

**TURNING FLOODPLAINS
INTO GREENWAYS:
Strategies for Developing Parks
and Trails Along River Corridors**



The Reedy River Falls, with a walking trail
and downtown Greenville in the background.
Photo courtesy Ben Keys

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TURNING FLOODPLAINS INTO GREENWAYS: Strategies for Developing Parks and Trails Along River Corridors

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INTRODUCTION

The rapid pace of development in the Upstate is a mixed blessing. Growth brings jobs to the region but also threatens the character of the landscape and the quality of life that make this region so special. For many Upstate residents, deteriorating water quality is one of the most troublesome impacts of development. Excessive erosion, unmanaged stormwater, and other consequences of poorly managed growth are everywhere to be seen. At the same time, growth often entails the loss of safe places to walk, jog, or bicycle. Development often fails to provide for the recreational needs of our citizens, forcing people to drive everywhere even if they would rather walk or bike.

Many communities have been successful in addressing both deteriorating water quality and the loss of areas for recreation through a single tool: the development of a greenway trail system and associated parks. Greenways are corridors of undeveloped land that typically follow natural land or water features. They link nature reserves, parks, cultural features, historic sites, and points of interest with nearby neighborhoods. Greenways can follow human-made features such as utility corridors, roads, or railroad beds; however, they often have a river or stream as their focal point.

Greenways offer people a safe place to pursue outdoor recreation activities such as walking, bicycling, in-line skating, and jogging, while providing an aesthetically appealing contrast to asphalt and concrete. If properly designed and maintained, river-based greenway corridors can help improve water quality and reduce the impacts of flooding downstream. In addition, they provide alternative modes of transportation by connecting people and places on routes other than roads. Greenways are an economic asset, often increasing the value of adjacent properties and attracting tourists to a community. Finally, greenways can help protect flora and fauna by preserving habitat and providing the opportunity for wildlife movement along natural corridors.

Several South Carolina cities already have greenway systems in place. Columbia has the [Three Rivers Greenway](#), a 12-mile long park system that links people to the Congaree River and preserves open space for flood management. The [Anne Springs Close Greenway](#) in Fort Mill is a park-like area of approximately 2,300 acres with trails for hiking, cycling, and picnicking, rental facilities for events, and recreational and educational activities that give residents and visitors a deeper appreciation for the area. Charleston has the [West Ashley Greenway](#), a 100-foot wide corridor with an unpaved trail that begins in a residential and commercial area of the city and extends over ten miles to Johns Island.

The foundation for a greenway in the Greater Greenville area has already been laid by a group of forward-thinking citizens and city officials. They saw the potential for a greenway in a section of the Reedy River that runs through the heart of Greenville. This corridor eventually became Cleveland Park with its network of paths and trails. Together with the redevelopment of Falls Park on the Reedy, this downtown corridor has played a significant role in the redevelopment of the downtown area. By building on this existing system of parks and trails, the greater Greenville region could turn the Reedy River corridor into a truly beneficial greenway that not only connects residents with the river but also connects communities together. With a corridor of natural areas, parks, and trails stretching from the headwaters in Travelers Rest to Lake

Conestee, the greater Greenville area could soon be home to the most exciting new greenway in the state.

This document outlines strategies and resources for the development of greenway corridors, with a focus on the full range of benefits that greenways along rivers can offer. The principles outlined here are broadly applicable; while they certainly apply to the Reedy River corridor, they may also be used in planning a greenway in a variety of locations. We encourage readers to take these strategies and put them to use!



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BENEFITS OF GREENWAYS

Greenway corridors provide a wide range of amenities, such as attractive views, open space preservation, water quality protection, and convenient recreation opportunities. Drawing on a wide variety of studies and examples of established greenways, this section provides an overview of the benefits of greenways, particularly those constructed along river corridors.

Health Benefits

Lifestyle choices have been shown to influence health, and, as a result, urban planners and landscape architects have long espoused the need for interconnected pedestrian networks to promote public health. [With recent estimates placing the number of overweight Americans at nearly 64%](#) and with the health risks associated with obesity, easily accessible opportunities for exercise are needed more than ever. According to recommendations from the [Centers for Disease Control and Prevention \(CDC\)](#) and the [American College of Sports Medicine](#), adults should get at least 30 minutes of moderate-intensity physical activity, like brisk walking, five or more days per week in order to produce health benefits.

Providing convenient opportunities for regular, short-duration physical activity – close to where people live and work – makes it much more likely that people will exercise regularly. A recent study by Pamela J. Miller (University of Massachusetts Amherst, 2004) explored [the relationship between physical activity and greenway use along three rail trails in New England](#). This study found that trail users’ self-reported activity levels increased after the greenways were built, showing that when people have access to parks, they exercise more. Moreover, the CDC reports that [creation of or enhanced access to places for physical activity can lead to a 25.6% increase in the number of people exercising on three or more days per week](#). A group of studies reviewed in the American Journal of Preventive Medicine have shown that [“creation of or enhanced access to places for physical activity combined with informational outreach” can produce a 48.4% increase in the frequency of physical activity.](#)

Access to greenways can encourage people to be active by providing attractive, safe, accessible, and low or no-cost places to cycle, walk, hike, jog, or skate. While certainly not definitive, studies suggest that there is a connection between availability of greenways and increased physical activity. Building more greenway trails, especially those that connect people from their homes to work places, schools, and local amenities, can have a positive impact on physical activity level and public health.

Transportation Benefits

In addition to providing recreational opportunities, a well-designed greenway functions as an alternate means for getting around. Greenway trails can connect neighborhoods with shopping centers, parks, and other points of interest, allowing people to walk or bike from their neighborhood to their destination—be it the office, a corner store, the library, or the neighborhood school. As such, greenways serve as a complement to the road network, offering alternative routes of travel.

Greenway-based bikeways and walkways are most effective if travel distances are geared to distances that people are typically willing to walk or bike. National surveys by the Federal

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Highway Administration have shown that [Americans are willing to walk as far as two miles to a destination, and bike as far as five miles. Considering that 63% of all travel trips made are less than five miles in length](#), greenways can serve as viable alternatives to automobile travel.

With over 46 miles of pedestrian and bike trails, the [Capital Area Greenway in Raleigh, North Carolina](#), is a Southeastern example of a greenway that provides transportation alternatives of this kind. As part of Raleigh's regional trail system, this greenway system connects homes, workplaces, schools, parks, shopping centers, and cultural attractions. This system has also increased the efficiency of transit by linking the trail system to bus stops to accommodate the needs of those who do not or cannot drive.

Nationally, there is mounting evidence that [people are increasingly choosing forms of commuting other than by motorized means](#). In fact, the consistent message from commuter studies is that [more people would choose to commute by bicycle or other non-motorized means if safe routes were more accessible](#). Therefore, by building greenways, cities may help to increase the use of non-motorized modes of transportation, enhancing the quality of life for their citizens.



Reedy Falls Park

Economic Benefits

Greenways have consistently been shown to have a strong positive economic effect on the communities near which they are built, in the form of either increased property values or economic revitalization. Increased property values can, in turn, lead to higher taxes, thus offsetting the cost of the greenway. By encouraging investments along greenway corridors, cities can provide opportunities for economic revitalization that will serve to increase tourism and local spending.

Increased Property Values. [“The real estate market consistently demonstrates that many people are willing to pay a larger amount for a property located close to parks and open space areas than for a home that does not offer this amenity,”](#) writes John L. Crompton, a professor at Texas A&M University. Dr. Crompton has published extensive research on parks and recreation, and, in 2000, he reviewed 25 studies that investigated if parks and open space contribute to property values of neighboring properties. In 20 of the 25 studies he reviewed, Crompton found that property values of areas near parks and open space did increase.

Proximity to natural areas has been shown to raise the value of immediately adjacent properties by as much as 5 to 20 percent. In a 2001 survey conducted for the National Association of Realtors, [50% of respondents said they would be willing to pay 10% more for a house located near a park or other protected open space](#). American Lives, a real estate research firm, completed a national study on the reasons people cite for their choice of a new home. [Walking and bike](#)

[paths were cited as important factors for 74% of buyers.](#) And a 2002 survey of recent homebuyers showed that [trails ranked as the second most important community amenity out of a list of 18 choices.](#)

A key study in the National Park Services' report, "[Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors](#)," examined the effect of proximity to greenways on prices of housing in Boulder, Colorado. The study found that, other things being equal, there was an average \$4.20 decrease per square foot in the price of residential property for every foot moved away from the greenway system, with a maximum decrease of over \$10 per square foot. The average value of homes next to the greenway system was 32% higher than those 3,200 feet away. The same greenway system in Boulder added \$5.4 million to the tax base of one neighborhood, generating \$500,000 per year in additional potential property taxes. This was enough to cover the \$1.5 million cost of the greenway system in only three years.

Opportunities for Economic Revitalization. In addition to increasing property values of nearby neighborhoods, greenways can lead to opportunities for economic revitalization. A park or trail system often becomes one of a city's signature attractions, a prime marketing tool to attract tourists, conventions, and businesses. Parks such as the Boston Public Garden, Baltimore's Inner Harbor, and Minneapolis's Chain of Lakes Regional Park help shape the city's identity and give residents pride of place.



San Antonio's River Walk Park has become the city's most popular tourist attraction out of the \$3.5 billion dollar tourism industry.

For example, Minneapolis's Chain of Lakes [received 5.5 million visitors in 2001, making it Minnesota's second-biggest attraction after the Mall of America.](#) San Antonio's Riverwalk Park, [created for \\$425,000, has overtaken the Alamo as the most popular attraction for the city's \\$3.5 billion tourism industry.](#) Greenville's Falls Park on the Reedy and the proposed Reedy River Greenway are well situated to become a key element of the region's identity and will serve to attract both residents of the Upstate and tourists from across the country.

In some communities, greenways have been shown to directly spur economic revitalization. In Pennsylvania, the Pittsburgh to Cumberland Trail Corridor, centered on a 124-mile long trail, has been a focal point of economic growth. Within the past decade, this area has generated so much interest for residents and tourists alike that [the greenway is now a destination for more than half a million visitors each year.](#) Communities along the greenway have capitalized on the positive effects of the greenway, with entrepreneurs opening bed & breakfasts, antique shops, and cafes. The Executive Director of the Somerset County Chamber of Commerce praises the trail as the primary reason for a surge of interest in the area: "[Several properties near the trail in Somerset](#)

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County, that were once in dire despair, have been purchased and renovated... Quite simply, these locations had no meaning before the trail went in.”

Water Quality Benefits

Through the use of streams and rivers as focal points of a trail system, greenways produce beneficial impacts to water quality and aquatic habitat. Greenways improve and sustain water quality by protecting riparian zones, restoring floodplains, and limiting runoff from impervious surfaces.

Protecting Riparian Zones. The health of rivers and streams depend greatly on the condition of the streamside areas, or the riparian zone. Vegetation found in riparian zones stabilizes the riverbank and serves to filter sediment and other contaminants that would otherwise run off into streams and rivers. Riparian vegetation also provides shade, providing the cool water that many aquatic organisms require in order to survive. In addition, many animals depend on the riparian zones and the water quality benefits they provide. In Colorado, for example,



Cleveland Park greenway in downtown Greenville

riparian zones account for less than 2% of the landscape, but provide habitat for 60% of Colorado wildlife.

Creating greenways near or along river corridors is an excellent strategy for protecting or restoring riparian zones. In fact, many federal, state, and county programs encourage the use of riparian buffers along rivers and streams because of their ability to stabilize soil and to help control runoff pollution. Recommendations for these vegetative riparian buffers vary from 25 to more than 1000 feet, with the effectiveness of protecting water quality increasing as the width of the buffer increases. Greenways along river corridors provide a unique opportunity to maximize the width of the riparian buffer and therefore maximize the associated water quality benefits while still making productive use of the protected zone.

Managing Stormwater Runoff From Impervious Surfaces. Natural areas can be designed to manage the flow of stormwater runoff more effectively and more cheaply than concrete pipes and drainage ditches. This is because trees help to intercept rainfall and unpaved areas absorb water, both of which slow the rate at which water reaches streams and rivers. Vegetation along water bodies filters pollutants from stormwater, reducing the detrimental impacts of runoff on water quality. Conversely, impervious surfaces such as roads, parking lots, and rooftops prevent water from soaking into the ground and increase runoff velocity. High velocity runoff can cause soil erosion and downstream flooding. In addition, urban runoff easily carries pollutants like metal dusts, motor oils, fertilizers, and pet wastes that are commonly found on roads and lawns.

By creating greenways and restoring floodplains in areas that receive urban stormwater runoff, cities can better manage the impacts of impervious surfaces on water quality through the natural ability of greenspace to remove urban pollutants and to slow runoff velocity.

Incorporating trees into a city's infrastructure can allow communities to build smaller, less expensive stormwater management systems. Yet natural tree cover has severely declined in many metro regions over the last several decades. In fact, over [77,000 acres of tree cover was lost in Greenville County between 1985 and 2000](#). This is a loss of 14 acres of forest cover – an area about the size of 10 football fields – every day. The conservation organization American Forests estimates that [trees in the nation's metropolitan areas currently save cities \\$400 billion in the cost of building stormwater retention facilities](#). By creating and preserving greenways and other open space, cities can continue to use the abilities of natural vegetation to minimize the amount of stormwater and minimize stormwater impacts on our waterways while providing aesthetically pleasing areas for residents to walk, jog, bike, and play.

Restoring Floodplains. Floodplains are a river's natural mechanism for dissipating and absorbing the force of floodwaters, and undisturbed floodplains are an essential component of a healthy river system. An intact floodplain not only serves to improve water quality by filtering out pollutants, but it minimizes downstream floodwater damage because it allows for temporary water storage upstream and slows the speed of floodwaters. Often, certain types of development are prohibited within floodplains due to the sheer amount of damage caused by flooding. Damage to flooded structures and the existence and enforcement of building restrictions typically render floodplains poor locations for building sites.

However, approximately [10 million homes are located in floodplains across America](#). The [Federal Emergency Management Agency](#) estimates that flooding causes over \$1 billion in property damages every year. According to the [South Carolina Emergency Management Department](#), flood damage over the last decade in Greenville and Spartanburg Counties has reached over \$20 million in property damage in each county.

To combat the damage caused by floodwaters, some communities have initiated floodplain buyout programs that purchase and remove homes instead of allowing them to be rebuilt in flood-prone areas. [Mecklenburg County, North Carolina](#) (i.e. Charlotte), has removed nearly 135 structures from the floodplain, replacing them with floodplain friendly greenways and restored floodplains. The structures purchased through this program were bought with federal money after they were severely damaged by floodwaters, and the structures were either relocated or demolished.



Before and after pictures of Mecklenburg County's floodplain buyout program.
Photos courtesy of Charlotte-Mecklenburg Storm Water Services

Mecklenburg County's floodplain buyout program is a prime example of how incorporating floodplain protection into greenway development can both protect the floodplain and benefit the community. Returning the floodplain to its natural state allows it to store and filter runoff while providing open space to serve functional purposes for the community. Providing permanent protection of these lands allows for long-term water benefits for both the effected waterways and the surrounding community.

CREATING A GREENWAY

A greenway system begins with a vision – something large and grand that inspires people and helps them see beyond what exists to what might be. Yet, building a greenway and developing a network of trails from scratch can be a daunting undertaking. Fortunately, many communities already have parks and trails along rivers that can serve as key elements of a greenway system. The Greater Greenville area has a number of pieces already in place: Cleveland Park, the rail corridor from Travelers Rest to Greenville, and Conestee Nature Park, among others. The challenge is connecting all of these pieces together into a coherent network.

Such systems already exist in a number of cities in our region. The city of Gainesville, Georgia began developing a system of trails and parks along Rock Creek in the 1970s. However, it was only in the last few years that the city developed a full-scale greenway master plan known as Vision 2014. The idea behind the [Rock Creek Greenway](#) – the vision that held the plan together – was to link downtown Gainesville with nearby Lake Lanier. With this goal in mind, the City of Gainesville Parks and Recreation Board began working with other city agencies, private contractors, and a non-profit organization called Friends of the River to realize the plan. Due to



Rock Creek Greenway,
Gainesville, Georgia

the large scope of this project and the amount of money required, the partners undertook the project in phases. Many considerations went into planning for the Rock Creek Greenway, including stormwater management, renovation of existing parks, downtown revitalization, and land acquisition for new parks. Rock Creek Park was developed as the gateway to the greenway. To date over \$2 million has been raised to connect remaining parks to the greenway system.

In a similar vein, the city of Raleigh, North Carolina began developing a greenway system over 30 years ago to promote revitalization and well-planned development. The [Capital Area Greenway System](#) was initiated in 1974 in response to rapid growth and development with the goal of “permitt[ing] urban development while preserving Raleigh’s characteristic natural beauty.” Since 1974, Raleigh’s Greenway Master Plan has evolved into a 46-mile, 3000-acre greenway network. This system connects city residents to park facilities across Wake

County and the Triangle region, supporting the health and well being of people, wildlife, and the environment and fostering a strong sense of community and pride.

Building Support for a Greenway

Successful creation of a greenway will require a concerted effort by local governments, local residents, and private sector organizations to influence and guide the entire community toward a multi-objective greenway plan. [Gwinnett County](#) and [Charlotte-Mecklenburg](#) Greenway Master Plans stress using community meetings to:

- Identify strategic issues, assets, and concerns of the greater community
- Educate members of the community, particularly influential individuals

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- Stimulate discussion about the definition and roles of the greenway and develop a common vision

Local Government Support. Local governments will likely be the lead agents, owners, developers, and managers of a greenway system. Therefore, garnering support from these municipalities will be integral to the success of a greenway development project. Because trails often cross multiple jurisdictions, it may be necessary to partner with a number of local municipalities to build and maintain various segments of the greenway system. One way to accomplish this is to develop a larger advisory committee. Such a committee would:

1. Educate and solicit feedback from citizens regarding the objectives of the master plan and multiple trail needs
2. Coordinate with other entities, programs, and departments to prioritize greenway development and land acquisition
3. Identify and solicit resources to accelerate land acquisition and trail construction
4. Develop a regional greenway network by working with surrounding counties to establish linkages to their recreational and natural resources

Before approaching the various municipalities or attempting to establish an advisory committee, identify which political jurisdictions the proposed greenway corridor crosses. Determining any relevant history regarding greenway trails is also important. Have any trails ever been proposed in the various municipalities, and, if so, what were the reactions and outcomes? Knowing the political climate with regards to trails, greenways, and greenspace could prove to be valuable in the greenway development process. By targeting residents and businesses for greenway marketing strategies, greenway advocates can begin the process of building local government support for a particular project.

Local Resident Support. Perhaps the most important group within the community from which support is needed is local residents. Nothing can hinder or advance a greenways project faster than adjacent landowners and nearby residents. Therefore, it is wise to take the time to determine how these individuals view their neighborhood and community and how the greenway may fit in with their desires. Be sure to understand the concerns of local residents before pushing forward with a trail development process. By satisfying the desire for what residents would like in a trail and by easing residents' concerns, local support for the greenway system will likely grow. This grassroots support can often be one of the strongest factors in marketing and advocating a greenway trail system.

Recruiting interested individuals to donate time, labor, and expertise during the various aspects of the greenway development process can also boost support within a local community or neighborhood. All volunteer efforts help to publicize the greenway and its development throughout the community by creating vital marketing opportunities at minimal cost.

Community Organization Support. Support from local organizations such as recreation clubs, environmental organizations, historical societies, homeowners' associations, service and civic clubs, and educational groups is also important when building support for a greenway system. Because they can play a vital role in building support through their membership base, these organizations represent a large contingent of stakeholders for a greenway system. Support from

these organizations and members may be able to influence local politics as well as provide a means of fundraising for the greenway system. The most appropriate way to include these organizations in the development of the greenway system is by addressing the goals and objectives of each organization with the development of the greenway system. However, no relevant groups should be excluded, even if opposed to the trail. For a greenway planning process to succeed, input from a wide variety of stakeholders is needed, and groups with reservations about the greenway can aid in providing that diversity.

Private Sector Support. Gaining support from businesses and corporations is another important part of building community support for a greenway system. Local businesses and business associations are a likely source of support for the greenway because of the local economic benefits of greenways. Businesses and corporations can work with local governments to sponsor segments of trails and may provide funding, products, or labor toward the development of the greenway facilities. Businesses may also consider installing facilities such as bike racks, benches, or signage that link their properties to the greenway system.

To be truly successful, the greenway system must become a shared pursuit of the entire community. Only after building support through all community stakeholders can the process move forward. By getting each stakeholder involved in the beginning of the process, the greenway planners can effectively develop goals and policy recommendations covering planning approaches, administration, and management of a greenway system that meet the community's needs. Emphasize the myriad benefits that trails and greenways offer, especially the economic, ecological, and health benefits specific to the community. By continually communicating these ideas and principles to all stakeholders, support from both greenway users and non-users will, in turn, result in strong overall support for the project. Local leaders will then continue to see the importance of the project and prioritize the greenway system in future planning efforts.

Greenway Planning

A greenway system plan is a comprehensive guide to what, where, and how to protect and develop land along the greenway corridor. It is a conceptual design document that, once adopted, generally describes and guides the future management and development of a park property. This part of the process can include ways to integrate new park facilities into the greenway system, guidelines for the interim management of parkland, and document existing site conditions and constraints. What follow are important planning concepts included in both [Gwinnett County](#) and [Charlotte-Mecklenburg](#) Greenway Master Plans.

1. Prioritize Land Acquisition

Given that prime land for greenways and parks are disappearing quickly within developing areas, it is important that the community seek every opportunity to acquire key tracts as they become available. Prioritization should be based on providing the greatest connectivity between existing greenspaces, creating useful transportation corridors, and providing property value and environmental protection benefits. Distribution of greenspace within a community should also be considered when acquiring land in both developed and undeveloped areas. Land preserved in less-developed areas provides more acreage per dollar, while land preserved in more developed areas provides greenspace that is readily accessible to more local residents. Criteria for prioritizing land acquisition include:

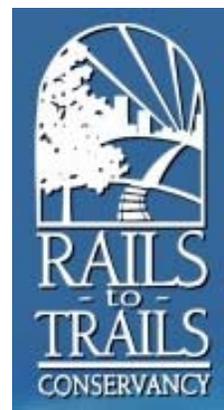
- Cost of Acquisition - it is financially feasible to acquire the property.
- Cultural Significance - the property contains a unique artifact of history, or is a historically significant parcel of land.
- Environmental Significance - the property is an important parcel of land and contains a significant 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 community that, if acquired, will provide a balanced future trail system.
- Maintenance of Property - the property can be maintained in a manner that is consistent with local policies.
- Opportunity for Trail Development - the property is well-suited for trail development, and issues of accessibility have been addressed and satisfied.
- Population Served - the property is located in an area of the community that is densely populated.
- Threat of Loss - the property is in demand and may not be available for public ownership unless quick action is taken.

2. Assess Land Acquisition Methods and Funding Sources

Before detailed master planning of a particular greenway occurs, it is necessary to establish a framework for acquiring prioritized lands or rights of ways. [Greenways: A Guide to Planning, Design and Development](#) and [Trails for the Twenty-First Century](#), describe various methods of acquisition and funding sources for greenways, some of which are described below.

Methods of acquisition. There are a number of strategies to acquire land for greenways, including: donations, easements, land dedication, or purchases. Up to 30% of property owners that have land adjacent to the proposed greenway have been found to be willing to donate a portion of their land or right-of-way for greenway trail development. Because of this fact, established greenways planners recommend requesting donations of land or easements before paying cash. Landowners may benefit from donations because of tax-incentives available for land donations. Local land trusts or tax lawyers can provide more information on tax-incentives for land donations.

An easement is a method to acquire the use of land, or a portion of land, without having full ownership. It is a legally binding agreement between a land owner and another entity that can allow public access, via a trail, or restrict development for conservation purposes. They may be purchased (for less than the full value of the property), traded, or donated. An easement may be permanent or may expire after a certain period of time. In some instances, properties already have easements established that may provide a unique opportunity for trail development. One such example is a railroad right-of-way easement that may be purchased and converted to a trail. The Swamp Rabbit Railroad corridor, owned by Greenville County, is a rail property and right-of-way that was purchased with the intent of developing a trail. The [Rails to Trails Conservancy](#) can provide more information on converting railroad lines to trails.



Some communities provide incentives for developers to dedicate a portion of land being developed to recreational or conservation purposes, while others require dedication. If developers or owners dedicate land in such a way that it can fit into an already-planned greenway system, land dedication can be a vital tool in providing lands for greenway trails. These lands can be conveyed to a governmental entity or a land trust with the understanding that the land will be used for trail development, but they may also be retained by the developer or a homeowner's association with an appropriate easement placed on the property.

Land purchases result in a complete transfer of full title from one entity to another, and may include:

- Fee-simple purchases – the most commonly type of land purchase. These are simply the exchange of land for money, typically at fair-market value.
- Bargain sales – when land is exchanged at a below-market value, with the intent that the land will be used for trail or conservation purposes. The original land owner may be eligible for tax deductions through the transfer of title via a bargain sale.
- Lease purchase – when land is leased for a specified amount of time, with the transfer of full title at the end of the lease term.

Sources of Funding. In order to acquire land for the greenway system and build greenway trails, funding must be secured. Money for greenway development is available at the federal, state, and local levels as well as through the private sector. The largest source of federal dollars that may be used for greenway development is federal surface transportation funds. State funds vary from state to state but typically focus on improving recreation opportunities, water quality, land conservation, and non-motorized transportation; natural resource agencies and state parks agencies are likely places to inquire about availability of these funds.

Local funds, though typically less than federal and state funds, can often be used as match money for state and federal funds. Bonds, impact fees, taxes, and capital improvement campaigns are some examples of how local funds may be raised. To fund the \$13 million [Falls Park on the Reedy](#), for example, Greenville implemented a hospitality tax. No property taxes were used to build the park, and the hospitality tax will cover operating expenses for the park in the future.

Private contributions are also an important source of funding for greenways development. An endowment of over \$3 million was established for [Falls Park](#) to ensure long term maintenance as well as park and program development. Land trusts, local and national foundations, businesses, and individual sponsors may also be valuable sources of funds for greenway development.

3. Integrate a Variety of Uses

An effective greenway system supports multiple uses while linking residents with popular destinations and activities. Delineating the use of existing and future parklands and greenway trails is an important step in identifying facilities that meet community needs as well as targeting lands for future recreational development and resource conservation. [Greenways: A Guide to Planning Design and Development](#), describes a number of these uses, outlined below:

- Intensive recreational use – recreational opportunities like baseball and soccer that require significant alteration of the landscape to create a playing surface.

- Low-Impact recreational use – recreational opportunities such as hiking, jogging, birding, or picnicking that require little to no alteration of the landscape. Non-motorized vehicular use – biking, skateboarding, or inline skating – are included in this category.
- Motorized vehicular recreational use - recreational opportunities that use motorized equipment like jeeps, ATVs, or motor-bikes that may alter the landscape as a consequence of their use.

The plan for the greenway and parks system should include a base set of facilities to be used and propose any additional recreational facilities that would be appropriate for different uses and locations. The community should help identify desired destinations and uses for the greenway so that a clear picture of residents' expectations of the greenway may be determined. This will help provide a basis for the overall greenway plan by providing connections to a range of activities desired by the community. By identifying these activities and locations, the master plan process allows for an overall improvement in connectivity of the users to the trail system and their desired activities.

4. Plan For Connectivity

An important concept in developing a greenway is recognizing that there must be not only a variety of destinations connected to the greenway system but also a central organizing component to the system. River corridors and their floodplains provide a ready-made component on which to build. The greenway master plan, therefore, should place significant emphasis on the linkages between areas in the community where residents choose to visit, prefer to access the greenway, and where residents choose to work and live. Within this scheme, each community and amenity uniquely contributes to how the greenway is perceived and experienced.

Nodes are the anchor points of the greenway system and provide access, services, and support. Some potential nodes include:

- Source Areas
A greenway system that serves transportation and recreation needs for residents must consider where users live. Large residential areas and urban centers are primary sources of potential system users. By identifying these areas, a greenway master plan can locate trails so as to link residents' homes to their places of work and other popular destinations.
- Destination Areas
Destination areas within a greenway system should include a diverse array of locations, but it is important to do the research necessary to determine which are the most important to the community. Surveying people's commuting patterns to and from work, shopping centers, and recreation areas can define which destinations communities value. Such areas include major businesses, professional services, restaurants, hotels, and shopping centers. Other important destinations may include historical and cultural sites or outdoor recreational areas where people hike, bike, ride horses, and engage in river-related activities. Public parks and recreation sites – areas held in the public domain for conservation and recreation – are important destinations as well as areas that provide needed connectivity along a greenway system.

- Access Points

Access points determine the ease with which the community can make use of the greenway system. Well-designed access points should not only provide an entrance to the system but also encourage the use of the greenway with attractive, obvious, and consistently signed gateways to the system. Transportation centers such as rail stations, bus stations, and trailheads can be designed or redeveloped in such a way as to encourage the community to use the greenways. Planning for access points should also consider proximity to source areas such as neighborhoods, schools, and commercial centers to ensure they are within walking distance or are connected by another form of public transit. The same considerations must be given to primary destinations and their proximity to access points.

Spokes and linkages are the corridors that connect nodes and other linkages of the greenway system. These may be natural features, man-made features, or a combination of the two. Greenway links may include:

- Primary Trails

These are trails that have been specifically developed for walking, biking, and other related activities, and link the system to existing or proposed parks, nature preserves, urban centers, or other primary destinations identified by the community. Primary trails follow identifiable routes through areas where it is permissible to traverse without special permission. As with other public infrastructure systems, it is important to develop and operate a primary system of trails that can serve the needs of residents in a cost-effective manner.

- Secondary Trails

While primary connections form the backbone of the greenway system, there will still be many popular destinations that will not be directly connected to the primary greenway trail system. Secondary trails serve to connect these destinations to the greenway system. Many secondary trails are already in existence in communities and have traditionally been developed by other groups and organizations. They often follow abandoned rail corridors, major electrical and gas pipeline utility rights-of way or easements, or are footpaths that parallel the river or its tributaries. To expand secondary trails, communities can develop working partnerships with public agencies or private sector organizations to establish these connections and link them to the primary network.

- Special Interest Trails

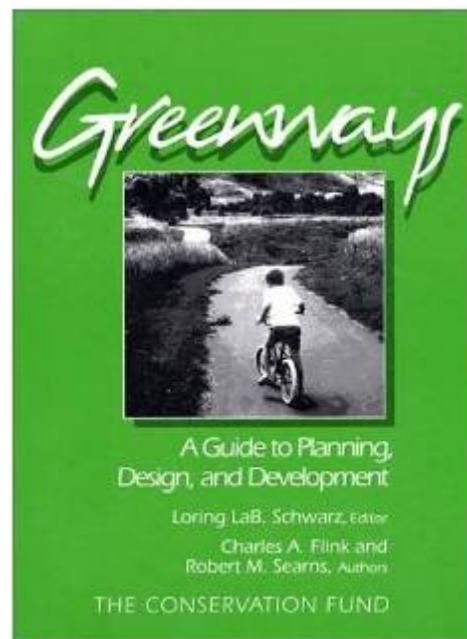
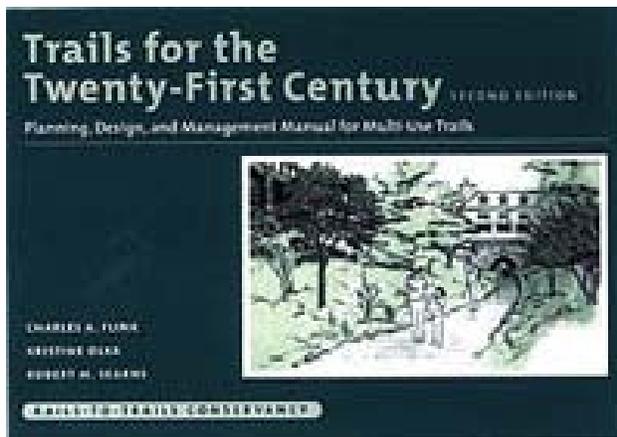
These trails may consist of historical site tours or bicycle routes that overlay roads or other transportation routes and would otherwise not be apparent without the assistance of maps or other aids. By connecting special interest trails to the greenway system, a wider variety of users may be encouraged to use the greenway system. These trails may also serve to enrich the experience of other users of the greenway system.

CONCLUSIONS

The benefits of designing and constructing a system of greenway trails are both numerous and widespread across a community. Greenway development has been shown to benefit the health, transportation, economics, and water quality within numerous communities, improving overall quality of life for both residents and visitors. With all the benefits of developing greenway corridors, it is no surprise that many cities have developed or have plans for such a versatile and invaluable amenity.

The design and construction of a greenway system is not simple task. As demonstrated in this document, when beginning to design a greenway, there are a multitude of stakeholders to include and considerations to be made. However, by working through the detailed process of designing a greenway master plan, a city may better determine the wants and needs of its citizens. This will help design a greenway system that citizens will likely support and identify as a valuable asset to their community.

This document provided an overview of some considerations to make when planning and designing a greenway. For more detailed information on any of the topics in this document or for any additional information, please consult either [*Trails for the Twenty-First Century*](#) or [*Greenways: A Guide to Planning, Design, and Development*](#).



For additional information on creating greenway systems along river corridors as well as links to relevant organizations and web resources, please visit www.saludareedy.org/outreach/forums.html.

REFERENCES AND OTHER GREENWAY RESOURCES

Three Rivers Greenway

<http://www.riveralliance.org/3rg.htm>

Anne Springs Close Greenway

<http://www.leroy springs.com/Greenway.html>

West Ashley Greenway

<http://www.sctrails.net/trails/ALLTRAILS/Railtrails/WestAshGreenway.html>

Overweight Americans

<http://www.healthypeople.gov/document/tableofcontents.htm>

Centers for Disease Control and Prevention (CDC)

<http://www.cdc.gov/nccdphp/dnpa/physical/recommendations/index.htm>

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<http://www.realtor.org/SmartGrowth2.nsf/Pages/mngtrtpress-survey>

Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors

http://www.nps.gov/pwro/rtca/econ_index.htm

Minneapolis – Chain of Lakes

http://www.minneapolis parks.org/documents/about/budget_packet.pdf

San Antonio – Riverwalk Park

<http://www.planning.org/cpf/pdf/economicdevelopment.pdf>

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For additional information on creating greenway systems along river corridors as well as links to relevant organizations and web resources, please visit www.saludareedy.org/outreach/forums.html.

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http://www.saludareedy.org/press/landcover_pr_6_13.pdf

“The State of the Urban Forest: Assessing Tree Cover and Developing Goals,” *American Forests*. September 1997;
cited in Lerner and Poole, *The Economic Benefits of Parks and Open Space*, p. 42.

Rails to Trails Conservancy. “Economic Benefits of Trails and Greenways.”
http://www.trailsandgreenways.org/resources/benefits/topics/tgc_economic.pdf

Federal Emergency Management Agency
<http://www.fema.gov/plan/mitplanning/index.shtm>

South Carolina Emergency Management Department
<http://www.scemd.org/Mitigation/planning.htm>

Charlotte-Mecklenburg
Greenway Master Plan
<http://www.charmeck.org/Departments/Park+and+Rec/Greenways/Master+Plan.htm>
Floodplain Buyout Program
<http://www.charmeck.org/Departments/StormWater/Flood+Zone/Floodplain+Buyout+%28Acquisition%29+Program.htm>

Rock Creek Greenway
http://www.gainesville.org/recreation.asp?contentscreen_id=projects

Gwinnett County Greenway Master Plan
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