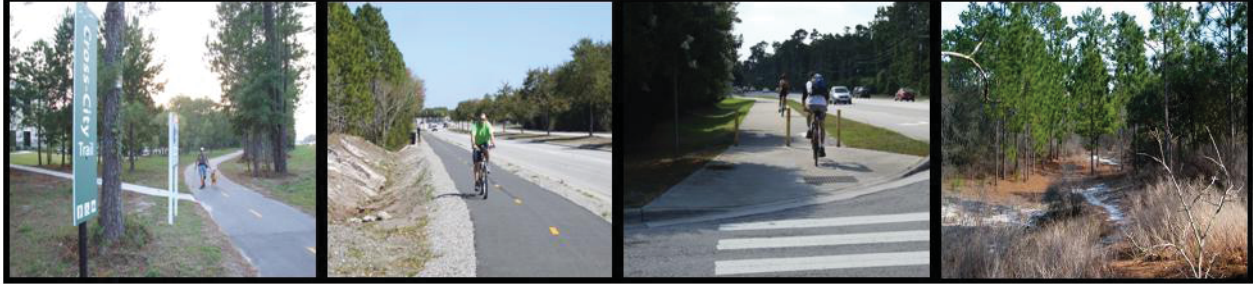


DRAFT



Gary Shell Cross-City Trail Master Plan

P R E F A C E

Incorporated in 1739, the City of Wilmington prides itself on providing exception quality of life services for its citizens. Wilmington is a coastal town in New Hanover County situated in southeastern North Carolina. The city is bordered by the Cape Fear River to the west and the Intracoastal Waterway to the east.

The City of Wilmington partners with its citizens to create a dynamic city characterized by a strong sense of community. It is known for its stewardship of its bountiful assets including its

- Vibrant downtown riverfront
- Distinctive neighborhoods that include a range of quality housing
- Renowned historic character
- Ample greenspace and pristine and accessible waterways
- Convenient transportation options
- Exceptional education and health care institutions
- Effective regional partnerships
- Diverse employment opportunities

The goal of the Gary Shell Cross-City Trail is to provide residents and visitors with an amenity that provides opportunities for recreational use, physical activity and alternative transportation. The Gary Shell Cross-City Trail is collaboratively planned and managed by the City's Community Services and Developments Services Departments. The mission of the Community Services Department is to provide quality of life services to the citizens of Wilmington through the building of partnerships, providing superior parks and recreation programs and facilities, providing new initiatives and creative programs so citizens can receive the benefits and rewards of neighborhood vitality, while protecting and conserving the natural resources and environmental quality of our community. The mission of the Development Service's Department is to facilitate sustainable growth, development and redevelopment while preserving the historic character and viability of our city.

Wilmington serves its citizens and visitors with 775 acres of public parks and greenways and 439 miles of sidewalks. Current outdoor recreation opportunities include walking, cycling, hiking, skating and skateboarding, golfing, motorized and non-motorized boating, fishing, swimming, basketball, baseball and softball, soccer, lacrosse, and nature interpretation. These amenities are designed to provide physiological, sociological and cultural benefits to residents, contributing to the quality of life for our community through health promotion, tourism promotion and environmental stewardship.

GARY SHELL CROSS-CITY TRAIL MASTER PLAN

Wilmington City Council

The Honorable Bill Saffo, Mayor
Dr. Earl Sheridan, Mayor Pro-Tem
Neil Anderson
Margaret Haynes
Kevin O'Grady
Laura Padgett
Charlie Rivenbark

City Staff

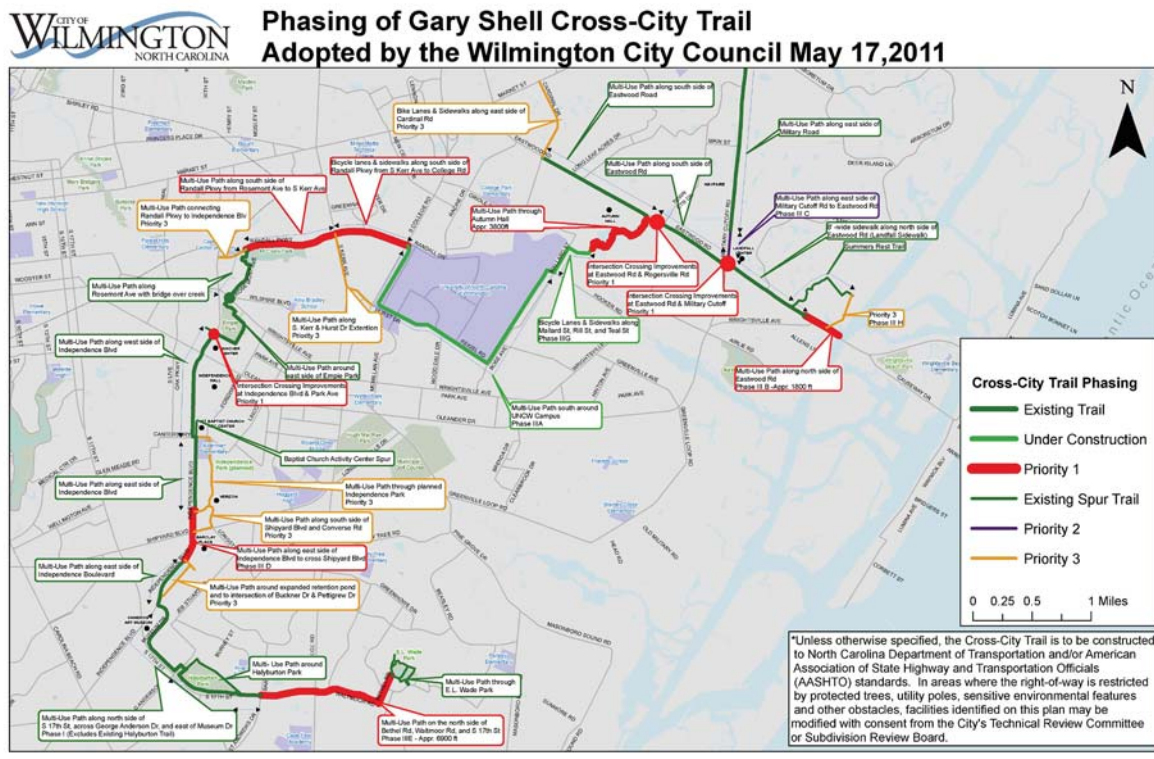
Sterling Cheatham, City Manager
Tony Caudle, Deputy City Manager
Steve Harrell, Community Services Director
Amy Beatty, Recreation and Downtown
Services Superintendent
Mike Kozlosky, Transportation Planning
Manager
Marian Doherty, Program Specialist
Suraiya Rashid, Associate Planner
Adrienne Walters, Planner I
Penny Bray, Administrative Support Specialist

GARY SHELL CROSS-CITY TRAIL MASTER PLAN

EXECUTIVE SUMMARY

Throughout this document, Gary Shell Cross-City Trail, GSCCT, Cross-City Trail, and CCT are used synonymously.

Upon completion, the Gary Shell Cross-City Trail will be a 15-mile, primarily off-road multi-use trail which will provide bicycle and pedestrian access to numerous recreational, cultural, and educational destinations in Wilmington. Collaborative agreements with the Cameron Company, the Trask Family, Oleander Company, Inc., the University of North Carolina-Wilmington, along with local, state and federal funds, and connections with existing or funded trail facilities will make this project possible. The Gary Shell Cross-City Trail is a core trail in a developing City-wide Greenways System which will make alternative transportation in Wilmington a safer, more convenient option for every citizen. It makes up part of the East Coast Greenway, a multi-use path that will run all the way from Maine to Florida. It also connects to the River with the Sea Bikeway.



In May 2006, residents of Wilmington and New Hanover County passed a combined \$35.5 million bond referendum to expand parks, green space and cultural facilities throughout the City of Wilmington, New Hanover County and the beach towns.



Figure 1: UNCW students enjoy a run on the campus portion of the GSCCT

The goal of the Gary Shell Cross-City Trail is to provide residents and visitors with an amenity that provides opportunities for recreational use, physical activity and alternative transportation. Currently, the residents of Wilmington are underserved by means that provide access to safe, convenient and attractive off-road transportation facilities. The Cross-City Trail will expand access to established destinations and provide off-road transportation alternatives, creating new opportunities for commuting and recreational access to employment, retail, cultural, educational and recreation sites in Wilmington, improving safety, economic development, mobility and environmental benefits.

Beginning at Wade Park in the southeast quadrant of the City, the GSCCT travels in a northwesterly direction along South 17th Street and through Halyburton Park, connects to Museum

Drive, continues its northerly direction along Independence Blvd., travels through Empie Park and the Devon Park neighborhood along Rosemont Avenue connecting to Randall Parkway where the trail begins trending east. At the intersection of Randall Parkway and South College Road, the trail enters the campus of the University of North Carolina-Wilmington, exiting in the College Acres neighborhood where the trail follows Mallard Drive and Rill Road. At the terminus of Teal Street, a bicycle and pedestrian bridge provides access through the Autumn Hall development to Eastwood Road where the path remains until its completion at the Heide Trask Drawbridge at Wrightsville Beach.

The GSCCT will provide direct and indirect access to residential neighborhoods, six public parks, two elementary school, a university, art museum, three municipal interior park trails and numerous commercial nodes. Part of the trail is along the East Coast Greenway alignment and the trail intersects with the River to the Sea Bikeway.

The Gary Shell Cross-City Trail was initially designated \$1 million of Parks and Greenspace Bond Funds. Design input for the trail has been provided by the Wilmington Metropolitan Planning Organization (WMPO), in particular, the WMPO Bicycle and Pedestrian Committee. In 2009, the Gary Shell Cross-City Trail was one of six multi-use paths in North Carolina selected by the North Carolina Department of Transportation to received funds from the American Recovery and Reinvestment Act (ARRA, also known as the Stimulus Bill) which was signed into law on February 17, 2009. A second, subsequent ARRA grant was also awarded to the project for a total of \$4 million dollars.

The one million dollar bond project was originally conceived as a mid-city greenway project initially designed to connect two parks. The initial plan was to construct a “Preserve Trail” which would connect William D. Halyburton Memorial Park to the future City Park behind Alderman Elementary School.



Figure 2: A man uses the GSCCT adjacent to the Cameron Art Museum - one of several areas included as part of the GSCCT thanks to the generous donations of private developers

Collaborative agreements with several prominent, private land owners, the utilization of existing, funded facilities, and grant funding opportunities allowed for the conceptual expansion of the trail to the town limits of Wrightsville Beach. In 2008, the project scope expanded to a city-wide greenway due to public demand, development trends, and the cultivation private and public partnerships.

Numerous city planning documents recommend development and expansion of a city-wide network of pedestrian facilities in order to increase alternative transportation and recreational opportunities. The *South 17th Street Land Use Plan Update*, (1996) which focuses on development recommendations in the area of the city where the original trail concept is located, recommends a network of greenway and bikeway facilities. Other adopted plans identifying the need for a pedestrian and bicycle network include the *Wilmington Future Land Use Plan* (2004); *Walk Wilmington, A Comprehensive Pedestrian Plan* (2009); the *Wilmington-New Hanover County Joint Coastal Area Management Plan* (2006); the *Wilmington Parks, Recreation and Open Space Master Plan Update 2010-2015*; and *Cape Fear Commutes 2035 Transportation Plan* (2010).

Collaborative agreements with the Cameron Company, Trask Family, Oleander Company, and UNC Wilmington allowed for the expansion of the trail from E.L. Wade Park, in the Pine Valley East neighborhood, to the town limits of Wrightsville Beach.

On June 17, 2008, following a public input period, Wilmington City Council formally adopted the alignment of the Cross-City Trail. As planning continues, the City continues to seek public input. To date, eight public workshops have been held. The adopted map is revised to accommodate modifications to the alignment. Each proposed amendment to the map is brought before City Council for approval.

The Gary Shell Cross-City Trail has been divided into phases and prioritized. Prioritization is based upon a set of criteria including public input, accessibility, connectivity, the safety of road crossings, the physical conditions of the alignments, engineering, permitting, construction and operations costs, drainage management, and easement acquisitions.

The Gary Shell Cross-City Trail is operated and maintained under the City of Wilmington's ordinances and policies. Management of the trail is overseen by the Community Services Department's Recreation and Downtown Services Division and maintained by the Parks, Landscaping and Athletics Maintenance Facilities Division. One fulltime staff person from this Division is responsible for daily maintenance and inspection of the trail facility. Additional staff and seasonal help are made available as needed. Maintenance staffing levels are provided as funding permits.

Volunteers will also be a resource in the maintenance of the facility. City staff is currently in the process of developing a process to implement an "Adopt-A Trail Program" that seeks to form a community partnership between area volunteers and the City of Wilmington. The program gives volunteers the opportunity to conserve and maintain our natural environment, promote civic responsibility and community pride and also serves to fulfill a gap in the demand for maintenance and existing operational funding. Adopt-A-Trail sponsors are made up of groups and organizations throughout the community. Each sponsor is responsible for general trail maintenance and the upkeep of their designated trail.

The Gary Shell Cross-City Trail requires initial costs comprised of acquisition, design, permitting and construction costs and ongoing costs comprised of operations and maintenance.

Trail development has and will continue to occur as funding becomes available, opportunities for project coordination with external organizations develop, and as private development projects adjacent to the trail corridor coincide with planning.

The cost to develop each segment can vary widely based upon certain variables including land acquisition or easement costs, the geography the segment will traverse, drainage patterns, the number and type of permits required, the number and type of traffic devices required, signage, amenities and landscaping requirements.

GARY SHELL CROSS-CITY TRAIL MASTER PLAN

EXECUTIVE SUMMARY

The cost to complete the GSCCT is estimated at nearly \$8 million dollars. Over six million dollars have been expended or allocated to date. A combination of federal, state, local and private funds has been allocated to the project. Municipal funds have accounted for 30.5 % of the total cost of the project to date. Annual operating costs which include labor and materials, is estimated at \$40,000 annually.



Figure 3: A City of Wilmington Parks Employee works on maintaining the GSCCT

Preface.....	page i
Executive Summary	page iii
Table of Contents.....	page viii
Planning Framework	page 1
Relationship to other plans.....	page 3
External Agency Coordination.....	page 4
Benefits of Trails and Greenways.....	page 5
Trail Corridor.....	page 5
Geographic Description.....	page 6
Land Acquisition.....	page 10
Implementation.....	page 11
Public Process.....	page 12
2010 Wilmington Citizens Survey.....	page 12
Stakeholder Participation.....	page 12
Public Workshops.....	page 13
Guiding Principles.....	page 14
Demand Forecast.....	page 15
Demographics.....	page 15
Outdoor Recreation Trends.....	page 16
Special Needs.....	page 16
Management Plan.....	page 18
Maintenance.....	page 19
Signage.....	page 19
Marketing & Outreach.....	page 20
Cost Estimate and Funding.....	page 21
Other Revenue.....	page 21

The Gary Shell Cross-City Trail will be a 15-mile, multi-use trail which will provide bicycle and pedestrian access to numerous recreational, cultural, and educational destinations in Wilmington. It will fill a need in Wilmington for safer, more accessible and attractive transportation and recreation alternatives.

Collaborative agreements with the Cameron Company, the Trask Family, Oleander Company, Inc., and UNC-Wilmington, along with local, state and federal funds, and connections with existing or funded trail facilities will make this project possible.

The GSCCT is a core trail in a developing City-wide greenway system which will make alternative transportation and recreation in Wilmington a safer, more convenient option for every citizen. It will also make up part of the East Coast Greenway, a multi-use path that will run all the way from Maine to Florida and will function like an “urban Appalachian Trail”. It intersects with the River to the Sea Bike Route (WMPO Bicycle Route 1) which is an 11-mile bicycle route that follows the Historic Beach Car Line, which carried vacationers from downtown Wilmington to Wrightsville Beach by trolley. The bikeway is comprised of neighborhood residential streets, off-road multi-use paths, and a few arterial roadways. Benefits of the trail include expanding commuting and recreational access to vital employment, retail, and recreational sites in Wilmington, providing safety, economic development, mobility and environmental benefits. It has the potential to reduce congestion and increase traffic efficiency.

Figure 4: Cyclists using the Eastwood Road section of the GSCCT as a means of transportation



The City of Wilmington prides itself on providing exceptional quality of life services for its citizens. Wilmington partners with its citizens to create a dynamic city characterized by a strong sense of community. To facilitate this vision, the Wilmington City Council has developed six focus areas which determine service prioritization.

These focus areas are:

- Diverse and Thriving Economy
- Welcoming Neighborhoods and Public Spaces
- Efficient Transportation Systems
- Safe Community
- Civic Partnerships
- Sustainability and Adaptability

The mission of the Community Services Department is to provide quality of life services to the citizens of Wilmington through the building of partnerships, providing superior parks and recreation programs and facilities, providing new initiatives and creative programs so citizens can receive the benefits and rewards of neighborhood vitality, while protecting and conserving the natural resources and environmental quality of our community. The mission of the Development Service's Department is to facilitate sustainable growth, development and redevelopment while preserving the historic character and viability of our city. 775 acres of public area are maintained by the Community Services Division, including 531 acres of public parks, 184 acres of athletic facilities, sixteen recreation facilities, 60 acres of greenways, 24 acres of landscaped areas and traffic calming devices, 38 play units, five miles of medians and 202 miles of right-of-way.

The Development Services Department includes the Planning Division; comprised of Environmental Planning, Historic Preservation, Community Planning, and Zoning; Transportation Planning Division and Traffic Engineering Division. The WMPO is housed in the Transportation Planning Division.

The Wilmington Metropolitan Planning Organization (WMPO) also provides guidance in the development of the Gary Shell Cross-City Trail. The WMPO is the regional transportation planning agency for the lower Cape Fear region of southeastern North Carolina. The WMPO is composed of elected and appointed officials from each of the Wilmington area governments as well as the Cape Fear Public Transportation Authority and the North Carolina Board of Transportation. The WMPO facilitates a cooperative, comprehensive and continuing transportation planning process that serves as the basis for the expenditure of all federal transportation funds in the area for streets, highways, bridges, public transit, and bicycle and pedestrian facilities. In addition to commissioning a number of planning studies that have led to the support and advancement of the GSCCT, the WMPO's Bicycle and Pedestrian Committee has provided important design, safety and policy input.

Relationship to Other Plans

In 2006, voters approved a \$35.5 million dollar joint City of Wilmington-New Hanover County Parks and Greenspace Bond. One of the identified bond projects was a \$1 million mid-city greenway project initially designed to connect two parks. Due to public demand, development trends, and the cultivation of private and public partnerships, the scope of the project expanded.

The original concept for the forbearer of the GSCCT, the “Preserve Trail” was conceived to link Halyburton Park, located on S. 17th Street between Independence Blvd. and S. College Road, and the future “Alderman” Park, located on Independence Blvd. at Canterbury Road.

The South 17th Street Land Use Update Plan, adopted by Wilmington’s City Council in 1996, recommended a bicycle and pedestrian network be established in the vicinity of S. 17th Street and Independence Blvd, with Halyburton Park identified as a hub of the trail. The plan was commissioned to provide guidance for the development of the area within a “triangle” formed by the intersections of Shipyard and Independence Boulevards and South 17th Street. Among the recommendations identified in the plan:

- Special designations of space suitable for bikeways and greenways
- A network of facilities running parallel to the roadway for alternative means of transportation

Subsequently, additional plans also recommending the development of a comprehensive bicycle and pedestrian network were adopted by Wilmington City Council. *Walk Wilmington, A Comprehensive Pedestrian Plan*, adopted in 2009, was developed to meet the demands for safer and more extensive pedestrian facilities, including greenways, sidewalks, and crosswalks. The comprehensive pedestrian plan is designed to guide local, regional and state efforts to improve conditions for walking in the City of Wilmington. *Walk Wilmington* identifies and recommends the completion of the GSCCT.

The *Cape Fear Commutes 2035 Transportation Plan* is the long range transportation plan for the urbanized area of Wilmington, North Carolina. It has been prepared by the Wilmington Metropolitan Planning Organization. The plan establishes the goals and objectives for the improvement of travel conditions within the WMPO planning area and makes specific recommendations for transportation projects and funding sources. The committee overseeing the planning document received significant input from the cycling community, including detailed input from community surveys and open houses. The plan recommends to increase the security of the transportation system for motorized and non-motorized users and to work to construct projects in several adopted plans that include the GSCCT.

Wilmington’s Park, Recreation and Open Space Plan Update 2010-2015, identifies the completion of the GSCCT as a priority. Specifically, the plan recommends the city acquire land for the completion of the CCT and other acquisitions necessary to complete a comprehensive bike, pedestrian and non-motorized vehicular transportation system in and around the City of Wilmington.

In addition to these plans, the WMPO, City of Wilmington and New Hanover County are embarking on a Comprehensive Greenway Plan which will serve as a blueprint for future greenway development in the greater Wilmington area. The GSCCT will serve as the spine in this emerging greenway system. Planning for the undeveloped segments of the GSCCT will be included in the plan.



Proposed Future East Coast Greenway Alignment



One consideration in the planning of the GSCCT is to identify and capitalize on potential opportunities to provide connectivity to existing trails. Portions of the GSCCT are on the East Coast Greenway. The East Coast Greenway is a developing trail system, spanning nearly 3,000 miles as it winds its way between Maine and Key West, linking all the major cities of the eastern seaboard.

Another connection along the GSCCT is the River to the Sea Bikeway, (WMPO Bicycle Route 1) an 11-mile bicycle route that follows the Historic Beach Car Line, which carried vacationers from downtown Wilmington to Wrightsville Beach by trolley. The bikeway is comprised of neighborhood residential streets, off-road multi-use paths, and a few arterial roadways.

External Agency Coordination

The North Carolina Department of Transportation has been a significant partner in the planning, design and funding of the Gary Shell Cross-City Trail. NCDOT provided assistance in the development of cross-sections and intersection crossings that traverse state-maintained facilities and has issued encroachment agreements for the construction of these improvements. NCDOT has been a funding partner by providing approximately

\$685,000 for the construction of the trail along Eastwood Road and the bridge over the Bradley Creek Floodway connecting Teal Street with Autumn Hall. NCDOT also administered \$4 million dollars of American Recovery and Reinvestment Act for the construction along Independence Boulevard, through UNCW and College Acres, Road to Teal Street.

Benefits of Trails and Greenways

Greenways provide a means of preserving open space while at the same time creating a “green” infrastructure linking people to places. As recreational areas, they provide places for people to walk, jog or skate serving as vital places for people to access convenient opportunities for exercise and wellness. As transportation areas, they provide safe, convenient alternatives to motorized travel and have the potential to reduce traffic congestion. Socially, they serve to connect people and neighborhoods. The positive impacts environment can be significant. As multi-modal transportation opportunities increase, air quality improves. When placed along streams and rivers, greenways can serve as important water quality buffers.

The City of Wilmington recognizes the importance of trails and greenways and the positive impacts that these facilities may have to assist in economic development. There are many ways that trails and greenways affect the local economy including tourism, events, urban redevelopment, community improvement, health care savings, economic investment and general consumer spending. There is an increasing body of studies showing that greenways improve local economies. In many communities, greenways have proven to raise property values and increase tourism and recreation-related revenues. In a 2002 survey of recent home buyers sponsored by the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of 18 choices. NCDOT’s Division of Bicycle and Pedestrian Transportation conducted a study to examine the value of public investment in bicycle facilities in the Outer Banks of North Carolina. The study concluded that bicycling activity in the northern outer banks provides an estimated \$60 million dollars of annual economic impact to the area and that bicycle facilities in the area are an important factor for many tourists in deciding to visit the region. Fifty-three percent (53%) of visitors report bicycling as a strong influence in their decision to return for subsequent visits. Forty-three percent (43%) report bicycling as an important factor in selecting the area for a vacation. It is believed that a comprehensive greenway network in Wilmington can have a similar impact.

Trail Corridor

The Gary Shell Cross-City Trail is a corridor that provides for recreational and transportation activities on linear resources. It performs a recreational-transportation function, allowing access to parks, educational, commercial and cultural destinations. It serves as a connecting or linking function and will provide the spine in a comprehensive greenway network.

In considering the alignment of the GSCCT, a number of variables are taken into account, including land acquisition or easement costs, the geography the segment will traverse, drainage patterns, the number and type of permits required, the number and type of traffic devices required, signage, amenities and landscaping requirements. Public demand, public support, financial feasibility and cultural benefits are also heavily weighed.

The adopted alignment of the GSCCT seeks to maximize on the neighborhood and commercial connectivity, maximizes recreation and social opportunities and takes into consideration cost feasibility. The Gary Shell Cross-City Trail is comprised of constructed and unconstructed segments. The segments have been prioritized. Prioritization is based upon a set of criteria including public input, accessibility, connectivity, the safety of road crossings, the physical conditions of the alignments, engineering, permitting, construction and operation costs, drainage management, and easement acquisitions.

Geographic Description

Wilmington is located in the southeastern portion of southeastern North Carolina and is the largest of four incorporated areas within New Hanover County. The City is the eighth largest in the state and is bound by the Cape Fear River on the west and the Intracoastal Waterway to the east. Wilmington covers approximately 54.3 square miles or 27.4 % of the land in New Hanover County. New Hanover County forms a peninsula bound on the east by the Atlantic Ocean and on the west by the Cape Fear River.

The topography of Wilmington is relatively flat with elevations typically around 38-40 feet above sea level or less. The low-flying, flat terrain is characterized by sandy soils covered with loblolly and long leaf pines and various species of hardwood trees. There are numerous creeks, rivers, and lakes in and around Wilmington supporting large expanses of freshwater and coastal wetlands and bottomland swamps.

The GSCCT's alignment is characterized primarily by modern suburban development traversing primarily through commercial areas, interspersed with residential neighborhoods and municipal parks.



Figure 5: Ultimately, the GSCCT will connect to multi-use paths in James E. L. Wade Park

- **Wade Park to John D. Barry Drive Segment:** This is identified as a priority one segment. Approximately 1.3 miles, the trail head will be located in Wade Park. The route is undetermined at this time. Potential designs include a multi-use path along a sewer easement and sidewalks and bike lanes along Waltmoor Road. It will also include traffic signal upgrades and crosswalk improvements at South College Road and South 17th Street. Direct connections within this segment include a park, a residential neighborhood and a commercial center.

- **John D. Barry Drive to Independence Boulevard and Ashton Drive (built):** This approximately two mile segment contains a 10' multi-use path along the north side of S. 17th Street from. Direct connections include a park, a residential neighborhood, an art museum and commercial center. An Indirect connection with an elementary school via an existing sidewalk is also provided.



Figure 6: Existing GSCCT connects to multi-use paths in Halyburton Park

- Independence Boulevard and Ashton Drive to Independence Boulevard and Converse Drive: This is a priority one segment. It consists of approximately .44 miles of an 8' to 10' foot multi-use path along the east side of Independence and traffic signal upgrades and crosswalk improvements at Shipyard Boulevard and Independence Boulevard. It provides an indirect connection to a commercial center via existing sidewalks.
- Independence Boulevard to Park Avenue (built): This segment is approximately 1.5 miles of 10' multi-use path along Independence Boulevard. It provides a direct connection to residential neighborhoods and a commercial center and indirect connections with an elementary school and park via existing sidewalks.

Figure 7: GSCCT runs down a large portion of Independence Boulevard including adjacent to Alderman Elementary School



- Empie Park (built): This approximately 0.67 mile segment consists of a 10' multi-use path along the eastern portion of Empie Park
- Empie Park to Randall Parkway (built): This segment is approximately .5 miles consists of a multi-use path along Rosemont Avenue through the Devon Park neighborhood and a bridge across Randall Pond. It provides a direct connection to a residential neighborhood and a business center.
- Randall Parkway at Brailsford Drive to the intersection of Randall Parkway and South College Road: This segment is a priority one segment. It will consist of a combination of 10' multi-use path and sidewalks and bike lanes and is approximately one mile. It will directly connect an apartment complex, several residences and businesses and a university. This project will be built as part of the Randall Parkway Roadway Widening Project.
- Randall Parkway at Brailsford Drive to the intersection of Randall Parkway and Independence Boulevard. This is a priority three segment. It will consist of 1,300 linear feet of a 10' multi-use path. This project will be built as part of the Randall Parkway Roadway Widening Project.



Figure 8: Users enjoy the GSCCT as it runs by Empie Park



Figure 9: A plaque commemorates UNCW leadership for their partnership in routing the trail through campus



Figure 10: Bike lanes and sidewalks traverse through the College Acres neighborhood as part of the GSCOT

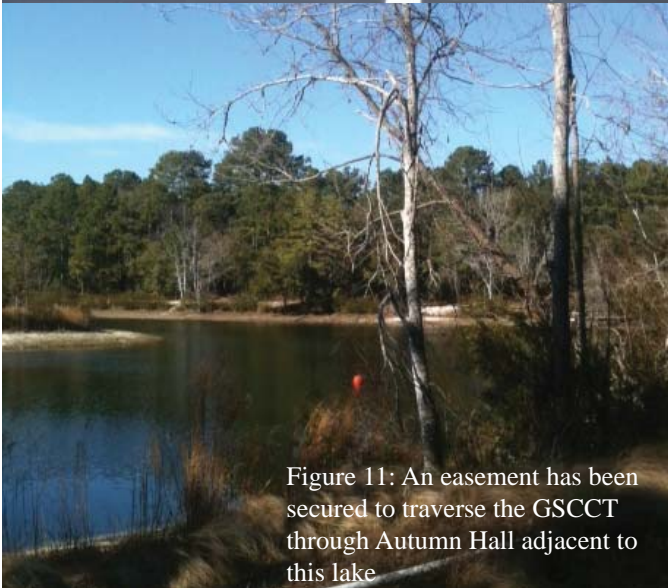


Figure 11: An easement has been secured to traverse the GSCOT through Autumn Hall adjacent to this lake

- Kerr Avenue from Randall Parkway and Hurst Drive Extension to UNCW: This is a priority two segment. It consists of approximately 0.9 miles of an 8' multi-use path. It will directly connect a residential neighborhood a several small commercial centers.
- UNCW: (built) This segment is approximately two miles and consists of a 10' multi-use path from the intersection of Randall Parkway and South College Road to Mallard Drive.
- College Acres neighborhood: (built): This segment consists of approximately one mile of sidewalks and bike lanes from Mallard Drive and Hooker Road, along Mallard to Rill Road, to the termination at Teal Street.
- Bradley Creek Floodway Bridge: This is a priority one segment. It consists of 175 linear feet of bridge and boardwalk. It will directly connect a residential neighborhood and the Autumn Hall mixed-use development.
- Autumn Hall: This is a priority one segment. It will consist of .67 miles of an 8' to 10' multi-use path directly connecting the College Acres neighborhood to Eastwood Road.
- Cardinal Drive from Eastwood Road to Inland Greens Drive: (priority two) This segment will consist of sidewalks and bike lanes on Cardinal Drive from Eastwood Road to Inland Greens Park, providing a direct connection to residential neighborhoods and a park.
- Eastwood Road: (partially built) This segment consists of 2.5 miles of an 8' multi-use path along Eastwood Road. Constructed portions extend south along Eastwood Road from Cardinal Drive to just west of Military Cutoff Road and a sidewalk north along Eastwood Road from Military Cutoff to Canal Drive. Unconstructed portions which are a priority one, include traffic signal upgrades and crosswalk improvements at the Eastwood Road and Rogersville Road intersection and Eastwood Road and the Eastwood Road and Military Cutoff Extension intersection, and .15 miles of multi-use path. It will provide a direct connection to several large commercial and business centers.

- Wrightsville Avenue at the Eastwood Road and Canal Street intersection: This is a priority one segment. It will consist of .15 miles of a 10' multi-use path and traffic signal upgrades and crosswalk improvements. It will directly connect several small business and commercial centers and terminate at the Heide Trask Drawbridge, the end of the jurisdictional area for the City of Wilmington.

Land Acquisition

As a general guideline, the Gary Shell Cross-City Trail is located primarily within existing right-of-way. When it is necessary to acquire easements, the City of Wilmington's philosophy is to work with land owners from a "willing seller" approach. Instances in which it may be necessary to acquire easements include:

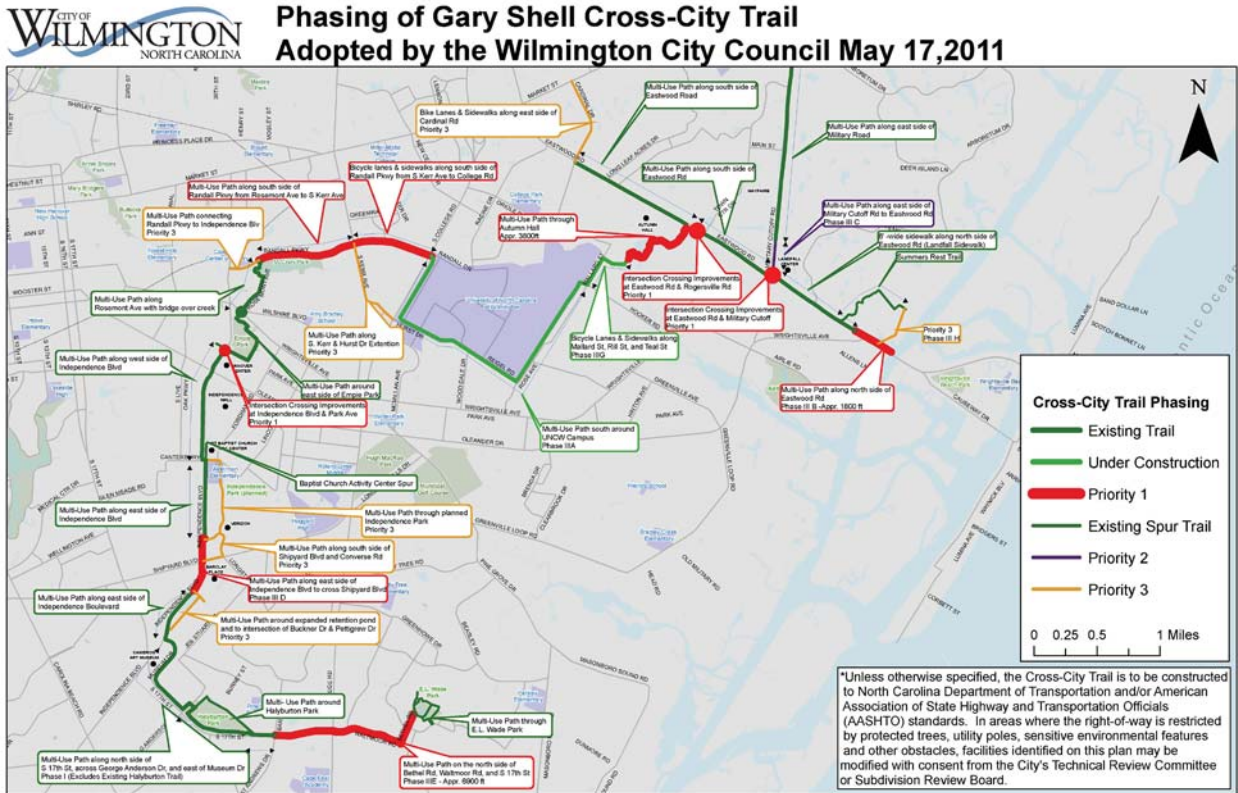
- When there is not enough right-of-way for the new trail segment to be built in compliance with design standards
- The new trail segments may conflict with existing roadway curb limits
- In order to minimize environmental impacts
- In order to achieve connectivity, the alignment needs to be routed through developed or undeveloped parcels of private property.

An inventory of trail parcels recommended for acquisition should be developed and maintained so that the City can maintain a good relationship with the land owners and sustain communication. The "willing seller" approach means that the City engages the property owner in discussions and negotiations that allow for maximum flexibility. Terms of the easement may vary depending upon the goal of the landowner and the characteristics of the specific property. Negotiations may include the following alternatives:

- Aligning the trail to utilize portions of the property that have marginal development potential such as road frontage or land adjacent to wetlands or floodplains
- Acquiring the easement through developer negotiations that may include redevelopment incentives
- Negotiating with the landowner/developer to secure easement dedications in advance of development
- Other mitigation alternatives
- Negotiating a donated easement which normally qualifies as a charitable contribution, entitling the donor to a charitable income tax deduction for the easement's value.
- Other nonfinancial benefits include a landowner being able to leave land that's going to be open into perpetuity while still remaining in a family's ownership

Implementation

The Cross-City Trail will be developed in phases. Construction of the various phases will be driven by a number of factors including available funding, public support, acquisition of land and the timing of other infrastructure improvements. Until the project is complete, gaps in the trail should be expected. In these situations, use of the existing sidewalk and/or roadway network will be necessary.



The importance of seeking public input on the GSCCT from a variety of sources and methods cannot be understated. Information the City seeks to determine from the public includes:

- How well the community's needs for open space are being met?
- How well the community's needs for connectivity and mobility are being met?
- How well the community's needs for the number and type of bicycle and pedestrian facilities are being met?
- What priorities the community values in the alignment of the trail?
- What amenities the community values in the alignment of the trail?

A multi-tiered approach to obtaining public input is necessary in an attempt to ensure the process is comprehensive, inclusive and transparent. The City has obtained input on the GSCCT through public surveys, meetings with stakeholder groups, and public workshops.

2010 Wilmington Citizens Survey

As part of Wilmington's ongoing strategic planning process, the City periodically surveys its residents to gather information about their priorities and how they perceive the quality of city programs and services. This statistically significant survey demonstrated that residents:

- Place a high priority transportation network and park and open space improvements
- Are dissatisfied with the ease of cycling and walking within the city: respondents were the least satisfied with biking trails (38%), followed by walking trails within the city (27%) out of ten various parks and recreation aspects
- Desire walking trails and bike paths over any other recreation amenity
- Of the various service selections provided, respondents are most willing to pay for transportation network improvements.

Stakeholder Participation

To better understand residents' issues, concerns and ideas for the GSCCT, ongoing input is obtained from various stakeholder groups. In addition to discussing the future alignment of the trail, feedback is sought on policies and programs related to the trail. Key stakeholder groups for the GSCCT include the WMPO Bicycle and Pedestrian Committee, the WMPO Citizen Advisory Committee, the Wilmington Parks and Recreation Advisory Board, Cape Fear Cyclists and Cape Fear Future.

Public Workshops

Public workshops for the GSCCT have been held periodically to provide opportunities for public input which is compiled and presented to Wilmington City Council to review prior to approving any revisions to the adopted Gary Shell Cross-City Trail Map.



Figure 12: Citizens give their input on routing preferences for the GSCCT across Shipyard Boulevard

These workshops allow the public to take an active role in the planning process. The open houses are advertised using multiple targeted approaches including traditional methods such as press releases, advertising in the newspaper and on the government television channel, direct mailings and signage to more modern means such as automated phone calls to surrounding residents, emails, web postings and facebook. During the workshops, residents have the opportunity to learn about the proposed alternatives for the trail route and their associated constraints and attributes. Through

this process, residents gain an understanding of the factors that go into the decision making process used to select the route of the trail. At the workshops, participants receive comment sheets that may be submitted to the city for consideration in the decision making process.

To date, eight public workshops for the GSCCT have taken place. The City will continue this process throughout the duration of the planning/design process for the trail. Other methods for public input include providing comments on the City of Wilmington's facebook page and on the website, crosscitytrail.com.

Guiding Principles

Throughout the public input process, a general basis for evaluating the trail route is provided. It is important to convey to the public that the developed route will coexist with existing infrastructure and development, which at times, can make alignment complex. The GSCCT will become a significant part of Wilmington's culture and identity. In determining the route for the GSCCT, key principles serve as guiding points. Based upon the goal of the GSCCT, to provide residents and visitors with an amenity that provides opportunities for recreational use, physical activity and alternative transportation, the route should:

- Provide connectivity to established destinations such as neighborhoods, parks, schools and cultural, commercial and business centers
- Provide a safe route with the least amount of conflicts
- Minimize property impacts
- Provide consistency with Wilmington, WMPO, and NCDOT planning practices and policies
- Be ADA Accessible
- Be in harmony with existing infrastructure
- Represent good stewardship of the environment
- Create a sense of place
- Meet all of the above criteria in a way that is politically acceptable

During the design process, a number of factors are taken into consideration including:

- Topography
- Right-of-way width
- Drainage patterns
- Utilities
- Intersection crossings

In most cases, the trail will parallel the roadway off-set from the road. In some locations, it will be necessary to build the trail to back of curb because of limited right-of-way, utilities conflict, existing vegetation protection or limitations due to private landownership. The trail should have a maximum of five percent (5%) grade and a cross slope of two percent (2%) for drainage.

The Gary Shell Cross-City Trail is intended to provide Wilmington's residents and visitors with an amenity that provides safe, convenient multi-modal transportation and recreation opportunities in an area that is underserved with bicycle and pedestrian facilities.

Though growth has slowed in recent years due to the national decline in the economy, Wilmington is still growing at a measurable pace. The delivery of outdoor recreation facilities in Wilmington has not kept pace with demand.

Since passage of the federal Land and Water Conservation Fund (LWCF) Act of 1965, preparation of a Statewide Comprehensive Outdoor Recreation Plan (SCORP) has been required in order for states to be eligible for LWCF acquisition and development assistance. Past and current SCORPs including the North Carolina Statewide Outdoor Comprehensive Plan 2009-2013 (NCSCORP) prepared by the N.C. Division of Parks and Recreation. This plan provides a coordinated framework addressing the problems, needs, and opportunities related to the need for improved public outdoor recreation. The plan's contents and format are shaped by the planning guidelines of the LWCF Act. NCSCORP identifies trends affecting outdoor recreation and the concomitant changes they will bring.

A component of the plan is the 2002-2007 National Survey on Recreation and the Environment (NSRE), coordinated by the USDA Forest Service. The primary purpose of the NSRE is to learn about approximately 85 specific outdoor recreation activities of people aged 16 and over in the United States. Questions from the NSRE broadly address areas such as outdoor recreation participation, demographics, household structure, lifestyles, environmental attitudes, natural resource values, constraints to participation, and attitudes toward management policies. The results of the survey are used to identify standards for outdoor public recreation facilities.

In 2010, Wilmington had 7.26 miles of multi-purpose trail per 100,000 population. Utilizing NCSCORP standards applied to Wilmington, Wilmington has a current need for 17.74 miles of multi-purpose trail. Projecting to 2015, Wilmington will have a demand for 28.75 miles of multi-purpose trail.

Demographics

In 2000, Wilmington's population was 75,838. By 2010 the population had grown to 106,476. The median age is 34.7 years with the following age distribution:

- Under 5: 5,934 or 5.6%
- 5 to 19: 18,707 or 17.6%
- 20 to 34: 29,050 or 27.3%
- 35 to 64: 37,906 or 35.6%
- 65 and older: 14,879 or 13.9%

The average household size is 2.16.

The growth is expected to continue with the projection for Wilmington's population in 2020 at 119,100 and 2030 at 134,000, demonstrating an increased need for services levels.



Figure 13: Enjoying the Eastwood section of the GSCCT

Outdoor Recreation Trends

According to residents participating in NCSCORP, walking for pleasure is rated as the number one recreational activity, selected by 85% of the respondents. Of individual sports activities, respondents listed running or jogging (first) and inline skating (fourth) as the most popular activities, both of which are applicable to multi-purpose trails. Walking for pleasure was the number one activity listed by North Carolina residents participating in outdoor recreation activities. Bicycling was the 18th most popular activity with 31% of respondents participating.



Figure 14: Including ADA improvements - a trail for everyone

Special Needs

The City of Wilmington is committed to providing access and recreational opportunities to all persons, including people with disabilities. The Gary Shell Cross-City Trail will be developed in accordance with ADA standards and guidelines.

The GSCCT is designed according to the City of Wilmington and North Carolina Department of Transportation standards. Additionally, the following agency's guidelines are consulted:

- Complete Streets Policy (Wilmington, State and Federal)
- Best Practices Design Guide (FHWA)
- Design Guidelines: Accommodating Bicycle and Pedestrian Travel; A Coordinated Approach (FWHA)
- ADA Accessibility Guidelines for Outdoor Developed Areas (United States Access Board)
- ADA and ABA Accessibility Guidelines for Buildings and Facilities (United States Access Board)
- Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials (ASHTO)
- Manual on Uniform Traffic Control Devices (MUTCD)

Associated site amenities such as parking and restrooms, primarily located in parks along the GSCCT, are all designed to accommodate persons with disabilities. In all possible circumstances, the GSCCT is designed to be a 10' wide multi-purpose path which safely and comfortably accommodates two-way directional, multi-modal traffic.

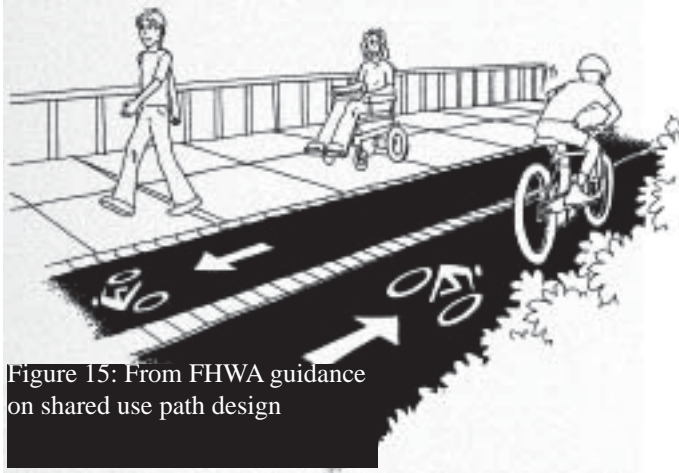


Figure 15: From FHWA guidance on shared use path design

The GSCCT crosses several major roadways. All such crossings will be designed to accommodate all users to facilitate the safe passage of the roadway. At each intersection, traffic signals are reviewed to determine modifications to the signal timing. Handicap curb ramps with tactile warning tiles and high visibility crosswalks are a standard design feature.

The Gary Shell Cross-City Trail is open to the general public from dawn to dusk. Its intended users are walkers, joggers, bicyclists, skaters, wheel chair users and other users as is provided by state law and local ordinances. The GSCCT is enjoyed by many different types of users. Whether users are bicycling, walking, jogging, skating, walking a dog or pushing a stroller, all users are advised to follow the same set of rules on their experience on the trail in order to make the experience a safer and more enjoyable one. Trail etiquette recommendations include:

- Always stay to the right side of the trail except when passing others. Always allow other trail users room to pass on the left.
- Pass others traveling in the same direction on the left. Yield to slower and on coming trail users and remember that children and pets can be unpredictable.
- Politely warn trail users as you approach from behind. Give a clear audible signal when passing like "Passing on your left". Give the person you are passing time to respond. Don't wear headphones on the trail so you can hear others passing you.
- All trail users, including bicyclists, joggers, walkers, wheelchairs, strollers, rollerbladers and skaters, should be respectful of other users regardless of their mode, speed or level of skill.
- Be predictable. Travel in a consistent and predictable manner. Always look behind when changing position on the trail.
- Do not block the trail. When in a group or with your pets, use no more than half the trail so you don't block the flow of other users.
- Do not litter. Do your part to keep the park clean. Please pick up after yourself and pets. Bags are available at pet waste stations located throughout the park.
- Move off of or to the side of the trail when you stop. Beware of others behind you and make sure they know you are stopping.

It has been clearly demonstrated that community trails enhance quality of life, improve the environment, ease traffic congestion, promote wellness, and provide unique recreational opportunities for citizens, close to home where they can easily be accessed. The Gary Shell Cross-City Trail should serve as a valued asset to the residents of Wilmington and future policy development should consider the rights of Wilmington's residents to access the trail freely and without undue interruption.

Maintenance

The Gary Shell Cross-City Trail is maintained by the Community Service's Parks, Landscaping and Athletics Facilities Division. One fulltime staff person from this Division is responsible for daily maintenance and inspection of the trail facility. Additional staff and seasonal help are made available as funding becomes available. It should be noted that in the event of a severe weather event such as a hurricane, post-storm maintenance is supplemented by the Wilmington's Public Services Department and if authorized, state and federal aid.

Maintenance activities include:

- Mowing
- Blowing natural debris such as leaves, acorns and twigs
- Trash pickup
- Weed control as needed by mechanical or chemical removal
- Edge/Trail shoulder vegetative maintenance
- Erosion repair
- Bridge and boardwalk repair
- Bituminous patching and striping replacement as needed
- Sign inventory and replacement
- Periodic trail sweeping and vacuuming
- Pet waste stations

As an extension and enhancement of the City's maintenance program, Wilmington is in the process of developing an "Adopt-A-Trail Program". The program is designed as a community partnership between area volunteers and the City of Wilmington. The program gives volunteers the opportunity to conserve and maintain our natural environment, promote civic responsibility and community pride and also serves to fulfill a gap in the demand for maintenance and existing operational funding. "Adopt-A-Trail" sponsors are made up of groups and organizations throughout the community. Each sponsor is responsible for general trail maintenance and the upkeep of their designated trail.

Signage

The need for quality wayfinding, trail marker and directional signage is an important component of the GSCCT. As each segment is designed, the type and quantity of each type of signage is analyzed and incorporated into the project. Coherent, consistent wayfinding signs are used throughout Wilmington to guide residents and visitors to significant attractions and destinations, including the GSCCT. The need for quality, consistent trail markers that identify the GSCCT are used in both assisting the user and in marketing of the trail. Finally, signage that advises both pedestrian and vehicles that may interact with trail users of traffic laws are utilized to encourage safe use of the trail.

Marketing and Outreach

Education, programming and awareness are critical to connect community members with the GSCCT. In order to achieve this, the City capitalizes on its diverse, existing community partner network to promote the trail. The City collaborates with the Obesity Prevention Initiative at UNCW, the New Hanover county Health Department, New Hanover County Schools, Safe Kids Cape Fear, Cape Fear cyclists, Cape Fear Healthy Carolinians, the Wilmington Police Department, and Live Fit Cape Fear to develop awareness and educational initiatives related to the trail.

Additional outreach and awareness efforts are and conducted by the City through the City's website, wilmingtonnc.gov, the GSCCT website, crosscitytrail.com and through the City's facebook page. A slogan has been developed by the City for users to identify the Cross-City Trail. "Connect to Your City" is meant to draw residents and visitors attention to the trail, emphasizing its role as a transportation and recreation amenity and its ability to link people geographically and socially. It is used in public service announcements as well as other marketing initiatives.

GARY SHELL CROSS-CITY TRAIL MASTER PLAN

COST ESTIMATE AND FUNDING

The Gary Shell Cross-City Trail require initial costs comprised of acquisition, design, permitting and construction costs and ongoing costs comprised of operations and maintenance.

Trail development has and will continue to occur as funding becomes available, opportunities for project coordination with external organizations occur, and as private development projects adjacent to the trail corridor coincide with planning.

The cost to develop each segment can vary widely based upon certain variables including land acquisition or easement costs, the geography the segment will traverse, drainage patterns, the number and type of permits required, the number and type of traffic devices required, signage, amenities and landscaping requirements.

The cost to complete the GSCCT is estimated at nearly \$8 million dollars. Over six million has been expended or allocated to date. A combination of federal, state, local and private funds has been allocated to the project. Municipal funds have accounted for 30.5 % of the total cost of the project to date.

Annual operating costs which include labor and materials, is estimated at \$40,000.

Wilmington has enjoyed extraordinary success in leverage funding for grant awards to build the Gary Shell Cross-City Trail. Chiefly, the City was awarded two Federal Stimulus awards in 2009 and 2010 from the American Recovery and Reinvestment Act (ARRA) which were administered by the North Carolina Department of Transportation. Allocated funds to date are presented in the table below.

Funding Source	Amount
Federal (ARRA)	\$4,000,000
North Carolina Department of Transportation	\$685,000
Recreational Trails Program Grant	\$75,000
Municipal Bond Funds	\$2,115,000
Private (cash)	\$56,370
Private (easement donations)	\$767,460
Total	\$7,698,830

Other Revenue

There is no fee to use the Gary Shell Cross-City Trail. At this time, no direct revenue is collected from the development of the trail. City staff is in the process of developing a policy governing organized use of the trail for events such as races. One result of the policy may be a participant charge to use the trail for such activity. In the meantime, indirect revenues in the form of increased and/or extended visitation to Wilmington because of the GSCCT is being analyzed in part with the assistance of the Cape Fear Visitor and Convention Center's Sports Tourism and Advisory Commission. It is believe that the Gary Shell Cross-City Trail and future greenway systems in Wilmington have the potential for significant economic impact.