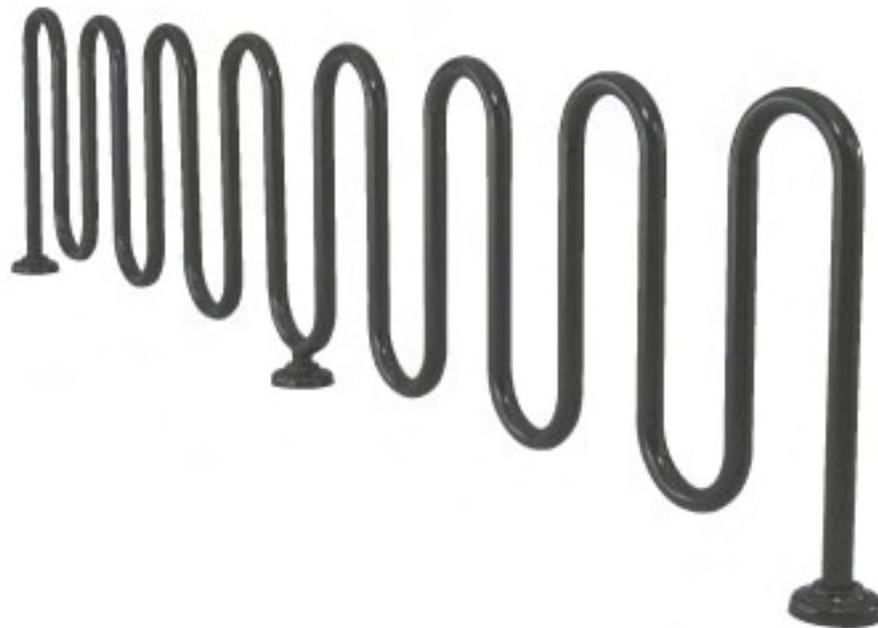
Bicycle Parking Systems



Bicycle Locker System (Long-Term)



Bicycle Parking (Short-Term)



Joint-Use Agreement Examples

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

STATE OF NORTH CAROLINA

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

COUNTY OF _____

THIS DEED OF EASEMENT, made this _____ day of _____, 200__, 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 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 Master Greenway 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:

BY: _____
President

Corporate Secretary

Approved as to Form:

(SEAL)

(Associate) City Attorney

STATE OF NORTH CAROLINA

COUNTY OF _____

This is to certify that on the _____ day of _____, 200__, 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 _____, 2000_.

Notary Public

(SEAL)

My Commission Expires: _____

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 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 Master Greenway 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 as, 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:

BY: _____
President

Corporate Secretary

Approved as to Form:

(SEAL)

(Associate) City Attorney

STATE OF NORTH CAROLINA

COUNTY OF _____

This is to certify that on the _____ day of _____, 200__, 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 _____, 2000__.

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 Master Greenway 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)
_____ (SEAL)

STATE OF NORTH CAROLINA
COUNTY OF _____

This is to certify that on the _____ day of _____, 200__, 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 _____, 2000__.

Notary Public

(SEAL)

My Commission Expires: _____

WILLIAMS GAS PIPELINE – TRANSCO ENCROACHMENT SPECIFICATIONS

The following Williams Gas Pipeline (WGP) specifications are minimum requirements for most proposed encroachments to avoid conflicts with regulations and existing right-of-way agreements. It is not WGP's intent to convey that these are the only types of activities permitted. Additional requirements may be imposed depending upon the scope of the proposed encroachment.

PIPELINE FACILITIES AND LEGISLATION

WGP owns and operates a 27,000-mile national pipeline network. The transmission operation includes high-pressure natural gas steel pipelines ranging in diameter from (2) inches to (48) inches. In addition to WGP's pipeline facilities, WGP has fee properties, storage facilities, compressor stations, meter stations, cathodic protection equipment, valve settings and other facilities.

WGP is regulated by the Department of Transportation, Office of Pipeline Safety. The pipeline safety regulations are administered through Title 49, Code of Federal Regulations, Part 192. Part 192 prescribes minimum standards for the safe operation of pipelines.

ENCROACHMENTS

It is WGP's philosophy to prevent encroachments by working with agencies and developers to design projects outside the pipeline right-of-way. Many of WGP's right-of-way agreements prohibit encroachments, and you should be aware that WGP will enforce applicable provisions in its right-of-way agreements where it believes the continued safe operation and maintenance of the pipeline facilities could be threatened.

NOTIFICATION AND CONSTRUCTION SAFETY REQUIREMENTS

1. In order to prevent unnecessary delays, WGP encourages close communication with our representative throughout your entire project. A WGP representative should participate in all pre-construction meetings. In addition, WGP can conduct a safety/informational presentation to any interested parties, including contractors, local governmental maintenance crews and developers.
2. "One Call" systems require (48)-(72) hours notice prior to any excavation activities or equipment use on or in close proximity to WGP's pipeline facilities. No equipment shall enter onto WGP's facilities until a WGP representative is on site to monitor the work. In addition, no excavation shall occur in the vicinity of WGP's facilities until proper telephone notification has been made to the appropriate One Call System and a WGP representative is on site to monitor the work. Any crossings made without a WGP representative on site will have to be re-excavated at the excavator's expense to provide WGP an opportunity to inspect all affected pipeline facilities.
3. Excavations must be barricaded to protect WGP's pipelines from exposure to vehicular traffic and to ensure the safety of pedestrians. WGP representatives must be provided safe access to all open excavations. Excavations must be properly sloped or shored, as required to comply with State and Federal OSHA regulations.

PLAN DESIGN AND REVIEW REQUIREMENTS

1. An open space trail, free of trees and other deep-rooted plants, is the ideal right-of-way use. This reduces the public exposure by minimizing the opportunity for "dig-ins." When this is not possible, lot division on either side of the right-of-way is preferable.
2. In most cases, WGP will require submittal of plan and profile drawings for prior review and approval by WGP. All drawings must show, in detail, all of WGP's facilities and other features that will allow WGP to determine the effects of the proposed construction or maintenance activity on its facilities. Encroachment plans shall include a scope of work, description, and a location map depicting the project site area, including sufficient geographical references such as legal property lines, roads, and appropriate deed information for the properties involved.
3. In order to ensure that all proposed improvements are designed in accordance with WGP's Encroachment Specifications, WGP requires a minimum of (30) business days lead-time to review proposed commercial and residential developments.
4. WGP requires a minimum of (30) business days lead-time to review proposed road crossing plans. Additional review time will be required for any proposed road which requires pipeline modifications and any proposed road that includes a dedicated right-of-way.

WGP EASEMENT, PERMITS AND AGREEMENTS

1. A **Foreign Line Permit** will be required for any proposed construction or maintenance within WGP's right-of-way. This permit, prepared by WGP, will outline the responsibilities, conditions, and liabilities of each party. This permit must be executed by the encroaching party and in WGP's possession prior to any work being performed on the right-of-way.
2. WGP will determine if a recorded **Encroachment Agreement** will be required for any proposed construction or maintenance within WGP's right-of-way. This agreement, prepared by WGP, will outline the responsibilities, conditions, and liabilities of each party. This agreement will be fully executed and in WGP's possession prior to any work being performed on the right-of-way.

3. WGP will determine if a **Reimbursement Agreement** will be required for any construction or maintenance within WGP's right-of-way. This agreement, prepared by WGP, will outline the reimbursement procedure for necessary and appropriate preliminary engineering and actual field inspection work. This fully executed agreement, including a check made payable to: "**Transcontinental Gas Pipe Line Corporation**" for the estimated cost of WGP's services, will be in WGP's possession prior to any work being performed on the right-of-way.

GENERAL REQUIREMENTS FOR SURFACE ALTERATIONS

1. No above ground structures or appurtenances are to be located within the WGP right-of-way. The structures include, but are not limited to: utility poles, towers, foundations, guy wires, satellite dishes, manholes, catch basins, utility pedestals, transformers, fire hydrants, etc..
2. An authorized WGP representative must be on site prior to and during any surface-disturbing work performed within the right-of-way. WGP's representative will assist in determining the location of the pipeline, the right-of-way width and existing cover over the pipeline.
3. No cut or fill on the WGP right-of-way is permitted without WGP approval.
4. WGP will request evidence of general liability (a minimum of \$1,000,000 coverage) and other appropriate and usual insurance prior to any activity and/or construction on or near WGP's right-of-way. In the event of excavation under WGP pipelines, the applicable WGP pipeline must be **named as additional insured**. Any rights of subrogation or recovery will be waived in favor of WGP. The insurance limits, terms and conditions that may be required will be dependent on the specific facilities potentially impacted and what would be usually and prudently obtained in similar industry situations.
5. Foreign lines crossing WGP's facilities shall be installed in accordance with all applicable codes and requirements governing such installations.
6. All foreign lines shall cross WGP's right-of-way at an angle as near to 90 degrees as possible. All foreign lines shall cross either over or under all of WGP's pipeline facilities. No horizontal or vertical bends are permitted within WGP's right-of-way. Parallel occupancy of WGP's right-of-way shall not be permitted.
7. WGP facilities are electrically protected against corrosion. At WGP's request, metallic foreign lines that enter or cross WGP right-of-way must have test leads installed. In addition, WGP personnel must be provided an opportunity to install test leads on WGP's existing pipelines. All necessary measures (coatings, electrical bonds, etc.) shall be taken to ensure that the proposed pipe or utility is adequately protected from potential interference effects. Inquires for cooperative testing shall be directed to WGP's Division Office, "Attn.: Pipeline Integrity Manager".
8. All foreign lines crossing WGP's pipeline or related facilities shall be installed with a minimum of (24) inches of clearance between the existing WGP facilities and the proposed foreign line. The foreign line shall be installed at a uniform depth across the full width of the WGP right-of-way. WGP may require that all foreign lines be installed under its existing pipeline(s) and related facilities.
9. WGP may require that foreign lines be identified with permanent aboveground markers where the lines enter and exit WGP right-of-way. It is the line owner's responsibility to obtain any rights to install the markers, and to maintain the markers. A direct burial warning tape should be placed (12)-(18) inches above the foreign line and extend across the entire width of WGP's right-of-way.
10. Stockpiling brush, trash, or other debris on the right-of way is prohibited, as it may conceal pipeline markers and hinder pipeline inspections or routine maintenance.
11. In some cases, there is a significant delay between the review of the developer's plans and the actual construction. If delays occur, all construction and maintenance activities are subject to WGP's requirements in effect at the time the work actually takes place.

FENCES

1. Fence posts shall not be installed within (4) feet of any WGP pipeline or related facility. WGP may require that all posts installed within the WGP right-of-way be hand dug.
2. WGP shall have the free right of ingress and egress. WGP may require that new fences have a (12) foot wide gate installed within the right-of-way at a location approved by WGP. The gate shall be installed as to minimize vehicular and equipment travel over the existing WGP facilities.

LANDSCAPE GUIDELINES

1. No trees or large deep-rooted shrubs are permitted on WGP's right-of-way. Shrubbery shall be limited to low-growing, shallow-rooted plantings with a maximum mature height of less than (5) feet.
2. With prior approval from WGP, some types of shrubs may be permitted on the right of way. All shrubs must be located at least (5) feet from the edge any pipeline or related facility. Under no circumstances will mechanical equipment be used in the planting of shrubs.

WGP reserves the right to cut and/or remove plantings on the WGP right-of-way as required in the operation, inspection and maintenance of its pipeline facilities; further, WGP assumes no responsibility for any cost involved in the replacement of said cut and/or removed landscape plantings.

4. All sprinkler or irrigation systems will require review by a WGP representative. Sprinkler heads will not be permitted within (10) feet of any pipeline or related facility. All crossings of the WGP pipeline(s) or related facilities with feeder lines shall be hand dug.
5. WGP may require that a recorded Encroachment Agreement be executed prior to any landscaping.

STREETS, ROADS AND DRIVEWAYS

1. WGP must complete a preliminary engineering evaluation for all roads, streets, driveways, etc., proposed on WGP's right-of-way. Any pipe casing, concrete slabs, or other protection required by WGP shall be installed at no expense to WGP. WGP may require a pipeline inspection prior to construction.
2. The recommended minimum total cover over WGP existing pipelines is (66) inches at all driveways, highways, roads, streets, etc. The recommended minimum total cover over WGP existing pipelines in adjacent borrow ditches is (48) inches.
3. Driveways, highways, roads, streets, etc. crossing over WGP pipeline facilities shall cross at an angle as near to 90 degrees as possible. All crossings must be over straight pipe and at locations free of any crossovers. Parallel occupancy of the right-of-way shall not be permitted.
4. WGP may require a recorded Encroachment Agreement. WGP will retain the right to cut all present and proposed driveways, highways, roads, streets, etc. and will have no responsibility for restoration, loss of use or access, or any other costs.
5. Access to the earth above each pipeline for leak detection (flame ionization) and cathodic protection surveys must be maintained.

TEMPORARY EQUIPMENT CROSSINGS

1. To protect WGP's pipeline(s) from external loading, WGP must perform an engineering evaluation to determine the effects of any proposed equipment use. Mats, timber bridges, or other protective materials deemed necessary by WGP shall be placed over WGP facilities for the duration of any loading. Protective materials shall be purchased, placed, and removed at no cost to WGP. The right-of-way must be returned to its original condition.
2. WGP may require markings to identify areas where equipment use is authorized. Vibratory equipment is not permitted on the right-of-way.

DRAINAGE, IMPOUNDMENT OF WATER AND EROSION CONTROL

1. WGP may conduct preliminary engineering studies for any proposed drainage channels or ditches within the right-of-way. Drainage channels or ditches must be adequately protected from erosion and provide a minimum of (48) inches of cover over the pipeline(s). Altering (clearing, re-grading or changing alignment of) an existing drainage channel or ditch requires approval from WGP.
2. Impoundment of water on WGP's right-of-way is not permitted. Soil erosion control measures shall not be installed within the WGP right-of-way without prior WGP approval.

EXCAVATIONS AND BLASTING

1. Plans for excavation on the right-of-way require prior approval by WGP. **No machine excavation shall be performed within (24) inches of WGP's pipeline(s) or related facilities.** WGP's onsite representative may require hand digging at a distance greater than (24) inches.
2. When a backhoe is used, the bucket teeth should be curled under each time the bucket is brought back into the ditch to reduce the chance of the teeth contacting the pipeline. A bar should be welded across the teeth and side cutters removed from the bucket.
3. Prior to any plowing or ripping of soil on the right-of-way, particularly in association with agricultural activities, plans should be reviewed with your local WGP representative to ensure proper cover exists.
4. WGP may require that a detailed blasting plan be submitted for review and authorization prior to any proposed blasting within a minimum distance of (200) feet of WGP's pipeline facilities. To determine if the detonation stresses will be detrimental to the safety of WGP's pipeline facilities, the blasting contractor must provide specific information on WGP's Blasting Data Sheet for evaluation and authorization a minimum of (5) business days prior to the proposed blasting. If deemed necessary by WGP, the blasting contractor may be required to perform seismic monitoring.

BURIED COMMUNICATION (TELEPHONE, TV, DATA TRANSMISSION, FIBER OPTIC) AND BURIED POWER LINE CROSSINGS

1. All buried communications (other than single residential telephone and TV) crossing WGP facilities shall be installed in rigid steel casing (minimum of Schedule 40) for the full width of WGP's right-of-way.
2. All buried electric cables, except (24) volt DC power (including single residential service drops), crossing WGP facilities shall be installed in rigid steel casing (minimum of Schedule 40) for the full width of WGP's right-of-way.
3. All buried single residential telephone; TV and (24) volt DC power shall be encased in plastic conduit for the full width of WGP's right-of-way.
4. WGP may require additional protection including concrete encasement or concrete caps.

SANITARY SEWER AND WATER CROSSINGS

All sewer and water lines shall be either (1) ductile iron or steel pipe (adequately protected from WGP's cathodic protection system) or (2) plastic pipe installed in rigid steel casing (minimum of Schedule 40) for the full width of WGP's right-of-way. No piping connections will be allowed within (5) feet of any WGP pipeline. All ductile iron utility crossings shall include restrained joints for the full width of WGP's right-of way.

COMBUSTIBLE MATERIAL LINES

1. All plastic combustible material lines shall be installed in rigid steel casing (minimum of Schedule 40) for the full width of WGP's right-of-way.
2. WGP may require that steel combustible material lines (adequately protected from WGP cathodic protection system) be installed under the existing WGP pipeline facilities. In addition, WGP may require additional protection for steel combustible material lines including concrete encasement or concrete caps.

BORED CROSSINGS

1. WGP existing pipeline facilities shall be test pitted to verify the horizontal and vertical location of all facilities prior to any proposed boring operations. WGP may require submittal of both plan and profile drawings for appropriate review prior to any proposed boring operations.
2. WGP may require rigid steel casing (minimum of Schedule 40) for all bores.
3. Prior to any boring, inspection holes will be excavated to verify the depth of the bore as it approaches each pipeline. The contractor shall provide and maintain instrumentation to accurately locate the boring head.

OVERHEAD LINE CROSSINGS

1. Overhead line crossings shall be installed with a minimum of (30) feet of vertical clearance above the WGP right-of-way to provide adequate equipment clearance. No poles or appurtenances shall be located on the WGP right-of-way.
2. Overhead line crossings shall not be installed within (25) feet (measured horizontally) of any gas vent (e.g. relief valve, blowdown vent).
3. Overhead lines shall cross WGP's facilities at an angle as near to 90 degrees as possible. Parallel occupancy of the WGP right-of-way will not be permitted.

DISPOSAL SYSTEMS

No septic tanks, liquid disposal systems, or hazardous waste disposal systems will be allowed on the right-of-way or within (25) feet of WGP's facilities. This prohibition includes, but is not limited to, facilities that have the potential of discharging effluent from sewage disposal systems, the discharge of any hydrocarbon substance, the discharge or disposal of any regulated waste, or any other discharge that may prove damaging or corrosive to WGP facilities.

STATEMENT REGARDING RIGHTS

1. Nothing contained herein shall be construed to convey, waive, or subordinate any of WGP's existing rights whatsoever.
2. WGP shall be fully and completely compensated for any damages to its facilities resulting from the acts of third parties who are working in the vicinity of WGP's facilities with or without WGP's consent.

Model Easement for a Trail

Source: Brandywine Conservancy

THIS GRANT OF EASEMENT AND DECLARATION OF RESTRICTIVE COVENANTS, hereinafter referred to as the "Easement" made the day of in the year of our Lord One Thousand Nine Hundred and Ninety-_____ (199_).

BETWEEN _____, (husband and wife) (single man) (single woman), having an address of _____, party of the first part, hereinafter called "Grantor," _____

AND

TOWNSHIP OF _____, party

WITNESSETH;

WHEREAS, Grantor is the owner of certain tracts of ground located in Township, County, Commonwealth of Pennsylvania, containing acres of land, more or less, hereinafter called the "Trail Easement Area", which includes the following parcels; as shown on a plan entitled dated _____, 199_, last revised _____ 199_, prepared for _____ by _____, and further revised on _____, attached hereto and made a part hereof as Exhibit "A", and as described by legal descriptions, attached hereto and made a part hereof as Exhibit "B"; and

WHEREAS, the trail easement area contains _____ feet/miles of public trail(s) which, by this Easement, will be available for outdoor recreation and transportation by and the education of the general public; and

WHEREAS, the Trail Easement Area contains greater than _____ miles of frontage along _____ Road, and _____ Road, and the public traveling these roads are afforded scenic views of the forestlands, grasslands, farm fields, and wetlands, whose beauty and open character shall be available for outdoor recreation and transportation by and the education of the general public by this Easement; and

WHEREAS, the _____ Township Comprehensive Plan, adopted in 19__, sets forth general community goals, which include ... [Indicate here any goal which would directly or indirectly relate to the development of the trails system]; and

WHEREAS, the _____ Township Zoning Ordinance, adopted in 19__ defines community objectives which include "Securing and protecting pedestrian and non-motorized transportation facilities consistent with the transportation plan and trails map..." and to this end the township requires dedication of land for transportation and recreation purposes; and

WHEREAS, Grantor further intends, as owner of the Property, to convey to Grantee the right to preserve and protect the Recreation and Transportation values of the Trail Easement Area in perpetuity; and

WHEREAS, Grantee is a publicly-supported, tax-exempt non-profit organization, qualified under Section 501(c)3 and 170(h) of the Internal Revenue Code, whose primary purpose is the.... ; and

WHEREAS, Grantee agrees by accepting this Easement to honor the intentions of Grantor stated herein and to preserve and protect in perpetuity the Recreation and Transportation Values of the Trail Easement Area for the benefit of this generation and generations to come.

NOW THEREFORE, for and in consideration of the above and the mutual covenants, terms, conditions, restrictions, and promises Herein contained, pursuant to the laws of ___[state]___ and in particular ___[specific statutory authority]___, and for the further consideration of the sum of Five Dollars (\$5.00), lawful money of the United States of America, in hand paid by Grantee to Grantor, the receipt of which is hereby acknowledged, the parties hereto, intending to be legally bound, do hereby mutually agree, grant, convey, and declare as follows:

1. STATEMENT OF GRANT

Grantor hereby voluntarily, unconditionally and absolutely grants and conveys unto Grantee, its successors and assigns, an Easement in Gross and a Declaration of Restrictive Covenants, in perpetuity, over the Trail Easement Area, as more particularly hereinafter set forth exclusively for the purposes of preserving and protecting the present natural, scenic, open space, educational, and recreation and transportation values of the Trail Easement Area. (such purposes hereinafter referred to as the "Recreation and Transportation Purposes"). Grantee hereby accepts the Easement and agrees to hold it exclusively for such Recreation and Transportation Purposes.

2. PUBLIC ACCESS

In furtherance of the Transportation and Recreation Purposes of this Easement set forth in Paragraph 1 above, Grantor hereby declares and covenants that the general public shall have and be allowed regular access to the Trail Easement Area for the transportation and recreation scientific, and educational purposes described in sub-paragraph A and subject to the limitations contained in subparagraphs B, C, and D of this Paragraph 2.

As used herein, Trail is defined as: A corridor of at least ten (10) feet in width through which passes, or will pass, a trail as part of the _____ Township Comprehensive Trail System or as otherwise authorized by the Township.

A trail is to serve transportation and recreation functions for one or more of the following: walkers, runners, bicyclists, horseback riders, and cross-country skiers; trails shall exclude all motorized vehicles except as authorized by the Township for maintenance, management and emergency purposes. Trail Easement Area is defined as: the area (a minimum of twenty (20) feet wide) that contains the trail and is restricted from development, which would inhibit the use of the trail.

A. The public shall be permitted access to the "Trail Easement Area", as shown on Exhibit "A", for the following activities, except to the extent that Grantee may determine that such activities are inconsistent with the Conservation Purposes for which this Easement is granted:

- (i) Nature study and scientific research, including bird watching and the study of fauna and flora, supervised by an organization described in Section 170(h)(3) of the Internal Revenue Code
- (ii) Horseback riding;
- (iii) Cross-country skiing;
- (iv) Hiking, biking and jogging; and
- (v) Painting, sketching, and photography.

B. Public access to the Trail Easement Area shall be restricted to the "Trail Easement Area" as shown on Exhibit "A": Grantee retains the right, as it may deem necessary, in order to preserve and protect the Transportation and Recreation Values of the Trail Easement Area and the Transportation and Recreation Purposes to repair the Trail Easement Area, relocate 60 the Trail within the Trail Easement Area, or temporarily prohibit public access to the Trail Easement Area.

C. The activities described in sub-paragraph A of this Paragraph 2 shall be conducted in such a manner as to preserve and protect the Transportation and Recreation Values of the Trail Easement Area, and in this connection the following specific limitations shall apply with respect to use of the Trail Easement Area by the general public and shall be enforceable by Grantor and/or Grantee:

- (i) Use of any motorized vehicle or similar mechanical means of locomotion, including automobiles, motorcycles, snowmobiles, or other all-terrain vehicles shall be prohibited;
 - (ii) Smoking of tobacco or other substances, or lighting of fires of any kind shall be prohibited;
 - (iii) Consumption of alcoholic beverages or use of any kind of stimulant or drug shall be prohibited;
 - (iv) Trapping or hunting with firearms, bow and arrow, or any other form of arms or weapons shall be prohibited; and
 - (v) Overnight camping or sleeping shall be prohibited.
- Grantee shall have the right to impose any additional limitations with respect to the Trail Easement Area, as it deems necessary or appropriate in order to preserve and protect the Transportation and Recreation Values of the Trail Easement Area and the Transportation and Recreation Purposes for which this Easement is donated.

D. Grantee shall have the right to require Grantor to keep the Trail Easement Area free from obstructions which prevent reasonable pedestrian (and equestrian) access to and along the Trail Easement Area including but not limited to structures, fences and fallen trees.

3. NOTICE

All notices, consents, approvals, or other communication hereunder shall be in writing and shall be deemed properly given if sent by US. certified mail, return receipt requested, addressed to the appropriate party or successor in interest, at the address most recently provided

4. PROHIBITION OF PUBLIC ACCESS

Nothing herein shall be construed as a grant to the general public, or to a person or persons, the right to enter upon any part of the Grantor's property other than as described in Paragraphs 2, herein. Grantor reserves unto themselves and its successors in title to the Trail Easement Area, all rights, privileges, powers, and immunities, including the right of exclusive; possession and enjoyment, subject only to the terms and covenants of this Easement.

5. ENFORCEMENT RIGHTS OF GRANTEE

A. To accomplish the purposes of this Easement the following rights are conveyed to Grantee by this Easement:

(i) To preserve and protect the Transportation and Recreation Values of the Trail Easement Area;

(ii) To prevent any activity on or use of the Trail Easement Area that is inconsistent with the purpose of this Easement and to require the restoration of such areas or features of the Trail Easement Area that may be damaged by any inconsistent activity or use, pursuant to subparagraphs B, C, and D of this Paragraph 5.

B. In the event that a violation of the terms of this Easement by Grantor or by a third party comes to the attention of Grantee, Grantee shall notify Grantor in writing of such violation and demand corrective action sufficient to cure the violation, and where the violation involves injury to the Trail Easement Area resulting from any use or activity inconsistent with the purposes of this Easement, to restore the portion of the Trail Easement Area so injured. If Grantor fails to cure the violation within thirty (30) days after receipt of such notice thereof from Grantee, or under circumstance where the violation cannot reasonably be assured within the thirty (30) day period, fails-to-begin curing such violation within the thirty (30) day period, or fails to continue diligently to cure such violation until finally cured, Grantee may bring an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Easement, to enjoin the violation, ex parte as necessary, by temporary or permanent injunction, to recover any damages to which it may be entitled for violation of the terms of this Easement or injury to any Transportation and Recreation Values protected by the terms of this Easement, including damages for the loss of scenic, aesthetic, or environmental values, and to require the restoration of the Trail Easement Area to the condition that existing prior to any such injury. Without limiting Grantor's liability therefore, Grantee, in its sole discretion, may apply any damages recovered to the cost of undertaking any corrective action on the Trail Easement Area. If Grantee, in its sole discretion, determines that circumstance require immediate action to prevent or mitigate significant damage to the Recreation and Transportation Values of the Trail Easement Area, Grantee may pursue its remedies under this Paragraph 5 without prior notice to Grantor or without waiting for the period provided for cure to expire.

C. Grantee's rights under this Paragraph 5 apply equally in the event of either actual or threatened violations of the terms of this Easement, and Grantor agrees that Grantee's remedies at law for any violation of the terms of this easement are inadequate and that Grantee shall be entitled to the injunctive relief described in this Paragraph, both prohibitive and mandatory, in addition to such other relief to which Grantee may be entitled

including specific performance of the terms of this Easement, without necessity of proving either actual damages or the inadequacy of otherwise available legal remedies.

D. Any costs incurred by Grantee in enforcing the terms of this Easement against Grantor, including, without limitation, costs of suit and attorneys' fees, and any costs or restoration necessitated by Grantor's violation of the terms of this Easement shall be borne by Grantor.

6. MAINTENANCE AND ASSESSMENT OBLIGATIONS OF GRANTEE

Note: Obligations may vary depending on whether the municipality holds the Trail Easement Area by easement or by ownership. If it holds the area by ownership or if it agrees through the easement to accept responsibilities, it is responsible for maintenance and assessment. In general, the municipality should be prepared to accept maintenance responsibilities except where the trail is on high traffic-generating properties such as commercial higher density residential or institutional properties for example municipally owned trails are generally not assessed taxes. Where trail easement areas remain in private ownership, the municipality should support waiver of assessment by county assessment offices.

Grantee shall be [if trail is to be publicly owned and maintained] under no obligation to maintain the Trail Easement Area, or any portion thereof, or pay taxes or assessments thereon. Any action by Grantee such as maintenance of the Trail Easement Area or any other act by Grantor [Grantee-if privately held] to protect the Trail Easement Area shall be deemed merely a gratuitous act, which shall create no obligation on the part of Grantor [Grantee].

7. SUCCESSORS IN INTEREST

Except where the context requires otherwise, the term "Grantor" and "Grantee", as used in this instrument, and any pronouns used in place thereof, shall mean and include, respectively, Grantor and his personal representatives, heirs, successors in title, and assigns, and Grantee and its successors and assigns.

8. STATEMENT OF COMPLIANCE

Grantor hereby agrees to request in writing at least thirty (30) days prior to the sale, transfer, or long term [ten (10) years or more] lease of the property containing the Trail Easement Area, or any portion thereof, a written instrument from Grantee stating that Grantor is in compliance with the terms and conditions of this Easement, or if Grantor is not in compliance with the terms and conditions of this Easement, stating what violations of this Easement exist Grantee agrees in such cases or at any other time to acknowledge, execute, and deliver to Grantor or to any mortgagee, transferee, purchaser, or lessee such written instrument concerning compliance within thirty (30) days of written request from Grantor. Grantor shall provide a copy of Grantee's compliance statement to any purchaser, mortgagee, lessee, or assignee and shall advise Grantee in writing at least ten (10) days in advance of any transfer, long-term lease, or sale of the Trail Easement Area, or any portion thereof.

Any costs incurred by Grantee in determining compliance and advising Grantor as to compliance or costs incurred as a result of Grantor's failure to notify Grantee of transfer, sale,

assignment, or long term lease of the Trail Easement Area, or any portion thereof, shall be paid by Grantor, [if the municipality does not agree to absorb such costs] his successors or assigns.

9. LIMITATION OF GRANTOR LIABILITY

Grantor, and each subsequent owner of the Trail Easement Area, shall have no personal liability for the observance or performance of the covenants and obligations of Grantor hereunder after such party has conveyed his, her, its, or their interest in the Trail Easement Area, provided that the provisions of Paragraph 8, above, have been fulfilled and all obligations thereunder discharged.

10. HOLD HARMLESS

Grantee, and each subsequent holder of the Trail Easement Area, shall hold harmless, indemnify, and defend Grantor and its heirs, personal representatives, successors, and assigns from and against all liability, penalties, costs, losses, damages, expenses, causes of action, claims, demands, or judgments, including, without limitation, reasonable attorneys' fees, arising from or in any way connected with: (1) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Trail Easement Area, regardless of cause, unless due solely to the gross negligence or willful misconduct of the Grantor and its heirs, personal representatives, successors, and assigns; (2) the obligations specified in Paragraph 6, herein; and (3) the existence or administration of this Easement.

11. STIPULATED VALUE OF GRANTEE'S INTEREST

A. Grantor acknowledges that this Easement constitutes a real property interest in the Trail Easement Area immediately vested in Grantee, and that such interest has a fair market value. For purposes of allocating net proceeds in an extinguishment of all or part of this Easement pursuant to Paragraph 12 herein, the share of Grantee's interest shall not be less than the percentage that the fair market value of this Easement on the date hereof bears to the fair market value of the Trail Easement Area prior to considering the effects of this Easement (hereinafter called the "Easement Percentage")

The values for calculating the Easement Percentage shall be based upon a Qualified Appraisal obtained by Grantor for federal income tax purposes. Upon receipt of such Qualified Appraisal, Grantor shall provide a copy of the Qualified Appraisal to Grantee. In the event that Grantor does not obtain a Qualified Appraisal, the Easement Percentage shall be thirty five (35) percent of fair market value.

B. Grantor and Grantee, and any successors in interests, shall exhaust all legal remedies in order to preserve and protect the Transportation and Recreation Purposes of this Easement. Grantor shall cooperate with Grantee in Grantee's performance of its obligations under this Paragraph 11.

C. In the event that all or part of this Easement is taken in exercise of eminent domain by public, corporate, or other authority so as to abrogate the transportation and recreation goals imposed by this Easement, Grantor and Grantee shall join in appropriate action at the time of such taking to

recover the full value of the taking and all incidental or direct damages resulting from the taking. All reasonable expenses incurred by Grantor and Grantee in an effort to prevent a taking or in an effort to recover the full value of a taking shall be shared on an equal basis out of any recovered proceeds except in the event that (i) Grantor and Grantee agree in writing to an alternative means for sharing such expenses, or (ii) all or pan of this Easement is extinguished as a result of a judicial proceeding brought by or on behalf of Grantor which, in that event, then all expenses shall be paid by Grantor.

12. EXTINGUISHMENT OF EASEMENT AND DISTRIBUTION OF NET PROCEEDS

A. In the event that all or part of the Trail Easement Area interests subject to this Easement are involuntarily extinguished by (i) an action in eminent domain, (ii) other judicial proceedings, or (iii) settlement is reached between Grantor, Grantee, and condemner under threat of condemnation, and Grantor joins with Grantee in accordance with Paragraph 11.B. and 11. C. above, Grantee's share of any proceeds recovered from any compensation in eminent domain or judicial proceedings or from the first lawful sale of the Trail Easement Area, after the restrictions within this Easement have been extinguished, shall equal the Easement Percentage, provided that a larger percentage has not been stipulated by agreement between Grantee and Grantor.

B. In the event that all or pan of the Trail Easement Area interests subject to this Easement are extinguished by (i) an action in eminent domain, (ii) other judicial proceedings, or (iii) settlement is reached between Grantor, Grantee, and condemner under threat of condemnation, where such action is brought by or on behalf of Grantor or where Grantor does not join with Grantee in accordance with Paragraph 11.B. and 11.C. above, the value of the interests so taken shall be determined by an independent appraisal and the net proceeds recovered from any compensation in eminent domain or judicial proceedings or from the first lawful sale of the Trail Easement Area after the restrictions within this Easement have been extinguished, shall be distributed between Grantor and Grantee in accordance with the findings of an independent appraisal of the interests taken which has been conducted by a Qualified Appraiser. Provided, however, that in no event shall Grantee's share of said net proceeds be less than the Easement Percentage.

C. Grantee shall use its share of any net proceeds recovered, as described in this Paragraph 12, exclusively for the protection or acquisition of interests in land or for Transportation and Recreation Purposes or for improvement to the trails system. For purposes of this Paragraph, proceeds shall not include an amount equal to the fair market value of any Improvements by the Grantor to the Trail Easement Area affected by the condemnation or judicial action or any improvements to the Trail Easement Area by the Grantee,

which were not included in the calculations by which the Easement Percentage was established.

13. FAILURE OF GRANTEE TO ENFORCE

If at any time any organization, agency, or person having rights or duties hereunder as Grantee shall fail to enforce -the restrictions set forth in this Easement, Grantor, or any governmental unit of _____ County, shall have the right to bring suit against Grantee for specific performance.

14. TRANSFER OF GRANTEE'S INTEREST

A. Grantee, its successors and assigns, shall have the right to assign either wholly or partially its right, title, and interest hereunder only to an organization able to enforce - the restrictions contained herein which has purposes similar to: those of Grantee, and which encompasses the _____ purposes set forth in this Easement. Such an organization must at the time of the assignment be a governmental unit qualified organization within the meaning of Section 170(h)(3) of the Internal Revenue Code of 1986 (or its successor provisions), hereinafter the "Code", and one which is organized or operated primarily or substantially for one of the conservation purposes specified in Section 170(h)(4)(A) of the Code. Any transfer or assignment of benefits by Grantee, its successors or assigns, must require the transferee or assignee to carry out the Transportation and Recreation Purposes of this Easement.

B. In the event Grantee shall cease to exist or to be a qualified organization as described in Subparagraph 14 A., herein, its rights and duties hereunder shall become vested in and fall upon one of the following named entities, or such other qualified organization as may then be determined, to the extent such entity shall evidence acceptance of and agree to fully enforce same:

- (i) _____ Land Trust;
- (ii) _____ Valley Association;
- (iii) The Nature Conservancy;
- (iv) _____ Watershed Association;
- (v) The Township(s) of _____, political subdivisions) of _____ County and the Commonwealth of Pennsylvania;
- (vi) _____ County, a political subdivision of the Commonwealth of Pennsylvania; or

(vii) Such other organizations as may be designated under the doctrine of cy pres by a court of competent jurisdiction; provided, however, that at the time of such designation, such entity shall be an organization as described in Subparagraph 14.A. herein.

[Use the following paragraph only if funds were received by a private organization or a municipality as Grantee.]

C. Upon the occurrence of any transfer or assignment of this Easement, Grantee shall also transfer to the transferee or assignee the then-value of any endowment funds received by Grantee from Grantor to support Grantee's obligation to monitor and enforce of this Easement, and the transferee shall hold such funds for such purposes and be subject to the provisions of this subparagraph C.

15. EASEMENT IN PERPETUITY

The provisions hereof shall inure to and be binding upon the heirs, executors, administrators, devisees, successors, and assigns, as the case may be, of the parties hereto and shall be covenants running with the land in perpetuity.

16. SEVERABILITY

This Easement shall be construed in its entirety, however, in the event that any provision or restriction of this Easement or the application thereof to any person or circumstance is found to be invalid, the remainder of the provisions and restrictions of this Easement, and the application of such provision or restriction to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

17. ACKNOWLEDGEMENTS

A. Grantor attests that Grantor is the owner of the Trail Easement Area and that the Trail Easement Area is not subject to a mortgage as of the date of this Easement. [Alternatively, a subordination agreement from the mortgagor for the Trail Easement Area must be obtained. Most mortgage companies will do so if the mortgage is for less than property value.]

IN WITNESS WHEREOF, and again stating their intention to be legally bound hereby, the said parties have hereunto set their hands and respective seals on the day and year first above written.

WITNESS _____
WITNESS _____

BY _____

(SEAL)

ATTEST _____

BE IT REMEMBERED that on this day of _____, 199__, personally appeared before me, the Subscriber, a Notary Public for the State and County aforesaid, _____, party to this Indenture, known to me personally to be such, and severally acknowledged this Indenture to be their deed.

GIVEN under my hand and seal of office, the day and year aforesaid.

Notary Public

BE IT REMEMBERED that on this day of _____ 199__, personally appeared before me, the Subscriber, a Notary Public for the State and County aforesaid, _____, President of Brandywine Conservancy, Inc., a corporation existing under the laws of the State of Delaware, party to this Agreement, and acknowledge this Indenture to be his act and deed and the act and deed of said corporation; that the signature of the President thereto is in his own proper handwriting and the seal affixed is the common and corporate seal of said corporation, and that his act of sealing, executing, acknowledging and delivering said Indenture was duly authorized by a resolution of the Board of Directors of said corporation.

GIVEN under my Hand and Seal of Office, the day and year aforesaid.

Notary Public

RAIL-TRAILS & UTILITIES

How to Share Your Corridor with Other Uses

Although it is obvious that rail-trails are great recreation areas, what you might not know is that almost 40 percent of all rails-trails do double-duty as corridors for utility lines, pipes, and cables. The ability of abandoned rail corridors to serve our communities as more than trails is another reason to save old rail lines and put them back to use! If you are interested in sharing your corridor, read on—we have the answers to your questions!

What type of utilities can share rail-trail corridors?

The utilities best suited for rail-trails are those that can be installed underground, such as water, sewer, natural gas, and buried electric or fiber optic lines. However, above ground utilities, such as telephone, cable television, and over head electric lines may also share a corridor with rail-trails.

How do trails benefit from sharing corridors with utilities?

By sharing the same space, utilities can help defray trail costs in a number of ways. Sometimes utility companies will donate a corridor, thereby eliminating the cost of acquisition. In other instances, utilities have provided in-kind services such as trail surfacing, general repair work, and overall maintenance of the trail. The agency or organization that owns the right-of-way may even earn revenue through one-time installation fees or, preferably, annual fees paid by the utility. Generally speaking, fee structures are based upon the length of corridor the utility needs, comparable land values, or the number of trail crossings. On the flip side, land purchased for the purpose of providing or upgrading public utilities (such as water and sewer) can serve a greater community benefit if developed to accommodate a multi-use trail.

How can a utility company benefit from rail-trails?

Rail-trails provide utility companies with an uninterrupted, easily accessible, stretch of land that is relatively free from disturbance. In addition, they benefit from having to work with only one land owner—the trail's managing agency—rather than hundreds of individuals. Moreover, providing land or services to a rail-trail enhances public relations and contributes to positive relations between the local community and utility company.

In 1984, Wisconsin's Department of Natural Resources granted the communications company U.S. Telecom a 10-foot wide easement on an abandoned railroad corridor between Milwaukee and Madison for a fiber optic line. In exchange, U.S. Telecom paved a trail along the corridor—a \$600,000 endeavor. By sharing the route, U.S. Telecom was able to add 60 miles to its fiber optics network and Wisconsin gained the Glacial Drumlin Trail, a 48 mile multi-use recreational trail. There may be similar opportunities in your area.

How much is my corridor worth?

Owning a continuous corridor is extremely valuable. It may be the best, if not the only, passage that a utility can use for its facilities. As the trail managing agency, you stand to gain considerable compensation for sharing your corridor.

For example, the Northern Virginia Regional Park Authority receives \$450,000 annually for various easements it hold along the 44 mile Washington and Old Dominion Trail. The Park Authority has set up a fee structure for various utility companies that more than covers the trail's maintenance costs as well as all administrative and overhead costs. While every trail may not have this kind of clout, it is critical that you do not underestimate the value of your corridor!

-over-

RAILS-TO-TRAILS CONSERVANCY ♦ 1100 Seventeenth Street, NW, 10th Floor, Washington, DC 20036
(202) 331-9696 ♦ FAX (202) 331-9680



Are there any drawbacks to shared use?

Sometimes the utility requires specific landscaping to protect its facilities or to give its crews easier access, such as using certain herbicides and keeping vegetative growth regularly trimmed. The presence of above ground utility lines and cables may also compromise the visual integrity of the trail. Although it costs significantly more to install the facilities underground (up to \$1 million more per mile of electric cable) the utility may be more likely to do so in return for a reduced easement price.

What are the health and safety risks associated with utilities?

There are no known health effects associated with fiber optic cables, underground electric lines, telephone lines, sewer, and water pipes; there are minimal safety risks associated with gas lines. In recent years there has been concern over the possible health risks connected with exposure to electromagnetic fields (EMFs), which are present whenever electricity passes through a wire. While studies have indicated that long-term exposure to EMFs can be harmful, the few studies relating to short-term exposure, like that experienced when using trails with overhead power lines, show no evidence of health risks associated with EMFs.

Who maintains a shared corridor?

Typically the trail's managing agency maintains the corridor and the utility reserves the right to access its facilities for repair and general maintenance. In general, the trail agency and the utility company coordinate their efforts to maintain the trail and utilities in the safest, least intrusive, manner for trail users.

What if the railroad had a pre-existing arrangement with a utility on my corridor?

If the railroad had a contract for underground utilities and retains the ownership of the corridor's sub-surface rights, it remains bound to the agreement with the utility. If the contract expires when ownership of the corridor changes hands, however, the utility may re-negotiate its contract with the new owner to avoid disruption of the facilities. If the contract binds the owner of the corridor (whether or not it is the railroad), the new owner would be bound to the contract with the utility.

How are shared corridors insured?

Both the utility and trail managing agency should be insured. The utility carries its general insurance, while a trail's insurance varies by state and government agency. Any trail's managing agency with a shared corridor should set up an indemnification agreement with the utility company that requires the utility to assume full responsibility for injuries, damage or expenses arising out of the utility's operation on the corridor.

Who should I contact at the utility company?

You should speak with someone who is responsible for the location and/or maintenance of the company's facilities. While the organizational structure of each utility is different, this person can probably be found in the land, real estate or distribution office.

As a non-profit public organization, Rails-to-Trails Conservancy is wholly supported by its membership. If you are not already a member, join today at one of the following levels: regular (\$18); supporting (\$25); patron (\$50); benefactor (\$100); or Trailblazer Society (\$1,000).