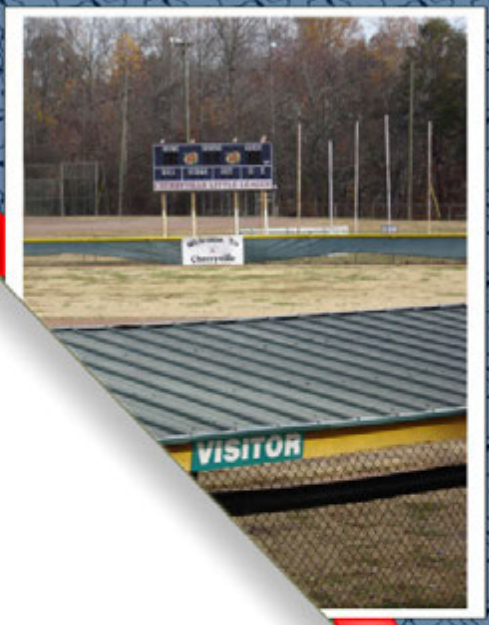

Cherryville

Pedestrian Plan

March 2009

Centralina Council of Governments

Division of Bicycle & Pedestrian Transportation
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Cherryville Pedestrian Plan

Funded by

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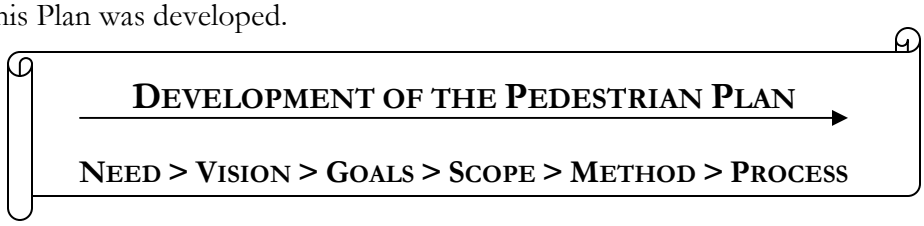
Introduction

The Cherryville Pedestrian Plan is organized to provide the user with information ranging from the nature of pedestrian planning, to instructions on how to get a sidewalk built. The Plan is divided into four parts and appendices. The following will help orient the reader in how to use this document:

PART 1: PLAN OVERVIEW

1.1 Realizing the Vision

An explanation of the City's need for the Pedestrian Plan, the City's pedestrian vision, and how the Plan can help bring about that vision and the process by which this Plan was developed.



1.2 Benefits of a Pedestrian Lifestyle

Background information about pedestrian planning and some examples of how pedestrian-oriented improvements will benefit the Cherryville community.

PART 2: CURRENT CONDITIONS

2.1 Existing Conditions & Trends

- Cherryville's existing layout, pedestrian amenities, and the current barriers to pedestrian lifestyle
- Current conditions that impact pedestrian planning throughout the community, from "big picture" issues, to the condition of individual sidewalks and other facilities
- Population trends of the City that have direct bearing on current and future pedestrian needs.

2.2 Current Policies, Ordinances and Plans

A thorough analysis of existing City policy, including ordinances, adopted plans, and other pertinent planning documents, and how these policies may aid or hinder pedestrian-friendly development.

2.3 Current Projects

Local and regional projects affecting the quality of pedestrian life in Cherryville.

2.4 Current Programs and Events

Pedestrian-oriented programs and events currently active in the City.

2.5 Unique Opportunities

A brief summary of factors, which have the potential to positively affect the pedestrian quality of the City.

PART 3: RECOMMENDATIONS

3.1 Recommended Policies & Ordinance Modifications

- Broad strategies that will help integrate pedestrian planning measures into the City's overall planning processes.
- Recommended ordinance changes

3.2 Recommended Programs

Aids to meaningful community improvement through active involvement by citizens who care and have a stake in the matter.

3.3 Project Recommendations & Implementation Strategies

A more focused description of actions the City should take to correct current problems and initiate future projects, including both planning efforts and types of facilities required.

3.4 Project Identification and Priority List.

A detailed description of specific projects. Projects are categorized and ranked in priority, and explanations are provided as to how each of them can be implemented. The projects will require more detailed design for construction, as well as acquisition of right-of-way or easements. Some projects should also receive additional public input.

3.5 Recommended Maintenance Programs

All projects, as well as existing facilities, will require proper maintenance. This section provides information about programs appropriate to each type of project.

3.6 Recommended Evaluation Process

A brief description of how the Pedestrian Plan's goals and implementation strategies can be examined and improved over time.

PART 4: IMPLEMENTATION

4.1 Sample Cost Estimates for Facilities.

4.2 Funding Strategies

4.3 Local Budget Recommendations

4.4 Plan Adoption and Approval Process.

Vision Statement

That Cherryville would be a community with a warm, safe, welcoming small town feel, and a thriving, clearly defined, historical downtown at its center, that is walkable and easily accessible; serving all of its citizens and attracting visitors from the surrounding region.

Current Issues

- The City is divided by NC 150 and the CSX Railroad corridor.
- Inadequate sidewalk connections force pedestrians into many of the City's primary streets. Many existing sidewalks are in need of repair and improved ADA accessibility.
- Trail links are needed between parks, schools, neighborhoods, and businesses.
- Inadequate crosswalk connections create unsafe conditions for pedestrians.
- Speeding vehicles plague many of the City's primary streets.
- Poor lighting conditions make walking less safe.
- A clear identity and a sense of arrival for the City needs to be reinforced.
- Economic and cultural vitality has languished.

Opportunities

- A centralized, well connected, downtown core
- Prime opportunites for redevelopment
- Substantial existing sidewalk network
- Ample greenway opportunities along creeks and utility corridors

Recommended Actions

1. Form a stakeholder-based Pedestrian Needs Committee.
2. Adopt recommended Ordinance changes.
3. Repair and improve conditions and accessibility of the existing sidewalk system.
4. Develop and adopt a comprehensive land use plan.
5. Engage in community planning for infill of large, under-developed parcels in and around the City.
6. Work with Gaston County on areas outside of Cherryville's incorporated limits
7. Expand the existing pedestrian system to improve walkability throughout the City.
8. Designate nodes of concentrated, mixed-use development.
9. Accentuate City identity through signature gateway features.
10. Engage the community in programs designed to encourage pedestrian activity and lifestyles.

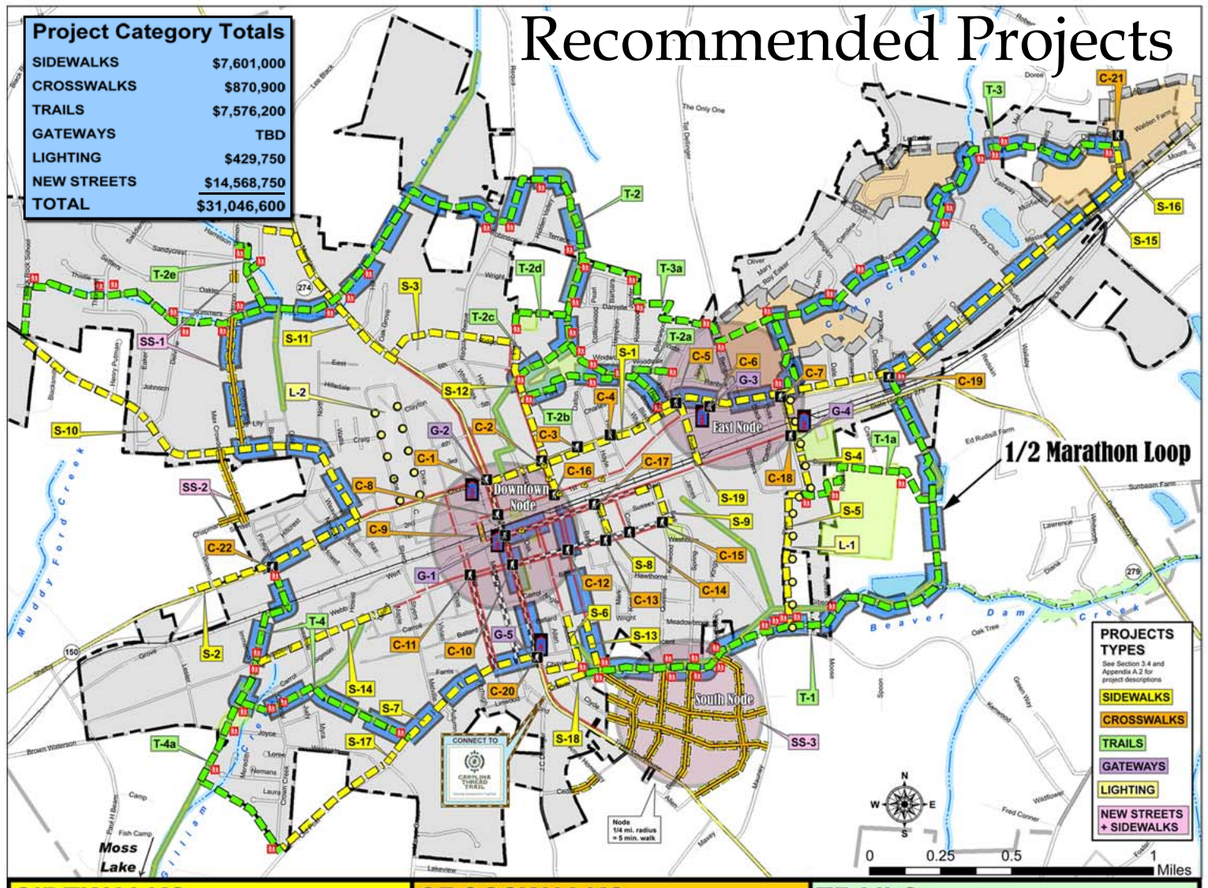
Many Cherryville sidewalks present obstacles, particularly to the physically challenged, as they are blocked by obstructions and are in need of repair.

January 2009

EXECUTIVE SUMMARY

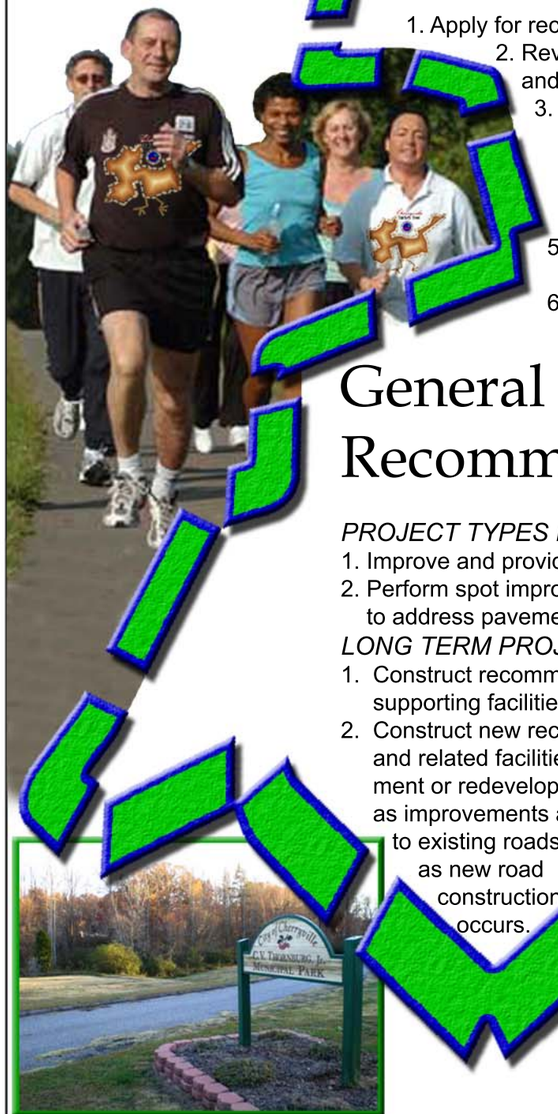
Recommended Projects

Project Category Totals	
SIDEWALKS	$7,601,000
CROSSWALKS	$870,900
TRAILS	$7,576,200
GATEWAYS	TBD
LIGHTING	$429,750
NEW STREETS	$14,568,750
TOTAL	$31,046,600



SIDEWALKS		CROSSWALKS		TRAILS	
S-1	NC 150	C-1	NC 150 & Mountain St.	T-1	Beaver Dam Trail
S-2	NC 150	C-2	NC 150 & Pink St.	T-1a	Ballard Park Trail
S-3	Ridge Ave.	C-3	NC 150 & Dalton St.	T-2	North Trail
S-4	Rudisil St.	C-4	NC 150 & Houser St.	T-2a	Ranbar Trail
S-5	Pine St.	C-5	NC 150 & Cherry St.	T-2b	Houser Trail
S-6	Jacob St. & Chavis Dr.	C-6	NC 150 & 1st St.	T-2c	Moss Park Trail
S-7	Old Post Rd.	C-7	NC 150 & Rudisil St.	T-2d	Cherryville High School Trail
S-8	Depot St.	C-8	Mountain St. & 1st St.	T-2e	Vernon Trail
S-9	Main, Kenwood, Academy	C-9	Mountain St. & Main St.	T-3	Camp Creek Trail
S-10	Delview Rd.	C-10	Mountain St. & Academy St.	T-3a	Roy Eaker Trail
S-11	Mountain Rd. & Harrilson Rd.	C-11	Academy St. & Elm St.	T-4	Westgate Park Trail
S-12	Pink St.	C-12	Academy St. & Pink St.	T-4a	Crown Creek Trail
S-13	Pink St.	C-13	Academy St. & Depot St.	GATEWAYS	
S-14	Academy St.	C-14	Academy St. & Cone St.	G-1	Mountain St. @ Main St.
S-15	NC 150	C-15	Academy St. & Kenwood St.	G-2	Mountain St. @ NC 150
S-16	Bud Black Rd.	C-16	1st St. & Pink St.	G-3	NC 150 @ 1st St.
S-17	Old Post Rd.	C-17	Main St. & Depot St.	G-4	Main St. @ Rudisil St.
S-18	Chavis Dr.	C-18	Main St. & Rudisil St.	G-5	Mountain St. @ Old Post Rd.
S-19	Cherry St.	C-19	Dellinger Cr. (E) & NC 150	NEW STREETS	
LIGHTING		C-20	Mountain St. & Old Post Rd.	SS-1	Vernon St. continuation
L-1	Rudisil, Spinners & Pine St.	C-21	Bud Black & Olde Coach	SS-2	Max Crowder Dr.continuation
L-2	N. Dixie & N. Pine St.	C-22	NC 150 & Pinegrove	SS-3	South Node development

The Cherryville
Turkey Trot



Implementation Strategies

1. Apply for recommended funding.
2. Revise current development policies and enact revisions to the local budget.
3. Initiate right-of-way agreements for sidewalks, trails, and other improvements.
4. Evaluate current City staffing needs.
5. Evaluate existing and ongoing pedestrian projects and strategies.
6. Initiate recommended programs.

General Project Recommendations

PROJECT TYPES FOR IMMEDIATE NEEDS:

1. Improve and provide new street crossing facilities.
2. Perform spot improvements to existing sidewalks to address pavement conditions and ADA compliance.

LONG TERM PROJECT TYPES:

1. Construct recommended pedestrian trails and supporting facilities.
2. Construct new recommended sidewalks and related facilities as new development or redevelopment occurs, as improvements are made to existing roads, and as new road construction occurs.

Recommended Programs

1. The Cherryville Trekkers - an organized exercise group, hosting special events
2. The Cherryville Turkey Trot - an Thanksgiving Day tradition with events for all ages
3. Walk a Kid to School Event - a community group walk with breakfast by local restaurants
4. Walking School Bus - supervised student walking-pool with games and prizes
5. Crossing Guards - volunteer safety patrol guards
6. Pedestrian Safety Roadshow - NCDOT's training program for safety
7. Adopt-a-Sidewalk/Trail Program - volunteer groups that help maintain sidewalk and trail segments
8. WiFi and Trail Webcam Coverage - for mobile workspaces and trailcams that enhance public safety and promote trail use
9. SEQL - Centralina's Sustainable Environment for Quality of Life providing further information and resources for Pedestrian-Friendly Streets, Trails and Open Space

LAKE NORMAN RPO

Division of Bicycle & Pedestrian Transportation
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Centralina Council of Governments

CITY OF CHERRYVILLE · NORTH CAROLINA · 1903

For further information contact:
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Cherryville

1/2 Marathon Loop

PART 1: PLAN OVERVIEW

1.1 Realizing the Vision

THE NEED

The City of Cherryville is a quaint historic community with a clearly discernable downtown business area, nearby schools and civic buildings, active and passive parks, all fitting together to create a small town charm highly valued by its citizens. But despite its obvious positive characteristics, the City is faced with growing challenges to its pedestrian character:

- **The City is divided** by NC 150 and the CSX Railroad corridor. Together, these facilities create a formidable barrier for pedestrians along the entire length of the City. Plans are now underway to improve NC 150 but, along with the benefits, these changes may result in more challenges to pedestrian traffic.
- **Inadequate sidewalk connections** force pedestrians into many of the City's primary streets. Many existing sidewalks are in need of repair and improved ADA accessibility.
- **Trail links are needed** between parks, schools, neighborhoods, and businesses.
- **Inadequate crosswalk connections** create unsafe conditions for pedestrians, particularly as they encounter speeding vehicular traffic. Cherryville's existing crosswalk facilities do not provide pedestrians the safety and respect they deserve.
- **Speeding vehicles** plague many of the City's primary streets, lending to unsafe traffic conditions.
- **Poor lighting conditions** make walking less safe in various neighborhoods about town.
- **A clear identity** for the City needs to be reinforced. A marked sense of arrival through coherent gateways would help define the City's edges and visually impart the vision Cherryville has for itself.
- **Economic and cultural vitality** has languished somewhat from its earlier days. The City needs to foster greater opportunities for its citizens to work in their own city. Cherryville should distinguish itself as an attractive destination in the region and a desirable home for people at all stages in life.

Each of these conditions requires specific actions that will produce tangible results. Such actions are most effective when they flow from a broad, cohesive strategy that the community supports and can realistically implement. Rather than simply reacting to the problems in a piecemeal manner as they occur, this comprehensive plan for pedestrian transportation improvements provides a systematic approach to the City

for taking on these challenges and others that threaten its pedestrian environment, and to do so with consensus and a coordinated effort.

THE VISION

Through the pedestrian planning process, the City and its citizens have expressed a clear vision for their community:

> **That Cherryville would be a community with a warm, safe, welcoming small town feel, and a thriving, clearly defined, historical downtown at its center, that is walkable and easily accessible; serving all of its citizens and attracting visitors from the surrounding region.**

In order to attain this vision, an ongoing coordinated effort must be undertaken to preserve the elements of the vision that exist, and guide the community's growth in a direction that will further achieve and maintain the vision. The charter for this effort is the Cherryville Pedestrian Plan. This Plan is intended to serve the City in the following ways:

- A compelling tool for **promotion** the City's pedestrian vision
- An effective source for the **education** decision makers and the general public about the value and methods of making Cherryville a pedestrian-friendly community
- A clear blueprint for the revision of City **ordinances and policies** that address development in order that all will support the same unified goals
- A comprehensive guide to the **implementation** and improvement of pedestrian routes and amenities
- A firm basis for seeking **financial assistance** in the form of grants and other support from various outside sources in furthering the Plan's implementation

THE GOALS

As the Plan is embraced and utilized in the ways described above, the City's Vision can be realized. This process will take place both through solving immediate concerns and achieving the City's expressed long-term goals:

I. **Encourage infill development and the creation of a concentrated downtown,** as opposed to linear strip development, in order to cultivate walkable city center of pedestrian life with a mix of business, civic and residential uses. The downtown is intended to provide a healthy and sustainable economic and cultural environment.

II. **Accentuate City identity** at the various points of arrival into the community through signature landscaping and signage. Make Cherryville a clear and desirable destination, with small town charm for residents and visitors.

III. **Improve pedestrian connectivity to critical destinations and throughout the City**. Connect significant destinations points and commercial areas with convenient, comfortable, accessible and attractive walkable links and encourage their use as an alternative to driving where possible in the daily activities of citizens. Connect the local pedestrian system with neighboring greenways and with county and regional networks where possible. Improve lighting where needed for safety and security.

IV. **Provide more outdoor recreational opportunities** in the form of greenway trails that connect City parks to one another, to area schools, and to a trail ring around the City.

V. **Maintain a continual source of funds** dedicated to the maintenance of existing facilities, and the design, construction and maintenance of future ones.

THE SCOPE

In order to meet these goals, this Cherryville Pedestrian Plan examines a broad range of pedestrian-related issues and recommends actions that address them in a comprehensive manner, including:

1. Policy and ordinance revision
2. Participation programs and initiatives
3. Comprehensive system planning
4. Facility standards and guidelines
5. Project identification and prioritization
6. Project specific planning and development process
7. Cost estimation
8. Funding and local budget recommendations
9. Project implementation and construction
10. Maintenance
11. Project evaluation process

THE METHOD

This Plan was developed using methodology approved by the North Carolina Department of Transportation Bicycle and Pedestrian Transportation Division. The process included the following steps:

Task 1: Gather relevant documents relating to pedestrian concerns in the City.

Task 2: Determine the project scope, schedule, points of contact with municipal staff; identify stakeholder groups, potential Steering Committee members, target meeting dates and planning budget

Task 3: Conduct an initial physical survey of the City and gather additional input on pedestrian conditions from the community.

Task 4: Create composite maps of existing conditions to include current facilities and traffic conditions.

Task 5: The City Council appoints the project Steering Committee to review the project maps and other information, provide additional stakeholder input, and guide the development of the Plan.

Task 6: Conduct Stakeholder Interviews on pedestrian needs and preferences.

Task 7: Conduct an interactive public meeting to review initial Steering Committee input and interview results with the general public, obtain feedback, and gather additional input from the public on pedestrian and mobility issues and concerns.

Task 8: Review the public meeting results with the Steering Committee in order to gather direction for preparation of a Draft Pedestrian Plan.

Task 9: Prepare the Draft Pedestrian Plan based input from the Steering Committee and citizen comments.

Task 10: Submit the draft plan to the Steering Committee and NCDOT for preliminary review and comment.

Task 11: Facilitate a follow-up public meeting to review preliminary Pedestrian Plan and address how the input received through previous public processes has been incorporated into the draft Plan.

Task 12: Revise the Plan based on input received and meet with the Steering Committee to finalize approval of the Plan.

Task 13: Submit the Plan to the Planning Board and City Council for review. Additionally, submit the Plan to the Lake Norman RPO for endorsement.

Task 14: Upon adoption of Plan, furnish the City and NCDOT with the Plan with its associated maps.

THE PROCESS

In 2007, the City of Cherryville was awarded a $16,000 matching Pedestrian Planning Grant by the North Carolina Department of Transportation (NCDOT) Division of Bicycle and Pedestrian Transportation (DPBT) for the creation of a comprehensive pedestrian plan. The City then selected Centralina Council of Governments to develop the plan. Working with David Hodgkins, City Manager, and Director of Public Works, Brandon Abernathy, Centralina guided the City through a thorough, public-input driven planning process, involving a steering committee to oversee the elements of the plan. The steering committee members represented a variety of local interests including:

- Police department
- Business community
- Industry
- The elderly
- Health and medical fields
- Local government
- Schools
- Resident pedestrian citizens

The Cherryville Pedestrian Plan Steering Committee

1.2 Benefits of a Pedestrian Lifestyle

Throughout the country and only a few decades ago, streets and sidewalks served as the center of neighborhood life, where people of all ages walked, biked, shopped, ate, played, and met their neighbors. But today, streets with this kind of activity are the exception rather than the rule. New developments are full of barriers that discourage walking and often make a pedestrian feel like an outcast in a world made only for cars. Overcoming these barriers requires more than simply building more sidewalks or trails. Land use and transportation planning, ordinance revision, and developing economic incentives for businesses all play important roles toward creating an environment that makes walking practical, safe and convenient, and brings vitality back to the streets.

Walkable communities present numerous advantages to their citizens and provide many perks that attract visitors. They offer valuable incentives to prospective residents and businesses. Investments in a community through pedestrian-oriented improvements can, in just a few short years, show visible and economic results. Though a city like Cherryville may already possess many pedestrian-friendly qualities, those attributes can be improved upon in substantial ways. Such improvements would help make the Cherryville community healthier, more vibrant and a more attractive place to live, visit, work and own a business.

Some direct benefits of the pedestrian lifestyle can be summarized in the following statements:

1. **Local Economy**
   Retail and commercial developers have learned that walkable context sells. Pedestrian-oriented streets encourage shoppers to linger and enjoy the setting. Furthermore, works such as Richard Florida's *Rise of the Creative Class* indicate that the population segments most likely to contribute to thriving economic conditions are attracted by amenities such as walkability, street trees, linkages to outdoor activities, etc. In short, pedestrian-oriented communities are more likely to attract as new residents the type of people most likely to help stimulate the local economy.

2. **Safety**
   Drivers familiar with a community learn which streets are generally more populated with pedestrian traffic. The more pedestrians likely to be encountered, the more cautious most drivers are apt to be. In this way, pedestrian activity is self-protective. The more pedestrians using a street, the safer that street becomes for pedestrians.

3. **Public Health**
   A key concern in all aspects of community planning and design is the health, safety and welfare of citizens. There is growing recognition of how the built environment influences health-related behavior. Decisions about zoning, transportation, land use and community design influence the distances people travel by foot and by car, and the general safety and attractiveness of neighborhoods for walking. Fitness experts agree that regular daily activity is the key to good health. Walking is the most affordable and convenient way for most people to stay active. Whenever walking becomes a reasonable alternative to driving, many people will choose to walk rather than drive. As walking becomes an even more significant part of daily life in Cherryville, this will yield healthier lifestyles and ultimately impact community health care costs in a positive manner.

4. **Elderly and Youth Friendly**
   When communities are pedestrian-friendly, the elderly retain greater independence and freedom, and young people are free to rely less on parents to drive them to school and other activities. As young people become accustomed to walking and biking, they are also less likely to depend on automobiles for short trips as they grow older. With a more complete system of sidewalks, trails, and other pedestrian amenities helping to connect a mix of significant destinations within close proximity of each other, walking becomes a safer and more reasonable option, particularly to those who need it most.

5. **Friendly to Disabled Populations**
   Another group for whom pedestrian friendliness means independence are those with disabilities. For those who cannot drive independently, mobility is severely limited in communities that are designed around the car. Walkable communities maximize the independence and mobility for disabled persons, in ways that auto-dependent communities cannot.

6. **Improved Environment**
   Street trees and other forms of landscaping are an integral part of pedestrian friendly communities. Street trees not only make pedestrians more comfortable and increase the

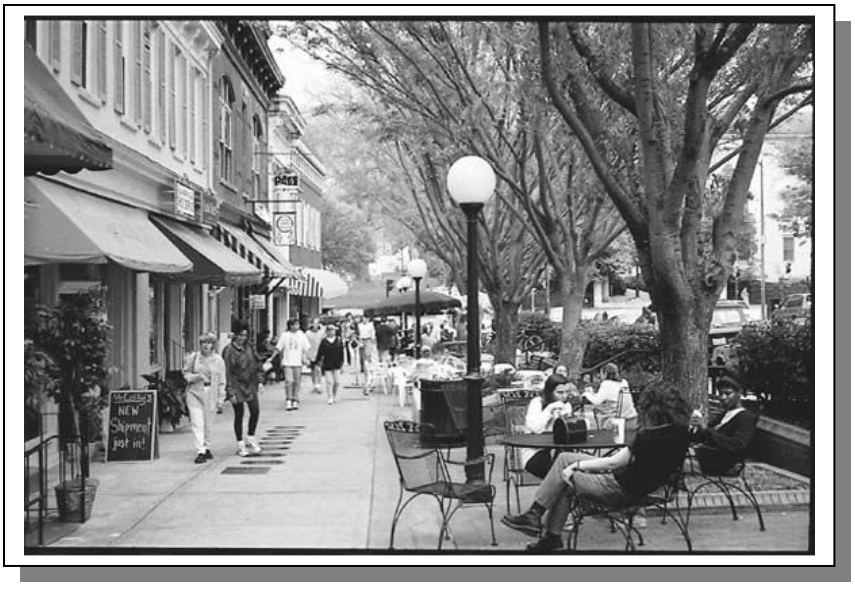
likelihood that people will choose to walk; they also moderate temperatures, reduce storm water runoff, and contribute to cleaner air. A pedestrian-friendly environment will also contribute positively to air quality by reducing unneeded vehicular trips.

7. **Reduced Crime and Better Emergency Access**
   Streets that draw more pedestrians and encourage social interaction tend to have lower crime rates and other social problems than those that are isolated and unpopulated. Furthermore, streets that are connected for pedestrian-friendliness are also much more accessible to emergency vehicles such as EMS and fire, as they have more than one way to reach an emergency location. Encouraging increased connectivity in future developments in Cherryville will help the current system of streets function best for both pedestrians and vehicles.

8. **Cultural and Community Life**
   Cities that feature interesting streets and public spaces with active pedestrian life become vibrant cultural and economic centers that draw visitors from the surrounding region.

9. **Transportation**
   Pedestrian-friendly communities make full use of the most affordable and efficient transportation system available: walking. As various concentrated centers of development occur throughout Cherryville, these locations will provide further transit options in the future. Such transportation hubs will allow Cherryville citizens, commuters and non-commuters alike, to access work, shopping and recreational opportunities without need of a car.

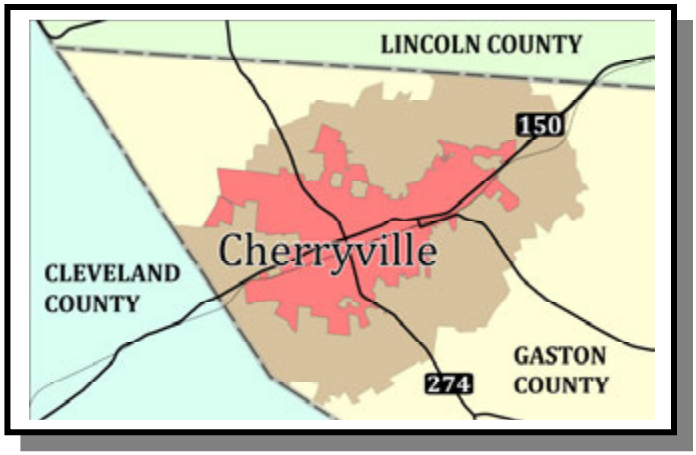
A surprising number of people, when asked to recall or identify venues that make them feel comfortable or in which they would like to live, work, and play, will identify tree-lined streets with sidewalks, and pedestrians of all ages using them. While it would be true to say that "pedestrian friendliness" is not a cure-all for every economic, social, or political ill that modern society experiences, it is also true that the creation of more livable public spaces and the de-isolation of citizens by allowing them greater freedom from their cars, is an important part of the remedy.



Part 2: CURRENT CONDITIONS

2.1 Existing Conditions and Trends

1. CHERRYVILLE AT A GLANCE



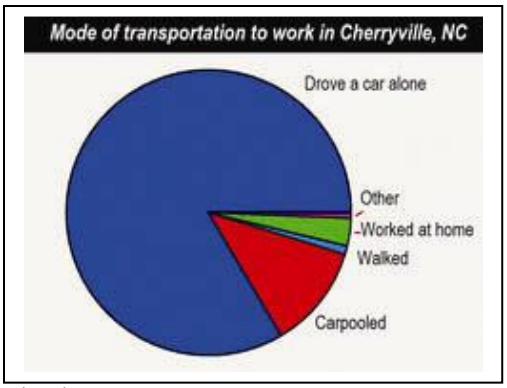
The **City of Cherryville** is a small rural town situated in the northwest corner of Gaston County. It stretches along over 4 miles of NC 150 around the intersection of NC 274. The community rose up from the crossroads of major trade routes in the late 1700's. Incorporated in 1881, the City was named "Cherryville", stemming from the brilliant cherry trees it had been known for that were planted along its railroad tracks. Currently, the total incorporated municipal area is just under five square miles. The City lies roughly 13 miles northwest of the City of Gastonia, 9 miles from Lincolnton, 10 miles from Shelby and 32 miles from Charlotte. Cherryville is situated in the piedmont region and rests about 1000 feet above sea level. Most of the terrain of Cherryville is gently rolling. The physical conditions and layout of the City, including all existing pedestrian facilities described in this section, are shown on the **Existing Conditions Map** at the end of Part 2.

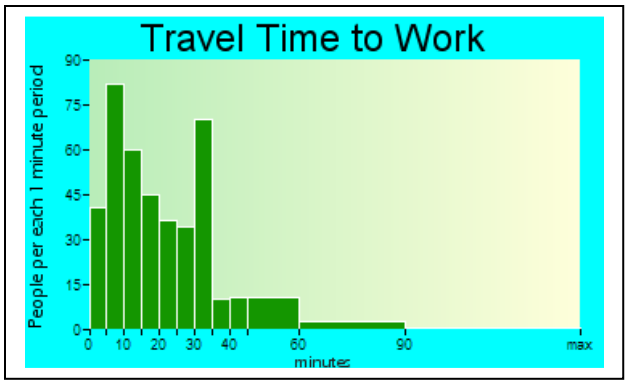
Population of Cherryville was estimated in 2000 at 5,361, and in 2006 at 5,533 (a 3.2% change). The population decreased in the seventies and eighties, but the City has seen slow but continual growth from 1990 to the present. The current median resident age is 41.2, 6 years above the state median. According to the 2000 census, about 20% of the population is below legal driving age, while almost 22% is 65 or over. Boys from 5 to 14 outnumber girls in the same age bracket by about 10%. The median household income has decreased since the year 2000, from $33,054 to $29,500 in 2005.

Most **employment centers** within Cherryville are small businesses. The downtown retail center stretches along Main Street from Mountain Road to the shopping center at the corner of Cherry Street. More businesses line 1st Street parallel but across the tracks from downtown, ending where NC 150 and 1st Street merge in a congregation of banks, fast food chains and filling stations. The primary employment centers of Cherryville, however, are clustered at the two ends of town. On the east is the Wal-mart, newly opened and employing approximately 300 people. Directly across the highway is the Sunbeam Industrial Complex. Four of Cherryville's major employment centers are located within this industrial park, including RNL Custom Homes (with approximately 250 employees), FleetNet (100 employees), Keystone Powdered Metals (125 employees), and the Pepsi-Cola distribution center. On the **west** side of town another industrial complex runs along Academy Street. It is the home of Bernhardt Furniture (100 employees), Modern Polymers (100 employees) Blackwelder's Textile, and Pizza Equipment Supply, Inc. More centrally located was the old Carolina Freight property along NC 150 at Benaja. Businesses here are now mostly small warehousing and trucking firms. This property is now being eyed as a potential retail center.

Nearby, the Bradington-Young Furniture Company employs about 300 people in its installation situated on East 1st Street.

As **commuter traffic** travel times below indicate, a majority of Cherryville citizens work close to home, though a large percentage do commute to jobs outside of the City. 96% of commuters reach their jobs by car, with only 12% of those carpooling. While over two hundred commuters in Cherryville reach their employment destination in less than five minutes, only 1% of Cherryville's working population currently walks to work. However, approximately 56 homeowners and 83 renters in the City do not own a car; a percentage close to the state average. The nearest bus terminal is located in Shelby, NC which is 12 miles from Cherryville.





City-data.com

Residential development has seen a moderate but steady rise over the last three decades. Terrace Estates is a 60-parcel subdivision located along Black Rock School Road, just off Delview Road in the northwest corner of the City. All but seven of the properties are built. Cherry Vale Subdivision began construction came around 2003. It is located was approved for fourteen lots. It is located off Requa Road. No homes have yet been built on these lots. Rocky Ridge is the most recently approved subdivision. Three homes have been built within its 27 approved parcels. This subdivision is located off Roy Eaker Road. The remaining residential subdivisions in the City are older and have been largely built out.

Cherryville's traditional downtown grid **street network** reveals the community's historic roots. Cherryville's downtown exhibits the high connectivity of a street network grid typical of historic communities in America. The grid begins to loosen further away from the core of downtown but still retains a highly connective nature with relatively few dead ends. However, newer developed subdivisions within the City exhibit the low connectivity typical of their era. Cul-de-sacs begin to dominate, leaving fewer choices of route for both drivers and pedestrians.

Highways: NC 150, 279, and 274 intersect in Cherryville and connect the City to the region. A widening project is currently underway on NC 150 that will create a four-lane connection between Cherryville and Lincolnton.

The City is primarily oriented to its central railroad corridor that parallels Main Street, Academy, 1st, and Church. The CSX Railroad bisects the City and terminates many of its perpendicular streets. Of the streets that do cross the railroad, only one does so above grade, and provides the sole physical connection across town during a train.

Sidewalks line most of the grid streets in Cherryville's historic downtown, with some additional lengths reaching out along a few major streets. The following table lists Cherryville's existing sidewalk locations and their approximate length. The list begins with east-west running streets starting on the north side, and concludes with north-south streets beginning on the east side.

STREET	LOCATION	(Street SIDE)	LENGTH
NC 150	Mountain St. to Delview Rd.	(N)	2400'
1st Street	Cherry St. to Mulberry St.	(N)	4260'
Main St.	Rudisill St. to Mulberry St.	(N)	5930'
Main St.	Cone St.+ to Mountain Rd.	(S)	2550'
Academy St.	Jacob St. to Styers St.	(N)	2500'
Academy St.	Kenwood St. to Elm St.	(S)	3670'
Academy St.	Styers St.+ to Maple St.	(S)	550'
Cone St.	Main St. to Academy St.	(W)	660'
Pink St.	Main St. to Academy St.	(E)	580'
Pink St.	Ridge Ave. to 1st St.	(W)	2900'
Pink St.	Main St. to Ballard St.+	(W)	1900'
Jacob St.	midblock to 1st St.	(E)	400'
Jacob St.	Main St. to Ballard St.	(E)	1650'
Jacob St.	Main St. to midblock	(W)	410'
Mountain Rd.	4th St.+ to 1st St.	(E)	1700'
Mountain Rd.	Main St.+ to Pink St.	(E)	4300'
Mountain Rd.	6th St.+ to 1st St.	(W)	3530'
Mountain Rd.	Main St. to Ballard St.	(W)	1650'
Elm St.	Main St. to Old Post Rd.	(E)	2230'
Elm St.	US 150 to Old Post Rd.	(W)	3360'
		TOTAL:	**47,130'**

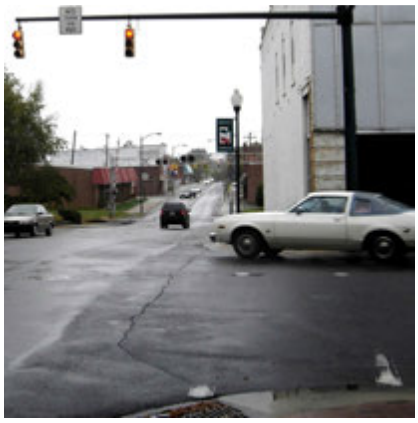
Lengths shown above are approximate measurements of the total path length, end to end, including intervening streets.

Though the majority of the City's existing sidewalks are in fairly good condition, many locations throughout the system are in need of repair. The sidewalks are generally four feet in width but vary throughout City in levels of compliance with current ADA standards, particularly due to obstructions such as utility poles.

There are a number of **traffic lights** in Cherryville. The primary signalized streets crossing the City include Main Street, 1st Street and NC 150.

The City has provided **crosswalks** at a few of the heavy pedestrian trafficked locations particularly around the Intermediate School complex. There are three between Hoyle Street and Pink Street, crossing East 1st Street, and another to serve the Methodist Church one block further west. As part of a downtown improvement project, another crosswalk has been provided midblock to cross Main Street between South Mountain Street and South Jacob Street. This crosswalk features decorative pavers to match the improved sidewalks on either side of Main Street.

Downtown crosswalk on Main Street



Former crosswalk on Main Street at Mountain Street

Repaving has apparently obliterated some prior crosswalks. One example can be found on Main Street at the eastern side of its crossing of South Mountain Street, the City's central intersection.

There are currently no improved public **trails** in Cherryville.

The physical conditions and layout of Cherryville, including all existing pedestrian facilities described in this section, are shown on the **Existing Conditions Map** at the end of Part 2.

2. ORIGIN-DESTINATION POINTS

Downtown

Many of the most visited destination points within Cherryville are located near downtown Main Street, particularly within a quarter mile radius – or five-minute walking distance - of the intersection of Main Street and Mountain Road. This interconnected clustering of desirable destinations create a hubs of pedestrian activity. Among the popular destination points currently located within this conveniently walkable distance are:

- Cherryville City Hall and Fire Department
- The Cherryville Community Building
- Edwards Park, Beam Park, and the skate park
- The Post Office
- The YMCA
- Three museums
- The American Legion building
- The Cherryville Little Theatre
- Assisted living centers
- Churches
- The Foundry
- Numerous restaurants, retail stores, and offices

Cherryville's Main Street

There are also many single-family homes within the radius. Area schools lie just outside this radius but still within easy reach of Downtown.

The Shake Shop is a Cherryville dining landmark located on Church Street near the Pine Street intersection and less than a ten-minute walk from downtown. Tables fill with locals who enjoy a hot lunch from the grill, great milkshakes (of course) and lively conversation. The Shake Shop is just one in a row of dining establishments that stretch along West Church Street, and south along Mountain Street to Downtown.

Cherryville Historical Museum

Located on East Main Street, the Museum features historical displays and artifacts from Cherryville's past. The museum is operated by the Cherryville Historical Association.

Cherryville Municipal Auditorium

This formal auditorium on West Academy Street provides for special events such as beauty pageants, talent shows, candidate debates, and special events. The Cherryville Little Theatre group presents theatrical productions in the auditorium throughout the year.

Cherryville Community Building

This facility on South Jacob Street provides meeting space for civic and church groups, private parties, and special events.

Cherryville Country Club is located on the northeast side of the City on East 1st Street. The Club features a nine-hole golf course.

Cherryville Recreation Facilities
Minor league, Little League, Senior Little League and adult league baseball are very popular in Cherryville, particularly during the summer. Four of the City's baseball fields are clustered along a half-mile segment of Pink Street between the Intermediate School and the High School, including Moss Park. Two more fields are located at Ballard Park on Rudisill Drive.

Altogether, the City of Cherryville maintains seven municipal parks, two municipal mini parks, one community center, one municipal auditorium, a skate park, and the Cherryville Historical Museum. Mini-parks throughout the City feature tennis courts, basketball goals, concrete skating area, playgrounds and equipment. Larger parks include picnic shelters along with the ball fields. There is one public swimming pool and two private pools. Below is a complete list of the City's parks, their facilities and locations.

- **Robert H. Ballard Park**
  Located on Guffey Street, includes two lighted Little League baseball fields, two lighted youth softball fields, a municipal pool, a children's playground, an outdoor basketball court, horseshoe pits, a walking track, and a picnic shelter. This park was expanded in 2007.
- **Ben Black Park**
  Located on Ranbar Street, includes a lighted tennis court, a basketball court, a children's playground, and a picnic area.
- **Kenwood Park**
  Located on Kenwood Avenue, includes a lighted basketball court, a children's playground, and a picnic area.
- **Bill Edwards Park**
  Located on East Old Post Road, includes a lighted full court basketball court, a children's playground, and a picnic shelter.
- **Westgate Park**
  Located on Westgate Drive, includes two lighted tennis courts, a lighted full court basketball court, a children's playground, and a picnic shelter.
- **Aaron Moss Park**
  Located on Park Drive, includes one lighted Senior Little League baseball field, one lighted baseball/softball field, three lighted tennis courts, and a picnic area.
- **J. Ralph Beam, Jr. Heritage Park**
  Located on South Jacob Street, contains five original buildings from the early years of Cherryville, including the first City Hall, an old jailhouse, a one-room schoolhouse, a smoke house, and an early warehouse for federally licensed bonded liquor.
- **Gazebo Mini-Park**
  Located on East Main Street, provides a nice gazebo and picnic area in the center of the City's downtown area. This park provides the setting for the City's annual July Fourth celebration, as well as performances by various musicians and choral groups throughout the year.
- **Stroupe Park**
  Located on North Mulberry Street, provides a nice shaded sitting and picnic area on

the western edge of the City's central business district. This park boasts a wide variety of flowers and shrubs in a compact environment.

- **Cherryville Skate Park**
  Located on East First Street, provides a secure, smooth surface for skating and skateboarding with various ramps and rails for users of the park.

In addition to the recreational facilities above, certain school properties are available for municipal use thanks to a joint use agreement between the City of Cherryville and Gaston County Public School System. These facilities include Rudisill Stadium on East Church Street, Starnes Auditorium on East First Street, Blackwelder Gymnasium on North Chavis Drive, and the Cherryville High School Practice Gymnasiums on Ridge Avenue.

Schools are perhaps the most critical pedestrian destination, as the majority of their visitors are not drivers. The Cherryville Schools include the Cherryville Junior Senior High School, Cherryville Elementary from grades K-5, and John Chavis Middle School for grades 6 – 8.

One of Cherryville's more recent destination areas is still developing. The new **Wal-Mart** store along Lincolnton Highway opened recently and other commercial development is on the way. Cherryville's eastern end is growing, with more land being annexed to accommodate the new retail areas. Though the location may be out of walking distance for most City dwellers, residents and employees of the Walden Pond retirement home can walk right across Bud Black Road to shop.

Walden Pond Retirement Home and neighboring Wal-Mart

To view the location of all destination points listed above, see the **Existing Conditions Map** at the end of Part 2.

3. SPECIFIC PEDESTRIAN BARRIERS AND CONSTRAINTS

Though a number of general conditions in City, to some degree, inhibit a more active pedestrian lifestyle in Cherryville, there are particular barriers that pose a tremendous challenge to those wanting to safely and practically reach destinations on foot or to walk for recreation and exercise. The following is a list of those most challenging specific barriers.

CSX Railway

One of the challenges facing Cherryville is the division created in the community by the physical barrier of the CSX railroad line. Citizens are concerned that the speed limit for trains passing through the City has been recently raised to 45 mph. Trains pass routinely through the City on a daily basis. There is only one way for pedestrians or drivers to cross the rails during the passage of a train: on the bridge crossing at Mulberry Street.

NC 150 at the Black Street intersection

Highway NC 150

Particularly at peak commuting times, the volume of cars streaming through this intersection to pass into Lincoln or Cleveland County is substantial. NCDOT reported average daily trips (ADT) along NC 150 in downtown Cherryville at 12,000 vehicle trips per day. Significant accidents involving pedestrians have been reported along NC 150 in the City since 1990. Two of those have been disabling injuries at the intersection of Black Street. This location has a bend in the road coupled with a vertical curve that reduces site distances The location of these accidents was just one block away from the police department. Other disabling accidents have occurred on NC 150, one between the Intermediate School and the cemetery, and another at the intersection of Mountain Street. Only a limited amount of sidewalk serves NC 150, stretching six blocks from Delview Road to Mountain Road.

Main Street also sees its share of heavy vehicular traffic inhibiting pedestrian activity in the City's primary downtown corridor. Main Street is an extension of NC 279. Three evident pedestrian injuries have occurred at the central intersection of Main and Mountain since 1997.

Speeding traffic is an issue for pedestrian safety and mobility particularly along Academy Street between Main Street and Kenwood, along 1st Street from Mountain to Houser, and along Main Street from Mountain to Houser. Two evident pedestrian injuries have occurred along Academy, within a block of Pink Street since 1992. A disabling injury occurred along 1st Street at the Mountain Street intersection in 1993.

4. GENERAL ANTI-PEDESTRIAN CONDITIONS:

The problem areas described above focus on specific locations, but they are all part of a larger system that requires attention on a number of fronts. The general conditions listed below each exert a negative influence on the community and limit pedestrian activity. Each may contribute in some way to the reality or perception that walking is not as safe, practical or enjoyable as it should be. Each may inhibit citizens who find themselves with no other choice of transportation, from making a necessary or desired trip. Each may discourage those on the cusp of a decision between walking and driving, to make the effort on foot.

1. **Handicap accessibility** – Currently at least nine citizens of Cherryville require ADA accessibility. Utility poles in many locations obstruct existing sidewalks. Some HC ramps are too steep. In addition to enabling pedestrians with mobility challenges and the visually impaired, they also aid runners and people with strollers.

2. **Insufficient public transportation choices** – Citizens of Cherryville have expressed a need for bus service to Shelby and Gastonia. A Park and Ride at the primary bus stop would serve as part of that solution.

3. **Under-developed sidewalk system** – Though many of Cherryville's central streets feature sidewalks, additional pedestrian links are needed, particularly in the following areas:
   - Self St. to Cherry Plaza or 150,
   - Elm to Cherry Plaza
   - Pink St. south of Ballard St.
   - The Cherry Wood Apartments area

   In general, sidewalks to connect the area schools to each other and to nearby parks have been cited as a primary need. This would foster more interaction between the schools. Currently busses are used to transport students very short distances as a means of shielding the kids from the hazards of walking in traffic. Along with the need for new sidewalks, general maintenance of existing sidewalks is also needed in many locations.

4. **Street lighting –** Adequate lighting is essential for safe and inviting streets. Additional lighting is needed especially in the City's multi-family residential neighborhoods.

5. **Inadequate crosswalk facilities**
   The city's crosswalks (described earlier) are inadequate to meet the population's needs, particularly at the City's most heavily trafficked intersections and around schools. Adequately designed crosswalks provide a safer route for pedestrians and serve to slow down vehicular traffic.

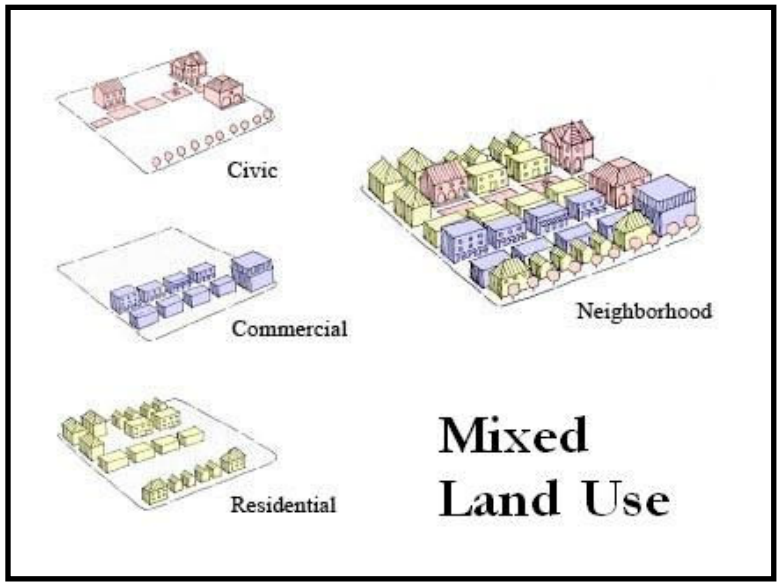
6. **Minimal trail connections**
   Currently there are no off-road transportation facilities for Cherryville citizens. In order to reach most destinations of interest, pedestrians must use the streets, and many of those streets are not equipped with sidewalks.

2.2 Current Policies, Ordinances & Plans

CITY OF CHERRYVILLE ZONING & SUBDIVISION ORDINANCES

Cherryville's Official Zoning Ordinance was adopted in January of 2002. The Subdivision Ordinance (with amendments through May 1994) was adopted January 10, 1977. These ordinances are the most binding legal documents affecting the contemporary form of Cherryville and its future development patterns. The degree to which the City will develop in a pedestrian-friendly manner – with all the benefits thereof – as the City grows and changes with economic conditions, will depend largely upon the continuing development of these collected documents. Most of the pedestrian-related issues covered below are addressed in the Cherryville Subdivision Ordinance, however the Zoning Ordinance does provide guidance or direct rulings on some of the issues, particularly regarding land uses.

Issue 1: Mix of Land Uses
When various land uses are mixed together in close proximity – for instance: residences, commercial establishments and civic buildings – more activities can be accomplished on foot (One can walk to the corner store, for instance.)



The intent of Cherryville's ten zoning districts is each briefly described in chapter six of the Ordinance. Most of these zones permit a very limited range of uses. Currently the City's **Central Business District** (B-1) is small and compact enough to permit a walkable proximity to neighboring residential areas. However, outlying parts of the City do not enjoy this luxury. As the City continues to expand, the physical distances between the City's single-use zones will likely expand as well. Residences will become increasingly further away from businesses, for example, and more and more daily tasks will require a car. Traffic problems will increase, particularly in business zones where strip development dominates.

Cherryville does offer two zones, however, that are particularly inviting to pedestrian circulation.

- **Residential Office Districts** (RO) permit a mix of residential and business uses. This zone largely surrounds the Central Business District.
- **Neighborhood Business Districts** (B-2) permit a variety of retail uses and services. These commercial districts are intended to be relatively small areas located at accessible places in order to conveniently serve the local neighborhood. Currently only four B-2 areas exist outside of the downtown core of RO and B-1 zoning.

Issue 2: Street Connectivity

"Connectivity" means being able to get from one place to another without having to go long distances out of the way. Communities with high connectivity are more walkable because destinations are within easier reach and there are more choices of routes. A connected network of streets also gives drivers more choices of vehicular routes. Allowing drivers a greater choice in routes helps decrease vehicular congestion. When more streets interconnect, local vehicular traffic can take shorter routes and avoid busy arterial roads, as can pedestrians.

Street connectivity can be compromised both by limiting access points into and out of subdivisions, and by limiting the number of opportunities that streets intersect within subdivisions. Over the last few decades, many residential developments have been designed with fewer street intersections in favor of incorporating more cul-de-sacs. Cul-de-sacs were initially used to avoid terrain that would prohibit streets from connecting. However, development practices grew to rely upon them, even on flat land, as a way of discouraging traffic in front of individual homes, turning public throughways into semi-private drives that dead-end into semi-private courts. While this arrangement does reduce non-residents cutting through the neighborhood, it also gives residents very limited options. Traffic can back up into the neighborhood during rush hour, as everyone tries to get out by the same street onto busy arterial roads. Emergency vehicle access is also severely limited. Kids going to school, events, or just wanting to visit friends in neighboring subdivisions have to walk or bike much greater distances, often upon busy main thoroughfares or be driven by a parent.

One of the "*13 Points of Pedestrian-Oriented Development*", a foundational planning document developed by Duany Plater-Zyberk, is street connectivity. *13 Points* recommends: "Streets within the neighborhood form a connected network, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination." See **Appendix A-3: Articles**.

Cherryville's B-1 and RO zoned districts exhibit a high degree of connectivity. This is due to their location in the historic core of the downtown. Connectivity begins to breakdown outside of the core, largely due to the infrequency of streets, though there are still relatively few dead ends. The City's newer developed residential subdivisions, however, exhibit the characteristic low connectivity typical of their era. Cul-de-sacs begin to dominate, leaving fewer choices of route for both drivers and pedestrians. This pattern is particularly evident in Cherryville's **Single Family Residential** (R-15) zones.

Street connections may not be desirable everywhere, particularly where existing creeks and floodways divide neighborhoods. However, linear lowlands, floodways and other properties with severely limited development capacity provide ideal opportunities for trail connections.

Cherryville's Subdivision Ordinance addresses the issue of connectivity in **Article VI, Section 1.4**, where it states:

> **1.4 Access to Adjacent Properties**
> "Where it is deemed desirable by the City Council, proposed streets shall be extended by dedication to the boundary of such property and a temporary turn around provided."

The ordinance language above neither encourages nor discourages the connection of streets between subdivisions. City Council is given absolute authority to render such decisions on a case-by-case basis. However, the Ordinance provides no site-specific criteria or general principles to which the Council may refer to base such judgments. In most cases, it is within the developer's immediate interest to avoid the construction costs of what may be considered "additional" roads. With no written authority on which to rest their decisions for requiring connecting roads as a condition of subdivision approval, the Council's rulings could be labeled as indiscriminant by the subdivision developer, who may opt to sue the Town over the issue.

Further treatment of the issue of connectivity is provided, however, at the end of **Section 1.5(k)** under the specific topic of cul-de-sacs:

> **1.5(k) Cul-de-sacs**
> "…Cul-de-sacs shall not be used to avoid connection with an existing street or to avoid extension of an important street, unless exception is granted by the City Council."

Here the Subdivision Ordinance discourages the use of cul-de-sacs, particularly in cases where adjacent developments already have streets to which newly developed streets can physically connect, or in cases where the street in question is deemed a primary road. Again, the ordinance grants City Council authority to determine whether a cul-de-sac will be permitted on a case-by-case basis, and provides no basis on which to make exceptions.

In another section devoted to street layout, the Subdivision Ordinance goes further to say:

> **1.13 Street Layout (b) Continuation of Adjoining Streets**

"The proposed street layout shall be coordinated with the street system of the surrounding area. Where possible, existing principal streets shall be extended."

This statement reinforces the prior verbiage in **Article VI, Section 1.5(k)** regarding "important streets." It also implies the connecting of streets by requiring a "coordination" of new with existing streets. The Subdivision Ordinance also makes reference to coordinating with "official plans or maps", stating that new streets shall conform to these adopted documents.

Section 1.13 Street Layout (a) Conformity to Existing Maps or Plans
"In any new subdivision, the street layout shall conform to the arrangement, width, location of proposed streets on any official plans or maps for the City of Cherryville."

Reference to any specific existing and adopted document is not included.

The Cherryville Zoning Ordinance says little toward the issue of street connectivity, though concerns about transportation are part of its stated purpose:

Part 3: Jurisdiction - Section 3.2
"The purpose of these regulations shall be to regulate … the location and use of buildings, structures and land for trade and residence, and other purposes, so as to lessen congestion in the streets; … to facilitate the adequate and economic provision of transportation"

In Part 13, the Zoning Ordinance does address the issue of access points of residential subdivisions as one of its stipulations of Conditional Use:

Section 13.5.1(b) Planned Residential Developments
"The proposed ingress and egress points will not result in a substantial amount of vehicular traffic to be channeled onto adjacent local streets (non-collector/non thoroughfare streets)."

Aside from the above Conditional Use stipulation, the Zoning Ordinance sets no restrictions or parameters related to street connectivity. No actual limit on the use of cul-de-sacs by way of a connectivity ratio or other objective means is provided or referenced in either the Subdivision Ordinance or the Zoning Ordinance.

Issue 3: Cul-de-sac Length

One way to curtail the overuse of cul-de-sac design while still permitting them, when necessary, is to limit their allowable lengths. As cul-de-sacs lengths increase, connectivity decreases. Properties accessible from only one direction become more isolated and difficult to reach. And vehicular traffic on these cul-de-sacs increase in speed and volume. All of these issuse are critical factors affecting the walkability of such neighborhoods.

The Subdivision Ordinance places limits on cul-de-sac length in **Article VI, Section 1.5(k)**:

1.5(k) Cul-de-sacs

"Permanent dead streets or cul-de-sacs shall be no longer than eight hundred (800) feet unless necessitated by topography, property accessibility, or stream or railroad crossings but in no case shall be permitted to be more than eleven hundred (1,100) feet in length."

Lot widths within **R-15** Single-Family Low Density Residential Districts may range, but most in Cherryville are roughly 115' wide at the street. Excluding the use of "flag lots" (where minimal lot width is provided where the lot meets the street – a practice commonly employed at the terminus of cul-de-sacs), an 800' cul-de-sac will permit about 15 lots of this dimension. A 1,100' cul-de-sac will permit roughly 21 such homes. **R-12** neighborhoods typically feature lots of 100' width. More than 23 such homes can occupy a single 1,100' cul-de-sac. Absolute minimum lot widths, however, are set in **Section 6.2** at 75'. For developments with this lot width, the Cherryville Ordinance permits a total of 31 lots on the maximum allowable cul-de-sac length.

Issue 4: Block Length

Connectivity is also product of block length. Short blocks and frequent cross streets open up more direct routes. Pedestrians benefit from more opportunities for choice in travel path for a given distance. More choices mean a greater variety in the walking experience, an increase in walk-in customer exposure for businesses, and more opportunities for new neighbors to meet and interact. There is also a psychological benefit of short blocks: pedestrians do not have a sense of having to walk "forever" to get to a crossing. People tend to judge such distances as "too far to walk" before they can turn a corner to get to a parallel street. A dense network of streets also disperses traffic, making streets more pleasant to walk along and easier to cross. Long streets without interruption encourage drivers to travel at excessive unsafe speeds.

A review of the best block sizes for walkable neighborhoods was performed for TND Design Rating Standards. A wide range of sources was consulted, including *Great Streets* by Allan Jacobs, *Planning for Street Connectivity* by Handy et al., various municipal ordinances, and direct evidence from historic neighborhoods and towns in the U.S. The following guidelines were developed:

BLOCK LENGTH	(RANGE IN FEET)
Excellent	250-400
Good	200-250 or 400-500
Acceptable	500-600
Fair	150-200 or 600-800
Poor	Less than 150 or more than 800

In car-free or car-restricted areas, smaller block sizes are more viable and should not be given low ratings.
–TND Design Rating Standards, Version 1.5 (2005)

The Cherryville Subdivision Ordinance gives parameters for block length in **Article VI, Section 2**:

Section 2. BLOCKS – 3.1
"Block length shall not exceed one thousand three hundred twenty (1,320) feet and not be less than four hundred (400) feet in length."

No additional restrictions or guidelines related to block length are found in the Cherryville Zoning Ordinance.

Issue 5: Crosswalks

Intersection and mid-block crosswalks are an effective way of safely channeling pedestrian traffic along major traffic arteries. Crosswalks also offer a secondary pedestrian benefit of calming traffic.

Again in **Article VI, Section 2** of the Subdivision Ordinance, requirements for midblock crosswalks are imposed where intersections of streets are at an exceptional distance apart.

Section 2. BLOCKS – 3.3
"Pedestrian ways or crosswalks, not less than ten (10) feet in width, shall be provided near the center and entirely across any block nine hundred (900) feet or more in length where deemed essential, in the opinion of the Planning Board, to provide adequate pedestrian circulation or access to schools, shopping centers, churches, or transportation facilities."

The only specification provided for the crosswalk is the required width. The Planning Board is given complete authority to determine the need for crosswalks in long block situations. However, the Ordinance does provide guidance for these decisions based upon the location of particularly pedestrian-oriented categories of destinations. No reference is made to additional planning documents. No additional requirements or guidelines for crosswalks are provided in the Cherryville Zoning Ordinance.

Issue 6: Sidewalks

Sidewalks form the backbone of a pedestrian system in urban and suburban environments. They can provide highly visible, accessible and practical pedestrian connections to common destinations points. They can also serve as vital public space in themselves, particularly in front of retail shops, restaurants, and civic buildings. For many pedestrians, sidewalks provide the primary opportunity for public interaction.

The Cherryville Subdivision Ordinance briefly addresses sidewalks in its General Requirements under **Article VI, Section 1.10** where it states:

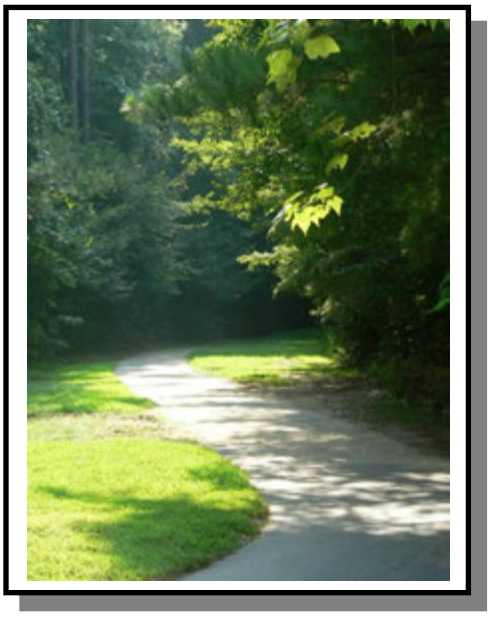
> **Section 1.10 Sidewalks**
> "Sidewalks shall be constructed on such streets that the City Council considers sidewalks to be necessary in order to promote the free flow of vehicular traffic and to provide safety to pedestrian."

The Subdivision Ordinance makes no reference to additional planning documents to provide City Council a basis for decisions about sidewalk placement, and there are no references to existing or planned destination or destination categories (such as with crosswalks).

The Cherryville Zoning Ordinance includes no additional requirements or guidelines for sidewalks. Neither Ordinance makes reference to any additional City plans or policies that take into account destinations, or current or future land use or transportation issues.

Issue 7: Greenways, Trails and Open Space

While parks and other open space are intended to accommodate a community's recreational needs, they also provide vital public space and accommodate public functions that help give a City its identity. Greenways and other trails also serve a dual role. In addition to providing opportunities for recreation and exercise, they are also intended to link common destinations points, functioning as a transportation resource for pedestrians and bicyclists. Within municipalities, parks and greenways are often located in otherwise undevelopable land, such as streams and floodways, utility right-of-ways or abandoned railroad corridors.



Cherryville's Subdivision Ordinance contains a brief section on parklands within its General Requirements in **Article VI, Section 5**:

> **Section 5. PARK LANDS**
> "In the event that a proposed park, playground, or public facility shown on the comprehensive plan is located in whole or in part within an area proposed to be subdivided, such an area shall be either dedicated for the public purpose or reserved for acquisition by the appropriate public body…"

The above quote references a "comprehensive plan", however there is currently no such plan.

Cherryville's Zoning Ordinance includes the following definitions for Open Space in **Section 4.1**.

Common Open Space.
Land and/or water areas within the site designated for development, not individually owned or dedicated for public use, which is designed and intended for the common use or enjoyment of the residents of the development but not including any lands occupied by streets, street rights-of-way, or off-street parking.

Common Open Space, Improved.
Common open space which has been improved with recreational areas and amenities such as, but not limited to, ball fields, tennis courts, swimming pools, nature trails, clubhouses, etc.

The Zoning Ordinance, however, has no open space requirements except in Manufactured Home Parks (MHP). The amount of open space required in an MHP is a product of the total square footage of manufactured homes within that park. According to **Section 12.3.26**, qualifying open space may consist of required buffer areas, natural wooded areas, open fields, lawns, gardens, traffic islands or medians, recreation areas above the minimum required. These required recreation areas within the MHPs are also calculated based upon the total square footage of manufactured homes within that park, with a minimum area required of 10,000 s.f. The following requirements are made for these areas:

PART 12: MANUFACTURED HOME PARKS – Section 12.3.27
Recreation Areas
Recreation areas may consist of, but are not limited to, adult and/or child play areas with play apparatus, picnic areas, outdoor exercise facilities, playgrounds, ballfields, shuffleboard courts, volleyball courts, tennis courts, basketball courts, and swimming pools. Unimproved areas or buffer areas shall not be counted as required recreation areas. If a developer elects to provide recreation areas in excess of the amount required by this section, such excess may be counted toward the required open space area as required by Subsection 12.3.26.

Aside from the rules imposed upon MHPs, Cherryville has no requirements in its ordinance for open space, trails, or greenways.

Issue 8: Street Trees

Street trees provide an array of environmental and economic assets to communities. In addition to a broad range of air and water quality benefits, street trees offer the pedestrian shade, a physical buffer to traffic, and bring a human scale to an otherwise car-oriented landscape. Trees can even bring to a community a strong sense of identity, as in the case of Cherryville, a city originally named for its prominent cherry trees.

Cherryville's Subdivision Ordinance "recommends" in **Article VII, Section 5** that street trees be planted in all subdivisions, but does not require them. The Zoning Ordinance stipulates only that trees be placed in buffer strips between certain land use zones in **Section 5.2.1**, and in interior landscaping in Manufactured Home Parks per **Section 12.3.25**. In the case where a developer chooses to plant trees, the Subdivision Ordinance places requirements on those trees. These requirements are stated in **Article VII, Section 5**:

SECTION 5. STREET TREES

"Trees shall be planted no closer than ten (10) feet to a front property line nor closer than five (5) feet to a side lot line."

Sweet Gum seed ball

The Subdivision Ordinance goes further to restrict the general types of trees that may be planted. Interestingly, the list of explicitly approved tree varieties does not include cherry trees. However, it does include Sweet Gums, which drop seed balls that can pose a tripping hazard, particularly of concern to older walkers.

The Zoning Ordinance provides a more detailed list of trees deemed "acceptable" for use (see **Figure 5.2.3**), however these are in the context of plants for screening purposes in **Section 5.2**.

Issue 9: Building Setbacks

Excessive building setbacks are disadvantageous and even problematic to communities for reasons of safety, economic vitality, and general pedestrian friendliness. With no regulations to establish maximum setbacks (or "build-to" lines), retailers can create very deep front yards to accommodate their off-street parking entirely in the front yard, if otherwise permitted to. Such strip-development arrangement deteriorates street definition, making pedestrian use uncomfortable, unsafe and impractical.

On the other hand, minimal setbacks provide a number of advantages:

1. **Safety.** Buildings set close to the street do not require visitors on foot to navigate significant distances through parked cars (and moving ones!) in parking lots to reach their desired destination point – an often unsafe experience for pedestrians.

2. **Good business.** Buildings in a central business district are ideally built with little or no front yard setback. Businesses built close to the street offer pedestrians opportunity to "window-shop" or walk into a business immediately from the sidewalk.

3. **Comfort.** Streets with minimum setbacks are usually more inviting to walk along. This phenomenon is largely due to a sense of enclosure that buildings can impart to a street, along with the lack of large, hot expanses of asphalt. Buildings set close to the street help make the street viable and interesting public space rather than the vast, open no-man's land often found with strip development.

The Subdivision Ordinance, in **Article V Section 6.6** sets a minimum setback distance from the front property line of 35' for all properties, regardless of zone. Front yard setbacks required in the Cherryville Zoning Ordinance vary with the zone. However, neither ordinance sets a maximum for front yard setbacks.

Issue 10: Off-Street Parking

Although parking lots provide a convenience to motorists, they can significantly diminish the pedestrian quality of a community, creating a hot, barren car-dominated landscape that is uncomfortable, unsafe and inconvenient to pedestrians. Property owners with expansive impervious areas also incur substantial maintenance costs to maintain valuable land that is yielding a less-than-profitable use. Parking lots (like other impervious surfaces) also negatively impact the local environment, particularly with respect to water supplies and water quality. **See Appendix A.2 Section 7: Parking.**

Section 6.2 of Cherryville's Zoning Ordinance provides a brief summary description of each of the City's general zoning districts. In its description of the Downtown B-1 district, it states:

> **Section 6.2.8 B-1 Central Business District**
> "Given the lack of space for off-street parking, this requirement has also been eliminated."

Requiring off-street parking for all uses in a downtown area inadvertently conflicts with the pedestrian nature of a "downtown." These areas should be designed to facilitate the movement of persons by foot, as well as by car. Pedestrian-friendly zoning ordinances either

waive or significantly limit the amount of off-street parking required in a downtown setting, or give credit for on-street spaces. The elimination of the parking requirement for the B-1 zone allows Cherryville's core downtown area to remain compact enough to be walkable. Only the B-1 zone is permitted this exception (though **Section 7.8.1** allows "automobile parking lot" as a use permitted by right in B-1, and does require one off-street parking space to be provided per residential unit located within an otherwise commercial or office building). The other zones must incorporate the minimum parking requirements described in Part 10 of the Zoning Ordinance. Consequently, these zones are less accessible and inviting to pedestrian traffic.

Part 10 of the Zoning Ordinance provides nine pages of text to govern off-street parking. It begins by stating:

> **Section 10.1 Off-Street Parking Requirements**
> "Every new use, or an enlargement, expansion or alteration of an existing use, shall require off-street parking in compliance with this Ordinance, except that all off-street parking requirements shall be waived within the B-1 District."

Further on in the text, means for calculating the minimum number of required parking spaces per parcel are provided for the variety of land uses within each zone. The minimums are based upon building square footage, number employees, etc.

Typical allotments of required parking spaces per use is often found to be excessive for most uses. In an effort to reduce the "sea of asphalt" phenomenon, there has been a trend to lower the number of required parking spaces for retail uses and to reduce the required area of each space. Some ordinances set a *maximum* parking requirement rather than a minimum.

Cherryville Plaza

A few opportunities for creative ways to meet these minimums, however, are provided for in some cases. The Zoning Ordinance allows required parking on a separate lot:

> **Section 10.1.4 a.**
> "Off-street parking spaces shall generally be provided on the same lot of record as the principal use. In instances where such parking cannot be reasonably provided on the same lot of record, it shall be provided on a separate lot of record, fifty (50%) percent or more whose area is located within five hundred (500) feet of the lot of record on which the principal use is located."

Options in offsite parking can encourage clustering of businesses and civic uses near a common parking area within a walkable proximity. They give businesses flexibility without placing undue hardship on customers. Motorists can park in one location and conveniently

walk from there to a variety of destinations. Such an arrangement can also encourage a greater mix of uses within reach of residential areas.

The Ordinance also allows parking minimums to be met through shared parking:

> **Section 10.1.4 b.**
> "Cooperative provisions for off-street parking may be made by contract between owners of adjacent properties… The parking area provided on any one lot may be reduced to not less than one-half (1/2) the number of parking spaces required for the use occupying such lot. The end result of such cooperative parking shall be that the total number of parking spaces provided equals or exceed that which would be required for each use if computed separately."

Allowing business owners the opportunity to voluntarily share parking spaces helps decrease the total number of parking spaces in the area while still satisfying the parking needs of the uses. This ordinance encourages common sense cooperation and helps eliminate unnecessary paved surfaces. It also provides an incentive for the development of mixed-use areas, with a clustering of businesses and civic uses.

Part 10 also includes design standards for off-street parking that favor pedestrians. **Section 10.1.4** reserves areas for landscape between sidewalks and parking lots by preventing parking lots from directly abutting the public right-of-way:

> **Section 10.1.4 e.**
> "For all non-residential uses (except those located in the B-1 District), no off-street parking, loading, or product display areas shall be located within ten (10) feet of any street right-of-way line unless otherwise noted."

In addition to the above concern for aesthetics, **Section 10.1.5** safeguards the physical clearance of public pedestrian ways:

> **Section 10.1.5 d.**
> "All off-street parking areas shall be designed so that vehicles cannot extend over sidewalks or bump against any wall, vegetation or other obstruction."

This section of the Ordinance also recognizes the potential threat parking lots pose to pedestrian safety by offering this general guideline:

> **Section 10.1.5 e.**
> "Circulation patterns within off-street parking areas shall be so designed so that vehicles can proceed safely without posing a danger to pedestrians or other vehicles both inside and outside the off-street parking area."

Despite the concern for pedestrians addressed in this ruling, no specific design principles are offered to assist developers to meet this goal or to aid zoning administrators in their determination of whether the intent of this ordinance has been adequately met.

The remainder of Part 10 describes in detail how the minimum number of required off-street parking spaces must be determined based upon building square footage, number of employees, etc.

The Cherryville Subdivision Ordinance does not address off-street parking issues.

NC 150 CORRIDOR PLAN

Beginning in October 2007, Centralina Council of Governments, in association with the City of Cherryville and Gaston County, began preparing a transportation/land use study for that portion of the NC 150 Corridor between Lincolnton and Cherryville. NCDOT's Strategic Highway Corridors Plan, in the Division 12 Vision Plan designates NC 150 as a Boulevard in need of upgrade (See **Appendix A-1 Map 6**). The NC 150 Corridor Plan is expected to be completed and adopted in August 2008. It will examine the corridor area and will contain policies for its development over the next 10 to 15 years. It will also address policies that local governments could enact to support the Plan's recommendations.

An Advisory Committee, with facilitation by Centralina, and input from stakeholders and several public forums, will create a consensus document for the study area. The Plan will serve as the guiding document when reviewing land use and transportation plans for consistency, for environmental resource preservation, as well as subsequent development proposals along the corridor in the future. The Corridor may be broken into different segments to reflect existing conditions and/or desired end results. The consensus document may therefore contain guiding principles for the entire corridor, with specific recommendations for the individual segments.

As part of the process, existing land use plans and development regulations of each local jurisdiction along the Corridor are being reviewed for consistency with the Corridor Vision. Existing transportation plans will also be analyzed for consistency purposes. Necessary changes needed to conform to the Corridor Vision will be identified. The final product will include a matrix showing the how and where current plans and regulations support or detract from the adopted vision. It will be each local government's responsibility to amend their ordinances and/or adopted plans to conform to the Corridor Vision.

A spectrum of land use categories is under review in the process. One of these categories in particular embodies many pedestrian–friendly features:

Mixed Residential/Commercial

These areas are intended to become true mixed-use villages consisting of higher-density residential uses (both single- and multi-family) and associated small-scale and pedestrian-oriented office and retail uses. These areas are created to allow persons to live, work, walk, recreate, and shop in one area. Height and locational criteria shall be the same as for "mixed residential" uses (previously cited).

GASTON COUNTY UNIFIED DEVELOPMENT ORDINANCE (GUDO)

The Preliminary draft of the GUDO is now complete and presently under review. The theme of the GUDO is: "Enhancing Communities, Enhancing neighborhoods". Among the *Guiding Principles/Desired Outcomes* that shape the GUDO, are some particularly pedestrian-friendly goals, including:

- **Address problems of sprawl patterns of land use**

- **Develop design guidelines that promote livable communities not exclusive ones**
  By "livable communities" the GUDO explicitly encourages "street connectivity and the placement of sidewalks in new residential developments."

Additional goals that shaped the development of the GUDO include:

- Lessen congestion on streets
- "Accommodate and promote pedestrians and pedestrian use to the greatest degree feasible and practical."
- Coordinate transportation networks and utilities within proposed subdivisions with existing or planned streets and highways and with other public facilities.

THE GASTON COUNTY BIKE TRAIL NETWORK

The City of Gastonia Planning Department produced this plan of designated bike trails in 2001. The plan covers all of Gaston County. Five different bike routes are recognized, in addition to greenways and some "unmarked connectors". Various destinations of interest are also shown. Two of the five routes terminate in Cherryville. One connects the City to Mount Holly, the other to Crowders Mountain. An unmarked connector route circling about the northwest end of the County, begins and ends in Cherryville. A number of destinations are designated in Cherryville, including a museum, schools and parks. See **Appendix A-1 Map 3**.

2.3 Current Projects, Programs & Events

The **Carolina Thread Trail** is a proposed regional network of multi-purpose greenways, serving 15 counties and over 2 million people. This greenway system will eventually link communities and attractions throughout the region by connecting smaller trail systems throughout its bi-state area. The City of Cherryville is located on the proposed Carolina Thread Trail alignment in the approved Greenway Master Plan for Gaston County Communities (See **Appendix A.1.4**).

The steering committee for the Gaston County portion has completed its review of the Greenway Master Plan and the course for adoption by the county and municipalities is being set. Local governments can adopt this plan to serve as a guideline for developing future connections without committing themselves to funding plan implementation. Segments will likely appear one-by-one, and adjustments will be made to the proposed routes as circumstances change and more information becomes available. Similarly, trail development will follow through various arrangements with multiple funding partners. Nevertheless, the following actions are recommended to take this plan from concept to reality in an intentional, coordinated, fair and transparent way, consistent with the planning to date:

Adopt the plan. The adoption procedures vary from community to community depending on existing plans and policies. In each jurisdiction, the planning board (as applicable) should review and recommend the plan to its governing body, which in turn must consider, make additional adjustments as needed, and officially incorporate the trail into its land-use plans. It is recommended that regulations be amended to have developers set aside land for trails whenever a development proposal overlaps with the proposed routes, as adopted.

Build public support for trail implementation. It is recommended that a Greenway Advisory Group be formed for leaders with a personal and professional interest to mark progress with public events, share resources/tools, and coordinate trail planning and development activities. Regional organizations can assist in identifying opportunities and working with willing landowners to build support and interest in trails and greenways.

Knit together funding sources. The plan lists various public and private funding sources available to acquire land, construct trails, and operate and maintain these facilities and amenities. The CTT organization, housed within the Catawba Lands Conservancy, is spearheading a private fundraising campaign to make catalytic dollars available to communities for individual trail projects.

Evaluate land or right-of-way acquisition options. Where public land is not already available or private developers are not already building trails along the planned trail route, conversations with private landowners are recommended to assess their interest in trails through their communities. This will assist with route feasibility and alignment.

Design, construct and maintain trails. Communities should work through a public process to determine intended use of the particular segment at issue, and design with that in mind, as well as safety and affordable maintenance.

As a member government of the **Lake Norman Rural Planning Organization** (LNRPO), the City of Cherryville participates in transportation planning initiatives for the region, and enjoys the benefits and resources available through the LNRPO. One of those benefits has been assistance in applying for the NCDOT Pedestrian Planning Grant that funded the development of this Pedestrian Plan.

Gaston County and Municipal Planners (**GCaMP**) was formed in November 2002 as a cooperative group of planners, school officials, health department representatives and law enforcement officers from 15 jurisdictions within the County. They meet monthly, together and with other stakeholders, to coordinate planning efforts and discuss emerging issues. Cherryville's participation in GCaMP means they are part of a support system that shares best planning practices and information for more informed decisions at the local level.

Home Owners Associations throughout City meet to discuss and plan lighting and landscaping that will encourage pedestrian outdoor activity in their communities.

Recreation Programs

Recreation programs in Cherryville are provided under contract with the Cherryville YMCA, Cherryville Little League, Cherryville Optimist Club, and Cherryville Dixie Youth Softball. A full range of athletic and non-athletic programs is available for all ages.

City Events

Cherryville is home to a number of events that draw crowds of participants on foot, or provide assistance to pedestrians. Here are some examples:

- **Cherry Blossom Festival** – Annually in late April, the City closes off parts of Main Street. Food and craft vendors line the street, bands perform on a stage, local politicians meet the crowds, churches host events, and kids enjoy carnival rides.
- **New Year's Shooters** is perhaps the most popular of Cherryville's social and civic organizations. The Shooters are preserving the German heritage of the community by beginning each year with a traditional chant and shooting of muskets. The "New Year's Shoot" continues for a span of eighteen hours.
- **Independence Day celebration** is held every year on Main Street and is sponsored by the Cherryville Fire Department.
- **The YMCA 5K** is held in conjunction with the Cherry Blossom Festival.
- **Fire Prevention Day** features a Kids Walk.
- **Christmas on Main Street** is another popular annual event, drawing crowds to stores, outdoor displays, booths, various activities and a parade.
- **The Cherryville Police Department** conducts various safety-related and crime prevention programs such as the Cleveland Regional Helmet Program.
- **Little League Baseball** – Cherryville is home to several leagues with regular events for boys and girls throughout the season that draw crowds to the area ball fields.
- **Educational Programs** - In addition to Cherryville's School System, pre-kindergartens for ages 3 and 4 year olds are available at several area churches. Special programs are available for exceptional, handicapped and learning disabled students.
- **Field Days** take place at the end of the school year, organized by the schoolteachers.

2.4 Unique Opportunities

As it exists today, Cherryville offers a number of features that make the City an inviting place for pedestrians. Other pedestrian-friendly elements and trends in the City may be less obvious but have an even more profound impact on Cherryville's walkability in the present and near future. Each of these features deserves a spotlight in order that their value can be more clearly understood, and their characteristics preserved, enhanced and drawn upon as the City continues to develop.

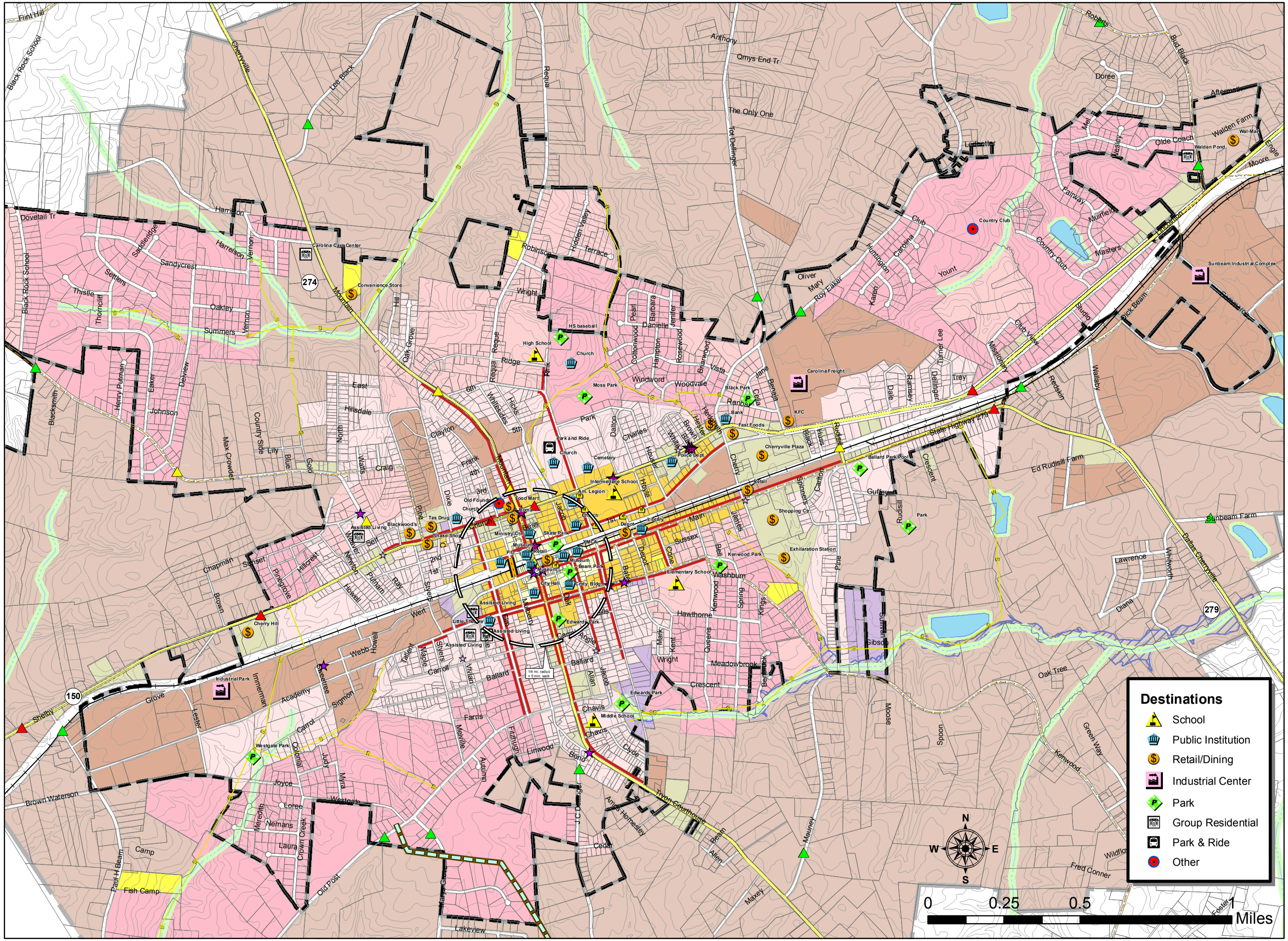
1. **A centralized downtown core**
   As a historic city, Cherryville has grown around a tight-knit fabric of streets in a walkable grid. This classic arrangement provides a convenient and inviting setting for pedestrian life.

2. **Opportunities for new development**
   In recent decades, some portions of the city have developed along conventional, suburban arrangements that favor cul-de-sacs. But opportunities still await in underdeveloped land within the incorporated area of the City for new development to mimic the traditional walkable arrangement of the downtown.

3. **Existing sidewalk network**
   Many of the City's retail, civic and recreational destinations are connected with sidewalks that line the main streets. This established centralized network provides a substantial core for a pedestrian system that could branch out to serve even more destinations.

4. **Greenway opportunities along creeks and utility corridors**
   The area has a network of sewer right-of-way corridors - many along attractive wooded creek beds - that could provide opportunity for a system of greenways. This branching network could reach all parts of the community to form a viable system of alternative transportation to destination points throughout City.

Building upon these strengths and unique assets of the City, **Part 3: Recommendations** of the Cherryville Pedestrian Plan will outline specific strategies to meet the community's pedestrian goals.



Cherryville Pedestrian Plan

Existing Conditions Map

12.09.08

EXISTING FEATURES

- Pedestrian Node (1/4 mile)
- Sidewalk
- Bridge
- Bike route
- Primary roads
- Crosswalk
- Rail
- Abandoned rail

Pedestrian Accidents (1990+)

- Disabling Injury
- Evident Injury
- Possible Injury

Average Daily Traffic (trips per day)

- 6001 - 110000 ADT
- 2001 - 6000 ADT
- 60 - 2000 ADT

- 5' contour
- Creek
- Ponds
- 100 yr flood
- Sewer line
- Future Carolina Thread Trail
- City limits
- ETJ

Zoning

- GMC Manufacturing/Commercial
- B-1 Central Business District
- B-2 Neighborhood Business
- B-3 General Business
- RO Residential Office
- R-9 Residentail
- R-12 Residential
- R-15 Single Family Residential
- R-25 Residential
- RMF Residential Multi-Family

Centralina Council of Governments

PART 3: RECOMMENDATIONS

Communities can employ a number of differing strategies in implementing pedestrian improvements depending on the philosophy of its leadership. They may choose to:

1. Simply build sidewalks and other amenities on a per request basis that may or may not address overall pedestrian needs
2. Systematically identify and address existing pedestrian barriers and constraints
3. Address both current and expected future pedestrian needs on a case-by-case basis
4. Develop and implement an approach that integrates the need for pedestrian amenities into other aspects of planning, in order to ensure that future development supports pedestrian travel as a practical mode of transportation

Many municipalities will, by default, take the first approach, or else employ a more coordinated effort the second two require. But Cherryville has indicated a commitment to finding ways to integrate pedestrian needs into their comprehensive planning efforts through this Pedestrian Plan process, so that both current and future pedestrian needs are addressed. Additionally, policy tools are put into place to ensure that future development decisions strongly consider pedestrian interests. Through this process, the developing pedestrian system will work toward the realization of the overall vision and goals of the community by helping to engender a cohesive and compact City where walking is not only a viable option but often the preferred way of getting to destination points. It will help Cherryville develop as a community whose initial historic urban core provides the framework for future growth.

Transportation needs do not exist in a vacuum. They are interwoven with other needs reflected in the way land is used. Transportation systems and land use patterns must be mutually supportive for either to work in a fully functional and efficient manner. This is particularly true in the case of pedestrian planning, where a number of land-use factors often determine whether even the "best" pedestrian facilities actually ever get used.

Citizens may be unfamiliar with how particular development patterns come about, or they may not realize how those forms of development may encourage or discourage pedestrian activity and lifestyle. And they may underestimate the power their community has to shape its own future development. This Pedestrian Plan is intended to convey options in urban design and describe the means of improving pedestrian conditions in Cherryville, and with those improvements, to see the increased civic and economic vitality of the City itself.

3.1 Recommended Policies, Plans and Ordinance Modifications

The City of Cherryville will find serving pedestrian needs easier if its policies, plans, and ordinances are coordinated and consistent with regard to pedestrian travel. The following recommendations are designed to help integrate pedestrian mobility into the land use and transportation systems, so as to promote maximum use and benefit. Each recommendation is tied to the specific Goals outlined in Section 1.1 of the Plan.

1. **Form a stakeholder-based Pedestrian Needs Committee. (Section 1.1 Goals I-V)**
   The PNC should represent a wide variety of pedestrian interests and populations in the City. Members should include representatives of the business community, long-time residents, and residents of recent residential developments. Various areas of expertise represented by the PNC should include:

   - Transportation
   - Commerce
   - Industry
   - Health
   - Safety and crime prevention
   - Recreation
   - Education
   - Aesthetics
   - Environment
   - Engineering and Design
   - Public outreach

   The purpose of the PNC is to ensure that the Pedestrian Plan stays in the forefront of public awareness, that it is implemented through ordinance changes, grant opportunities, and as development occurs in the private and public sectors. The PNC should also help assure that the Pedestrian Plan is updated as needed to reflect changing conditions and pedestrian needs. The PNC can be an important avenue for integrating pedestrian needs with other planning processes. The group can serve as advocate, monitor, facilitator, and educator, as well as ensure that emerging public needs are addressed in the planning process. The PNC should also ensure that citizens are alerted of planning efforts, changes in facilities, and upcoming construction.

   Implementation Strategy: The City Council shall appoint PNC members and invest them with the authority and charge to pursue the Pedestrian Plan strategies. Potential members should enroll in the Cherryville's **Citizen's Academy** program, which will provide them with valuable training on the process of local government.

2. **Enhance Conditions and Accessibility of Existing Sidewalk System. (Goal III)**
   Many segments of existing sidewalks throughout the City are in poor condition and inaccessible to handicapped users. Portions of sidewalks are crumbling or are partially obstructed by utility poles and other objects that impede the travel path. Accessible ramps are needed for curbs at intersections. Crosswalk striping at prominent intersections has faded.

   Implementation Strategy:

a.) The City's current sidewalk maintenance schedule may be insufficient to keep up with City's increasing pedestrian infrastructure requirements. Review the funding sources referenced by the schedule along with the funding sources provided in **Part 4: Implementation** of this Plan to see if additional funding sources could be tapped to increase a steady flow of maintenance funds.

b.) Handicapped pedestrians are particularly sensitive to sidewalk maintenance and accessibility needs. Contact these users directly, or through local organizations that work with the physically challenged, and develop a volunteer reporting system that helps these users to record and report maintenance and accessibility problem spots.

c.) Develop a maintenance reporting system for local sanitation services that travel city streets weekly. Maintenance needs can be reported by cell phone or radio to a central dispatch, or be recorded on a laminated map with grease pencil, or by using an adapted GPS system. For more information, contact: PinPoint Geotech at bob@PinPointGeoTech.com or (864) 643-0344.

3. Develop and Adopt a Comprehensive Land Use Plan (Goals I-IV)

Through the comprehensive land use planning process, a clear vision for a community is developed and documented. The Plan describes how and where the community should grow and develop in the future, and what steps the community should take to turn this vision into a reality. Pedestrian-related elements that could be included in the plan are:

a.) An examination of alternative overall growth and development scenarios, including those that accommodate and foster pedestrian activity.

b.) Economic development strategies, particularly for those located in the central business district and along major growth corridors

c.) Coordination of all adopted policies and documents (plans, ordinances, etc.) that affect growth and development to ensure that these are coordinated and mutually supportive.

d.) Development of a prioritized implementation and funding schedule to help ensure that implementation strategies called for in the plan are realized.

e.) Descriptions of individual neighborhood and corridor development schemes.

Implementation Strategy: City Council select a qualified planning consultant to guide the Town through this collaborative planning process.

4. Engage in community planning for infill of large, under-developed parcels in and around the City. (Goal I)

As part of the land use planning process, serious discussions at the community level should guide the desired character infill development on large parcels, and how much street connectivity and pedestrian-friendly actions should be promoted in that development. These discussions should occur sooner rather than later, before these properties are developed, so that pedestrian facilities can be included in planning (because they are very difficult to successfully retrofit). As a part of these discussions, current zoning restrictions for these properties should be evaluated in terms of pedestrian-friendliness. A higher density and broader mix of uses (as permitted in B-1, B-2 or RO zones, for example), along with sidewalks and street trees, could support walking as a desirable means of transportation. Mixed-use zones would allow a variety

of destination points to exist in these areas – restaurants, stores and offices, for instance - giving people more opportunities to walk in their daily routine and work near their homes. Widely spaced and dispersed uses tend to discourage walking as a form of transportation between them.

Implementation Strategy:

a.) This element should be included in the development of the Comprehensive Land Use Plan if possible. Otherwise, follow the same Implementation Strategy as Item 2.

b.) The City planning staff, the Planning Commission and the PNC should evaluate public input and present recommendations for adoption by the City Council.

c.) Amend related regulatory documents as needed to incorporate the changes recommended.

5. Work with Gaston County on areas outside of Cherryville's incorporated limits. (Goal I)

Cherryville can directly determine what happens within its corporate limits, but not what happens just over the line. Gaston County's Unified Development Ordinance (UDO) explicitly discourages sprawl. Sprawling growth patterns inevitably lead to strip-type development that would, in the long run, prove auto-dependent and not support the pedestrian vision the City has articulated. This aspect of the County's vision meshes well with Cherryville's, but it will be important to monitor development to see whether these mutually supportive visions are being fulfilled, or whether something further should be done to promote them.

Implementation Strategy: The PNC shall continue to monitor land development near Cherryville, and coordinate with the Gaston County Planning Department, and the Carolina Thread Trail.

6. Create a safe and comfortable pedestrian system to improve pedestrian connectivity throughout the City. (Goal III)

In addition to the recommended sidewalks - with their associated crosswalks and traffic calming devices - many of the links recommended in the Pedestrian Plan are by way of proposed greenways. Opportunities for such off-road trails abound in Cherryville. Creek lands, particularly those within utility right-of-ways and existing parks can be most readily utilized.

Implementation Strategy:

a.) Locate pedestrian facilities according to the Pedestrian Plan. Require sidewalks, trails, crosswalk and associated facilities with minimum deviation from alignments shown in the **Comprehensive System Plan**, to be built according to the **Facility Standards and Guidelines**.

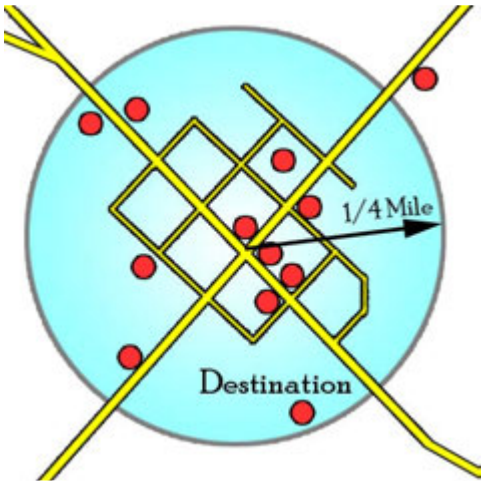
b.) Ensure that all new development respect designated corridors for greenways. City staff and the PNC shall work with the Carolina Thread Trail organization to develop greenways within Cherryville that can eventually serve as part of this larger regional network. Steps for such greenway development are outlined in **Appendix A.6** of the Pedestrian Plan.

c.) Require node zoning overlay standards for pedestrian facilities within designated nodes (See Recommendation 6 below).

d.) Implement traffic calming measures for designated streets, including signage, restriping of road lanes to allow on-street parking, textured pavement at crossings, repositioning curb lines for curb extensions/bulb-outs and reduced curve radii, in addition to related educational programs and police enforcement.

7. Designate Development Nodes. (Goals I-III)

Depending upon the outcome of Items 2 & 3, nodes of concentrated development could further foster a more walkable Cherryville even as the City expands. Currently, many of the most visited destination points within Cherryville are located in the downtown area, particularly within a quarter mile radius (a five-minute walking distance) of the central intersection of Main Street and Mountain Street. Such a clustering of desirable destinations - particularly when those destinations are well connected with a dense grid of streets and paths - create hubs (or nodes) of pedestrian activity. As the City continues to develop, additional nodes could provide more of these viable pedestrian-friendly centers of activity.



Typical pedestrian node

Nodes offer a concentration of destination points, creating a walkable center of activity. Various destinations are all within an easy 5-minute (1/4 mile) walking distance from the node center. In American urban centers, nodes most often occur at prominent street intersections.

Implementation Strategy:

a.) Develop a preliminary set of Node Overlay Standards designed to foster walkable overlay districts in concentrated centers of development. These standards should include a grid network of streets, mixed use zoning, and other features outlined in *The 13 Points of Pedestrian Oriented Development* in **Appendix A.4**.

b.) Develop a map of the nodes with the boundaries of each node clearly defined. Ideally, each node should be based upon a ¼ mile radius (= 5 minute walking distance). Evaluate the node locations shown in the Pedestrian Plan's **Comprehensive System Plan** in light of findings from a Comprehensive Land Use Plan (Item 2) and any additional community input from Item 3. Determine the geographic boundaries of each node and define those boundaries on a revised land use map. Follow additional implementation strategies prescribed in the Land Use Plan.

c.) Adopt the node map and establish it in the Zoning Ordinance. Create a new ordinance section addressing nodes. Apply Node Overlay zoning standards to all nodes.

8. Accentuate City Identity (Goal II)

A clear sense of arrival through coherent gateways can help define the city's edges and provide opportunities to reinforce the unique identity of Cherryville.

Implementation Strategy:

a.) Identify signature landmark elements that express the City's unique heritage and special qualities.

b.) Select a qualified landscape architect (and/or other design consultant(s)) to design a signature landscape to be used at the locations selected as gateways for the City, and a central location at the intersection of Main Street and Mountain Street. The design should include signature elements such as a planting palette and design, pavement palette and design, signage and monumentation. This plan specifically recommends the prominent use of a selected signature cherry tree variety in the gateway designs.

c.) Adopt the landscape design with provisions for minor adaptive changes to be made to the generic design to fit the individual constraints of each location.

d.) Designate the selected gateway locations as a special landscape zone in the Land Usage Ordinance node section, citing the adopted landscape plan.

e.) The ordinance shall require any new development on affected land to include the signature landscape features. The City may implement the signature landscape plan on parcels it considers will not be developed or re-developed within the preferred timeframe. The City shall be responsible for permitting and constructing improvements within the NCDOT right-of-way.

9. Enact ordinance changes (Goal I-IV)

Specific revisions to the Cherryville Ordinance could help achieve the expressed pedestrian vision of the City.

Implementation Strategy: Examine the following list of recommended ordinance modifications that would positively impact the pedestrian quality of the City. Then select a qualified planning consultant to guide the City through the ordinance revision process.

3.2 Recommended Programs

Pedestrian facilities, old or new, will receive greater use if certain programs are in place to promote and encourage pedestrian activity, especially for people who are not accustomed to walking much. In addition to current events and programs hosted within the City, the following programs are recommended.

The Cherryville Trekkers
When the proposed trails are complete, they will provide opportunities for the community to meet, socialize and exercise. As part of initial promotions for particular trails, the "Cherryville Trekkers" would provide an organized opportunity for gather for a trek along the trails. As part of the weekly event, refreshments could be provided by sponsoring area restaurants and served by volunteers. Printed T-shirts or ball caps could also be available to initial participants, along with area retail coupons. The Cherryville Trekkers could also hold events like Special Olympics and charity relay races, walkathons and marathons. Proceeds could be directed toward park or trail improvements. Such events would also draw attention to the healthy benefits of walking.

The Cherryville (Turkey) Trot
For many communities across the nation, Thanksgiving Day tradition would not be complete without the annual Turkey Trot. A number of events may be featured, including an 10K and 8K runs, a 5K walk, a Tot Trot, a 1 mile "Fun Run" or even a half marathon. These popular events are sponsored by various businesses and can be organized by an independent contractor. The Annual Turkey Trot half marathon in Pinehurst, NC, provides one example of how the event can be arranged. Visit:
http://www.active.com/page/Event_Details.htm?event_id=1341960&assetId
To talk to someone about beginning a program, contact Jodi Heimrich of:
First Health Center for Health & Fitness,
(910) 715-1843 or jheimrich@firsthealth.org

Walk a Kid to School event
On special days each year, non-profit organizations, teaming up with area restaurants, could provide school children breakfast before leading them on a community group walk to school. Programs like these help children, parents and all participating adults see for themselves the benefits and viability of children walking to and from school. NCDOT has more information about this type of initiative and related ones at: http://www.ncdot.org/transit/bicycle/safety/programs_initiatives/walk2school_intro.html

Walking School Bus

The walking school bus idea encourages students to walk together with supervision of one or more adults, depending on the size of the group. Adults can take turns walking with students by having assigned days of duty. The group follows a planned route, similar to the traditional school bus, on their commute to and from school. Children can be met by the group at their homes or at supervised "bus stops". The bus participants can have fun with the idea by wearing a specific color, use a wagon for the backpacks, or hold a rope linking them all together. Adults can use the opportunity to teach pedestrian safety skills to students while walking to school as well. Special days might be designated, like "Walking Wednesdays", on a weekly or monthly basis to encourage participation. Classes that have the greatest percentage of students participating can be recognized and rewarded.

Crossing Guards

Volunteers from the community can work with the local school system to provide safe crossings for school children at key crossing areas. Crossing guards help guide students safely across busy streets and provide additional supervision for children. They also serve as visual cues to drivers to slow down.

Students can also serve as safety patrol volunteers. The AAA School Safety Patrol program has helped reduce injuries and deaths among younger students most at risk for pedestrian injury. The AAA program also instills students with a sense of responsibility and leadership, as each day they protect classmates going to and from school. Contact the AAA School Traffic Safety Coordinator for North Carolina, at (888) 274-4459 x6201, mllyles@mailaaa.com. Or visit AAA at: http://www.aaapublicaffairs.com/Main/Default.asp?CategoryID=7&SubCategoryID=25&ContentID=71

Pedestrian Safety Roadshow

In an effort to reduce pedestrian injuries and fatalities in North Carolina, the Division of Bicycle and Pedestrian Transportation (DBPT) hosts this special program to train facilitators who could help communities identify and solve problems that affect pedestrian safety and walkability. The Federal Highway Administration (FHWA) developed this program in conjunction with the National Highway Traffic Safety Administration (NHTSA).

The objectives of the Pedestrian Safety Roadshow are these:

- Increase awareness of pedestrian safety and walkability concerns
- Provide participants with information about the elements that make a community safe and walkable
- Channel community concerns into a plan of action for addressing pedestrian issues.

Led by a trained facilitator, the Roadshow brings together community officials, concerned citizens, and local business leaders for an educational workshop about pedestrian issues. An accompanying slide show illustrates both problems and solutions to help pedestrians. The Roadshow also addresses health, environmental, and quality of life concerns that impact a community. After the classroom portion of the Roadshow, participants are asked to visit a

particular street, neighborhood, or area of their community to identify pedestrian concerns and then to discuss possible solutions. The participants are then challenged to follow up on the Roadshow with a plan of action to develop and implement appropriate solutions.

To request a Pedestrian Safety Roadshow for Cherryville, contact the DBPT at 919/733-2804 or bikeped_transportation@dot.state.nc.us.

Adopt a Sidewalk/Trail Program
The Adopt-a-Road program is very successful in gathering volunteer groups to regularly clean a particular stretch of road. Adopting a trail or sidewalk section can be just as effective. Any interested individual or organization can care for their "own" section of trail. They may adopt a favorite site or a Beautification Committee can suggest a trail or sidewalk section most in needing. Volunteers pick up litter four times annually, or more if necessary. They also serve as an extra set of eyes to watch for downed trees and branches or report other maintenance issues. Adopt-a-Trail or Adopt-a-Sidewalk signs are placed on the trails to recognize those volunteers who have taken their valuable time to keep the trails clean and help preserve these valuable assets for the community.

Provide Wireless Internet (Wifi) and trail webcam coverage.
Wifi allows people to enjoy a mobile workplace. Anyone working on a laptop computer can choose to work inside or outside, wirelessly, anywhere within the Wifi range. Wireless broadband access can be set up in areas where people are likely to want to gather outside, such as existing parks, area restaurants, or open spaces provided within new communities. Wireless webcams can also work off of the same system and be incorporated into greenway trails. These "trailcams" would enhance public safety and provide promotion for greater trail use. Additionally, 911 call buttons could also be stationed along various parts of each trail.

Sustainable Environments for Quality of Life (SEQL) is a regional initiative in the rapidly growing 15-county Charlotte, NC /Rock Hill, SC area. SEQL supports the region's efforts to develop integrated and sustainable long-range plans to ensure robust economic development, a clean and healthy environment, and a positive quality of life for its future. SEQL is funded in part by a grant from the EPA to Centralina Council of Governments in cooperation with Catawba Regional Council of Governments. Initiatives include the development of an action notebook for local jurisdiction elected officials and planners to use as a guide to development of policies and actions on the local level. Outreach extends to chambers, environmental groups and citizens. See more at www.seql.org
Pedestrian-related Action Items include:

- Pedestrian Friendly Streetscapes
  http://www.seql.org/actionplan.cfm?PlanID=16
- Connectivity for Multi-Modal Transit
  http://www.seql.org/actionplan.cfm?PlanID=4
- Greenways and Open Space
  http://www.seql.org/actionplan.cfm?PlanID=3

3.3 Project Recommendations and Implementation Strategy

Before considering individual site-specific projects (or how to implement them), a broad description of recommended pedestrian initiatives for Cherryville is provided below. Each of these project types or strategies is intended to improve pedestrian conditions in terms of increased safety and mobility. These general recommendations are listed categorically. Individual projects and project priorities within those categories are described in detail in the subsequent section: **Individual Project Identification and Priority List**, and are also shown on the **Comprehensive System Map**. All improvements should be constructed and maintained in accordance with the **Facility Standards and Guidelines** section in **Appendix A-2.**

GENERAL PROJECT RECOMMENDATIONS

Short-term Project Types

Short-term Projects are elements that can be constructed to help accomplish the overall goals of the Pedestrian Plan. They are considered "short-term" because they generally satisfy the following criteria:

- Address critical safety, mobility, or access needs
- Primarily improve or utilize already existing facilities
- Require minimal purchase of right-of-way or easements
- Are consistent with other previously adopted plans
- Require no changes in existing ordinances
- Require a minimum of funding

- **Immediately address safety concerns over street crossing conditions.** Contact NCDOT Division 12 and formerly request a site visit to existing crosswalks and other crossing points and traffic calming areas recommended in this Plan as needing particular attention. Crosswalks are proposed at strategic locations where increased pedestrian activity, linked to existing or proposed sidewalks, encounters the greatest potential conflict with vehicular traffic. Properly designed crosswalks not only facilitate safer street crossing opportunities for pedestrians, they also offer a secondary pedestrian benefit of calming traffic. Request that consideration be given to the need for crosswalk signalization, pedestrian activation mechanisms, signage and striping in locations listed in the **Proposed Pedestrian Infrastructure Projects Appendix A.2**.

- **Spot improvements to existing sidewalks** in accordance with the Plan's priorities. Sidewalk conditions to be considered for improvements may include:
  a. Pavement condition and type
  b. ADA compliance
  c. Path width
  d. Drainage
  e. Removal of obstructions
  f. Lighting
  g. Planter islands
  h. Landscaping
  i. Trash cans, benches, and other "pedestrian furniture"

Long-term Project Types:

Long-term projects may have equal or greater impact than Short-term but may require that one or more of the following actions be taken:

- Private development or private land and thus public-private cooperation
- Require additional right-of-way or easement acquisition
- Fall within NCDOT right-of-way
- Require NCDOT funding, engineering and construction
- Require ordinance modification

- **Construct pedestrian trails and supporting facilities** in acquired easements and right-of-way including proposed public destination points identified in the **Comprehensive System Map** and other desirable destinations.

  It should be noted that the term "trail" refers to a path other than a sidewalk that links destination points (and thus is useful for transportation) as well as a path that may be used for recreation.

  When developing pedestrian trails (or greenways) consider the following steps:

  1.) Identify, plan and develop greenways in cooperation with all affected landowners, local businesses, civic organizations, pertinent citizen advisory groups, jurisdictions, and local law enforcement. A "Greenways Partnership" can facilitate communication between these groups.

  2.) Ensure the preservation, protection and appropriate management of significant and sensitive environmental, ecological and cultural resources within greenways through conformance with the standards and criteria identified in this Plan and other pertinent policies and plans.

  3.) Where acquisition of land needed for the greenway is not feasible or desirable, work with landowners to protect identified resources, and provide public access where appropriate, through voluntary means such as conservation and trail easements and/or cooperative agreements.

  4.) Identify roadside segments of the greenway/trail plan. Ensure that these segments are incorporated into local and state transportation plans and developed and maintained through appropriate agencies.

- **Construct sidewalks** and related facilities as improvements are made to existing roads and as new road construction occurs. Many of the Pedestrian Plan's recommended sidewalk projects are to be constructed as road improvements are implemented by NCDOT.

IMPLEMENTATION STRATEGIES

Each of the specific strategies listed below are interdependent steps. Each will help put the pieces in place necessary for effectively building pedestrian projects and meeting the vision set forth in the Pedestrian Plan. These strategies should be addressed simultaneously to the greatest degree possible.

- **Apply for recommended funding** and enact revisions to the local budget.
  See **Funding Strategies and Local Budget Recommendations** in this Plan.

- **Revise current development policies** per the **Recommended Policies and Ordinance Modifications** section of this Plan. New streets, trails and associated pedestrian facilities will become available to the City through the development process, with minimal public expense. Encouraging mixed-use development in these parcels through the creation of a mixed-use zoning category will foster new neighborhood development where walking can serve as a useful means of transportation and help Cherryville develop as a more walkable city.

- **Initiate right-of-way agreements for sidewalks, trails and other improvements.**
  All pedestrian projects should be coordinated with the appropriate right-of-way owners, including NCDOT Division 12, local utility companies, and individual parcel owners to be identified. Coordinate with new development and Gaston County where trails leave Cherryville municipal limits. All projects must meet all local ordinance buffer requirements and state wetlands requirements.

  See the **Funding Strategies** section for various options of land acquisition and public-private partnerships. New trail easements may be acquired through a subdivision process, as proposed in the **Recommended Policies and Ordinance Modifications** chart, or through various other means including:
  - Donation of right-of-way or easements by public or private landowners
  - Public purchase of right-of-way or easements
  - Public/private partnerships

- **Evaluate current City staffing needs.**
  Implementation of the Pedestrian Plan may require some additional staff responsibilities to coordinate individual improvement projects and work with the Pedestrian Needs Committee.

- **Initiate recommended programs** for community awareness, safety and maintenance procedures. The PNC and City staff shall work with stakeholders to reach out to pedestrians about safety issues. The Police Department can participate by distributing materials through their Community Policing program, the schools by distributing materials to their students and parents.

- **Evaluate existing and ongoing pedestrian projects and strategies.**
  See the **Recommended Evaluation Process** in this Plan.

3.4 Proposed Project Groups

Projects are described below in groups as they function together to accomplish goals for specific areas and corridors throughout the City. All projects are further described individually in **Appendix A.2**, according to location, length, approximate cost, right-of-way ownership, and project evaluation and priority.

Prioritizing projects is by nature a fluid process, dependent upon factors subject to change, such as traffic demands, individual parcel sales, development trends, and employment opportunities. For purposes of this Plan, projects have been prioritized according to how well they have been evaluated as meeting the overall goals of this Plan. The **Goals**, previously stated in Part I, are repeated here in shortened form:

1. Encourage the creation of concentrated downtown and infill development
2. Accentuate City identity
3. Provide greater service to critical destination points
4. Improve pedestrian connectivity throughout City
5. Provide more outdoor recreational opportunities

In addition to meeting community goals, the projects listed below are also weighted by the following implementation **Criteria**:

1. Physical/geographic constraints
2. Potential for right-of-way acquisition
3. Project costs
4. Support by existing plans and initiatives
5. Community-expressed support based on where people walk or would like to walk, particularly as a means of transportation between destination points.

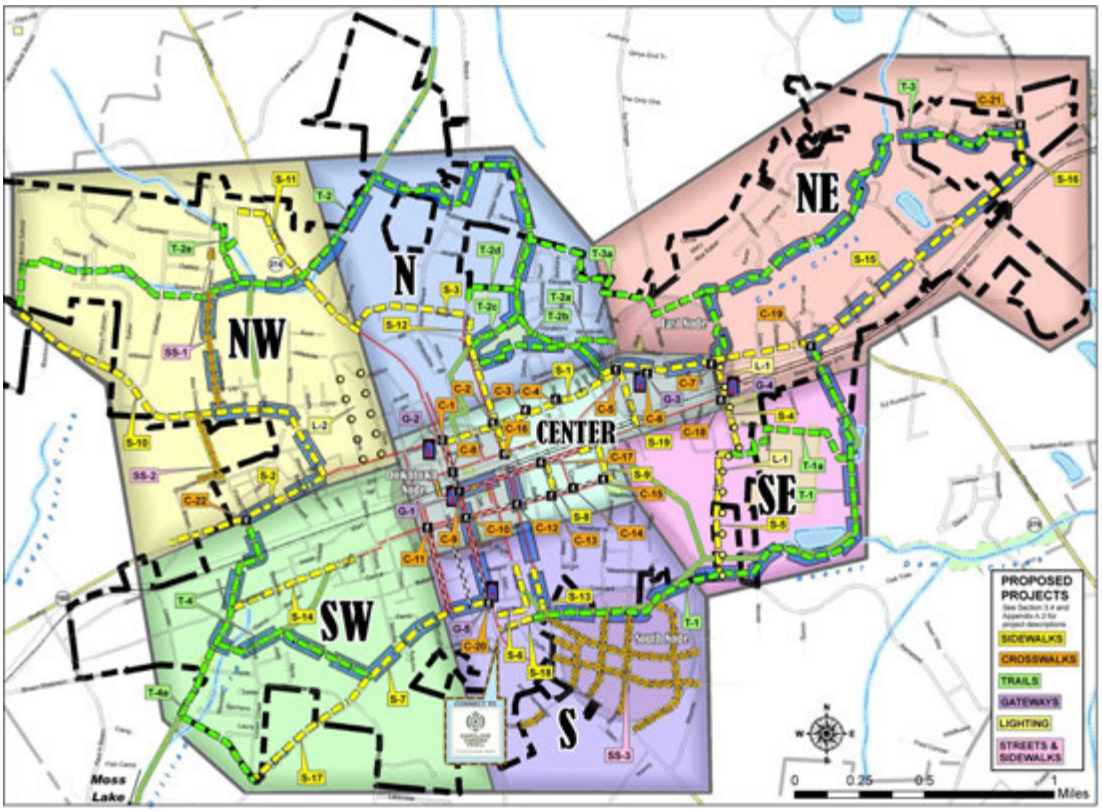
Each project was evaluated in terms of the above goals and criteria. The public rated the projects during the second public input meeting. The steering committee reviewed the public response and factored it into a finalized prioritization.

All project locations are shown on the attached **Comprehensive System Map**. See the **Project Recommendations and Implementation Strategy** section for background, justification and further explanation of each project type. All improvements shall be designed and constructed in accordance with the descriptions in **Facility Standards and Guidelines**, all pertinent NCDOT specifications and the most current **Manual on Uniform Traffic Control Devices** (MUTCD). All improvements in NCDOT right-of-way are contingent upon NCDOT District 12 approval.

Project distance and cost estimates provided in this Plan are approximate. All sidewalk and trail projects will require sufficient right-of-way to permit the paved area, necessary grade changes, shoulders or planter strips, and other accessories as described in the **Facility Standards and Guidelines**.

CHERRYVILLE PEDESTRIAN PROJECT GROUPS

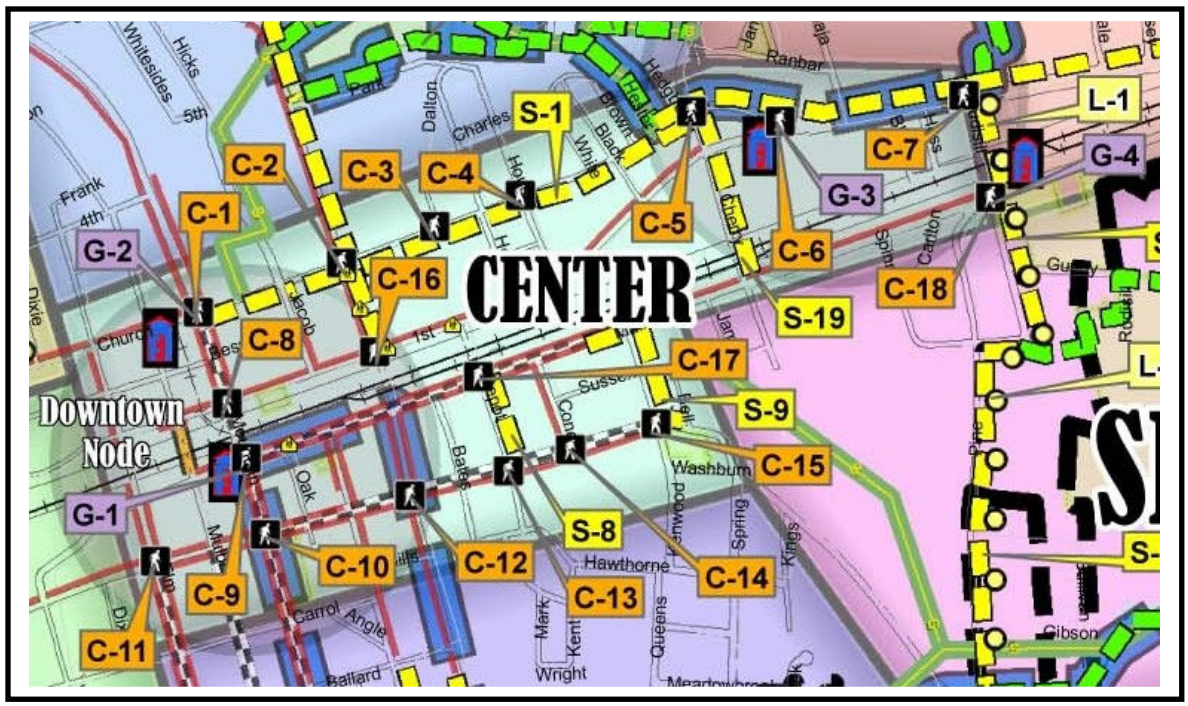
The recommended pedestrian projects have been grouped into seven neighborhood zones. The edges of these zones are loosely defined by the major transportation corridors in the City and the central historic City grid.



Neighborhood Zones

A continuous 13.1-mile loop – the distance of ½ marathon – is proposed to run throughout the seven neighborhood zones. The Cherryville Loop is comprised of various trail and sidewalk projects described in the following pages, along with some existing sidewalks in the downtown (Center) area. The Loop appears as a wide blue dash in the **Comprehensive System Plan**, as well as the Neighborhood Zones map above. Each neighborhood zone is considered individually in the following pages. The goals and opportunities for each zone are considered, followed by suggested projects. The projects are described in additional detail in the **Proposed Pedestrian Infrastructure Projects** in **Appendix A.2**.

1. The **Center Zone** covers primarily the historic City grid, including NC 150, and extending as far as Rudisill Street, Elm Street and Carroll Street. The proposed Downtown Node, centered upon Main Street and Mountain Street, occupies the west portion of the Zone, and a portion of the proposed East Node is centered at the northeast end near the junction of NC 150 and 1st Street.



Goals & Opportunities:

- Create a safer walking environment, particularly along NC 150.
- Slow vehicular speeds through traffic calming devices (TCDs) and strategies
- Make street crossings safer
- Enhance City identity and sense of arrival.
- Provide stronger pedestrian connections to adjacent areas and nearby destinations, such as parks and schools.

Projects:

- **Sidewalk** along south side of NC 150 from Mountain Street to Cherry Street **(S-1)**
- **Sidewalk** along east side of Cherry Street from NC 150 to Main Street **(S-19)**
- **Sidewalks** along Depot Street **(S-8)** and Kenwood Road **(S-9)** to strengthen pedestrian connections from Main Street to Academy Street and Kenwood Park
- **Crosswalks** at numerous intersections along NC 150, Mountain Street, Main Street, and Academy Street for safer crossings and traffic calming (**C-1** through **C-18)**
- Four city **gateway features**, including the central "gateway" at Mountain Street and Main Street **(G-1)**, and the designated entranceways at NC 150 at Mountain Street **(G-2)**, NC 150 at 1st Street **(G-3)**, and NC 279 at Rudisill **(G-4)**
- Various **traffic calming strategies** along the following road segments:
  - **Mountain Street** from NC 150 to Chavis

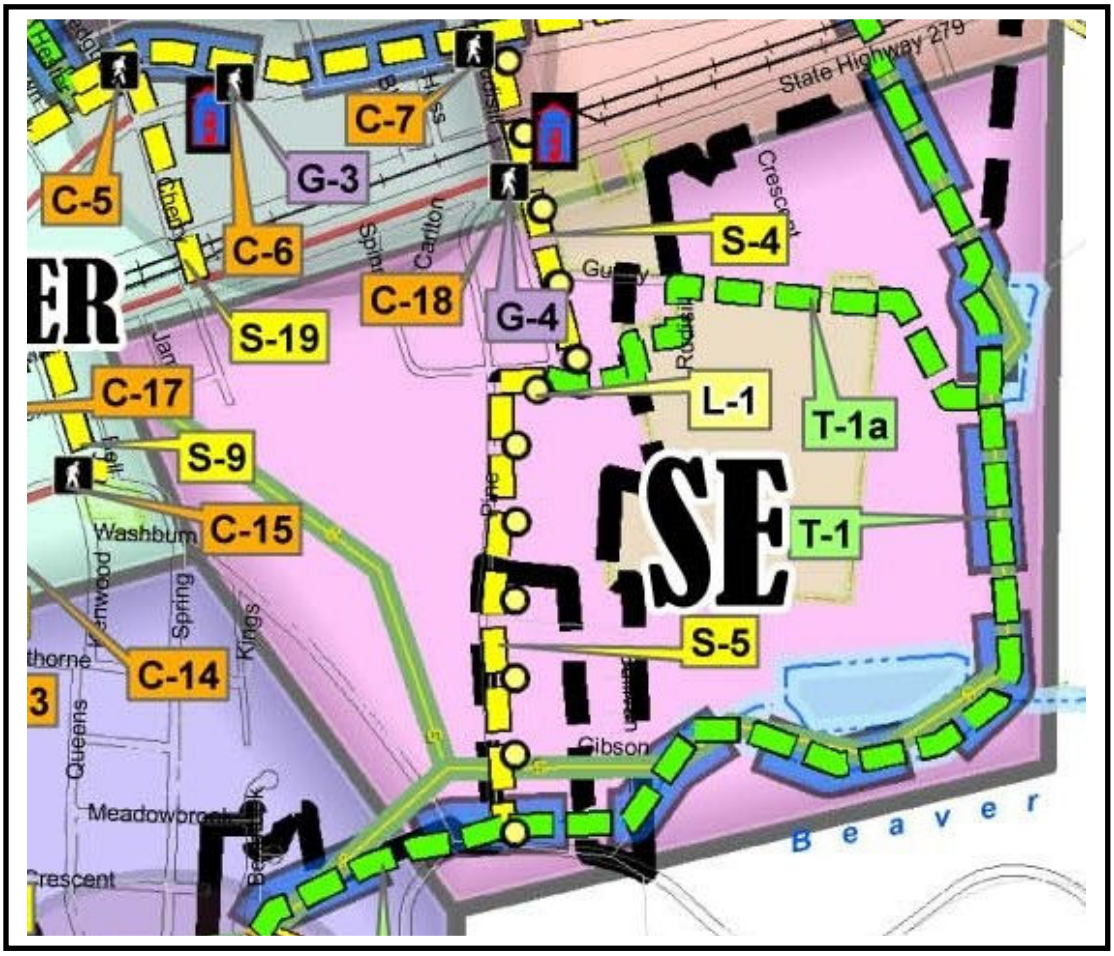
- **Main Street** from Mountain Street to Kenwood Street
- **Academy Street** from Mountain Street to Kenwood Street
- **Elm Street** from Academy Street to Old Post Road
- **Mulberry Street** from Academy Street to Old Post Road

In addition to educational and enforcement traffic calming programs, the following TCDs are recommended for these road segments as right-of-way and physical constraints permit:

a.) 4-way stops
b.) Crosswalk facilities (including signage and textured pavement)
c.) Bulb-outs at midblock and intersection opportunities
d.) Pedestrian median islands
e.) Parallel parking along one or both sides of the street depending upon road width

For more detailed recommendations of each project, refer to **Appendix A.2 - Proposed Pedestrian Infrastructure Projects**. For further general description of these facilities, see **Appendix A.3 - Facility Standards & Guidelines**.

2. The **Southeast Zone** begins west of Cherry Street and runs eastward. It includes Beaver Dam Creek with its associated sewer ROW to the south and the east. Recreation areas, including Ballard Park, and the Exhilaration Station, characterize the area, which also includes the Harris Teeter Shopping Center and some multi-family housing.



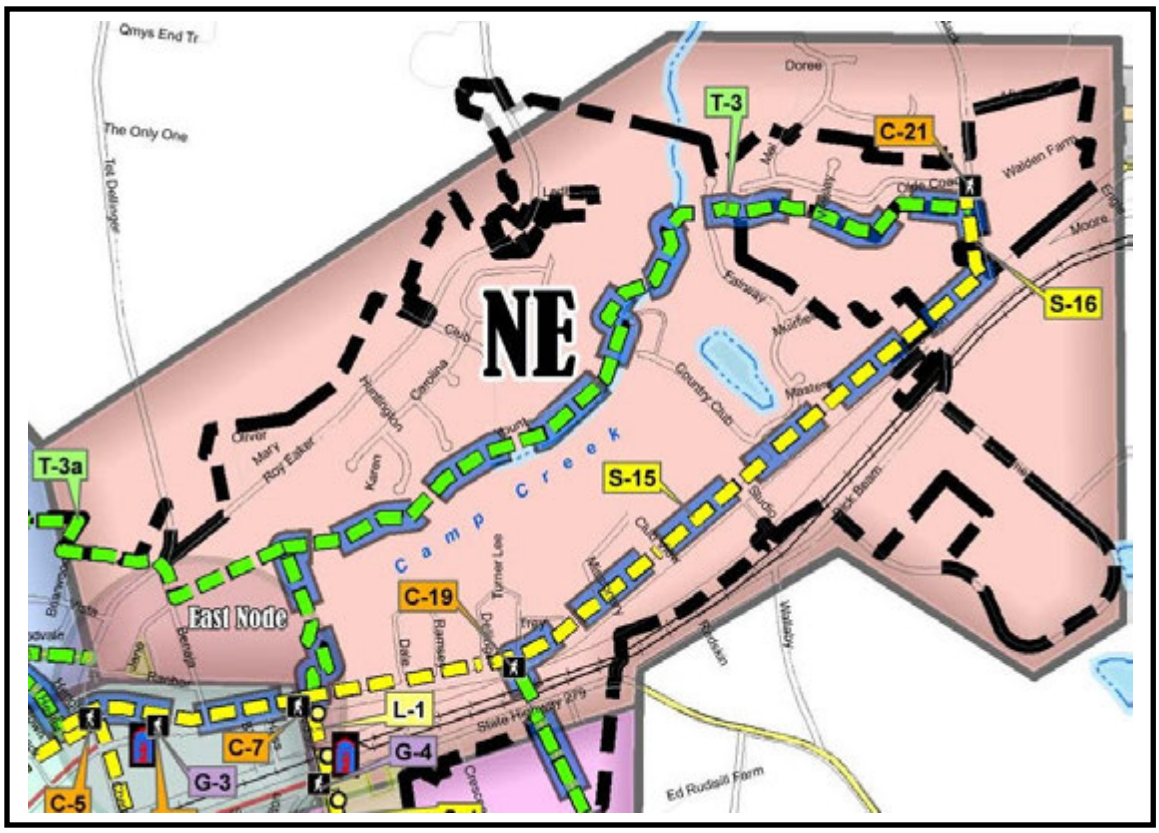
Goals & Opportunities:

- Connect the various recreation areas
- Provide connections to multi-family housing
- Improve street lighting particularly in multi-family residential areas

Projects:

- **Sidewalks** along east side of Rudisill and Pine Streets to connect NC 150 sidewalk to parks and proposed greenway **(S-4, S-5)**
- **Beaver Dam Trail** along Beaver Dam Creek, connecting NC 150 to multi-family housing and the South Neighborhood **(T-1)**
- **Ballard Park Trail** connecting Beaver Dam Creek Greenway to Rudisill Street through Ballard Park **(T-1a)**
- **Street lighting** along Rudisill, Spinners and Pine Streets, from NC 150 to Kenwood Road **(L-1)**

3. The **Northeast Zone** includes NC 150 from the Rudisill Street intersection to the City's eastern extent at the Wal-mart shopping area. It includes a portion of the East Node.



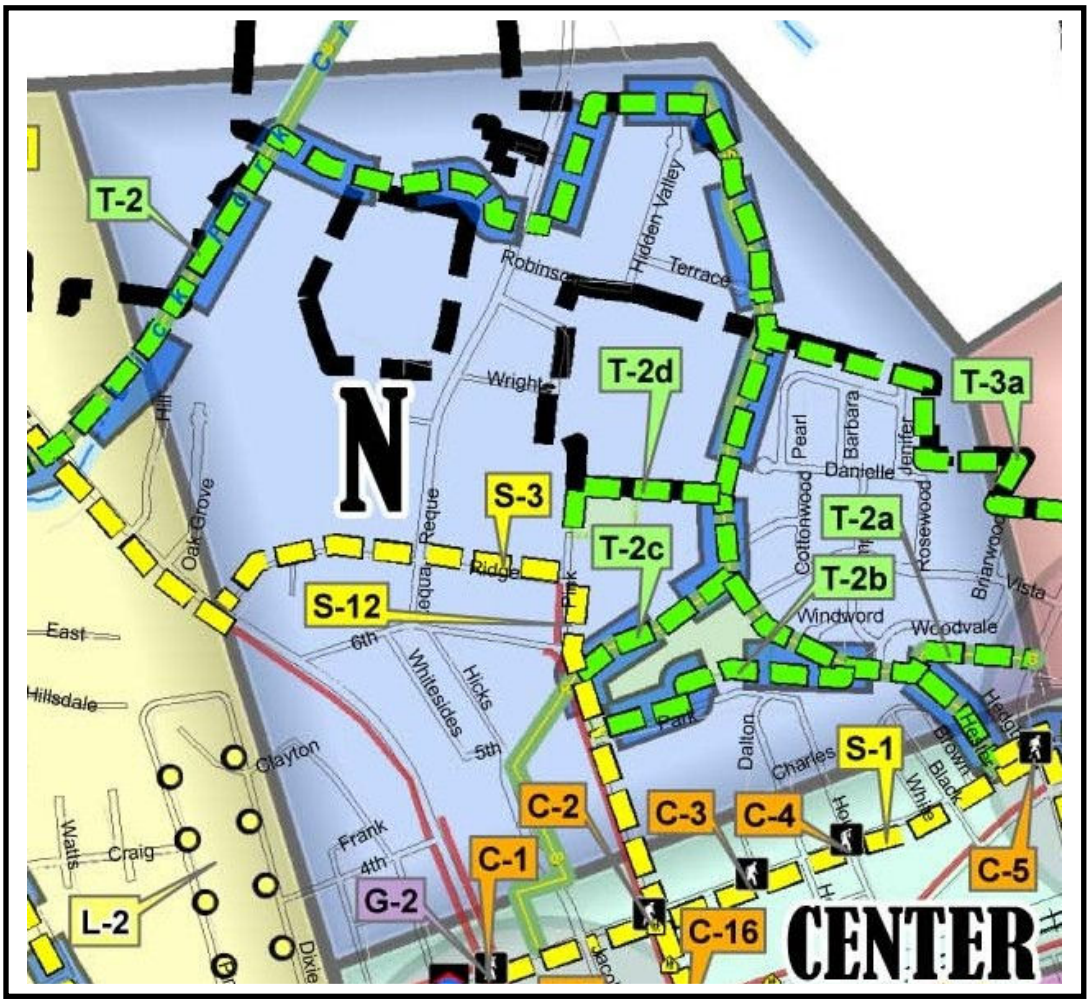
Goals & Opportunities:

- A safer walking environment along NC 150
- Safe crossing opportunities along NC 150
- Better access to proposed shopping areas
- Camp Creek can provide a pedestrian link through the Country Club area to the proposed shopping area.
- Proposed development areas

Projects:

- **Sidewalk** to be incorporated into the north side of NC 150 from Hester Street to Bud Black **(S-15)**
- **Sidewalk** along west side of Bud Black **(S-16)** from NC 150 to Camp Creek Greenway, Wal-mart entrance, and Walden Pond Care Home.
- **Camp Creek Trail** along the Creek connecting NC 150 through the east Node, the proposed development area, and the Country Club to the new shopping area **(T-3)**.
- **Crosswalks** for Beaver Dam Trail trailhead at NC 150 **(C-19)** connecting to regional trail, and across Bud Black at Olde Coach **(C-21)** to connect Camp Creek Trail to new shopping area.

4. The **North Zone** lies north of NC 150 from Cherry Street to Elm Street. It includes the portion of Mountain Street with existing sidewalks.



Goals & Opportunities:

- Improve pedestrian connections to Moss Park and Cherryville High School
- Existing creek bed and sewer easements for trails

Projects:

- **North Trail** from the East Node at Hester Street to Mountain Street (and westward) along sewer ROW and creek beds **(T-2)**
- **Off shoot trails:**
  - Ranbar Trail **(T-2a)** along sewer easement to Ranbar St. and Black Park.
  - Houser Trail **(T-2b)** along south side of Moss Park to Houser and Woodvale
  - Moss Park Trail **(T-2c)** at creek along north side of Moss Park to Pink St.
  - High School Trail **(T-2d)** at north end of church property to connect to Cherryville High School
- **Sidewalks** along east side of Pink Street **(S-12)** and north side of Ridge Road **(S-3)** to existing sidewalk at Mountain Street

5. The **Northwest Zone** includes Mountain Street north of the existing sidewalk. It also includes NC 150 from Elm Street to the west edge of the City. The area also includes Black Rock School Road and the Carolina Care Center on Harrilson Road.

Goals & Opportunities:

- Create a safer walking environment along NC 150.
- Provide additional street and sidewalk connections for Delville neighborhood
- Existing creek bed and sewer easements for trails
- Street lighting particularly in multi-family residential areas

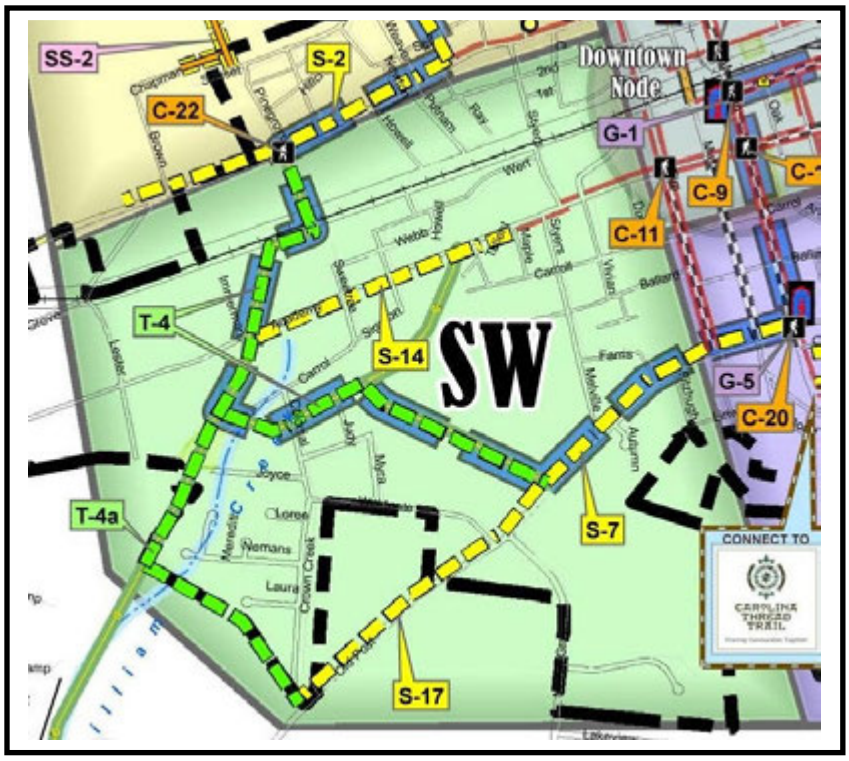
Projects:

- **North Trail** from Black Rock School Road to Mountain Street (and eastward) along sewer ROW and Lick Fork Creek **(T-2)**
- **Off shoot trail:** Vernon Trail **(T-2e)** along existing sewer ROW.
- **Sidewalk** along Mountain St. and Harrilson Rd to connect Carolina Care Center to existing business and North Trail Greenway **(S-11)** and along Delview Road **(S- 10)**
- **Sidewalk** along north side of NC 150 from Delview Road to Cherry Hill Shopping Center and proposed road just west of Grove Road **(S-2)**
- Vernon **Street and sidewalk continuation** to Delview Road along the Countryside Drive alignment to connect to North Trail **(T-2)** and **Street continuation** of Vernon Street between Sandycrest Drive and Oakley Lane **(SS-1)**
- **Street and sidewalk** connection from Delview Road to Sunset Road, with an offshoot to Chapman Road **(SS-2)**
- **Street lighting** along Dixie and Pine Streets **(L-2)**

6. The **Southwest Zone** lies south of NC 150 and west of Mountain Street, and includes Academy and Elm Streets south and west of their intersection. This Zone includes destinations such as Westgate Park, Cherry Hill Shopping Center, and the industrial sites along Academy Street.

Goals & Opportunities:

- Provide better pedestrian connections to Westgate Park, particularly from the adjacent Crown Creek neighborhood.
- Existing creek bed and sewer easements for trails



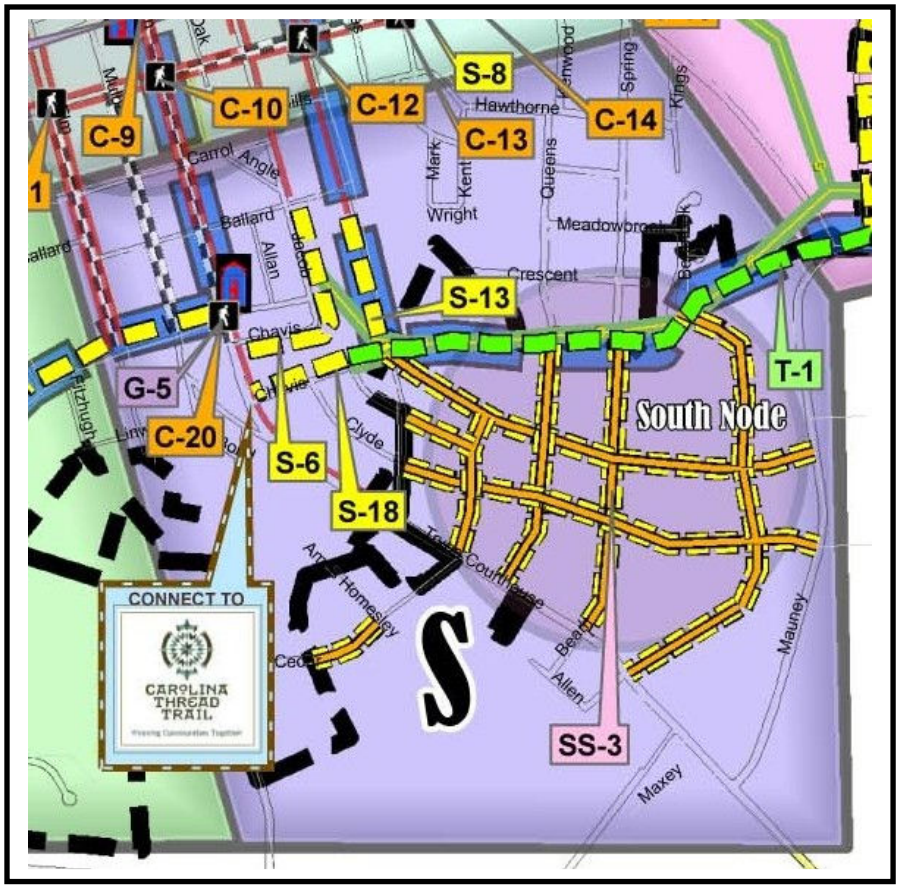
Projects:

- **Westgate Park Trail** along sewer ROW from NC 150 at the Pinegrove Avenue intersection, at the east end of the Cherry Hill Shopping Center, to Westgate Park, and continuing south along the sewer ROW to the City limits, and turning east to terminate at Old Post Road at Crown Creek intersection **(T-4)**
- **Off shoot trail:** Westgate Park Trail **(T-4a)** along existing sewer ROWs to Old Post Road between Melville and Westgate.
- **Sidewalk** along south side of Academy Street to Westgate Park **(S-14).**
- **Sidewalk** along north side Old Post Road from Mountain Street Westgate Trail trailhead **(S-7)** and further to Crown Creek Drive **(S-17).**

7. The **South Zone** includes Mountain Street/Tryon Courthouse Road south of and including the Old Post Road intersection, portions of Jacob and Pink Streets where there is currently no sidewalk, Beaver Dam Creek to Pine Avenue. Key destinations with the Zone include Chavis Middle School, its recreation fields, and the proposed South Node.

Goals & Opportunities:

- Complete sidewalk links to the Middle School.
- Existing creek bed and sewer easements for trails
- Connect to the proposed regional greenway
- Safe crossing opportunities
- Enhance City identity and sense of arrival.
- Proposed development area



Projects:

- **Sidewalk** down the east side of Jacob Street, and the south side of Chavis Drive (North) to Mountain Street/Tryon Courthouse Road **(S-6)**
- **Sidewalk** along west side of Pink Street **(S-13)**, and the north side of Chavis Drive (South) **(S-18)**, to Mountain Street/Tryon Courthouse Road
- **FTrail (T-1)** to continue along the existing sewer ROW and connect the City pedestrian system to the proposed regional Carolina Thread Trail
- City **gateway feature** at intersection of Mountain Street/Tryon Courthouse Road and Old Post Road **(G-5)**
- **Crosswalk** at intersection of Mountain Street/Tryon Courthouse Road and Old Post Road **(C-20)**
- Develop the **South Node** according to this Plan's recommendations for node development (See **Section 3.1**, recommendation 6) to foster a thriving, pedestrian-friendly neighborhood **(SS-3)**, includes connection to Cedar Street from Amos Homesley Road.

3.5 Recommended Maintenance Programs

Sidewalks and other pedestrian paths must be properly maintained and kept clear of debris, overgrown landscaping, tripping hazards, or areas where water accumulates. Other pedestrian facilities, such as signage, lighting, striping and landscaping, require other care and occasional replacement.

In general, maintenance costs include:

- Personnel Costs – Wages and benefits for the people who perform the work.
- Materials – Or supplies, including paving materials, and landscape materials such as soil, rocks, and plants.
- Water – For irrigation.
- Utilities – Including electricity and phone for running automatic or centralized irrigation systems and traffic signals.
- Equipment – For on-going maintenance and future purchases of maintenance tools.

Maintenance Considerations for Landscaped Areas

All outdoor public areas require regular maintenance procedures, such as weed control, litter pickup, inspection and general repair. Additionally, individual landscape areas require particular maintenance procedures.

- For tree and shrub areas: structural pruning, sucker removal, pest/disease control, fertilizing, adjustment/checking/repair of irrigation systems, applying post/pre-emergents, staking and bracing of trees, rodent control, and pruning and clearing branches or trimming shrubs when they encroach on the travel path or impair the line of sight for drivers and pedestrians.
- For groundcover areas: pruning, edging, applying post/pre-emergents & plant growth regulators, fertilizing, adjustment/checking/repair of irrigation systems, rodent control and dead-heading (removal of dead blooms).
- For turf areas: mowing, edging, aeration, fertilizing, adjustment/checking/repair of irrigation systems, cleaning hardscape areas (paths, squares, etc.), and rodent control.
- For non-vegetated areas (open space): applying post/pre-emergent (selected areas), fire abatement, cleaning of hardscape areas (concrete pathways, squares, etc.)
- Additional work as needed: decorative light inspection/repair, inspection for acceptance of new sites, vandalism and graffiti cleanup.

Maintenance & Operations of Off-road Trails

Facility inspections are an essential part of maintaining any facility. Planning and design of all off-road trails should include management plans that help gauge operational funds for various maintenance projects. Proper maintenance must address both the performance condition of the trail preserving the environmental integrity and character of any environmental areas that are adjacent to the trail. Maintenance and repair projects can be

managed either through annual service contracts put out to bid, or become an integral part of the Facilities Management maintenance program. Annual budgets for trail maintenance and operations should document maintenance items, facility improvements, and other related costs to ensure the long-term health of trail facilities, the environment, and safety for users.

Three tiers of maintenance programs should be included in the management plan:

1. **Long-term maintenance programs** - includes renovation of facilities and trail resurfacing. Comprehensive inspections should occur twice a year to record user impacts, general wear and tear, and other factors that may affect safety, environmental features, or structural integrity of the facility. If long-term maintenance programs are deferred, the safety of the trail is compromised and costly capital improvement funds to renovate damaged areas may be required. Typical long-term maintenance activities include:
    - Annual vegetation clearance (June and September)
    - Annual inspection by engineer to identify potential repairs needed for bridges and structures, drainage structures, pavement, railings, and fences
    - Revegetation during planting seasons
2. **Routine maintenance** – includes safety and repair issues that occur throughout the life of the facility. Frequency of routine maintenance should take place on a monthly basis, dependent upon the amount of usage and availability of funds. Typical routine maintenance activities include:
    - Removal of litter and general cleaning
    - Sweeping and leaf removal
    - Mowing and weed control
    - Pruning and removal of encroaching/fallen branches
    - Trail edging
    - Route signage maintenance
    - Graffiti control
    - Regular presence of volunteers to report faults
3. **Emergency repairs** - necessitated when storm damage makes the trail unsafe for daily use. Severe weather may occasionally cause damage to the facility either through wind, erosion, or fallen trees. Emergency repair funds for severe weather should be allocated and allowed to rollover from year to year for this inevitability.

Volunteer programs

Volunteer programs for greenway maintenance can be organized through the "Adopt-A-Park" program. Volunteer labor can yield a substantial savings for labor costs on routine maintenance and repair. Materials can be donated by a group, provided through a corporate sponsor, or purchased by the City.

3.6 Recommended Evaluation Process

As the Cherryville Pedestrian Plan is implemented and pedestrian facilities are constructed, it is recommended that the City perform a periodic evaluation of the goals and the processes described in the Plan, particularly in coordination with road projects, and as more growth in the area occurs. Plans in themselves are static and unchanging documents, but circumstances change constantly. Though the City remains true to the vision described in this Plan, the means of achieving that vision may change with fluctuating economic conditions, property sales and redevelopment, fluid population trends, changing development practices, and evolving technology. The following recommendations are provided as examples of regular means of evaluation.

1. Pedestrian Needs Committee (PNC) should meet periodically to confirm and re-evaluate the priorities of this Plan and its recommended projects, particularly as tracts of land are developed.

2. The Public Works Director should regularly report facility conditions and needs.

3. Public surveys can be used to solicit the opinions of everyday users to determine if the plan and its rate of execution are adequately meeting the needs of the populace.

PART 4: IMPLEMENTATION

4.1 Sample Cost Estimates for Facilities

In order to build pedestrian facilities, a number of different costs associated with projects must be considered. There are material costs, labor costs, mobilization costs, right-of-way purchase or easement costs, design costs, and project management expenses. Sidewalk and trail projects might also include changes to existing grades and necessitate alterations to drainage structures. Together these items are considered "project costs." In addition to the project costs, there are also ongoing expenses associated with the new facility, such as maintenance, security, promotion and other programs necessary for the initial and continued success of the facility.

The cost estimates provided below are primarily limited to material and labor. They are provided only as a guide and are approximate. Prices are current for the time of this publication. Materials, labor and other project costs will vary with fluctuating interest rates and inflation.

Sidewalks and Trails

Surface Material (width)	**Costs per LF/per mile**	**Longevity**
Concrete (4')	$135 / $700,000	20 years +
Pervious Concrete (10')	$50 / $245,000 – 265,000	
Asphalt (10') 2" w/6" base	$135 / $700,000	7-20 years
Crushed stone walkway (10')	$15 - 25 / $80,000 -106,000	7-10 years
Wood chips (10')	$14 - 18 / $ 70,000 - 90,000	1-3 years
Soil cement (10')	$14 - 22 / $ 70,000 -110,000	5-7 years
Native soil (10')	$11 - 15 / $ 55,000 - 75,000	variable
Boardwalk (6' – 8') wood or recycled material	$200 - 250 / $1.0 – 1.3 million	7-15 years
Polyurethane track (8') or Rubberized running track	$22 / $110,000	13-15 years

Installation costs do not include ROW purchase, grading or utility relocation.

Total Cost of Resurfacing Trails

Concrete	$ 25 LF
Asphalt	$ 10 LF (per linear foot) ($ 5 LF to overlay w/ top coat)
Crushed Stone	$ 5 LF
Polyurethane track	$70,000/mile to re-spray after 6 years

Typical Annual Maintenance Costs for a 1-Mile Paved Trail

Drainage and storm channel maintenance	$ 500
Sweeping/blowing debris off trail head	$ 1,200
Pickup/removal of trash	$ 1,200
Weed control and vegetation management	$ 1,000
Mowing of 3-foot grass shoulder along trail	$ 1,200
Minor repairs to trail furniture/safety features	$ 500
Maintenance supplies for work crews	$ 300
Equipment fuel and repairs	$ 600
TOTAL	**$ 6,500**

Street Improvements

Crosswalks

Approximate installation costs per unit:

Regular striped	$ 100
Ladder crosswalk	$ 300
Stamped asphalt	$1,100 ($50/square yard)
Patterned concrete	$3,000
Raised	$2,000 - $5,000

Warning signage: $50 to $150 per sign plus $150/sign in installation costs.

Traffic signals $40,000 to $200,000 per signal

Pedestrian signals $20,000 to $40,000 for all four legs

Traffic signal enhancements: $10,000 to add new pedestrian signals

Motion activated crossing: $20,000 per typical two-pole system (excluding installation)

Striping: 12-inch: $1 per linear yard (LY)
4-inch: $10 K per mile, or $2 LF

Costs do not include maintenance, which varies according to materials used.

Concrete curb and gutter: $12 - $15/LF

Curb inlets $2000 per unit

Curb extensions: $5,000 - 10,000 per corner or midblock section.
Costs vary with design and site conditions, particularly utilities, control boxes and drainage considerations. Special pavement, street furnishings and landscaping are recommended but contribute to costs.

Crossing Islands/Medians: $8,000 to $15,000 for a raised curbed island with minimal landscaping.

Reconstructing turning radius: $5,000 to $30,000 per corner, depending on site conditions (e.g., drainage and utilities may need to be relocated).

Speed humps: $1,700 per unit

Bike Racks: $350-$750 (10-12 bikes)

Trees: $200/tree, installed

Lighting: $ 45/LF frontage

Street Furniture:
Prices vary greatly according type of facility, brand, and level of customization. Benches or outdoor trashcans installed start at approximately $600/unit.

General park facilities $ 25/SF
The construction of new park or open space facilities on land not currently used as park, with some furniture and amenities.

Cost Estimate Sources:

- Walkinginfo.org – **Pedestrian & Bicycle Information Center**
- "Trails For The 21st Century," published by **Rails-To-Trails Conservancy**, 2001:
- http://www.trafficcalming.org/measures2.html
- http://www.nysphysicalactivity.org/site_beactiveenv/nybc/source_files/3_pedfac_improve/FHA_EmergTechPedXWalk.pdf
- http://www.charmeck.org/Departments/Transportation/About+Us/Speed+Humps.htm
- **National Trails Training Partnership**
  http://www.americantrails.org/resources/trailbuilding/AsphaltCO.html

4.2 Funding Strategies

Careful planning of pedestrian facilities is half the battle. The other half is building them. Both procedures require funding. However, there are many sources available for funding the planning and construction of pedestrian improvements. Using the right source and getting the best return requires strategy. This Plan itself was funded by the NCDOT Bicycle and Pedestrian Planning Grant. But grants usually provide only a portion of overall funding needs. The most successful strategy for a municipality to develop and improve its pedestrian system will involve an appropriate combination of all possible sources, public and private.

Local, state, federal, and private funding is available to support the planning, construction, right of way acquisition and maintenance of bicycle and pedestrian facilities. Available funding sources are related to a variety of purposes including transportation, water quality, hazard mitigation, recreation, air quality, wildlife protection, community health, and economic development. This section identifies a list of some of the bicycle and pedestrian facility funding opportunities available through federal, state, nonprofit and corporate sources. An important key to obtaining funding is for local governments to have adopted plans for greenway, bicycle, pedestrian or trail systems in place prior to making an application for funding.

Funding Allocated by State Agencies

Funding Opportunities Through NCDOT:

Bicycle and Pedestrian Independent Projects Funded Through the Transportation Improvement Program (TIP):
In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT) manages the Transportation Improvement Program (TIP) selection process for bicycle and pedestrian projects.

Projects programmed into the TIP are independent projects – those that are not related to a scheduled highway project. Incidental projects – those related to a scheduled highway project – are handled through other funding sources described in this section.

A total of $6 million is annually set aside for the construction of bicycle improvements that are independent of scheduled highway projects in communities throughout the state. Eighty percent of these funds are from STP-Enhancement funds, while the State Highway Trust provides the remaining 20 percent of the funding.

Each year, the DBPT regularly sets aside a total of $200,000 of TIP funding for the department to fund projects such as training workshops, pedestrian safety and research projects, and other pedestrian needs statewide. Those interested in learning

about training workshops, research and other opportunities should contact the DBPT for information.

A total of $5.3 million dollars of TIP funding is available for funding various bicycle and pedestrian independent projects, including the construction of multi-use trails, the striping of bicycle lanes, and the construction of paved shoulders, among other facilities. Prospective applicants are encouraged to contact the DBPT regarding funding assistance for bicycle and pedestrian projects.
For a detailed description of the TIP project selection process, visit:
http://www.ncdot.org/transit/bicycle/funding/funding_TIP.html.

Incidental Projects – Bicycle and pedestrian accommodations such as bike lanes, widened paved shoulders, sidewalks and bicycle-safe bridge design are frequently included as incidental features of highway projects. In addition, bicycle-safe drainage grates are a standard feature of all highway construction. Most bicycle and pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of National Highway System funds and State Highway Trust Funds.

Sidewalk Program – Each year, a total of $1.4 million in STP-Enhancement funding is set aside for sidewalk construction, maintenance and repair. Each of the 14 highway divisions across the state receives $100,000 annually for this purpose. Funding decisions are made by the district engineer. Prospective applicants are encouraged to contact their district engineer for information on how to apply for funding.

Governor's Highway Safety Program (GHSP) – The mission of the GHSP is to promote highway safety awareness and reduce the number of traffic crashes in the state of North Carolina through the planning and execution of safety programs. GHSP funding is provided through an annual program, upon approval of specific project requests. Amounts of GHSP funds vary from year to year, according to the specific amounts requested. Communities may apply for a GHSP grant to be used as seed money to start a program to enhance highway safety. Once a grant is awarded, funding is provided on a reimbursement basis. Evidence of reductions in crashes, injuries, and fatalities is required. For information on applying for GHSP funding, visit: www.ncdot.org/programs/ghsp/.

Transportation Enhancement Call for Projects, EU, NCDOT

The Enhancement Unit administers a portion of the enhancement funding set-aside through the Call for Projects process. In North Carolina the Enhancement Program is a federally funded cost reimbursement program with a focus upon improving the transportation experience in and through local North Carolina communities either culturally, aesthetically, or environmentally. The program seeks to encourage diverse modes of travel, increase benefits to communities and to encourage citizen involvement. This is accomplished through the following twelve qualifying activities:

1. Bicycle and Pedestrian Facilities

2. Bicycle and Pedestrian Safety
3. Acquisition of Scenic Easements, Scenic or Historic Sites
4. Scenic or Historic Highway Programs (including tourist or welcome centers)
5. Landscaping and other Scenic Beautification
6. Historic Preservation
7. Rehabilitation of Historic Transportation Facilities
8. Preservation of Abandoned Rail Corridors
9. Control of Outdoor Advertising
10. Archaeological Planning and Research
11. Environmental Mitigation
12. Transportation Museums

Funds are allocated based on an equity formula approved by the Board of Transportation. The formula is applied at the county level and aggregated to the regional level. Available fund amount varies. In previous Calls, the funds available ranged from $10 million to $22 million.

The Call process has typically taken place on even numbered years or as specified by the Secretary of Transportation. However, in recent years, federal funding for the program has not been available. Find out more at: www.ncdot.org/financial/fiscal/Enhancement/

Bicycle and Pedestrian Planning Grant Initiative, managed by NCDOT, DBPT

To encourage the development of comprehensive local bicycle plans and pedestrian plans, the NCDOT Division of Bicycle and Pedestrian Transportation (DBPT) and the Transportation Planning Branch (TPB) have created a matching grant program to fund plan development. This program was initiated through a special allocation of funding approved by the North Carolina General Assembly in 2003 along with federal funds earmarked specifically for bicycle and pedestrian planning by the TPB. The planning grant program was launched in January 2004, and it is currently administered through NCDOT-DBPT and the Institute for Transportation Research and Education (ITRE) at NC State University. Over the past three grant cycles, 48 municipal plans have been selected and funded from 123 applicants. A total of $ 1,175,718 has been allocated. Funding was secured for 2007 at $400,000. Additional annual allocations will be sought for subsequent years. For more information, visit: www.itre.ncsu.edu/ptg/bikeped/ncdot/index.html

Safe Routes to School Program, managed by NCDOT, DBPT

The NCDOT Safe Routes to School Program is a federally funded program that was initiated by the passing of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which establishes a national SRTS program to distribute funding and institutional support to implement SRTS programs in states and communities across the country. SRTS programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The Division of Bicycle and Pedestrian Transportation at NCDOT is charged with disseminating SRTS funding.

The state of North Carolina has been allocated $15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. A typical non-infrastructure project could be an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is construction of sidewalks around a school. Infrastructure improvements under this program must be made within 2 miles of an elementary or middle school. The state requires the completion of a competitive application to apply for funding. For more information, visit www.ncdot.org/programs/safeRoutes/ or contact:

Leza Wright Mundt, AICP
Safe Routes to School Coordinator
Division of Bicycle and Pedestrian Transportation
1552 Mail Service Center
Raleigh, NC, 27699
Email: lwmundt@dot.state.nc.us
Phone: 919.807.0774
Fax: 919.807.076

The North Carolina Conservation Tax Credit (managed by NCDENR)

This program, managed by the North Carolina Department of Environment and Natural Resources (NCDENR), provides an incentive (in the form of an income tax credit) for landowners that donate interests in real property for conservation purposes. Property donations can be fee simple or in the form of conservation easements or bargain sale. The goal of this program is to manage stormwater, protect water supply watersheds, retain working farms and forests, and set-aside greenways for ecological communities, public trails, and wildlife corridors. Visit: www.enr.state.nc.us/conservationtaxcredit/

Land and Water Conservation Fund (LWCF)

The Land and Water Conservation Fund (LWCF) program is a reimbursable, 50/50 matching grants program to states for conservation and recreation purposes, and through the states to local governments to address "close to home" outdoor recreation needs. LWCF grants can be used by communities to build a trail within one park site, if the local government has fee-simple title to the park site. Grants for a maximum of $250,000 in LWCF assistance are awarded yearly to county governments, incorporated municipalities, public authorities and federally recognized Indian tribes. The local match may be provided with in-kind services or cash. The program's funding comes primarily from offshore oil and gas drilling receipts, with an authorized expenditure of $900 million each year. However, Congress generally appropriates only a small fraction of this amount. The allotted money for the year 2007 was $632,846.

The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the US Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by NCDENR. Since 1965, the LWCF program has built a permanent park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than $63 million in matching grants to protect land and support more than

800 state and local park projects. More than 37,000 acres have been acquired with LWCF assistance to establish a park legacy in our state. For more information, visit: http://ils.unc.edu/parkproject/lwcf/home1.html

NC Adopt-A-Trail Grant Program

This program, operated by the Trails Section of the NC Division of State Parks, offers annual grants to local governments to build, renovate, maintain, sign and map and create brochures for pedestrian trails. Grants are generally capped at about $5,000 per project and do not require a match. A total of $108,000 in Adopt-A-Trail money is awarded annually to government agencies. Applications are due during the month of February. For more information, go to: http://ils.unc.edu/parkproject/trails/grant.html.

Recreational Trails Program

The Recreational Trails Program (RTP) is a grant program funded by Congress with money from the federal gas taxes paid on fuel used by off-highway vehicles. This program's intent is to meet the trail and trail-related recreational needs identified by the Statewide Comprehensive Outdoor Recreation Plan. Grant applicants must be able contribute 20% of the project cost with cash or in-kind contributions. The program is managed by the State Trails Program, which is a section of the N.C. Division of Parks and Recreation.

The grant application is available and instruction handbook is available through the State Trails Program website at http://ils.unc.edu/parkproject/trails/home.html. Applications are due during the month of February. For more information, call (919) 715-8699.

North Carolina Parks and Recreation Trust Fund (PARTF)

This fund was established in 1994 by the North Carolina General Assembly and is administered by the Parks and Recreation Authority. Through this program, several million dollars each year are available to local governments to fund the acquisition, development and renovation of recreational areas. Applicable projects require a 50/50 match from the local government. Grants for a maximum of $500,000 are awarded yearly to county or municipal governments. The fund is fueled by money from the state's portion of the real estate deed transfer tax for property sold in North Carolina.

The trust fund is allocated three ways:

- **65%** to the state parks through the N.C. Division of Parks and Recreation
- **30%** as dollar-for dollar matching grants to local governments for parks and recreation
- **5%** for the Coastal and Estuarine Water Access Program

For information on how to apply, visit: www.partf.net/learn.html

Powell Bill Program

Annually, State street-aid (Powell Bill) allocations are made to municipalities that establish their eligibility and qualify as provided by statute. This program is designed to help municipalities maintain, repair, construct, reconstruct or widen local streets within their jurisdiction, or to plan, construct, and maintain bikeways or sidewalks along public streets and highways. Funding for this program is collected from fuel taxes. Funding amounts are

based on population and mileage of city-maintained streets. For more information, visit www.ncdot.org/financial/fiscal/ExtAuditBranch/Powell_Bill/powellbill.html.

Clean Water Management Trust Fund

North Carolina's Clean Water Management Trust Fund (CWMTF) was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection. At the end of each fiscal year, 6.5 percent of the unreserved credit balance in North Carolina's General Fund, or a minimum of $30 million, is placed in the CWMTF. The revenue of this fund is allocated as grants to local governments, state agencies and conservation non-profits to help finance projects that specifically address water pollution problems. CWMTF funds may be used to establish a network of riparian buffers and greenways for environmental, educational, and recreational benefits. The Fund has provided money for land acquisition of numerous greenway projects featuring trails, both paved and unpaved. For a history of awarded grants in North Carolina and more information about this fund and applications, visit www.cwmtf.net/, or contact Bern Shumack at (336) 366-3801.

Natural Heritage Trust Fund

This trust fund, managed by the NC Natural Heritage Program, has contributed millions of dollars to support the conservation of North Carolina's most significant natural areas and cultural heritage sites. The NHTF is used to acquire and protect land that has significant habitat value. Some large wetland areas may also qualify, depending on their biological integrity and characteristics. Only certain state agencies are eligible to apply for this fund, including the Department of Environment and Natural Resources, the Wildlife Resources Commission, the Department of Cultural Resources and the Department of Agriculture and Consumer Services. Therefore, municipalities must work with State level partners to access this fund. Additional information is available from the NC Natural Heritage Program. Visit www.ncnhtf.org/.

North Carolina Conservation Tax Credit Program

North Carolina has a unique incentive program to help landowners protect the environment and quality of life. A credit is allowed against individual and corporate income taxes when real property is donated for conservation purposes. Interests in property that promote specific public benefits may be donated to a qualified recipient. Such conservation donations qualify for a substantial tax credit. For more information, visit: www.enr.state.nc.us/conservationtaxcredit/.

Urban and Community Forestry Assistance Program

This program offers small grants that can be used to plant urban trees, establish a community arboretum, or other programs that promote tree canopy in urban areas. The program operates as a cooperative partnership between the NC Division of Forest Resources (NCDFR) and the USDA Forest Service, Southern Region. To qualify for this program, a community must pledge to develop a street-tree inventory, a municipal tree ordinance, a tree

commission, and an urban forestry-management plan. All of these can be funded through the program. For more information and a grant application, contact NCDFR and/or visit: http://www.dfr.state.nc.us/urban/urban_grantprogram.htm.

Urban and Community Forestry Grant can provide funding for a variety of projects that will help toward planning and establishing street trees as well as trees for urban open space. See: http://www.dfr.state.nc.us/urban/urban_ideas.htm

Ecosystem Enhancement Program

Developed in 2003 as a new mechanism to facilitate improved mitigation projects for NC highways, this program offers funding for restoration projects and for protection projects that serve to enhance water quality and wildlife habitat in North Carolina. Information on the program is available by contacting the Natural Heritage Program of NCDENR. For more information, visit www.nceep.net/pages/partners.html or call 919-715-0476.

Community Conservation Assistance Program (CCAP)

Through the (CCAP) Program, the Gaston County Soil & Water Conservation District can pay up to 75% of the cost to install various facilities designed to protect or improve stormwater quality. These facilities may include various greenway or park improvements such as pet waste stations, or buffers and other best management practices (BMPs) for farmlands. Contact Dean Parker at the

Gaston County Natural Resources Department
1303 Cherryville Highway
Dallas, NC 28034
Site Location: Citizens Resource Center
Telephone: 704-922-4181
Or visit www.enr.state.nc.us/DSWC/pages/agcostshareprogram.html

Water Resources Development Grant Program

The NC Division of Water Resources offers cost-sharing grants to local governments on projects related to water resources. Of the seven project application categories available, the category that relates to the establishment of greenways is "Land Acquisition and Facility Development for Water-Based Recreation Projects." Applicants may apply for funding for a greenway as long as the greenway is in close proximity to a water body. For more information, see: www.ncwater.org/Financial_Assistance or call 919-733-4064.

Small Cities Community Development Block Grants

State level funds are allocated through the NC Department of Commerce, Division of Community Assistance for promoting economic development and to serve low-income and moderate-income neighborhoods. Greenways that are part of a community's economic development plans may qualify for assistance under this program. Recreational areas that serve to improve the quality of life in lower income areas may also qualify. Approximately $50 million is available statewide to fund a variety of projects. Call 919-733-2853, or visit: www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin/

North Carolina Health and Wellness Trust Fund

The NC Health and Wellness Trust Fund was created by the General Assembly as one of 3 entities to invest North Carolina's portion of the Tobacco Master Settlement Agreement. HWTF receives one-fourth of the state's tobacco settlement funds, which are paid in annual installments over a 25-year period. Fit Together, a partnership of the NC Health and Wellness Trust Fund (HWTF) and Blue Cross and Blue Shield of North Carolina (BCBSNC) announces the establishment of **Fit Community**, a designation and grant program that recognizes and rewards North Carolina communities' efforts to support physical activity and healthy eating initiatives, as well as tobacco-free school environments. Fit Community is one component of the jointly sponsored Fit Together initiative, a statewide prevention campaign designed to raise awareness about obesity and to equip individuals, families and communities with the tools they need to address this important issue.

All North Carolina municipalities and counties are eligible to apply for a Fit Community designation, which will be awarded to those that have excelled in supporting the following:

- Physical activity in the community, schools, and workplaces
- Healthy eating in the community, schools, and workplaces
- Tobacco use prevention efforts in schools

Designations will be valid for two years, and designated communities may have the opportunity to reapply for subsequent two-year extensions. Fit Community benefits include:

- Heightened statewide attention that can help bolster local community development and/or economic investment initiatives (highway signage and a plaque for the Mayor's or County Commission Chair's office will be provided)
- Reinvigoration of a community's sense of civic pride (each Fit Community will serve as a model for other communities that are trying to achieve similar goals)
- Use of the Fit Community designation logo for promotional and communication purposes.

The application for Fit Community designation is available on the Fit Together Web site: www.FitTogetherNC.org/FitCommunity.aspx.

Fit Community grants are designed to support innovative strategies that help a community meet its goal to becoming a Fit Community. Eight to nine, two-year grants of up to $30,000 annually will be awarded to applicants that have a demonstrated need, proven capacity, and opportunity for positive change in addressing physical activity and/or healthy eating. For more information, visit: www.healthwellnc.com/

Funding Allocated by Federal Agencies

Congestion Mitigation and Air Quality (**CMAQ**): CMAQ is an EPA program that currently designates $20 million annually to North Carolina to fund programs and projects designed to improve air quality and reduce congestion, without adding single-occupant vehicle capacity to the transportation system. All of the sidewalk improvements recommended for the Cherryville Pedestrian Plan are eligible CMAQ projects. Cherryville would need to apply to the Lake Norman Rural Planning Organization (LNRPO) for funding. The LNRPO historically has received approximately $800,000 per year, but NCDOT is currently reviewing the application process, which may result in a regional application process. No matter the changes, Cherryville will remain eligible to apply for CMAQ funds, and should contact the LNRPO for application details.

Wetlands Reserve Program
This federal funding source is a voluntary program offering technical and financial assistance to landowners who want to restore and protect wetland areas for water quality and wildlife habitat. The US Department of Agriculture's Natural Resource Conservation Service (USDA-NRCS) administers the program and provides direct payments to private landowners who agree to place sensitive wetlands under permanent easements. This program can be used to fund the protection of open space and greenways within riparian corridors and can thereby assist with trail/greenway funding efforts. For more information, visit http://www.nrcs.usda.gov/PROGRAMS/wrp/.

The Community Development Block Grant (HUD-CDBG)
The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic development, and improvements to community facilities and services, especially in low and moderate-income areas. Several communities have used HUD funds to develop greenways, including the Boulding Branch Greenway in High Point, North Carolina. Grants from this program range from $50,000 to $200,000 and are either made to municipalities or non-profits. There is no formal application process. Visit: www.hud.gov/offices/cpd/communitydevelopment/programs/.

USDA Business Enterprise Grants
Public and private nonprofit groups in communities with populations under 50,000 are eligible to apply for grant assistance to help their local small business environment. $1 million is available for North Carolina on an annual basis and may be used for sidewalk and other community facilities. For more information from the local USDA Service Center, visit: http://www.rurdev.usda.gov/rbs/busp/rbeg.htm

Rivers Trails and Conservation Assistance Program (RTCA)
The Rivers, Trails, and Conservation Assistance Program, also known as the Rivers & Trails Program or RTCA, is the community assistance arm of the National Park Service. RTCA staff provide technical assistance to community groups and local, State, and federal

government agencies so they can conserve rivers, preserve open space, and develop trails and greenways. The RTCA program implements the natural resource conservation and outdoor recreation mission of the National Park Service in communities across America

Although the program does not provide funding for projects, it does provide valuable on-the-ground technical assistance, from strategic consultation and partnership development to serving as liaison with other government agencies. Communities must apply for assistance. For more information, visit: www.nps.gov/ncrc/programs/rtca/ or call Chris Abbett, Program Leader, at 404-562-3175 ext. 522.

Public Lands Highways Discretionary Fund

The Federal Highway Administration administers discretionary funding for projects that will reduce congestion and improve air quality. The FHWA issues a call for projects to disseminate this funding. In the past, Congress has earmarked a portion of the total available funding for projects. For information on how to apply, visit: http://www.fhwa.dot.gov/discretionary/

FHWA Recreational Trails Program

The Recreational Trails Program is a Federal program administered by the FHWA from the Highway Users Trust Fund dollars derived from Federal fuel tax. But each state receives an annual portion committed to grants for recreational trail projects. In FY 2006 states shared in $60 million. This amount is expected to increase to $85 million by FY 2009.

Contact the Recreational Trails Program North Carolina Administrator:
Darrell L McBane - State Trails Coordinator
NC Division of Parks & Recreation
12700 Bayleaf Church Road
Raleigh NC 27614-9633
phone: 919-846-9995
email: darrell.mcbane@ncmail.net
http://www.ils.unc.edu/parkproject/trails/home.html

Local Funding Sources

Local Land Use Ordinance

As shown earlier in this Plan, improving the pedestrian qualities of the community may have more to do with guiding its growth patterns than it has with building individual sidewalks or trails. These patterns of development are guided by the land use ordinances governing the municipality. If these documents are guiding and directing privately funded growth in a coordinated, pedestrian-friendly manner, private development will accomplish many of the City's pedestrian-friendly goals through private initiative and investment. For examples of how the City's ordinances can accomplish this, refer to the **Recommended Policies and Ordinance Modifications** of this Plan.

Individual ideas by which private investment can help build and maintain public pedestrian improvements are limited only by the imaginations and incentive of those involved. If the community has a definite vision of what it wants, and promotes that image clearly and positively, it will attract developers that will be more inclined to work with the community to accomplish mutual goals.

Capital Improvement Programs

Municipalities often plan for the funding of pedestrian facilities or improvements through development of Capital Improvement Programs. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows municipal decision-makers to balance all capital needs. Typical capital funding mechanisms include the following: capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each of these categories is described below.

> **Capital Reserve Fund** - Municipalities have statutory authority to create capital reserve funds for any capital purpose, including pedestrian facilities. The reserve fund must be created through ordinance or resolution that states the purpose, duration, approximate amount, and the source of revenue for the fund. Sources of revenue can include general fund allocations, fund balance allocations, grants and donations for the specified use.
>
> **Capital Project Ordinances** - Municipalities can pass Capital Project Ordinances that are project specific. The ordinance identifies and makes appropriations for the project.
>
> **Municipal Service District** - Municipalities have statutory authority to establish municipal service districts, to levy a property tax in the district additional to the citywide property tax, and to use the proceeds to provide services in the district. Downtown revitalization projects are one of the eligible uses of service districts.

Tax increment financing

Tax increment financing is a tool to use future gains in taxes to finance the current improvements that will create those gains. When a public project, such as the construction of a greenway, is carried out, there is an increase in the value of surrounding real estate. Oftentimes, new investment in the area follows such a project. This increase in value and investment creates more taxable property, which increases tax revenues. These increased revenues can be referred to as the "tax increment." Tax Increment Financing dedicates that increased revenue to finance debt issued to pay for the project. TIF is designed to channel funding toward improvements in distressed or underdeveloped areas where development would not otherwise occur. TIF creates funding for public projects that may otherwise be unaffordable to localities. The large majority of states have enabling legislation for tax increment financing.

Installment Purchase Financing

As an alternative to debt financing of capital improvements, communities can execute installment/lease purchase contracts for improvements. This type of financing is typically

used for relatively small projects that the seller or a financial institution is willing to finance or when up-front funds are unavailable. In a lease purchase contract the community leases the property or improvement from the seller or financial institution. The lease is paid in installments that include principal, interest, and associated costs. Upon completion of the lease period, the community owns the property or improvement. While lease purchase contracts are similar to a bond, this arrangement allows the community to acquire the property or improvement without issuing debt. These instruments, however, are more costly than issuing debt.

Taxes

Many communities raise money through self-imposed increases in taxes and bonds. For example, Pinellas County residents in Florida voted to adopt a one-cent sales tax increase, which provided an additional $5 million for the development of the overwhelmingly popular Pinellas Trail. Sales taxes have also been used in Allegheny County, Pennsylvania, and in Boulder, Colorado to fund open space projects. A gas tax is another method used by some municipalities to fund public improvements. A number of taxes provide direct or indirect funding for the operations of local governments. A few of them include:

Sales Tax

In North Carolina, the state has authorized a sales tax at the state and county levels. Local governments that choose to exercise the local option sales tax (all counties currently do), use the tax revenues to provide funding for a wide variety of projects and activities. Any increase in the sales tax, even if applying to a single county, must gain approval of the state legislature. In 1998, Mecklenburg County was granted authority to institute a one-half cent sales tax increase for mass transit.

Property Tax

Property taxes generally support a significant portion of a municipality's activities. However, the revenues from property taxes can also be used to pay debt service on general obligation bonds issued to finance greenway system acquisitions. Because of limits imposed on tax rates, use of property taxes to fund greenways could limit the municipality's ability to raise funds for other activities. Property taxes can provide a steady stream of financing while broadly distributing the tax burden. In other parts of the country, this mechanism has been popular with voters as long as the increase is restricted to parks and open space. Note, other public agencies compete vigorously for these funds, and taxpayers are generally concerned about high property tax rates.

Excise Taxes

Excise taxes are taxes on specific goods and services. These taxes require special legislation and the use of the funds generated through the tax are limited to specific uses. Examples include lodging, food, and beverage taxes that generate funds for promotion of tourism, and the gas tax that generates revenues for transportation related activities.

Occupancy Tax
The NC General Assembly may grant municipalities the authority to levy occupancy tax on hotel and motel rooms. The act granting the taxing authority limits the use of the proceeds, usually for tourism-promotion purposes.

Fees
Three fee options that have been used by local governments to assist in funding pedestrian and bicycle facilities are listed here:

Stormwater Utility Fees
Greenway sections may be purchased with stormwater fees, if the property in question is used to mitigate floodwater or filter pollutants. Stormwater charges are typically based on an estimate of the amount of impervious surface on a user's property. Impervious surfaces (such as rooftops and paved areas) increase both the amount and rate of stormwater runoff compared to natural conditions. Such surfaces cause runoff that directly or indirectly discharge into public storm drainage facilities and create a need for stormwater management services. Thus, users with more impervious surface are charged more for stormwater service than users with less impervious surface. The rates, fees, and charges collected for stormwater management services may not exceed the costs incurred to provide these services. The costs that may be recovered through the stormwater rates, fees, and charges includes any costs necessary to assure that all aspects of stormwater quality and quantity are managed in accordance with federal and state laws, regulations, and rules.

Streetscape Utility Fees
Streetscape Utility Fees could help support streetscape maintenance of the area between the curb and the property line through a flat monthly fee per residential dwelling unit. Discounts would be available for senior and disabled citizens. Non-residential customers would be charged a per foot fee based on the length of frontage on streetscape improvements. This amount could be capped for non-residential customers with extremely large amounts of street frontage. The revenues raised from Streetscape Utility fees would be limited by ordinance to maintenance (or construction and maintenance) activities in support of the streetscape.

Impact Fees
Developers can be required to provide greenway impact fees through local enabling legislation. Impact fees, which are also known as capital contributions, facilities fees, or system development charges, are typically collected from developers or property owners at the time of building permit issuance to pay for capital improvements that provide capacity to serve new growth. The intent of these fees is to avoid burdening existing customers with the costs of providing capacity to serve new growth ("growth pays its own way"). Greenway impact fees are designed to reflect the costs incurred to provide sufficient capacity in the system to meet the additional needs of a growing community. These charges are set in a fee schedule applied uniformly to all new development. Communities that institute impact fees must develop a sound financial model that enables policy makers to justify fee levels for different user

groups, and to ensure that revenues generated meet (but do not exceed) the needs of development. Factors used to determine an appropriate impact fee amount can include: lot size, number of occupants, and types of subdivision improvements. If Holly Springs is interested in pursuing open space impact fees, it will require enabling legislation to authorize the collection of the fees.

Exactions

Exactions are similar to impact fees in that they both provide facilities to growing communities. The difference is that through exactions it can be established that it is the responsibility of the developer to build the greenway or pedestrian facility that crosses through the property, or adjacent to the property being developed.

In-Lieu-Of Fees

As an alternative to requiring developers to dedicate on-site greenway sections that would serve their development, some communities provide a choice of paying a front-end charge for off-site protection of pieces of the larger system. Payment is generally a condition of development approval and recovers the cost of the off-site land acquisition or the development's proportionate share of the cost of a regional facility serving a larger area. Some communities prefer in-lieu-of fees. This alternative allows community staff to purchase land worthy of protection rather than accept marginal land that meets the quantitative requirements of a developer dedication but falls a bit short of qualitative interests.

Bonds and Loans

Bonds have been a very popular way for communities across the country to finance their pedestrian and greenway projects. A number of bond options are listed below. Contracting with a private consultant to assist with this program may be advisable. Since bonds rely on the support of the voting population, an education and awareness program should be implemented prior to any vote. Billings, Montana used the issuance of a bond in the amount of $599,000 to provide the matching funds for several of their TEA-21 enhancement dollars. Austin, Texas has also used bond issues to fund a portion of their bicycle and trail system.

Revenue Bonds

Revenue bonds are bonds that are secured by a pledge of the revenues from a certain local government activity. The entity issuing bonds, pledges to generate sufficient revenue annually to cover the program's operating costs, plus meet the annual debt service requirements (principal and interest payment). Revenue bonds are not constrained by the debt ceilings of general obligation bonds, but they are generally more expensive than general obligation bonds.

General Obligation Bonds

Cities, counties, and service districts generally are able to issue general obligation (G.O.) bonds that are secured by the full faith and credit of the entity. In this case, the local government issuing the bonds pledges to raise its property taxes, or use any other sources of revenue, to generate sufficient revenues to make the debt service payments on the bonds. A general obligation pledge is stronger than a revenue pledge, and thus may carry a lower interest rate than a revenue bond. Frequently,

when local governments issue G.O. bonds for public enterprise improvements, the public enterprise will make the debt service payments on the G.O. bonds with revenues generated through the public entity's rates and charges. However, if those rate revenues are insufficient to make the debt payment, the local government is obligated to raise taxes or use other sources of revenue to make the payments. G.O. bonds distribute the costs of land acquisition and greenway development and make funds available for immediate purchases and projects. Voter approval is required.

Special Assessment Bonds
Special assessment bonds are secured by a lien on the property that benefits by the improvements funded with the special assessment bond proceeds. Debt service payments on these bonds are funded through annual assessments to the property owners in the assessment area.

State Revolving Fund (SRF) Loans
Initially funded with federal and state money, and continued by funds generated by repayment of earlier loans, State Revolving Funds (SRFs) provide low interest loans for local governments to fund water pollution control and water supply related projects including many watershed management activities. These loans typically require a revenue pledge, like a revenue bond, but carry a below market interest rate and limited term for debt repayment (20 years).

Other Local Options

Facility Maintenance Districts
Facility Maintenance Districts (FMDs) can be created to pay for the costs of on-going maintenance of public facilities and landscaping within the areas of the City where improvements have been concentrated and where their benefits most directly benefit business and institutional property owners. An FMD is needed in order to assure a sustainable maintenance program. Fees may be based upon the length of lot frontage along streets where improvements have been installed, or upon other factors such as the size of the parcel. The program supported by the FMD should include regular maintenance of streetscape of off road trail improvements. The municipality can initiate public outreach efforts to merchants, the Chamber of Commerce, and property owners. In these meetings, City staff will discuss the proposed apportionment and allocation methodology and will explore implementation strategies. The municipality can manage maintenance responsibilities either through its own staff or through private contractors. The public, particularly those within the FMD, should be periodically informed about whom to contact about maintenance issues.

Partnerships
Due to the linear and connective nature of many pedestrian facilities, oftentimes improvements may involve numerous landowners. Greenway projects, for example, can present complex challenges of working with multiple property owners and jurisdictions. Creating partnerships may be the only way to solve the complex problems that ensue, as well

as deal with the inevitable web of utility lines and transportation corridors. Though these partners may have some conflicting interests at times, opportunities for funding, support and publicity may arise and broaden by involving partners with diverse interests.

Multiple uses of utility corridors provide one example of effective partnership. Most utilities use a linear corridor but occupy only a small portion of the ground surface. Rather than being solely dedicated to that one isolated use, these valuable corridors can often include a complementary public transportation and recreation use along with the utility functions. Utilities benefit from sharing corridors with trails through maintenance savings.

Partnerships engender a spirit of cooperation, civic pride and community participation. The key to the involvement of private partners is to make a compelling argument for their participation. Major employers and developers should be identified and provided with a "Benefits of Walking"-type handout for themselves and their employees. Very specific routes that make critical connections to place of business would be targeted for private partners' monetary support following a successful master planning effort. Potential partners include major employers that are located along or accessible to pedestrian facilities such as multi-use paths or greenways. Name recognition for corporate partnerships would be accomplished through signage trailheads or interpretive signage along greenway systems. Utilities often make good partners and many trails now share corridors with them. Money raised from providing an easement to utilities can help defray the costs of maintenance. It is important to have a lawyer review the legal agreement and verify ownership of the subsurface, surface or air rights in order to enter into an agreement.

Find more information about partnerships through American Trails, at: http://www.americantrails.org/resources/greenways/GrnwyUrbanSHM.html

Local Trail Sponsors

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

Volunteer Work

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers form church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.

Private Foundations and Organizations

Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are a few examples of private funding opportunities available in North Carolina.

The Carolina Thread Trail

A $50,000 planning grant was recently awarded to Gaston County by the Carolina Thread Trail organization. The resulting Master Plan depicts corridors of opportunity for future greenways (See **Appendix A.1.4**). Additional funding may be made available through the organization in upcoming years for design and construction of the trail in the Cherryville area.

For more information, visit
http://www.carolinathreadtrail.org/
Or contact:
Carolina Thread Trail
105 West Morehead Street
Charlotte, NC 28202
704-376-2556
randi@carolinathreadtrail.org

Land for Tomorrow Campaign

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals and community groups committed to securing support from the public and General Assembly for protecting land, water and historic places. The campaign is asking the North Carolina General Assembly to support issuance of a bond for $200 million a year for five years to preserve and protect its special land and water resources. Land for Tomorrow will enable North Carolina to reach a goal of ensuring that working farms and forests; sanctuaries for wildlife; land bordering streams, parks and greenways; land that helps strengthen communities and promotes job growth; historic downtowns and neighborhoods; and more, will be there to enhance the quality of life for generations to come. For more information, visit http://www.landfortomorrow.org/

The Trust for Public Land

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and well being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities. TPL's legal and real estate specialists work with landowners, government agencies, and community groups to:

- Create urban parks, gardens, greenways, and riverways
- Build livable communities by setting aside open space in the path of growth
- Conserve land for watershed protection, scenic beauty, and close-to home recreation safeguard the character of communities by preserving historic landmarks and landscapes.

The following are TPL's Conservation Services:

- Conservation Vision: TPL helps agencies and communities define conservation priorities, identify lands to be protected, and plan networks of conserved land that meet public need.
- Conservation Finance: TPL helps agencies and communities identify and raise funds for conservation from federal, state, local, and philanthropic sources.
- Conservation Transactions: TPL helps structure, negotiate, and complete land transactions that create parks, playgrounds, and protected natural areas.
- Research & Education: TPL acquires and shares knowledge of conservation issues and techniques to improve the practice of conservation and promote its public benefits.

Since 1972, TPL has worked with willing landowners, community groups, and national, state, and local agencies to complete more than 3,000 land conservation projects in 46 states, protecting more than 2 million acres. Since 1994, TPL has helped states and communities craft and pass over 330 ballot measures, generating almost $25 billion in new conservation-related funding. For more information, visit: http://www.tpl.org/.

Z. Smith Reynolds Foundation

This Winston-Salem based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. The foundation has two grant cycles per year and generally does not fund land acquisition. However, the foundation may be able to support municipalities in other areas of greenways development. More information is available at www.zsr.org.

Robert Wood Johnson Foundation

The Foundation seeks to help communities become increasingly walkable and thereby promote more active lifestyles that include exercise, like walking or biking, as a part of daily routine, particularly for children. **Active Living by Design** is a national program of The Robert Wood Johnson Foundation and is a part of the UNC School of Public Health in Chapel Hill, North Carolina. The program will establish and evaluate innovative approaches to increase physical activity through community design, public policies and communications strategies. Learn more about available grant opportunities at:www.activelivingbydesign.org.

North Carolina Community Foundation

The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for nonprofit organizations and institutions throughout the state. Based in Raleigh, North Carolina, the foundation also manages a number of community affiliates throughout North Carolina that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. In addition, the foundation manages various scholarship programs statewide. Web site: http://nccommunityfoundation.org/

National Trails Fund

In 1998, the American Hiking Society created the National Trails Fund, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. Each year, 73 million people enjoy foot trails, yet many of our favorite trails need major repairs due to a $200 million in badly needed maintenance. National Trails Fund grants give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. For 2005, American Hiking distributed over $40,000 in grants thanks to the generous support of Cascade Designs and L.L. Bean, the program's Charter Sponsors. To date, American Hiking has granted more than $240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from $500 to $10,000 per project.

What types of projects will American Hiking Society consider? Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements. Building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage. Constituency building surrounding specific trail projects - including volunteer recruitment and support. Web site: www.americanhiking.org/alliance/fund.html.

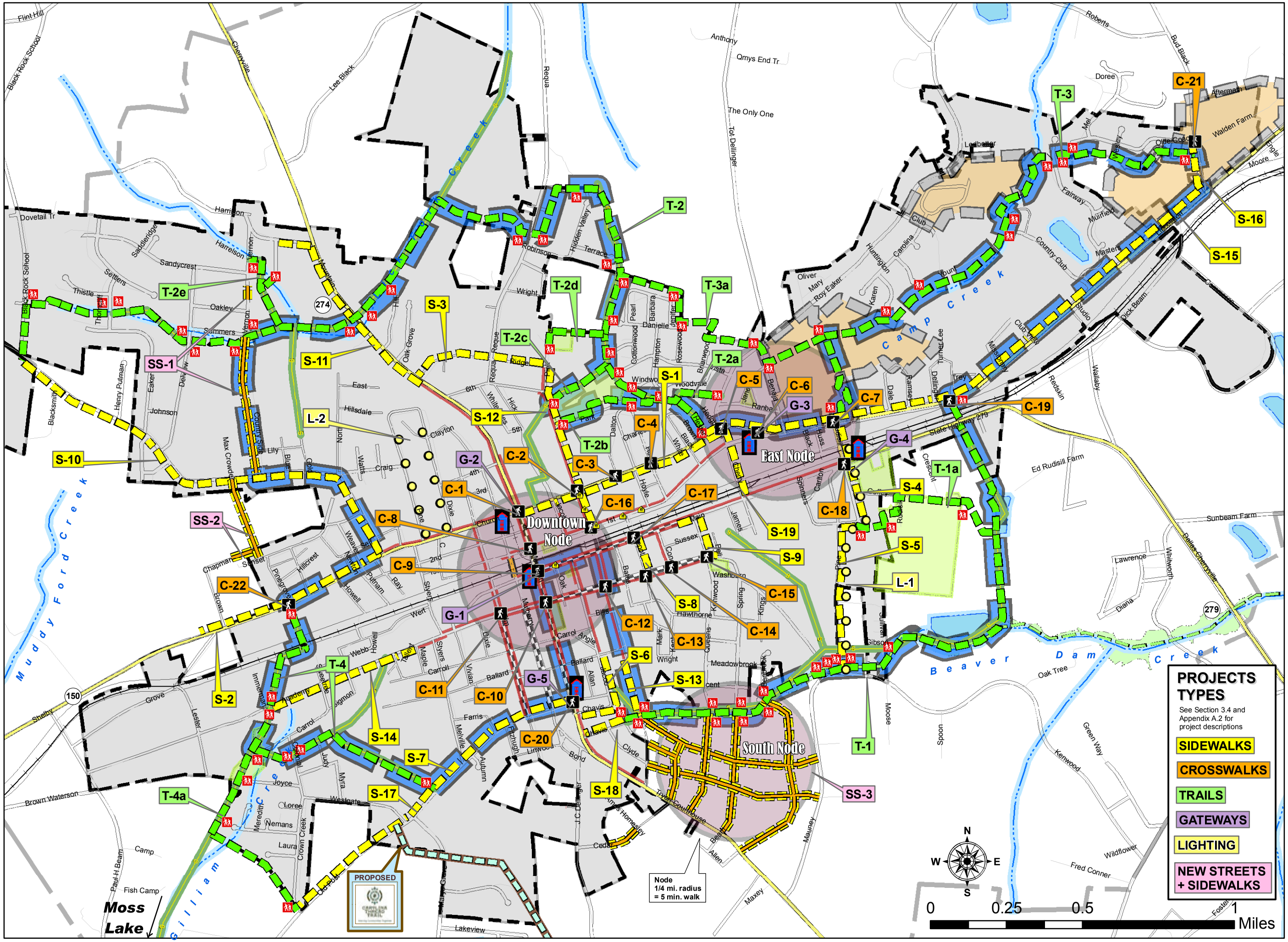
For additional information about funding sources and procedures, see
Appendices A.5 - How-to Build a Sidewalk (and other pedestrian facilities)

4.3 The Plan Adoption and Approval Process

Upon final approval of the Pedestrian Plan by the Steering Committee and NCDOT's Division of Bicycle and Pedestrian Transportation, the Steering Committee will submit the the Plan to the City Planning Board for review. At this time the Plan Consultant (Centralina Council of Governments) will also submit the Plan to the Lake Norman Rural Planning Organization (LNRPO) for endorsement.

The Planning Board will make any recommendations it sees fit and either return the Plan to Steering Committee for revision and resubmittal, or will recommend the Plan to the the City Council for review.

The City Council and attorney will review the Plan, and hold a public hearing of the Plan for public comment. The City Council will then either publicly adopt the Plan, or make other determinations.


Cherryville
Pedestrian Plan
Comprehensive
System Plan 12.09.08
Legend
Proposed Facilities
Trail (TR)
Sidewalk (SW)
Street with sidewalks
1/2 Marathon loop
Improved crosswalk
Trail head
Gateway feature
Street lights
Traffic Calming Area
Future Carolina Thread Trail
Future development area
Existing Features
Sidewalk
Bridge
Crosswalk
Primary roads
Road ROW
Rail
Abandoned rail
Sewer ROW
Creek
Ponds
City limits
ETJ
100 yr flood
Parks
PROJECTS TYPES
See Section 3.4 and Appendix A.2 for project descriptions
SIDEWALKS
CROSSWALKS
TRAILS
GATEWAYS
LIGHTING
NEW STREETS + SIDEWALKS
East Node
Downtown Node
South Node
Node 1/4 mi. radius = 5 min. walk
PROPOSED
Moss Lake
Muddy Ford Creek
Beaver Dam Creek
Camp Creek
Centralina Council of Governments
0 0.25 0.5 1 Miles
N
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S

PART 4: IMPLEMENTATION

4.1 Sample Cost Estimates for Facilities

In order to build pedestrian facilities, a number of different costs associated with projects must be considered. There are material costs, labor costs, mobilization costs, right-of-way purchase or easement costs, design costs, and project management expenses. Sidewalk and trail projects might also include changes to existing grades and necessitate alterations to drainage structures. Together these items are considered "project costs." In addition to the project costs, there are also ongoing expenses associated with the new facility, such as maintenance, security, promotion and other programs necessary for the initial and continued success of the facility.

The cost estimates provided below are primarily limited to material and labor. They are provided only as a guide and are approximate. Prices are current for the time of this publication. Materials, labor and other project costs will vary with fluctuating interest rates and inflation.

Sidewalks and Trails

Surface Material (width)	**Costs per LF/per mile**	**Longevity**
Concrete (4')	$135 / $700,000	20 years +
Pervious Concrete (10')	$50 / $245,000 – 265,000	
Asphalt (10') 2" w/6" base	$135 / $700,000	7-20 years
Crushed stone walkway (10')	$15 - 25 / $80,000 -106,000	7-10 years
Wood chips (10')	$14 - 18 / $ 70,000 - 90,000	1-3 years
Soil cement (10')	$14 - 22 / $ 70,000 -110,000	5-7 years
Native soil (10')	$11 - 15 / $ 55,000 - 75,000	variable
Boardwalk (6' – 8') wood or recycled material	$200 - 250 / $1.0 – 1.3 million	7-15 years
Polyurethane track (8') or Rubberized running track	$22 / $110,000	13-15 years

Installation costs do not include ROW purchase, grading or utility relocation.

Total Cost of Resurfacing Trails

Concrete	$ 25 LF
Asphalt	$ 10 LF (per linear foot) ($ 5 LF to overlay w/ top coat)
Crushed Stone	$ 5 LF
Polyurethane track	$70,000/mile to re-spray after 6 years

Typical Annual Maintenance Costs for a 1-Mile Paved Trail

Drainage and storm channel maintenance	$ 500
Sweeping/blowing debris off trail head	$ 1,200
Pickup/removal of trash	$ 1,200
Weed control and vegetation management	$ 1,000
Mowing of 3-foot grass shoulder along trail	$ 1,200
Minor repairs to trail furniture/safety features	$ 500
Maintenance supplies for work crews	$ 300
Equipment fuel and repairs	$ 600
TOTAL	**$ 6,500**

Street Improvements

Crosswalks

Approximate installation costs per unit:

Regular striped	$ 100
Ladder crosswalk	$ 300
Stamped asphalt	$1,100 ($50/square yard)
Patterned concrete	$3,000
Raised	$2,000 - $5,000

Warning signage: $50 to $150 per sign plus $150/sign in installation costs.

Traffic signals $40,000 to $200,000 per signal

Pedestrian signals $20,000 to $40,000 for all four legs

Traffic signal enhancements: $10,000 to add new pedestrian signals

Motion activated crossing: $20,000 per typical two-pole system (excluding installation)

Striping: 12-inch: $1 per linear yard (LY)
4-inch: $10 K per mile, or $2 LF

Costs do not include maintenance, which varies according to materials used.

Concrete curb and gutter: $12 - $15/LF

Curb inlets $2000 per unit

Curb extensions: $5,000 - 10,000 per corner or midblock section.
Costs vary with design and site conditions, particularly utilities, control boxes and drainage considerations. Special pavement, street furnishings and landscaping are recommended but contribute to costs.

Crossing Islands/Medians: $8,000 to $15,000 for a raised curbed island with minimal landscaping.

Reconstructing turning radius: $5,000 to $30,000 per corner, depending on site conditions (e.g., drainage and utilities may need to be relocated).

Speed humps: $1,700 per unit

Bike Racks: $350-$750 (10-12 bikes)

Trees: $200/tree, installed

Lighting: $ 45/LF frontage

Street Furniture:
Prices vary greatly according type of facility, brand, and level of customization. Benches or outdoor trashcans installed start at approximately $600/unit.

General park facilities $ 25/SF
The construction of new park or open space facilities on land not currently used as park, with some furniture and amenities.

Cost Estimate Sources:

- Walkinginfo.org – **Pedestrian & Bicycle Information Center**
- "Trails For The 21st Century," published by **Rails-To-Trails Conservancy**, 2001:
- http://www.trafficcalming.org/measures2.html
- http://www.nysphysicalactivity.org/site_beactiveenv/nybc/source_files/3_pedfac_improve/FHA_EmergTechPedXWalk.pdf
- http://www.charmeck.org/Departments/Transportation/About+Us/Speed+Humps.htm
- **National Trails Training Partnership**
  http://www.americantrails.org/resources/trailbuilding/AsphaltCO.html

4.2 Funding Strategies

Careful planning of pedestrian facilities is half the battle. The other half is building them. Both procedures require funding. However, there are many sources available for funding the planning and construction of pedestrian improvements. Using the right source and getting the best return requires strategy. This Plan itself was funded by the NCDOT Bicycle and Pedestrian Planning Grant. But grants usually provide only a portion of overall funding needs. The most successful strategy for a municipality to develop and improve its pedestrian system will involve an appropriate combination of all possible sources, public and private.

Local, state, federal, and private funding is available to support the planning, construction, right of way acquisition and maintenance of bicycle and pedestrian facilities. Available funding sources are related to a variety of purposes including transportation, water quality, hazard mitigation, recreation, air quality, wildlife protection, community health, and economic development. This section identifies a list of some of the bicycle and pedestrian facility funding opportunities available through federal, state, nonprofit and corporate sources. An important key to obtaining funding is for local governments to have adopted plans for greenway, bicycle, pedestrian or trail systems in place prior to making an application for funding.

Funding Allocated by State Agencies

Funding Opportunities Through NCDOT:

Bicycle and Pedestrian Independent Projects Funded Through the Transportation Improvement Program (TIP):
In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT) manages the Transportation Improvement Program (TIP) selection process for bicycle and pedestrian projects.

Projects programmed into the TIP are independent projects – those that are not related to a scheduled highway project. Incidental projects – those related to a scheduled highway project – are handled through other funding sources described in this section.

A total of $6 million is annually set aside for the construction of bicycle improvements that are independent of scheduled highway projects in communities throughout the state. Eighty percent of these funds are from STP-Enhancement funds, while the State Highway Trust provides the remaining 20 percent of the funding.

Each year, the DBPT regularly sets aside a total of $200,000 of TIP funding for the department to fund projects such as training workshops, pedestrian safety and research projects, and other pedestrian needs statewide. Those interested in learning

about training workshops, research and other opportunities should contact the DBPT for information.

A total of $5.3 million dollars of TIP funding is available for funding various bicycle and pedestrian independent projects, including the construction of multi-use trails, the striping of bicycle lanes, and the construction of paved shoulders, among other facilities. Prospective applicants are encouraged to contact the DBPT regarding funding assistance for bicycle and pedestrian projects.
For a detailed description of the TIP project selection process, visit:
http://www.ncdot.org/transit/bicycle/funding/funding_TIP.html.

Incidental Projects – Bicycle and pedestrian accommodations such as bike lanes, widened paved shoulders, sidewalks and bicycle-safe bridge design are frequently included as incidental features of highway projects. In addition, bicycle-safe drainage grates are a standard feature of all highway construction. Most bicycle and pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of National Highway System funds and State Highway Trust Funds.

Sidewalk Program – Each year, a total of $1.4 million in STP-Enhancement funding is set aside for sidewalk construction, maintenance and repair. Each of the 14 highway divisions across the state receives $100,000 annually for this purpose. Funding decisions are made by the district engineer. Prospective applicants are encouraged to contact their district engineer for information on how to apply for funding.

Governor's Highway Safety Program (GHSP) – The mission of the GHSP is to promote highway safety awareness and reduce the number of traffic crashes in the state of North Carolina through the planning and execution of safety programs. GHSP funding is provided through an annual program, upon approval of specific project requests. Amounts of GHSP funds vary from year to year, according to the specific amounts requested. Communities may apply for a GHSP grant to be used as seed money to start a program to enhance highway safety. Once a grant is awarded, funding is provided on a reimbursement basis. Evidence of reductions in crashes, injuries, and fatalities is required. For information on applying for GHSP funding, visit: www.ncdot.org/programs/ghsp/.

Transportation Enhancement Call for Projects, EU, NCDOT

The Enhancement Unit administers a portion of the enhancement funding set-aside through the Call for Projects process. In North Carolina the Enhancement Program is a federally funded cost reimbursement program with a focus upon improving the transportation experience in and through local North Carolina communities either culturally, aesthetically, or environmentally. The program seeks to encourage diverse modes of travel, increase benefits to communities and to encourage citizen involvement. This is accomplished through the following twelve qualifying activities:

1. Bicycle and Pedestrian Facilities

2. Bicycle and Pedestrian Safety
3. Acquisition of Scenic Easements, Scenic or Historic Sites
4. Scenic or Historic Highway Programs (including tourist or welcome centers)
5. Landscaping and other Scenic Beautification
6. Historic Preservation
7. Rehabilitation of Historic Transportation Facilities
8. Preservation of Abandoned Rail Corridors
9. Control of Outdoor Advertising
10. Archaeological Planning and Research
11. Environmental Mitigation
12. Transportation Museums

Funds are allocated based on an equity formula approved by the Board of Transportation. The formula is applied at the county level and aggregated to the regional level. Available fund amount varies. In previous Calls, the funds available ranged from $10 million to $22 million.

The Call process has typically taken place on even numbered years or as specified by the Secretary of Transportation. However, in recent years, federal funding for the program has not been available. Find out more at: www.ncdot.org/financial/fiscal/Enhancement/

Bicycle and Pedestrian Planning Grant Initiative, managed by NCDOT, DBPT

To encourage the development of comprehensive local bicycle plans and pedestrian plans, the NCDOT Division of Bicycle and Pedestrian Transportation (DBPT) and the Transportation Planning Branch (TPB) have created a matching grant program to fund plan development. This program was initiated through a special allocation of funding approved by the North Carolina General Assembly in 2003 along with federal funds earmarked specifically for bicycle and pedestrian planning by the TPB. The planning grant program was launched in January 2004, and it is currently administered through NCDOT-DBPT and the Institute for Transportation Research and Education (ITRE) at NC State University. Over the past three grant cycles, 48 municipal plans have been selected and funded from 123 applicants. A total of $ 1,175,718 has been allocated. Funding was secured for 2007 at $400,000. Additional annual allocations will be sought for subsequent years. For more information, visit: www.itre.ncsu.edu/ptg/bikeped/ncdot/index.html

Safe Routes to School Program, managed by NCDOT, DBPT

The NCDOT Safe Routes to School Program is a federally funded program that was initiated by the passing of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which establishes a national SRTS program to distribute funding and institutional support to implement SRTS programs in states and communities across the country. SRTS programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The Division of Bicycle and Pedestrian Transportation at NCDOT is charged with disseminating SRTS funding.

The state of North Carolina has been allocated $15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. A typical non-infrastructure project could be an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is construction of sidewalks around a school. Infrastructure improvements under this program must be made within 2 miles of an elementary or middle school. The state requires the completion of a competitive application to apply for funding. For more information, visit www.ncdot.org/programs/safeRoutes/ or contact:

Leza Wright Mundt, AICP
Safe Routes to School Coordinator
Division of Bicycle and Pedestrian Transportation
1552 Mail Service Center
Raleigh, NC, 27699
Email: lwmundt@dot.state.nc.us
Phone: 919.807.0774
Fax: 919.807.076

The North Carolina Conservation Tax Credit (managed by NCDENR)

This program, managed by the North Carolina Department of Environment and Natural Resources (NCDENR), provides an incentive (in the form of an income tax credit) for landowners that donate interests in real property for conservation purposes. Property donations can be fee simple or in the form of conservation easements or bargain sale. The goal of this program is to manage stormwater, protect water supply watersheds, retain working farms and forests, and set-aside greenways for ecological communities, public trails, and wildlife corridors. Visit: www.enr.state.nc.us/conservationtaxcredit/

Land and Water Conservation Fund (LWCF)

The Land and Water Conservation Fund (LWCF) program is a reimbursable, 50/50 matching grants program to states for conservation and recreation purposes, and through the states to local governments to address "close to home" outdoor recreation needs. LWCF grants can be used by communities to build a trail within one park site, if the local government has fee-simple title to the park site. Grants for a maximum of $250,000 in LWCF assistance are awarded yearly to county governments, incorporated municipalities, public authorities and federally recognized Indian tribes. The local match may be provided with in-kind services or cash. The program's funding comes primarily from offshore oil and gas drilling receipts, with an authorized expenditure of $900 million each year. However, Congress generally appropriates only a small fraction of this amount. The allotted money for the year 2007 was $632,846.

The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the US Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by NCDENR. Since 1965, the LWCF program has built a permanent park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than $63 million in matching grants to protect land and support more than

800 state and local park projects. More than 37,000 acres have been acquired with LWCF assistance to establish a park legacy in our state. For more information, visit: http://ils.unc.edu/parkproject/lwcf/home1.html

NC Adopt-A-Trail Grant Program

This program, operated by the Trails Section of the NC Division of State Parks, offers annual grants to local governments to build, renovate, maintain, sign and map and create brochures for pedestrian trails. Grants are generally capped at about $5,000 per project and do not require a match. A total of $108,000 in Adopt-A-Trail money is awarded annually to government agencies. Applications are due during the month of February. For more information, go to: http://ils.unc.edu/parkproject/trails/grant.html.

Recreational Trails Program

The Recreational Trails Program (RTP) is a grant program funded by Congress with money from the federal gas taxes paid on fuel used by off-highway vehicles. This program's intent is to meet the trail and trail-related recreational needs identified by the Statewide Comprehensive Outdoor Recreation Plan. Grant applicants must be able contribute 20% of the project cost with cash or in-kind contributions. The program is managed by the State Trails Program, which is a section of the N.C. Division of Parks and Recreation.

The grant application is available and instruction handbook is available through the State Trails Program website at http://ils.unc.edu/parkproject/trails/home.html. Applications are due during the month of February. For more information, call (919) 715-8699.

North Carolina Parks and Recreation Trust Fund (PARTF)

This fund was established in 1994 by the North Carolina General Assembly and is administered by the Parks and Recreation Authority. Through this program, several million dollars each year are available to local governments to fund the acquisition, development and renovation of recreational areas. Applicable projects require a 50/50 match from the local government. Grants for a maximum of $500,000 are awarded yearly to county or municipal governments. The fund is fueled by money from the state's portion of the real estate deed transfer tax for property sold in North Carolina.

The trust fund is allocated three ways:

- **65%** to the state parks through the N.C. Division of Parks and Recreation
- **30%** as dollar-for dollar matching grants to local governments for parks and recreation
- **5%** for the Coastal and Estuarine Water Access Program

For information on how to apply, visit: www.partf.net/learn.html

Powell Bill Program

Annually, State street-aid (Powell Bill) allocations are made to municipalities that establish their eligibility and qualify as provided by statute. This program is designed to help municipalities maintain, repair, construct, reconstruct or widen local streets within their jurisdiction, or to plan, construct, and maintain bikeways or sidewalks along public streets and highways. Funding for this program is collected from fuel taxes. Funding amounts are

based on population and mileage of city-maintained streets. For more information, visit www.ncdot.org/financial/fiscal/ExtAuditBranch/Powell_Bill/powellbill.html.

Clean Water Management Trust Fund

North Carolina's Clean Water Management Trust Fund (CWMTF) was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection. At the end of each fiscal year, 6.5 percent of the unreserved credit balance in North Carolina's General Fund, or a minimum of $30 million, is placed in the CWMTF. The revenue of this fund is allocated as grants to local governments, state agencies and conservation non-profits to help finance projects that specifically address water pollution problems. CWMTF funds may be used to establish a network of riparian buffers and greenways for environmental, educational, and recreational benefits. The Fund has provided money for land acquisition of numerous greenway projects featuring trails, both paved and unpaved. For a history of awarded grants in North Carolina and more information about this fund and applications, visit www.cwmtf.net/, or contact Bern Shumack at (336) 366-3801.

Natural Heritage Trust Fund

This trust fund, managed by the NC Natural Heritage Program, has contributed millions of dollars to support the conservation of North Carolina's most significant natural areas and cultural heritage sites. The NHTF is used to acquire and protect land that has significant habitat value. Some large wetland areas may also qualify, depending on their biological integrity and characteristics. Only certain state agencies are eligible to apply for this fund, including the Department of Environment and Natural Resources, the Wildlife Resources Commission, the Department of Cultural Resources and the Department of Agriculture and Consumer Services. Therefore, municipalities must work with State level partners to access this fund. Additional information is available from the NC Natural Heritage Program. Visit www.ncnhtf.org/.

North Carolina Conservation Tax Credit Program

North Carolina has a unique incentive program to help landowners protect the environment and quality of life. A credit is allowed against individual and corporate income taxes when real property is donated for conservation purposes. Interests in property that promote specific public benefits may be donated to a qualified recipient. Such conservation donations qualify for a substantial tax credit. For more information, visit: www.enr.state.nc.us/conservationtaxcredit/.

Urban and Community Forestry Assistance Program

This program offers small grants that can be used to plant urban trees, establish a community arboretum, or other programs that promote tree canopy in urban areas. The program operates as a cooperative partnership between the NC Division of Forest Resources (NCDFR) and the USDA Forest Service, Southern Region. To qualify for this program, a community must pledge to develop a street-tree inventory, a municipal tree ordinance, a tree

commission, and an urban forestry-management plan. All of these can be funded through the program. For more information and a grant application, contact NCDFR and/or visit: http://www.dfr.state.nc.us/urban/urban_grantprogram.htm.

Urban and Community Forestry Grant can provide funding for a variety of projects that will help toward planning and establishing street trees as well as trees for urban open space. See: http://www.dfr.state.nc.us/urban/urban_ideas.htm

Ecosystem Enhancement Program

Developed in 2003 as a new mechanism to facilitate improved mitigation projects for NC highways, this program offers funding for restoration projects and for protection projects that serve to enhance water quality and wildlife habitat in North Carolina. Information on the program is available by contacting the Natural Heritage Program of NCDENR. For more information, visit www.nceep.net/pages/partners.html or call 919-715-0476.

Community Conservation Assistance Program (CCAP)

Through the (CCAP) Program, the Gaston County Soil & Water Conservation District can pay up to 75% of the cost to install various facilities designed to protect or improve stormwater quality. These facilities may include various greenway or park improvements such as pet waste stations, or buffers and other best management practices (BMPs) for farmlands. Contact Dean Parker at the

Gaston County Natural Resources Department
1303 Cherryville Highway
Dallas, NC 28034
Site Location: Citizens Resource Center
Telephone: 704-922-4181
Or visit www.enr.state.nc.us/DSWC/pages/agcostshareprogram.html

Water Resources Development Grant Program

The NC Division of Water Resources offers cost-sharing grants to local governments on projects related to water resources. Of the seven project application categories available, the category that relates to the establishment of greenways is "Land Acquisition and Facility Development for Water-Based Recreation Projects." Applicants may apply for funding for a greenway as long as the greenway is in close proximity to a water body. For more information, see: www.ncwater.org/Financial_Assistance or call 919-733-4064.

Small Cities Community Development Block Grants

State level funds are allocated through the NC Department of Commerce, Division of Community Assistance for promoting economic development and to serve low-income and moderate-income neighborhoods. Greenways that are part of a community's economic development plans may qualify for assistance under this program. Recreational areas that serve to improve the quality of life in lower income areas may also qualify. Approximately $50 million is available statewide to fund a variety of projects. Call 919-733-2853, or visit: www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin/

North Carolina Health and Wellness Trust Fund

The NC Health and Wellness Trust Fund was created by the General Assembly as one of 3 entities to invest North Carolina's portion of the Tobacco Master Settlement Agreement. HWTF receives one-fourth of the state's tobacco settlement funds, which are paid in annual installments over a 25-year period. Fit Together, a partnership of the NC Health and Wellness Trust Fund (HWTF) and Blue Cross and Blue Shield of North Carolina (BCBSNC) announces the establishment of **Fit Community**, a designation and grant program that recognizes and rewards North Carolina communities' efforts to support physical activity and healthy eating initiatives, as well as tobacco-free school environments. Fit Community is one component of the jointly sponsored Fit Together initiative, a statewide prevention campaign designed to raise awareness about obesity and to equip individuals, families and communities with the tools they need to address this important issue.

All North Carolina municipalities and counties are eligible to apply for a Fit Community designation, which will be awarded to those that have excelled in supporting the following:

- Physical activity in the community, schools, and workplaces
- Healthy eating in the community, schools, and workplaces
- Tobacco use prevention efforts in schools

Designations will be valid for two years, and designated communities may have the opportunity to reapply for subsequent two-year extensions. Fit Community benefits include:

- Heightened statewide attention that can help bolster local community development and/or economic investment initiatives (highway signage and a plaque for the Mayor's or County Commission Chair's office will be provided)
- Reinvigoration of a community's sense of civic pride (each Fit Community will serve as a model for other communities that are trying to achieve similar goals)
- Use of the Fit Community designation logo for promotional and communication purposes.

The application for Fit Community designation is available on the Fit Together Web site: www.FitTogetherNC.org/FitCommunity.aspx.

Fit Community grants are designed to support innovative strategies that help a community meet its goal to becoming a Fit Community. Eight to nine, two-year grants of up to $30,000 annually will be awarded to applicants that have a demonstrated need, proven capacity, and opportunity for positive change in addressing physical activity and/or healthy eating. For more information, visit: www.healthwellnc.com/

Funding Allocated by Federal Agencies

Congestion Mitigation and Air Quality (**CMAQ**): CMAQ is an EPA program that currently designates $20 million annually to North Carolina to fund programs and projects designed to improve air quality and reduce congestion, without adding single-occupant vehicle capacity to the transportation system. All of the sidewalk improvements recommended for the Cherryville Pedestrian Plan are eligible CMAQ projects. Cherryville would need to apply to the Lake Norman Rural Planning Organization (LNRPO) for funding. The LNRPO historically has received approximately $800,000 per year, but NCDOT is currently reviewing the application process, which may result in a regional application process. No matter the changes, Cherryville will remain eligible to apply for CMAQ funds, and should contact the LNRPO for application details.

Wetlands Reserve Program
This federal funding source is a voluntary program offering technical and financial assistance to landowners who want to restore and protect wetland areas for water quality and wildlife habitat. The US Department of Agriculture's Natural Resource Conservation Service (USDA-NRCS) administers the program and provides direct payments to private landowners who agree to place sensitive wetlands under permanent easements. This program can be used to fund the protection of open space and greenways within riparian corridors and can thereby assist with trail/greenway funding efforts. For more information, visit http://www.nrcs.usda.gov/PROGRAMS/wrp/.

The Community Development Block Grant (HUD-CDBG)
The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic development, and improvements to community facilities and services, especially in low and moderate-income areas. Several communities have used HUD funds to develop greenways, including the Boulding Branch Greenway in High Point, North Carolina. Grants from this program range from $50,000 to $200,000 and are either made to municipalities or non-profits. There is no formal application process. Visit: www.hud.gov/offices/cpd/communitydevelopment/programs/.

USDA Business Enterprise Grants
Public and private nonprofit groups in communities with populations under 50,000 are eligible to apply for grant assistance to help their local small business environment. $1 million is available for North Carolina on an annual basis and may be used for sidewalk and other community facilities. For more information from the local USDA Service Center, visit: http://www.rurdev.usda.gov/rbs/busp/rbeg.htm

Rivers Trails and Conservation Assistance Program (RTCA)
The Rivers, Trails, and Conservation Assistance Program, also known as the Rivers & Trails Program or RTCA, is the community assistance arm of the National Park Service. RTCA staff provide technical assistance to community groups and local, State, and federal

government agencies so they can conserve rivers, preserve open space, and develop trails and greenways. The RTCA program implements the natural resource conservation and outdoor recreation mission of the National Park Service in communities across America

Although the program does not provide funding for projects, it does provide valuable on-the-ground technical assistance, from strategic consultation and partnership development to serving as liaison with other government agencies. Communities must apply for assistance. For more information, visit: www.nps.gov/ncrc/programs/rtca/ or call Chris Abbett, Program Leader, at 404-562-3175 ext. 522.

Public Lands Highways Discretionary Fund

The Federal Highway Administration administers discretionary funding for projects that will reduce congestion and improve air quality. The FHWA issues a call for projects to disseminate this funding. In the past, Congress has earmarked a portion of the total available funding for projects. For information on how to apply, visit: http://www.fhwa.dot.gov/discretionary/

FHWA Recreational Trails Program

The Recreational Trails Program is a Federal program administered by the FHWA from the Highway Users Trust Fund dollars derived from Federal fuel tax. But each state receives an annual portion committed to grants for recreational trail projects. In FY 2006 states shared in $60 million. This amount is expected to increase to $85 million by FY 2009.

Contact the Recreational Trails Program North Carolina Administrator:
Darrell L McBane - State Trails Coordinator
NC Division of Parks & Recreation
12700 Bayleaf Church Road
Raleigh NC 27614-9633
phone: 919-846-9995
email: darrell.mcbane@ncmail.net
http://www.ils.unc.edu/parkproject/trails/home.html

Local Funding Sources

Local Land Use Ordinance

As shown earlier in this Plan, improving the pedestrian qualities of the community may have more to do with guiding its growth patterns than it has with building individual sidewalks or trails. These patterns of development are guided by the land use ordinances governing the municipality. If these documents are guiding and directing privately funded growth in a coordinated, pedestrian-friendly manner, private development will accomplish many of the City's pedestrian-friendly goals through private initiative and investment. For examples of how the City's ordinances can accomplish this, refer to the **Recommended Policies and Ordinance Modifications** of this Plan.

Individual ideas by which private investment can help build and maintain public pedestrian improvements are limited only by the imaginations and incentive of those involved. If the community has a definite vision of what it wants, and promotes that image clearly and positively, it will attract developers that will be more inclined to work with the community to accomplish mutual goals.

Capital Improvement Programs

Municipalities often plan for the funding of pedestrian facilities or improvements through development of Capital Improvement Programs. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows municipal decision-makers to balance all capital needs. Typical capital funding mechanisms include the following: capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each of these categories is described below.

> **Capital Reserve Fund** - Municipalities have statutory authority to create capital reserve funds for any capital purpose, including pedestrian facilities. The reserve fund must be created through ordinance or resolution that states the purpose, duration, approximate amount, and the source of revenue for the fund. Sources of revenue can include general fund allocations, fund balance allocations, grants and donations for the specified use.
>
> **Capital Project Ordinances** - Municipalities can pass Capital Project Ordinances that are project specific. The ordinance identifies and makes appropriations for the project.
>
> **Municipal Service District** - Municipalities have statutory authority to establish municipal service districts, to levy a property tax in the district additional to the citywide property tax, and to use the proceeds to provide services in the district. Downtown revitalization projects are one of the eligible uses of service districts.

Tax increment financing

Tax increment financing is a tool to use future gains in taxes to finance the current improvements that will create those gains. When a public project, such as the construction of a greenway, is carried out, there is an increase in the value of surrounding real estate. Oftentimes, new investment in the area follows such a project. This increase in value and investment creates more taxable property, which increases tax revenues. These increased revenues can be referred to as the "tax increment." Tax Increment Financing dedicates that increased revenue to finance debt issued to pay for the project. TIF is designed to channel funding toward improvements in distressed or underdeveloped areas where development would not otherwise occur. TIF creates funding for public projects that may otherwise be unaffordable to localities. The large majority of states have enabling legislation for tax increment financing.

Installment Purchase Financing

As an alternative to debt financing of capital improvements, communities can execute installment/lease purchase contracts for improvements. This type of financing is typically

used for relatively small projects that the seller or a financial institution is willing to finance or when up-front funds are unavailable. In a lease purchase contract the community leases the property or improvement from the seller or financial institution. The lease is paid in installments that include principal, interest, and associated costs. Upon completion of the lease period, the community owns the property or improvement. While lease purchase contracts are similar to a bond, this arrangement allows the community to acquire the property or improvement without issuing debt. These instruments, however, are more costly than issuing debt.

Taxes

Many communities raise money through self-imposed increases in taxes and bonds. For example, Pinellas County residents in Florida voted to adopt a one-cent sales tax increase, which provided an additional $5 million for the development of the overwhelmingly popular Pinellas Trail. Sales taxes have also been used in Allegheny County, Pennsylvania, and in Boulder, Colorado to fund open space projects. A gas tax is another method used by some municipalities to fund public improvements. A number of taxes provide direct or indirect funding for the operations of local governments. A few of them include:

Sales Tax

In North Carolina, the state has authorized a sales tax at the state and county levels. Local governments that choose to exercise the local option sales tax (all counties currently do), use the tax revenues to provide funding for a wide variety of projects and activities. Any increase in the sales tax, even if applying to a single county, must gain approval of the state legislature. In 1998, Mecklenburg County was granted authority to institute a one-half cent sales tax increase for mass transit.

Property Tax

Property taxes generally support a significant portion of a municipality's activities. However, the revenues from property taxes can also be used to pay debt service on general obligation bonds issued to finance greenway system acquisitions. Because of limits imposed on tax rates, use of property taxes to fund greenways could limit the municipality's ability to raise funds for other activities. Property taxes can provide a steady stream of financing while broadly distributing the tax burden. In other parts of the country, this mechanism has been popular with voters as long as the increase is restricted to parks and open space. Note, other public agencies compete vigorously for these funds, and taxpayers are generally concerned about high property tax rates.

Excise Taxes

Excise taxes are taxes on specific goods and services. These taxes require special legislation and the use of the funds generated through the tax are limited to specific uses. Examples include lodging, food, and beverage taxes that generate funds for promotion of tourism, and the gas tax that generates revenues for transportation related activities.

Occupancy Tax
The NC General Assembly may grant municipalities the authority to levy occupancy tax on hotel and motel rooms. The act granting the taxing authority limits the use of the proceeds, usually for tourism-promotion purposes.

Fees
Three fee options that have been used by local governments to assist in funding pedestrian and bicycle facilities are listed here:

Stormwater Utility Fees
Greenway sections may be purchased with stormwater fees, if the property in question is used to mitigate floodwater or filter pollutants. Stormwater charges are typically based on an estimate of the amount of impervious surface on a user's property. Impervious surfaces (such as rooftops and paved areas) increase both the amount and rate of stormwater runoff compared to natural conditions. Such surfaces cause runoff that directly or indirectly discharge into public storm drainage facilities and create a need for stormwater management services. Thus, users with more impervious surface are charged more for stormwater service than users with less impervious surface. The rates, fees, and charges collected for stormwater management services may not exceed the costs incurred to provide these services. The costs that may be recovered through the stormwater rates, fees, and charges includes any costs necessary to assure that all aspects of stormwater quality and quantity are managed in accordance with federal and state laws, regulations, and rules.

Streetscape Utility Fees
Streetscape Utility Fees could help support streetscape maintenance of the area between the curb and the property line through a flat monthly fee per residential dwelling unit. Discounts would be available for senior and disabled citizens. Non-residential customers would be charged a per foot fee based on the length of frontage on streetscape improvements. This amount could be capped for non-residential customers with extremely large amounts of street frontage. The revenues raised from Streetscape Utility fees would be limited by ordinance to maintenance (or construction and maintenance) activities in support of the streetscape.

Impact Fees
Developers can be required to provide greenway impact fees through local enabling legislation. Impact fees, which are also known as capital contributions, facilities fees, or system development charges, are typically collected from developers or property owners at the time of building permit issuance to pay for capital improvements that provide capacity to serve new growth. The intent of these fees is to avoid burdening existing customers with the costs of providing capacity to serve new growth ("growth pays its own way"). Greenway impact fees are designed to reflect the costs incurred to provide sufficient capacity in the system to meet the additional needs of a growing community. These charges are set in a fee schedule applied uniformly to all new development. Communities that institute impact fees must develop a sound financial model that enables policy makers to justify fee levels for different user

groups, and to ensure that revenues generated meet (but do not exceed) the needs of development. Factors used to determine an appropriate impact fee amount can include: lot size, number of occupants, and types of subdivision improvements. If Holly Springs is interested in pursuing open space impact fees, it will require enabling legislation to authorize the collection of the fees.

Exactions

Exactions are similar to impact fees in that they both provide facilities to growing communities. The difference is that through exactions it can be established that it is the responsibility of the developer to build the greenway or pedestrian facility that crosses through the property, or adjacent to the property being developed.

In-Lieu-Of Fees

As an alternative to requiring developers to dedicate on-site greenway sections that would serve their development, some communities provide a choice of paying a front-end charge for off-site protection of pieces of the larger system. Payment is generally a condition of development approval and recovers the cost of the off-site land acquisition or the development's proportionate share of the cost of a regional facility serving a larger area. Some communities prefer in-lieu-of fees. This alternative allows community staff to purchase land worthy of protection rather than accept marginal land that meets the quantitative requirements of a developer dedication but falls a bit short of qualitative interests.

Bonds and Loans

Bonds have been a very popular way for communities across the country to finance their pedestrian and greenway projects. A number of bond options are listed below. Contracting with a private consultant to assist with this program may be advisable. Since bonds rely on the support of the voting population, an education and awareness program should be implemented prior to any vote. Billings, Montana used the issuance of a bond in the amount of $599,000 to provide the matching funds for several of their TEA-21 enhancement dollars. Austin, Texas has also used bond issues to fund a portion of their bicycle and trail system.

Revenue Bonds

Revenue bonds are bonds that are secured by a pledge of the revenues from a certain local government activity. The entity issuing bonds, pledges to generate sufficient revenue annually to cover the program's operating costs, plus meet the annual debt service requirements (principal and interest payment). Revenue bonds are not constrained by the debt ceilings of general obligation bonds, but they are generally more expensive than general obligation bonds.

General Obligation Bonds

Cities, counties, and service districts generally are able to issue general obligation (G.O.) bonds that are secured by the full faith and credit of the entity. In this case, the local government issuing the bonds pledges to raise its property taxes, or use any other sources of revenue, to generate sufficient revenues to make the debt service payments on the bonds. A general obligation pledge is stronger than a revenue pledge, and thus may carry a lower interest rate than a revenue bond. Frequently,

when local governments issue G.O. bonds for public enterprise improvements, the public enterprise will make the debt service payments on the G.O. bonds with revenues generated through the public entity's rates and charges. However, if those rate revenues are insufficient to make the debt payment, the local government is obligated to raise taxes or use other sources of revenue to make the payments. G.O. bonds distribute the costs of land acquisition and greenway development and make funds available for immediate purchases and projects. Voter approval is required.

Special Assessment Bonds
Special assessment bonds are secured by a lien on the property that benefits by the improvements funded with the special assessment bond proceeds. Debt service payments on these bonds are funded through annual assessments to the property owners in the assessment area.

State Revolving Fund (SRF) Loans
Initially funded with federal and state money, and continued by funds generated by repayment of earlier loans, State Revolving Funds (SRFs) provide low interest loans for local governments to fund water pollution control and water supply related projects including many watershed management activities. These loans typically require a revenue pledge, like a revenue bond, but carry a below market interest rate and limited term for debt repayment (20 years).

Other Local Options

Facility Maintenance Districts
Facility Maintenance Districts (FMDs) can be created to pay for the costs of on-going maintenance of public facilities and landscaping within the areas of the City where improvements have been concentrated and where their benefits most directly benefit business and institutional property owners. An FMD is needed in order to assure a sustainable maintenance program. Fees may be based upon the length of lot frontage along streets where improvements have been installed, or upon other factors such as the size of the parcel. The program supported by the FMD should include regular maintenance of streetscape of off road trail improvements. The municipality can initiate public outreach efforts to merchants, the Chamber of Commerce, and property owners. In these meetings, City staff will discuss the proposed apportionment and allocation methodology and will explore implementation strategies. The municipality can manage maintenance responsibilities either through its own staff or through private contractors. The public, particularly those within the FMD, should be periodically informed about whom to contact about maintenance issues.

Partnerships
Due to the linear and connective nature of many pedestrian facilities, oftentimes improvements may involve numerous landowners. Greenway projects, for example, can present complex challenges of working with multiple property owners and jurisdictions. Creating partnerships may be the only way to solve the complex problems that ensue, as well

as deal with the inevitable web of utility lines and transportation corridors. Though these partners may have some conflicting interests at times, opportunities for funding, support and publicity may arise and broaden by involving partners with diverse interests.

Multiple uses of utility corridors provide one example of effective partnership. Most utilities use a linear corridor but occupy only a small portion of the ground surface. Rather than being solely dedicated to that one isolated use, these valuable corridors can often include a complementary public transportation and recreation use along with the utility functions. Utilities benefit from sharing corridors with trails through maintenance savings.

Partnerships engender a spirit of cooperation, civic pride and community participation. The key to the involvement of private partners is to make a compelling argument for their participation. Major employers and developers should be identified and provided with a "Benefits of Walking"-type handout for themselves and their employees. Very specific routes that make critical connections to place of business would be targeted for private partners' monetary support following a successful master planning effort. Potential partners include major employers that are located along or accessible to pedestrian facilities such as multi-use paths or greenways. Name recognition for corporate partnerships would be accomplished through signage trailheads or interpretive signage along greenway systems. Utilities often make good partners and many trails now share corridors with them. Money raised from providing an easement to utilities can help defray the costs of maintenance. It is important to have a lawyer review the legal agreement and verify ownership of the subsurface, surface or air rights in order to enter into an agreement.

Find more information about partnerships through American Trails, at: http://www.americantrails.org/resources/greenways/GrnwyUrbanSHM.html

Local Trail Sponsors

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

Volunteer Work

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers form church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.

Private Foundations and Organizations

Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are a few examples of private funding opportunities available in North Carolina.

The Carolina Thread Trail

A $50,000 planning grant was recently awarded to Gaston County by the Carolina Thread Trail organization. The resulting Master Plan depicts corridors of opportunity for future greenways (See **Appendix A.1.4**). Additional funding may be made available through the organization in upcoming years for design and construction of the trail in the Cherryville area.

For more information, visit
http://www.carolinathreadtrail.org/
Or contact:
Carolina Thread Trail
105 West Morehead Street
Charlotte, NC 28202
704-376-2556
randi@carolinathreadtrail.org

Land for Tomorrow Campaign

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals and community groups committed to securing support from the public and General Assembly for protecting land, water and historic places. The campaign is asking the North Carolina General Assembly to support issuance of a bond for $200 million a year for five years to preserve and protect its special land and water resources. Land for Tomorrow will enable North Carolina to reach a goal of ensuring that working farms and forests; sanctuaries for wildlife; land bordering streams, parks and greenways; land that helps strengthen communities and promotes job growth; historic downtowns and neighborhoods; and more, will be there to enhance the quality of life for generations to come. For more information, visit http://www.landfortomorrow.org/

The Trust for Public Land

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and well being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities. TPL's legal and real estate specialists work with landowners, government agencies, and community groups to:

- Create urban parks, gardens, greenways, and riverways
- Build livable communities by setting aside open space in the path of growth
- Conserve land for watershed protection, scenic beauty, and close-to home recreation safeguard the character of communities by preserving historic landmarks and landscapes.

The following are TPL's Conservation Services:

- Conservation Vision: TPL helps agencies and communities define conservation priorities, identify lands to be protected, and plan networks of conserved land that meet public need.
- Conservation Finance: TPL helps agencies and communities identify and raise funds for conservation from federal, state, local, and philanthropic sources.
- Conservation Transactions: TPL helps structure, negotiate, and complete land transactions that create parks, playgrounds, and protected natural areas.
- Research & Education: TPL acquires and shares knowledge of conservation issues and techniques to improve the practice of conservation and promote its public benefits.

Since 1972, TPL has worked with willing landowners, community groups, and national, state, and local agencies to complete more than 3,000 land conservation projects in 46 states, protecting more than 2 million acres. Since 1994, TPL has helped states and communities craft and pass over 330 ballot measures, generating almost $25 billion in new conservation-related funding. For more information, visit: http://www.tpl.org/.

Z. Smith Reynolds Foundation

This Winston-Salem based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. The foundation has two grant cycles per year and generally does not fund land acquisition. However, the foundation may be able to support municipalities in other areas of greenways development. More information is available at www.zsr.org.

Robert Wood Johnson Foundation

The Foundation seeks to help communities become increasingly walkable and thereby promote more active lifestyles that include exercise, like walking or biking, as a part of daily routine, particularly for children. **Active Living by Design** is a national program of The Robert Wood Johnson Foundation and is a part of the UNC School of Public Health in Chapel Hill, North Carolina. The program will establish and evaluate innovative approaches to increase physical activity through community design, public policies and communications strategies. Learn more about available grant opportunities at:www.activelivingbydesign.org.

North Carolina Community Foundation

The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for nonprofit organizations and institutions throughout the state. Based in Raleigh, North Carolina, the foundation also manages a number of community affiliates throughout North Carolina that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. In addition, the foundation manages various scholarship programs statewide. Web site: http://nccommunityfoundation.org/

National Trails Fund

In 1998, the American Hiking Society created the National Trails Fund, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. Each year, 73 million people enjoy foot trails, yet many of our favorite trails need major repairs due to a $200 million in badly needed maintenance. National Trails Fund grants give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. For 2005, American Hiking distributed over $40,000 in grants thanks to the generous support of Cascade Designs and L.L. Bean, the program's Charter Sponsors. To date, American Hiking has granted more than $240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from $500 to $10,000 per project.

What types of projects will American Hiking Society consider? Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements. Building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage. Constituency building surrounding specific trail projects - including volunteer recruitment and support. Web site: www.americanhiking.org/alliance/fund.html.

For additional information about funding sources and procedures, see
Appendices A.5 - How-to Build a Sidewalk (and other pedestrian facilities)

4.3 The Plan Adoption and Approval Process

Upon final approval of the Pedestrian Plan by the Steering Committee and NCDOT's Division of Bicycle and Pedestrian Transportation, the Steering Committee will submit the the Plan to the City Planning Board for review. At this time the Plan Consultant (Centralina Council of Governments) will also submit the Plan to the Lake Norman Rural Planning Organization (LNRPO) for endorsement.

The Planning Board will make any recommendations it sees fit and either return the Plan to Steering Committee for revision and resubmittal, or will recommend the Plan to the the City Council for review.

The City Council and attorney will review the Plan, and hold a public hearing of the Plan for public comment. The City Council will then either publicly adopt the Plan, or make other determinations.

Cherryville

PEDESTRIAN PLAN

Appendices:

A.1 Maps & Charts

1. Zoning Map
2. Flood Zone Map
3. County Bike trail Network
4. Carolina Thread Trail Master Plan for Gaston County with STEPS TO THE CAROLINA THREAD TRAIL
5. Crash Data
6. NCDOT Division 12 Vision Plan

A.2 Proposed Pedestrian Infrastructure Projects

A.3 Facility Standards and Guidelines

A.4 Articles

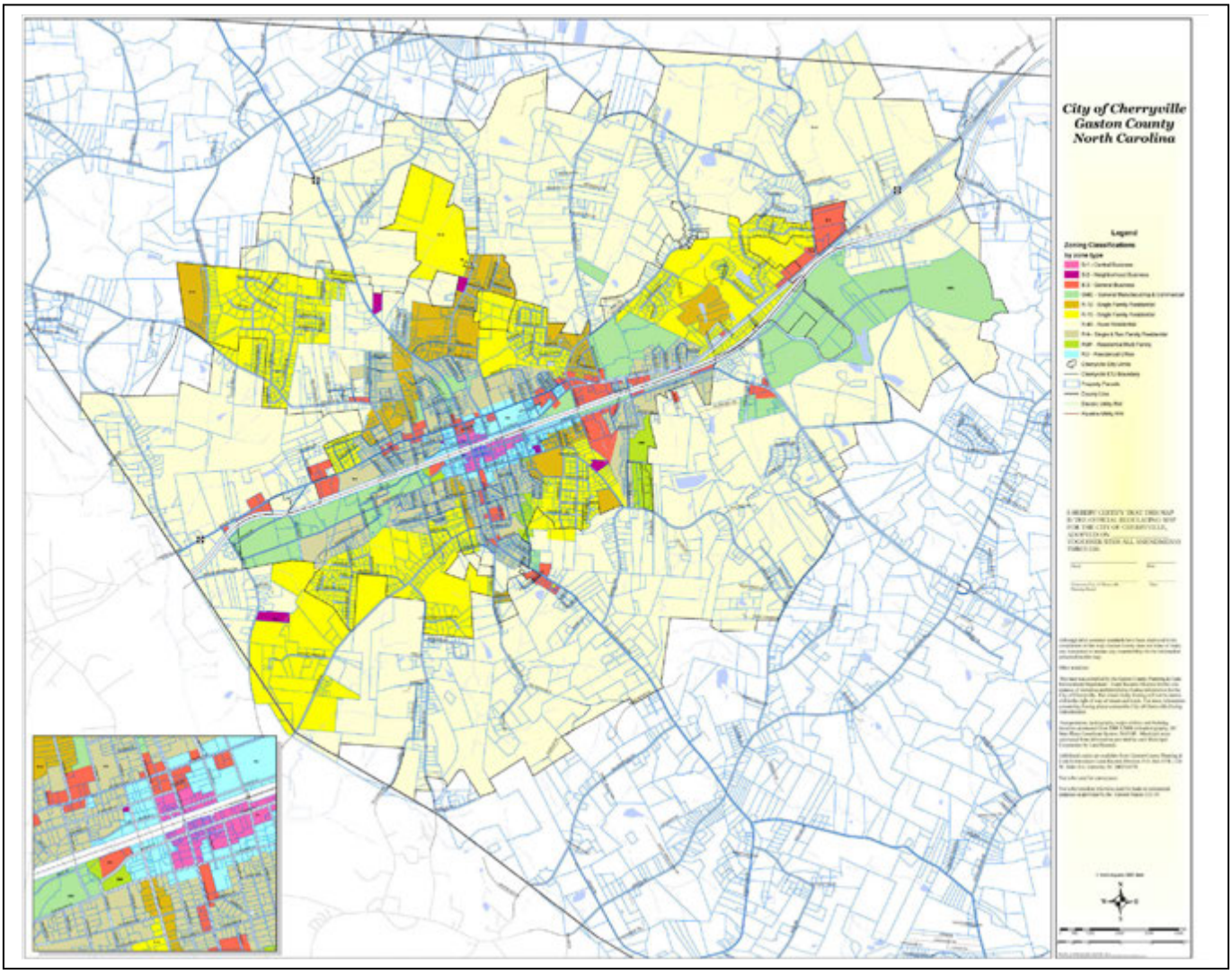
- The 13 points of pedestrian-oriented development
- Some Benefits of Greenways
- Planning on Walking?

A.5 How to Build a Sidewalk

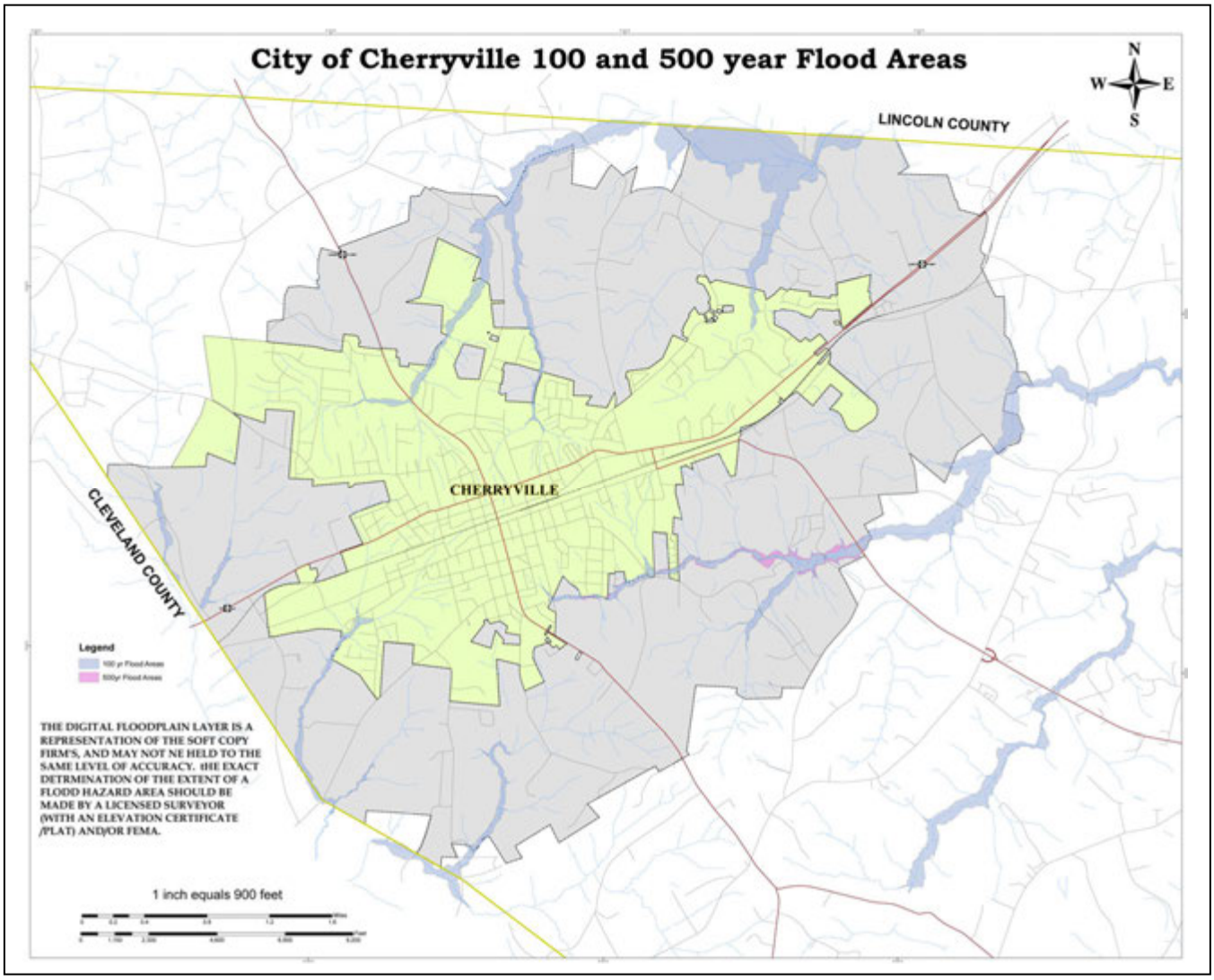
A STEP-BY-STEP GUIDELINE FOR BUILDING PEDESTRIAN IMPROVEMENTS

A.1 Maps

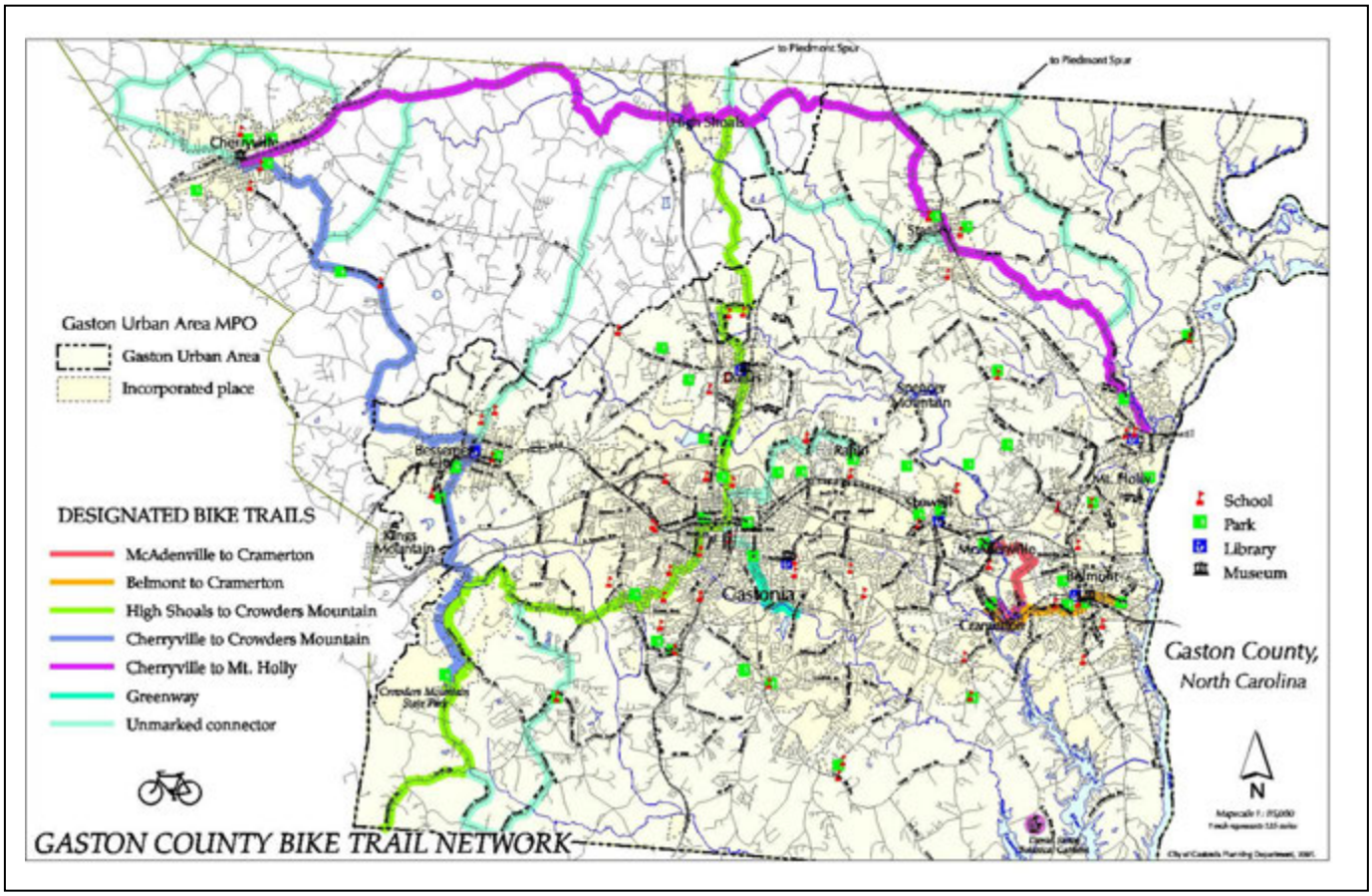
1. CITY OF CHERRYVILLE ZONING MAP
October 2006

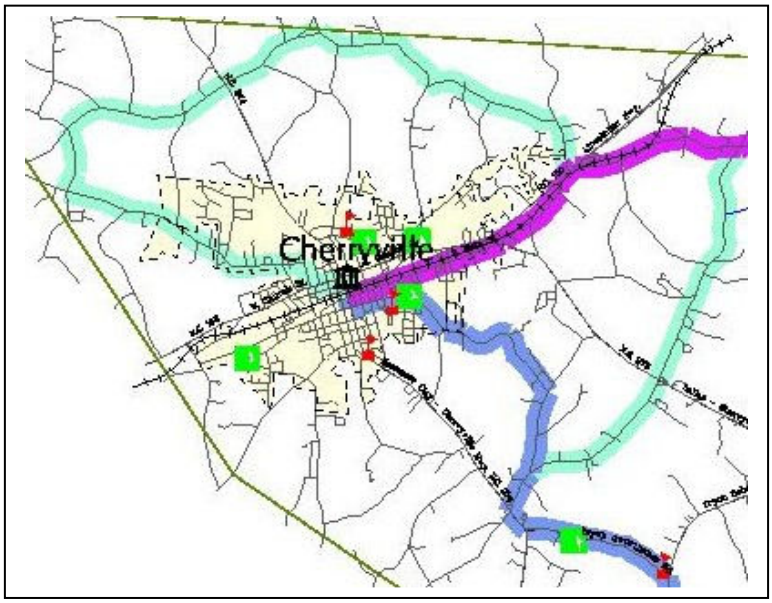


2. CITY OF CHERRYVILLE FLOOD ZONE MAP
October 2006

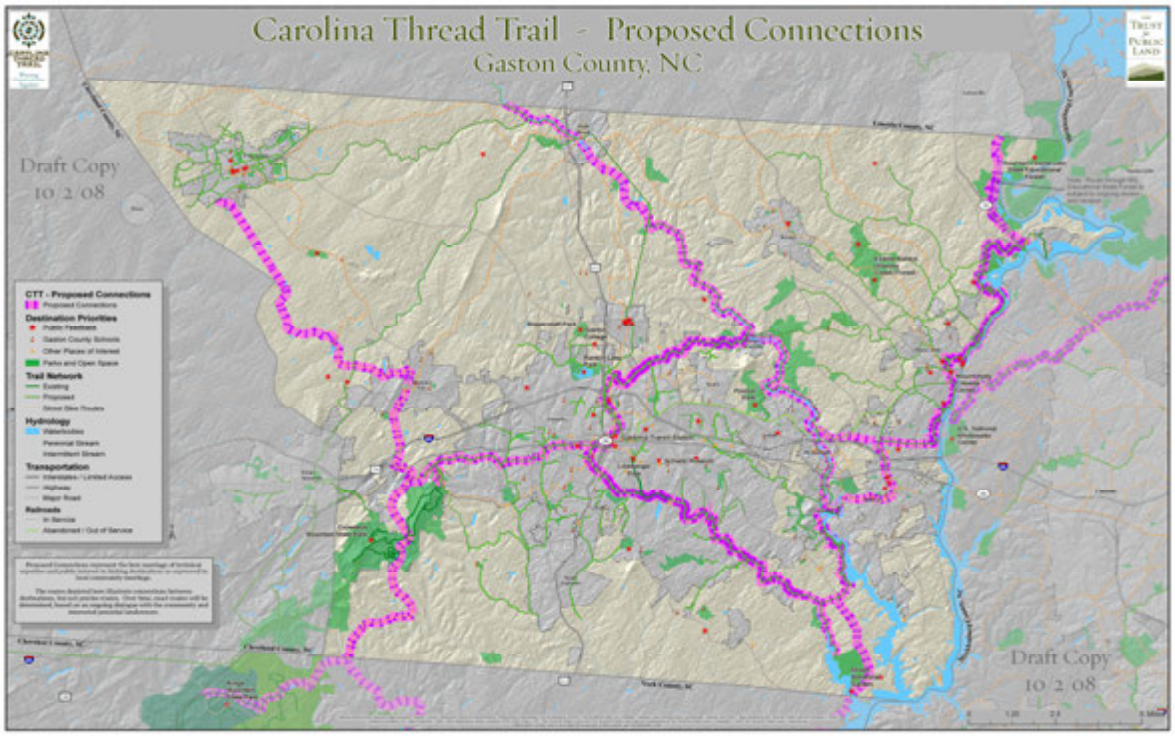


3. GASTON COUNTY BIKE TRAIL NETWORK





4. CAROLINA THREAD TRAIL



APPROVED MASTER PLAN FOR GASTON COUNTY

The Carolina Thread Trail has mapped out a series of steps to help communities within its region develop greenways that can be part of the larger Thread Trail network. This chart provides a general outline of the process.

Steps to the Carolina Thread Trail

	Planning	Corridor Design	Acquisition	Construction
Objective	Create a countywide Master Plan, adopted by elected officials, identifying regionally significant legs as the Carolina Thread Trail and an action plan for implementation of those corridors.	Create actionable, detailed corridor designs for specific legs of The Thread.	Acquire land or easements for The Thread, as well as open space along the designated corridors.	Complete construction design and build segments of The Thread.
Description	Plan incorporates GIS modeling, assessment of current trail conditions (existing and planned trails), identification of key destinations, connection points and corridors. Includes community meetings for public input and implementation plan.	Counties & municipalities conduct detailed planning to include route identification at a parcel level, a plan for landowner outreach, general design elements, implementation budget and a financial strategy.	Practitioners and conservation groups acquire parcels (outright or through easements) that will become The Thread, as well as open space along the designated corridors.	Practitioners contract for construction drawings and construction of The Thread segments.
Grant Type – private funds that will serve as catalytic seed funding for segments of The Thread	Planning Grants- Cash grants to lead organization. Counties, municipalities and NGOs are partners.	Corridor Design Grants- Cash grants to counties, municipalities and NGOs.	Land Acquisition Grants- Cash grants and grants of donated land to counties, municipalities & NGOs.	Construction Grants- Cash grants to counties and municipalities.
Participants	Community steering committee, planning consultant (may include sub-contractors designated by committee), TPL (manages mapping process), Thread staff	Local practitioners and steering committee, consultants, Thread staff	Local practitioners and steering committee, consultants, conservation groups, Thread staff	Practitioners, consultants, Thread staff

5. CRASH DATA (1990 – 2007)

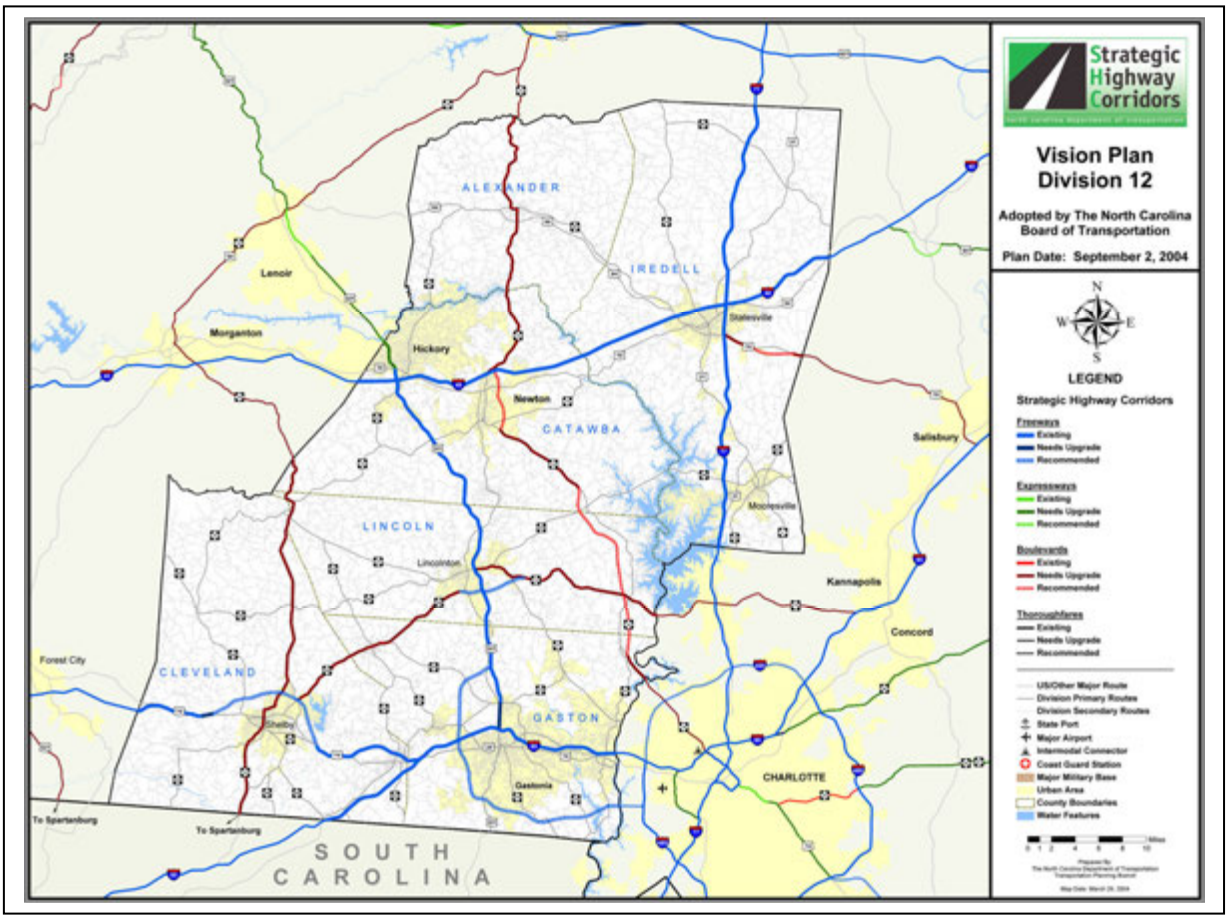
Reported Crashes Involving Pedestrians in the City of Cherryville, NC

For the Reporting Period of January 1, 1990 through May 31, 2007

DMV Crash ID Number	On Road	Miles	Dir	From Road	Toward Road	Date	Time	Day of the Week	Crash Severity
90018861	NC 150	0	N	NC 274		02/09/1990	8:10 AM	FRIDAY	A Injury (Disabling)
91180638	PINK ST	0.019	N	RIDGE AVE	SIXTH ST	12/03/1991	2:58 PM	TUESDAY	C Injury (Possible)
92009865	CHURCH ST	0		BLACK ST		01/22/1992	7:00 AM	WEDNESDAY	A Injury (Disabling)
92133287	ACADEMY ST	0.009	S	PINK ST		09/11/1992	2:25 PM	FRIDAY	B Injury (Evident)
93217757	FIRST ST	0.001	E	S MOUNTAIN ST	PINK ST	12/30/1993	9:47 AM	THURSDAY	A Injury (Disabling)
95071660	WEBB ST	0.2	W	WERT ST		04/21/1995	4:14 PM	FRIDAY	B Injury (Evident)
95088468	CHURCH ST	0		BLACK ST	BROWN ST	05/16/1995	11:03 PM	TUESDAY	A Injury (Disabling)
95258853	VIVIAN ST	0.019	N	CARROLL ST	STYERS ST	06/18/1995	2:30 PM	SUNDAY	C Injury (Possible)
96215770	MAIN ST	0		CHERRY ST	JAMES ST	11/07/1996	1:30 PM	THURSDAY	C Injury (Possible)
97060592	MAIN ST	0		MOUNTAIN ST	MULBERRY ST	04/01/1997	12:09 PM	TUESDAY	B Injury (Evident)
97093510	NC 150	0.005	W	DELVIEW RD	RAY ST	05/18/1997	7:00 PM	SUNDAY	C Injury (Possible)
97180877	MOUNTAIN ST	0.15	S	MULBERRY ST	PINK ST	09/25/1997	9:53 PM	THURSDAY	B Injury (Evident)
98023271	MAIN ST	0		MOUNTAIN ST		02/04/1998	5:35 PM	WEDNESDAY	C Injury (Possible)
98064229	MAIN ST	0.006	E	MOUNTAIN ST	OAK ST	04/06/1998	3:21 PM	MONDAY	B Injury (Evident)
98158169	CHURCH ST	0.014		DALTON ST	PINK ST	08/21/1998	10:16 PM	FRIDAY	A Injury (Disabling)
100098292	WHITE STREET	0.028	N	NC 150	LINCOLN	01/11/2000	8:55 PM	TUESDAY	C Injury (Possible)
100660004	ALLEN ST	0	E	JACOB ST	OLD POST RD	06/30/2002	8:00 PM	SUNDAY	C Injury (Possible)
100715525	MAIN ST	0.003	E	MOUNTAIN ST	MULBERRY ST	09/11/2002	4:52 PM	WEDNESDAY	B Injury (Evident)
101232918	EAST ACADEMY ST	0		BATES AVENUE	SOUTH PINK ST	12/11/2004	11:59 AM	SATURDAY	B Injury (Evident)
101959749	DELVIEW ROAD	0		SUNSET ROAD	SELF STREET	04/24/2007	5:48 AM	TUESDAY	B Injury (Evident)

Safety Planning Group
Traffic Safety Unit
North Carolina Department of Transportation

6. NCDOT DIVISION 12 VISION PLAN



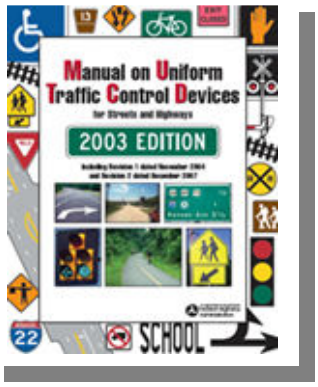
A.3 Facility Standards and Guidelines

Contents:

- **Facilities:**
  1. **SIDEWALKS –** width, connectivity, paving
  2. **PEDESTRIAN BUFFER ZONES** – planting strips, paved buffer zones, on-street parking
  3. **STREET TREES** – planting and maintenance, visibility, tree characteristics, pits & grates
  4. **CROSSWALKS**
  5. **STRIPING, SIGNAGE & SIGNALIZATION**
  6. **TRAFFIC CALMING DEVICES**
  7. **ON-STREET PARKING**
  8. **LIGHTING** – location, type, style
  9. **STREET FURNITURE** – seating, trash receptacles, bike racks, raised planters, water features
  10. **OFF-ROAD PATHS/TRAILS** – trail types, paving, environmental concerns, grade and site lines, accessibility, multi-use, acquisition and ownership, liability, security and safety, front-yard v. backyard paths, access points, maintenance and operations
  11. **PEDESTRIAN OVERPASSES/UNDERPASSES**
- **Additional Accessibility Information**
- **Information Sources**

Specific locations for facility installation and site improvements are provided in the **Project Identification and Priority List.** Any recommended improvements proposed to be located in the North Carolina Department of Transportation (NCDOT) right-of-way are under the jurisdiction of NCDOT Division 10. Contact the Division 10 Engineer before considering implementation of any improvements in the NCDOT right-of-way.

All facilities shall adhere to the current U.S. Access Board definition of the American's with Disabilities Act (ADA). See: http://www.access-board.gov/



For additional facility information, refer to the NCDOT Office of Bicycle & Pedestrian Transportation's *Planning and Designing Local Pedestrian Facilities*, available by request: Email: bikeped_transportation@dot.state.nc.us

For crosswalk markings, dimensions and other standards, refer to the **Manual on Uniform Traffic Control Devices** (MUTCD). The MUTCD is published by the Federal Highway Administration (FHWA) and defines the standards used by road managers nationwide to install and maintain traffic control devices on all streets and highways. Visit: http://mutcd.fhwa.dot.gov/

1. SIDEWALKS

Public sidewalks are intended to provide pedestrians a clear and convenient path of travel within the public right-of-way, separated from roadway vehicles, in a manner that is safe and accessible to all members of the public. They also provide places for children to walk, run, skate, ride bikes, and play. Sidewalks should feature a continuous travel path, clear of poles, signposts, and other obstacles that could block the obstruct pedestrians, obscure a driver's or pedestrian's view, or become a tripping hazard.

Width of travel path

The Plan recommends a minimum travel path width of 5 ft. for a sidewalk or walkway, in accordance with the Federal Highway Administration (FHWA) and the Institute of Transportation Engineers (ITE). This width allows two people to pass comfortably or to walk side-by-side. This minimum width of the travel path must be free of obstructions, such as utility poles, or pedestrian amenities such as street furniture, trashcans, etc. and shall meet all requirements of the ADA standards for "accessible pathway".

Where sidewalks abut public or commercial buildings, or anywhere high concentrations of pedestrians are expected, a minimum travel path of 8 ft. should be allowed for.

Where sidewalks align with the edge of an angled or 90-degree parking lot, a minimum of 30 inches of parked car overhang obstructing the sidewalk shall be taken into account in order to maintain the minimum travel path width.

Connectivity

The alignment of new sidewalks shall be designed and constructed to serve pedestrians in the most direct and convenient manner possible without causing undue physical or aesthetic damage to existing trees or other site features. The design of new sidewalks shall also respect all required or proposed landscaping and other site features.

All new commercial and industrial development shall feature an on-site sidewalk system that connects the main entrance or the most convenient accessible entrance of the primary building to existing public sidewalks or public trails that are adjacent to or abutting the property. Sidewalk/driveway crossings shall be minimized in on-site sidewalk systems.

Paving type

For typical concrete sidewalk paving and construction methods, refer to the City's standard specifications and construction details.

Alternative paving should be considered for the following applications:

- A change in paving type can help distinguish the pedestrian buffer zone from the pedestrian travel path. Sand-set pavers are recommended in the buffer zone for ease of utility maintenance.
- Paving type should vary as a pedestrian path crosses a vehicular path to visually cue pedestrians (and drivers) and provide tactile warning to the visually impaired.
- Textured pavements can add significant aesthetic value and help define a unique place.

2. PEDESTRIAN BUFFER ZONES

Buffer zones between pedestrian paths and vehicular traffic impart an increased sense of security to those on foot or in wheelchairs. They also help define the path and give it a more comfortable scale. Buffers also provide additional benefits depending on the type used.

A. Planting Strips of sufficient width provide a zone for street trees and other landscaping, creating a more comfortable and attractive environment for pedestrians and drivers. Street trees are most effective when placed between the walkway and the curb. When planting strips are properly engineered to provide storm water drainage, they can eliminate the need for curb and gutter, thereby vastly reducing the cost of road and sidewalk construction while providing an environmental benefit. Planting strips should not be less than 4-feet in width. The recommended planting width to permit healthy tree growth is 6 to 8 feet measured from the edge of pavement or back of curb. While planting strips are the preferred means of providing a buffer, they are not always feasible or appropriate. Areas of high foot traffic may preclude landscaping due to maintenance or space considerations. Additional information about street trees is provided on the following page.

B. Paved buffer zones are appropriate in more urbanized settings. This zone is located between the travel path of the sidewalk and the curb, though an additional buffer zone may also exist along the opposite side of the travel path, adjacent to buildings, open space, or off-street parking. Though a constant width is preferred for the buffer zone, widths may vary as long as the buffer does not interrupt the pedestrian travel path. Items such as street furniture, trees planted in tree grates, streetlights, street signs, fire hydrants, parking meters, etc., are placed in the buffer zones so as not to restrict pedestrian flow in the travel path. The buffer zone may be a good location to use paver stones for easy and affordable access to underground utilities.

C. On-street parking provides another opportunity to physically shield pedestrians from vehicular traffic, making them feel safer and more comfortable. On-street parking allows pedestrians to clearly see into the street and allows drivers to clearly see pedestrians. See more about on-street parking further along in Facilities section 7.

3. STREET TREES

This Pedestrian Plan recommends adopting a City Tree Ordinance to provide guidance for tree installation and maintenance. For more information about developing a Tree Ordinance and related policies and programs, see: http://www.seql.org/actionplan.cfm?PlanID=10

Planting and Maintenance requirements

All street trees should be selected according to the standards described in the *American Standard for Nursery Stock* of the American Nursery and Landscape Association.
See: http://www.anla.org/applications/Documents/Docs/ANLAStandard2004.pdf
Install and maintain trees according to the International Society of Arboriculture (ISA) guidelines. See: http://www.treesaregood.com/treecare/treecareinfo.aspx or contact: ISA, P.O. Box 3129, Champaign, IL 61826-3129, USA. E-mail: isa@isa-arbor.com

Visibility

Street trees should never be allowed to obscure the line of sight between pedestrians and drivers. A clear view should be maintained between 30" and 72" above street. This area must be free of limbs and foliage for safe cross visibility. Other plantings should also follow this rule within 50 ft. proximity of street corners and other designated crossing points.

Tree characteristics

Form - To maintain visibility and provide shade for a comfortable pedestrian corridor, street trees should be vase shaped, columnar, or oval in form (habit) with large spreading crowns.
Leaf - Street trees should primarily be deciduous, losing their leaves in the winter season.
Roots - Avoid trees with aggressively invasive roots adjacent to pavement or buildings.
Size - Large trees (growing over 35 ft. in height at maturity) are preferred as street trees except near overhead utility lines. Small tree (growing less than 35 feet in height at maturity) should be used in areas directly adjacent to or under utility lines.
Spacing – typically, large trees should be spaced approximately 40 – 50 feet when planted in a line, and small trees spaced at approximately 30 ft.

Species not recommended

Due to problems with weak branches, aggressive roots, invasive spreading, or vulnerability to vehicular fumes, the following species are not recommended for street tree use:

- Bradford Pear / Pyrus calleryana 'Bradford' Pin
- Eastern White Pine / Pinus strobus
- Silver Maple / Acer saccharinum
- Norway Maple / Acer platanoides
- Sweetgum / Liquidambar styraciflua
- Tree-of-Heaven / Ailanthus altissima

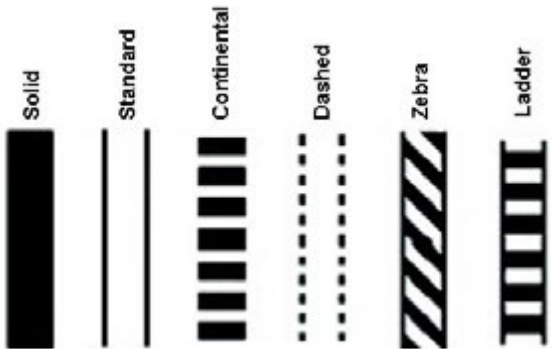
Tree Pits and Tree Grates

Street trees should generally be located in open planting strips, however tree pits with tree grates may be a practical (though expensive) alternative in very high pedestrian traffic areas. Tree pits should be constructed so that a continuous channel of soil under the pavement connects the individual pits and allows greater volumes of soil for root growth and water storage. Raised tree planting areas should likewise be designed to accommodate multiple rather than single trees. Tree grates should generally not encroach upon the travel path. However, for optimal pedestrian safety and comfort, all tree grates used should meet the ADA standards for "accessible pathway". Gratings should have openings not greater than

1/2" wide with slots perpendicular to the general direction of travel and have a coefficient of friction at least 0.6 on flat surfaces and 0.8 on ramps.

4. CROSSWALKS

Marked crosswalks indicate preferred locations for pedestrians to cross streets. They provide paths of increased safety to pedestrians as they warn motorists to yield to pedestrians in this designated right-of-way. Crosswalks should be placed strategically at high pedestrian volume locations, such as signalized intersections and high volume mid-block locations.

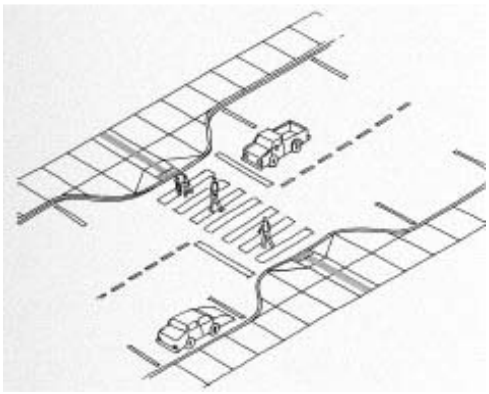


Types of Crosswalk Striping

Considerations for location and design:

- Crosswalk locations should be convenient for pedestrian access.
- Crosswalks should be used in conjunction with other measures that help reduce speeds and warn drivers to be prepared to stop, such as advance warning signs, warning signs, stop bars, median crossing islands and curb extensions (only where there is on-street parking), to improve the safety of a pedestrian crossing, particularly on multi-lane roads with average daily traffic (ADT) above about 10,000.
- Crossings with higher pedestrian volume require wider crosswalk paths.
- Marked crosswalks are particularly important for pedestrians who are visually impaired.
- Crosswalk markings must be placed to include the ramp so that a wheelchair does not have to leave the marked crosswalk to access the ramp.
- Pedestrians will generally wait only 30 seconds at crossings before looking for opportunities to cross, regardless of the walk indication and the crossing location.
- Pedestrian walking speeds generally range between 2.5 to 6.0 ft/s.

Curb extensions can enhance the effectiveness of crosswalks, either midblock or at intersections. Curb extensions shorten the crossing distance for pedestrians and improve their visibility of the crosswalk to oncoming vehicular traffic. They also serve as traffic calming devices whether pedestrians are crossing or not. Curb extensions also provide opportunities to enhance the street through landscaping.



Midblock curb extension with striped crosswalk

Raised crosswalks, constructed 3-4 inches above the elevation of the street can be appropriate for midblock pedestrian crossings where vehicle speeds are excessive. Textured paving should be incorporated into the edges in order to provide visual and tactile cues.

For more information about curb extensions and raised crosswalks, see **Traffic Calming Devices** in Section 6. For crosswalk markings, dimensions and other standards, refer to the Manual on Uniform Traffic Control Devices (MUTCD).

5. SIGNAGE, SIGNALS & STRIPING

SIGNAGE can serve effectively to alert drivers to reduce speeds and to warn pedestrians to use extra caution. However, too much signage can produce visual "clutter" and can encourage complacency and noncompliance with signs in general. Signs, and the sign text, should be large enough to be seen from a distance. The distance is dependent upon the road speeds. It is imperative that all signs be properly located so as not to obstruct the pedestrian and visibility triangles of motorists.

Way-finding signage is intended to orient and communicate in a clear, concise and functional manner. It should enhance pedestrian circulation and direct visitors and residents to important destinations. In doing so, the goal is to increase the comfort of visitors and residents while helping to convey a local identity. Signage regulations should address the orientation, height, size, and style of signage to comply with a desired local aesthetic.

It is recommended that municipalities adopt consistent and descriptive graphics to identify pedestrian routes. This signage system would assure pedestrians that they are safe and will not encounter gaps in facilities along these routes. A map should be incorporated into each route illustrating the entire pedestrian system and their location. Bus stops, destinations, and mileage should also be identified on the signs.

Maintenance of signage is as important as walkway maintenance. Clean, graffiti free, and relevant signage enhances guidance, recognition, and safety for pedestrians.

Though traffic signage can carry legal authority, it should not be relied upon as the primary or sole means of influencing driver or pedestrian behavior. However, it is essential to anticipate the need for traffic signs in every situation to provide clear direction for both pedestrians and drivers. It is also important to avoid unnecessary signs as they may cause physical or visual obstruction, will require maintenance, can confuse and erode the significance of necessary signage and add to visual blight. Signs should only be installed when they fulfill a need based on an engineering study or engineering judgment.

All pedestrian and vehicular pavement striping, signage and signals, and the locations thereof shall conform to the MUTCD.

Sample Pedestrian Regulatory Signage

MUTCD Pedestrian-Related Signage

Regulatory Signs

School, Warning, and Informational Signs

Sign	MUTCD Code	MUTCD Section	Conventional Road	
Yield here to Peds	R1-5	2B.11	450x450 (18x18)	Regulatory
Yield here to Peds	R1-5a	2B.11	450x600 (18x24)	
In-Street Ped Crossing	R1-6, R1-6a	2B.12	300x900 (12x36)	
Peds and Bikes Prohibited	R5-10b	2B.36	750x450 (30x18)	
Peds Prohibited	R5-10c	2B.36	600x300 (24x12)	
Walk on Left Facing Traffic	R9-1	2B.43	450x600 (18x24)	
Cross only at Crosswalks	R9-2	2B.44	300x450 (12x18)	
No Ped Crossing	R9-3a	2B.44	450x450 (18x18)	
No Hitch Hiking	R9-4	2B.43	450x600 (18x24)	
No Hitch Hiking (symbol)	R9-4a	2B.43	450x450 (18x18)	
Bikes Yield to Peds	R9-6	9B.10	300x450 (12x18)	
Ped Traffic Symbol	R10-4b	2B.45	225x300 (9x12)	
School Advance Warning	S1-1	7B.08	900x900 (36x36)	School, Warning, Informational
School Bus Stop Ahead	S3-1	7B.10	750x750 (30x30)	
Pedestrian Traffic	W11-2	2C.41	750x750 (30x30)	
Playground	W15-1	2C.42	750x750 (30x30)	
Hiking Trail	I-4	--	600x600 (24x24)	

1. Larger signs may be used when appropriate.
2. Dimensions are shown in millimeters followed by inches in parentheses and are shown as width x height.
3. First dimension in millimeters; dimensions in parentheses are in inches.
4. All information in table taken directly from MUTCD.

SIGNALS, or traffic control devices, include those intended to direct vehicle drivers, such as traffic signals and flashing warning lights, and pedestrian signals, directing pedestrians to walk/don't walk.

Traffic signals create gaps in the traffic flow, providing intervals where pedestrians can cross streets safely. These intervals should allow adequate crossing time for pedestrians and based upon a maximum walking speed of 3.5 ft/s. Most traffic signals are installed based on vehicular traffic considerations, but some high-volume pedestrian circumstances warrant traffic signals themselves. Judgment must be used on a case-by-case basis. For example, a new facility being built, such as a park, recreational path, or school, will create a new demand. A new signal could be installed based upon the projected crossing demand. There may also be latent demand if a destination is not currently accessible, but could become so with new facilities or redesign. According to the MUTCD, a traffic signal may be warranted when the pedestrian volume crossing a major street or mid-block location during an average day reaches 100 or more for each of any 4 hours; or 190 or more during any 1 hour.

In downtown areas, signals are often closely spaced, sometimes every block. When high or regular pedestrian traffic exists during a majority of the day, fixed-time signals should be used to consistently allow crossing opportunities. Pedestrian activated signals should only be used when pedestrian crossings are intermittent and should be made accessible to all pedestrians, including those with disabilities. Signal cycles should be kept short (90 seconds maximum) to reduce pedestrian delay. Pedestrians are very sensitive to delays. Marked crosswalks at signals should always be installed at all four legs. They encourage pedestrians to cross at the signal and discourage motorists from encroaching into the crossing area.

Simply meeting certain MUTCD warrants for signalization, however, does not always justify installation of a traffic signal. Traffic signals can sometimes cause excessive delay for drivers and pedestrians alike, and may lead to an increase in certain accident types.

Overhead warning signals warn drivers of crossing pedestrians at midblock crosswalks, or at intersections that periodically see heavy pedestrian traffic but that do not otherwise warrant traffic signals. These signals are most effective when triggered directly by pedestrian activity, or when flashing only during peak pedestrian times, such as school commute times.

Pedestrian activated warning signals with signage at a midblock crosswalk

Warning signals with signage can alert drivers to crossing pedestrians at an otherwise unsignalized intersection

Pedestrian signal devices are recommend at all traffic signals, unless the signal is located on a highway where walking is prohibited. Pedestrian signals should be clearly visible to the pedestrian at all times when in the crosswalk or waiting on the far side of the street.

Countdown signals are pedestrian signals that show how many seconds the pedestrian has remaining to cross the street. The countdown can begin at the beginning of the WALK phase, perhaps flashing white or yellow, or at the beginning of the clearance, or DON'T WALK phase, flashing yellow as it counts down.

Audible signals - Audible cues can be used to pulse along with a countdown signal. The signals are used for visually and audibly impaired individuals. Audible pedestrian signals should be carefully placed to ensure that false readings of the signal are not presented where there is a free-right or "slip" lane, in the presence of complex signal phasing, or other conditions where background noise can interfere with the audible signal. Consideration should be paid to the noise impact on the surrounding neighborhoods when deciding to use audible signals.

Pedestrian detectors automatically activate the red traffic and WALK signals when pedestrians are detected. Since pedestrian pushbutton devices are not activated by about one-half of pedestrians (even fewer activate them where there are sufficient motor vehicle gaps), new "intelligent" microwave or infrared pedestrian detectors are now being considered in many locations. Detectors can also be used to extend the crossing time for slower moving pedestrians in the crosswalk. Automatic pedestrian detectors have been found to improve pedestrian signal compliance and also reduce pedestrian conflicts with motor vehicles. These devices, however, are still considered experimental and their reliability may vary under different environmental conditions. Motion activated warning systems are one example.

Motion activated warning systems present an option where trails intersect roads. When triggered by path activity, these devices flash warning beacons to signal approaching motorists of path users near the intersection, without altering the existing flow of traffic. This solution is ideal for mid-block crossings or intersections where crosswalks that stop traffic are not warranted. The system also flashes beacons to pathway users warning them to stop. Active warning systems are more effective than 24-hour flashes that motorists come to ignore over time. Such devices can be equipped with trail counters to provide data of trail use. Solar energy with battery backup systems can be used to power the signal. For an example of this system, visit www.crossalert.com.

Motion Activated Warning System

In-pavement flashing warning light systems consist of a series of high-intensity luminaries buried in the pavement on both sides of the crosswalk that direct light along the road towards oncoming traffic. When activated, either by a pedestrian pressing a signal button or by some form of automatic pedestrian detection system, the lamps in each luminary flash for a fixed time, effectively alerting drivers that the crosswalk is in use. These systems can be integrated with other traffic signal lights if required. The MUTCD contains language that makes the use of in-pavement flashing warning lights at crosswalks acceptable and gives guidance for their application.

In-pavement flashing warning light system

STRIPING is a warning and directional feature that should always be used in conjunction with other devices. It can include crosswalk striping, stop bars, etc. One of the best materials for marking crosswalks is tape, which is installed on new or repaved streets. It is highly reflective, long lasting, slip-resistant, and does not require a high level of maintenance if installed properly. However, it does require a higher level of expertise to install well. Although initially more costly than paint, both inlay tape and thermoplastic are more cost-effective in the long run. Inlay tape is recommended for new and resurfaced pavement, while thermoplastic may be a better option on rougher pavement surfaces. Both inlay tape and thermoplastic are more visible and less slippery than paint when wet.

"An **advanced stop bar**, when used, should ordinarily be placed four feet in advance of and parallel to the nearest crosswalk line. In the absence of a marked crosswalk, the stop bar should be placed at the desired stopping point and in no case more than 30 feet or less than four feet from the nearest edge of the intersecting roadway. When a stop bar is used in conjunction with a STOP sign, it should be placed in line with the STOP sign. However, if the STOP sign cannot be located exactly where vehicles are expected to stop, the stop bar should be placed at the desired stopping point. Finally, the stop bar should be placed so that vehicles have optimum sight distance along the intersecting roadway."

-- **Institute of Transportation Engineers** Traffic Engineering Council

6. TRAFFIC CALMING DEVICES

Traffic Calming Devices (TCDs) are physical measures in street design that cue drivers to slow down. The effectiveness of TCDs does not depend upon a driver's compliance with traffic signs and signals, or police enforcement, though they may be used effectively in conjunction with them. In coordinated combinations, TCDs reduce speeds, alert drivers to pedestrians, and reduce the severity of collisions. Some TCDs can also provide greater refuge for pedestrians, reducing their exposure to at-grade traffic.

Though most of the examples listed below are not specified in the **Project Identification and Priority List**, the following TCDs are generally recommended for consideration by the City on a project-by-project basis:

- **4-way stops** – used strategically at key intersections, this inexpensive strategy can effectively reduce driver speeds and encourage increased caution at intersections.
- **Textured pavements** - stamped pavement or alternate paving materials to create an uneven surface for vehicles and pedestrians to traverse. Textured street pavement provides a visual and tactile cue for both drivers that they are driving in an area of high pedestrian use. Similarly, they cue pedestrians that they are entering a vehicular zone, and are a particularly effective treatment to warn visually impaired pedestrians. Textured street pavements should be used in areas of substantial pedestrian activity and where noise is not a major concern.
- **Curb radius reduction** - Reconstructing turning radii to a tighter turns will reduce turning speeds, shorten the crossing distance for pedestrians, and also improve sight distance between pedestrians and motorists.
- **Curb extensions** – also referred to as bulb-outs, neckdowns, or chokers, extend the sidewalk or curb line out into the parking lane, which reduces the effective street width from curb to curb. Curb extensions significantly improve pedestrian crossings by reducing the pedestrian crossing distance, visually and physically narrowing the roadway, improving the ability of pedestrians and motorists to see each other, and reducing the time that pedestrians are in the street. Curb Extensions slow vehicles by alerting drivers to potential pedestrians, visually tightening the vehicular path, and physically reducing the turning radii. Curb extensions can provide adequate space on narrow sidewalks for curb ramps and landings. Curb extensions should only be used where there is a parking lane. Curb extensions can create additional space for curb ramps, landscaping, and street furniture that are sensitive to motorist and pedestrian sightlines; this is especially beneficial where sidewalks are otherwise too narrow. Care should be taken to ensure that street furniture and landscaping do not block motorists' views of pedestrians.

Intersection crosswalk with curb extension

- **Medians/pedestrian islands** – an island located along the centerline of a street that may or may not narrow the vehicular travel lanes at that location. Medians can be combined with crosswalks to provide pedestrians a temporary "refuge" as they cross the street. They are often landscaped to provide a visual amenity. Placed at the entrance to a neighborhood, and often combined with textured pavement, and called "gateway islands." Medians may be raised, or partially sunken and combined with hydrophilic landscaping and drainage infrastructure to treat and drain storm water.

Raised median with crosswalk

- **Raised crosswalks** - speed tables outfitted with crosswalk markings and signage. Raised cross walks are intended to reduce vehicle speeds specifically where pedestrians will be crossing a street. By raising the level of the crossing, pedestrians are more visible to approaching motorists. Raised crosswalks can be appropriate for midblock pedestrian crossings where vehicle speeds are excessive.

Raised Crosswalk

- **Raised intersections** - raised flat areas that cover an entire intersection, with ramps on all approaches. By modifying the level of the intersection, the crosswalks are more readily perceived by motorists to be "pedestrian territory". Raised intersections should be used only where there is substantial pedestrian activity where other traffic calming measures have not been effective.
- **Speed humps** - raised mounds placed across residential streets to control chronic speeding problems where other methods of slowing traffic have not been effective. They are designed to calm traffic in residential areas, particularly near parks and schools. Similar to a speed bump, the speed hump is wider and has a more sloping side taper. The physical impact on passing vehicles is less severe at slower speeds than at higher speeds. Speed humps reduce vehicular speeds between intersections.
- **Speed Tables** - flat-topped speed humps typically long enough for the entire wheelbase of a passenger car to rest on the flat section. They often constructed with brick or other textured materials on the flat section.

Other strategies that do not rely on pavement and curb manipulation can also be employed to cue drivers to the presence of pedestrians and induce slower vehicular speeds. One of the most effective means among them is on-street parking.

7. ON-STREET PARKING

On-street parking benefits both pedestrians and drivers in a variety of ways, as well as contributing to the economic viability of a street.

- On-street parking provides a physical buffer between pedestrians on sidewalks and moving traffic in the streets. Pedestrians feel safer with such a barrier that still allows them to clearly see into the street and drivers to clearly see pedestrians.
- On-street parking compliments pedestrian-friendly setbacks for on street commercial development. Commercial establishments with on street parking require fewer parking spaces in large expanse pedestrian-unfriendly parking lots. When commercial buildings are set back behind parking lots, longer walking trips through vehicular areas are necessitated for pedestrians coming from the street. This arrangement discourages pedestrian usage of the area.
- On-street parking calms traffic. Drivers tend to slow down when they sense potential conflict with opening car doors or vehicles suddenly moving into the traffic lane.
- On-street parking can be easily monitored and controlled in order to maximize short-term visitor usage.
- On-street parking can even provide a source of revenue that helps pay for parking enforcement and other transportation improvements.

Despite the potential for on-street collisions,
such collisions more commonly occur in <u>interior</u> parking lots.

On-street parking alignment options include: parallel, diagonal or angle, and perpendicular.

1.) **Parallel parking** is preferred. Parallel parking permits drivers a clear view of oncoming traffic. And it requires the least amount of additional right-of-way depth to accommodate parked cars.

2.) **Diagonal or angle parking.** Though diagonal parking provides the advantage of greater ease in maneuvering into a space with fewer steps than parallel parking, it is the most accident-prone on-street parking arrangement commonly used, providing the most potential conflicts between vehicles and pedestrians. Diagonal parking is the least efficient use of space per car and is exceptionally unsafe of bicyclists.
Diagonal parking can be either "back-out" or back-in".
   a. **Back-out diagonal parking** requires a person leaving a parking space to back out into traffic, often without a good view of approaching cars or pedestrians.
   b. **Back-in diagonal parking** requires additional maneuvering skill but provides some advantages over back-out diagonal parking:
      i. Children are directed to the sidewalk and shielded by the door.
      ii. Easier to unload and load trunk at the sidewalk.
      iii. Sight visibility is improved for drivers and cyclists.
   c. **Perpendicular parking** has many of the disadvantages of angled parking but requires the even more depth in right-of-way.

Learn more about parking management at: http://www.seql.org/actionplan.cfm?PlanID=13

8. LIGHTING

Location
Lighting for sidewalks and off-street paths should be provided where considerable pedestrian traffic is expected at night, where there is insufficient available light from the surrounding area, and at all designated road crossings.

Type
Each lighting situation is unique and must be considered on a case-by-case basis. Average maintained horizontal illumination levels of 5 lux (0.5 foot candles) to 22 lux (2 foot candles) should be considered, though higher levels are advisable in special areas where security problems might exist. Light poles should generally be 12 to 15 ft. high. Luminaries and poles should be at a scale appropriate for pedestrian use.

Style
Light fixtures, as well as other on-street facilities, like street furniture, can add a great deal in terms of street aesthetics and reinforce community identity. The Plan recommends the community adopt a particular style of street lighting fixture appropriate for the City's identity and coordinate this choice with stylistic choices in other street facilities.

9. STREET FURNITURE

Well-designed walking environments are enhanced by street furniture, such as outdoor seating, lighting fixtures, bus shelters, trash receptacles, and water fountains. To select and properly site street furniture, careful attention should be given to the physical and social needs of the community and the various groups within it.

General design principles for selection, design, and siting of street furniture are listed below:

- Street furniture placement should never be placed so as to restrict regular pedestrian flow.
- Street furniture can be positioned to help reinforce a physical or visual buffer between pedestrians and vehicular traffic.
- Consider the role street furniture can take by providing familiar tactile landmarks, which can aid navigation for the visually impaired.

- Coordinate the style of various street elements to complement one another and reinforce a sense of common identity for the community.

Seating

- Seating should be located periodically along well-traveled paths and at destination points. For paths frequented by elderly citizens, adequate seating should be provided for along the path at a minimum of 150 ft.
- Provide seating in locations that are logical destinations or gathering points to allow opportunities for community interaction, particularly for students and the elderly.
- Seating should be oriented toward travel ways and areas of visual interest. Align benches with sidewalks and prominent views.
- Whenever possible in destination areas, provide moveable chairs.

- Seating should generally be located to take advantage of shade or in "suntraps" - areas that take advantage of winter sun and blocked from the wind.
- In addition to benches and other pre-manufactured seating, additional opportunities for seating may include other areas that meet the following parameters: smooth, level areas with a minimum depth of 14 inches, a minimum height of 12 inches, and a maximum height of 36 inches.
- The following procedure for selection and placement of benches is recommended:
  1.) Hold a community meeting to determine optimal locations for benches.
  2.) Select appropriate bench design based on utility, maintenance and aesthetic concerns.
  3.) Determine ongoing maintenance procedures and responsibilities.
  4.) Identify parcel owners if easement acquisition is required and acquire easement.
  5.) Involve community volunteer workers in installing benches where practical.

Trash receptacles

- Well placed, attractive, and properly maintained trash receptacles encourage pedestrian behavior toward keeping a cleaner community.
- Design style of trash receptacles should be carefully coordinated with other street furnishings to optimize aesthetic quality and opportunity for reinforcing community identity.
- Apply the recommended procedure for bench selection and placement.

Bike racks

- Bike racks encourage pedestrian life by providing greater opportunity for people to leave their cars at home.

- Rack design should be attractive to encourage use by cyclist and property owners.
- Racks must allow the bike frame and wheel(s) to be locked securely.
- Racks should be built from heavy duty, weather & tamper resistant materials.
- Racks must support the bicycle frame and not hold the wheel.
- Most racks are misused to some degree. Look for racks that provide the same opportunity for security whether the bike is on the end or middle of the rack.
- Locate racks next to entrance doors and in line of site of a window.

Raised Planters

- Planters can provide opportunities in addition to planting strips for street landscaping.
- Raised planters should be located either to act as buffers between pedestrian and vehicular ways, or to help define or enhance a public gathering space. Planters should not be located in the travel path or where they will otherwise obstruct normal pedestrian flow.
- Raised planters should be designed to provide additional opportunities for comfortable seating (meeting the dimensions specified in the **Seating** section) as well as community identity.

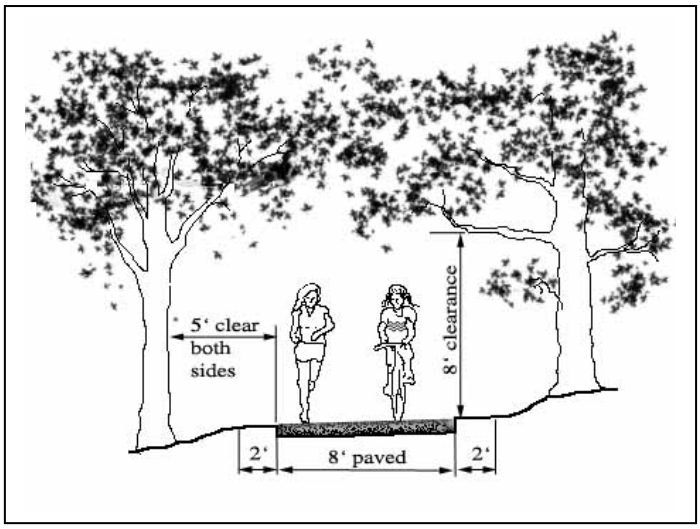
Water features

- Decorative Fountains usually provide an inviting visual and audible focal point for a public space. They are usually the dominant feature in any space.
- Fountains should be designed with audible effects in mind, so as to create an atmosphere conducive to conversation. Splashing water provides an element of privacy in public areas as it masks conversational tones.
- Raised fountains can provide highly favorable additional seating area.
- Fountains should be designed to permit free access to water by pedestrians.
- Great care should be given in planning fountain projects. Insure that there is an ongoing funding source for adequate fountain maintenance, as well as sufficient liability protection.

10. OFF-ROAD PATHS/TRAILS

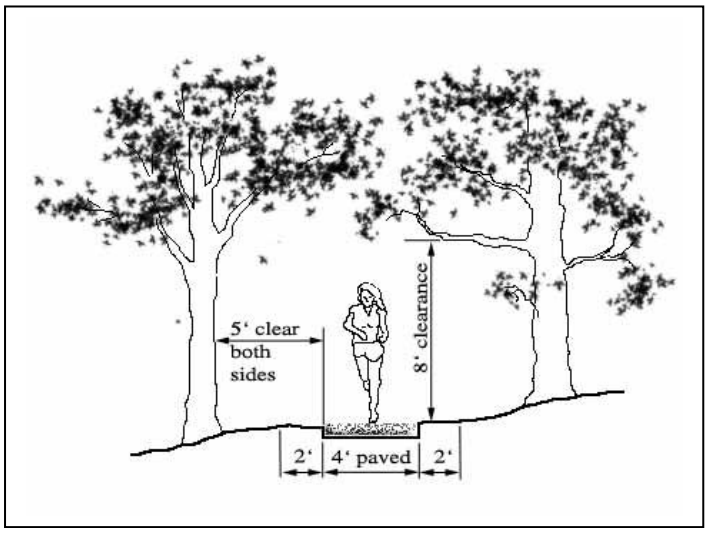
Trail types

1.) **Proposed Urban Paths** – Pavement types may vary between conventional or pervious concrete, asphalt or crusher fines. Width of pavement should be maintained at 8 ft., with 2 ft. improved shoulders. Deviations for very short distances are acceptable when existing conditions do not physically permit standard trail width. Paved surfaces of all trail segments must be at least 6 ft. in width to allow accessibility for maintenance equipment (ATV type). Maximum slope shall not exceed 8%. Maintain a vertical clearance minimum of 10 ft.



Urban path

2.) **Proposed Footpaths –** In environmentally sensitive areas, such as stream banks and lowlands, a 4 ft. wide soft surface may be preferred (crusher fines recommended), with 2 ft. improved shoulders. Maintain a vertical clearance minimum of 8 ft.



Foot Path

All trails should be maintained with a 5 ft. cleared area from the edge of the trail on each side. Pitch trails to drain with a 2% minimum grade. Paving materials may vary in specific locations.

Paving

Each trail is unique in terms of its location, design, environment, and intended use. For each segment of the trail, care should be given to selecting the most appropriate pavement type, considering cost-effectiveness, environmental benefit, accessibility and aesthetics. Various pavement types can be used to meet ADA standards, as long as the surface is "firm and stable." Pavement options include:

- **Conventional Concrete** – Costly installation and maintenance, but requires less periodic maintenance than asphalt or crusher fines. Install 4-inch thickness on compacted 4-inch aggregate base course.
- **Pervious Concrete** – Allows storm water to percolate when used over permeable soils, superior traction, unfavorable to rollerblading and skateboarding, higher installation cost. Install according to manufacturer's specifications.
- **Asphalt** – smooth, joint free and softer than concrete, preferred by runners, roller-bladers, cyclists, handicap users, and parents pushing baby buggies, construction is quicker and costs significantly less than a concrete. Install a minimum 2-inch I-2 asphalt thickness with 4-inch aggregate base course. Pavement can last up to 20 years with periodic maintenance. Repair is quick and inexpensive.
  For further information, see:
  http://www.americantrails.org/resources/trailbuilding/betterAsphalt.html &
  http://www.americantrails.org/resources/trailbuilding/AsphaltCO.html
- **Crusher fines** – Excellent for running trails, as well as walking, mountain bike and equestrian use. Can be constructed to meet ADA requirements. Constructed of small, irregular and angular particles of rock, crushed into an interlocking tight matrix. Typically costs about 1/3 the price of concrete paths, installed. For detailed information, see:
  http://www.americantrails.org/resources/trailbuilding/BuildCrushFinesOne.html
- **Dirt** – Recommended for mountain bikes and equestrian uses.
- **Boardwalk** – very expensive, for environmentally sensitive areas and wetlands.

For comparative costs of pavement types, see **Sample Cost Estimates for Facilities**.

Accessibility

The trail system should be designed to accommodate all people, regardless of age and ability. Off-road trails should meet ADA accessibility requirements whenever possible in the design. See: http://www.americantrails.org/resources/accessible/ADASummFeb00.html

Multi-use

Off-road trails should accommodate a wide range of activities including exercise, family outings, shopping expeditions, or as a means to reach school or work destinations.

Environmental Concerns

Trail corridors serve the community by protecting and enhancing the natural environment. Trails provide more transportation choices for people who wish to walk or bicycle. By doing so, they help to decrease dependence upon automobiles and thus contribute to improved air quality. Trails also improve water quality when they are used in conjunction with buffers along creeks and streams. These buffers provide habitat for a diversity of plant and animal species. They serve as natural filters, trapping pollutants from urban runoff,

eroding areas and agricultural lands. Stream buffers also reduce the severity of flooding by releasing storm water more gradually, giving the water time to evaporate, or percolate into the ground and recharge aquifers, or be absorbed and transpired by plants.

All proposed trails and other improvements should be designed, constructed and maintained with their ecological value in mind. Any disturbance of natural features should be kept to a minimum and conform to all jurisdictional environmental policy and ordinances.

Grade and sight lines

Trails should be designed with a minimum slope to insure proper drainage and prevent pooling. The maximum slope should not exceed 8% on primary paths to prevent undue erosion of the trail, accessibility, safety and ease of use.

Horizontal and vertical curves should be gentle in order to permit ADA accessibility, the safe use of bicycles on the path, and to allow maximum sight distances for the safety and security of all trail users. Sight lines along the trail should be maintained at a minimum of 100 ft. wherever feasible.

Acquisition & Ownership

Acquisition negotiations of the proposed off-road trail corridors can result in various types of agreements with current landowners. The owner of the property need not be the same entity that operates and maintains the trail corridor if appropriate agreements are drawn. Ownership options to consider for individual trails include:

1. **Local government** – An existing department within the City government (usually a department of parks and recreation) is assigned to manage and maintain the corridor.
2. **Non-profit association** – A non-profit association or council may assume ownership of the corridor or control of the trail property. Local organizations that are experienced in trail management have distinct advantages in managing the trail system and responding to public needs. Local land trusts or trail conservancies may also be formed to take ownership of the trails.
3. **Private landowners** – May open their land to trail use by formal or informal agreement, and may sell or donate conservation easements while retaining other rights to the land.

Several legal instruments that may be used to transfer ownership or interests in property, either temporarily or permanently:

1. **Titles** – transfer permanent ownership of the land, usually acquired in "fee-simple" through contribution or outright sale.
2. **Easements** – permanently or temporarily convey ownership and control of a certain interest, right or tangible element of the property to a second property while the other retains other rights to the land. Conservation easements are often particularly appropriate to retain off-road trail ways, as these lands are often valuable for lowland or wildlife corridor protection.
3. **Access and Use Agreements** – specify how a portion of property may be used for a specified time. The agreement should contain a termination clause, obligations of the municipality or trail manager, and a list of impermissible activities.

4. **Leases** – convey almost all rights, control and liability of the property to the lessee for a specified number of years (usually 25 or 99) and may provide the landowner with compensation from the lease.

Acquisition of land for trail corridors, on land that is currently underdeveloped, can take place as part of the City's subdivision process. As large parcels are subdivided, corridors that are specified in the adopted Pedestrian Plan are acquired from the developer and incorporated in to the City's trail system through whichever legal instruments are specified in the City's Subdivision Ordinance. The City may choose to require through the ordinance that the developer contribute a fee for the construction of the trail improvements, as well as continual maintenance fees for its upkeep through a portion of homeowners' association fees.

Liability

The following risk management strategy steps should be taken as the trail is planned and developed:

1. Identify potential hazards in the proposed trail alignment.
2. Develop a list of permitted trail uses along with the risks associated with each.
3. Identify applicable laws.
4. Design and construct the trail in accordance with recognized guidelines.
5. Develop a plan for handling medical emergencies.
6. Conduct regular inspections once the trail is open for use (see **Routine maintenance**).
7. Document inspection findings and actions taken.

For detailed information concerning liability, see:
http://www.americantrails.org/resources/adjacent/RailLiability.pdf

Security & Safety

- Safety concerns, such as minimizing accidents and exposure to risk should be addressed during the design process of any off-road trails.
- Safety design elements to consider include:
  1. Lighting and emergency phones,
  2. Elimination of obstructions
  3. Clear sight lines by selective vegetation removal
  4. Planting prickly shrubs at select locations
- In addition to standard police patrol, Adopt-A-Trail programs should be considered that encourage local residents to police trails much like Neighborhood Watch.
- Trails are typically accessible during daylight hours only, and violations after dark are viewed as trespassing.
- Emergency access points for Police, Fire, and EMS should be signed and have restricted-access bollards that allow emergency vehicles into the site while prohibiting access by unauthorized vehicles. Most maintenance access points also suffice as emergency access points.
- When extreme weather is expected, efforts should be taken to close trail to protect the safety of the public.

"Front yard" v. "backyard" paths

Although off-road trails will typically follow stream banks and utility corridors, they should be designed as "front yard elements" whenever possible, connecting to existing sidewalks, as well as civic, residential and commercial destinations. This arrangement will maximize the transportation value of the trail, and also increase visibility and safety for users.

Access Points & Linkages to private property

Access opportunities to off-road trails should be maximized. The trail system should readily accessible from sidewalks in the public right-of-way. Commercial and institutional establishments, as well as residential developments, are strongly encouraged to provide direct access to the trail from their property at points convenient to potential users.

Maintenance & Operations

Facility inspections are an essential part of maintaining any facility. Planning and design of all off-road trails should include management plans that help gauge operational funds for various maintenance projects. Proper maintenance must address both the performance condition of the trail preserving the environmental integrity and character of any environmental areas that are adjacent to the trail. Maintenance and repair projects can be managed either through annual service contracts put out to bid, or become an integral part of the Facilities Management maintenance program. Annual budgets for trail maintenance and operations should document maintenance items, facility improvements, and other related costs to ensure the long-term health of trail facilities, the environment, and safety for users.

Three tiers of maintenance programs should be included in the management plan:

1. **Long-term maintenance programs** - includes renovation of facilities and trail resurfacing. Comprehensive inspections should occur twice a year to record user impacts, general wear and tear, and other factors that may affect safety, environmental features, or structural integrity of the facility. If long-term maintenance programs are deferred, the safety of the trail is compromised and costly capital improvement funds to renovate damaged areas will be required. Typical long-term maintenance activities include:
    - Annual vegetation clearance (June and September)
    - Annual inspection by engineer to identify potential repairs needed for bridges and structures, drainage structures, pavement, railings, and fences
    - Revegetation during planting seasons
2. **Routine maintenance** – includes safety and repair issues that occur throughout the life of the facility. Frequency of routine maintenance should take place on a monthly basis, dependent upon the amount of usage and availability of funds. Typical routine maintenance activities include:
    - Removal of litter and general cleaning
    - Sweeping and leaf removal
    - Mowing and weed control
    - Pruning and removal of encroaching/fallen branches

- Trail edging
- Route signage maintenance
- Graffiti control
- Regular presence of volunteers to report faults

3. **Emergency repairs** - necessitated when storm damage makes the trail unsafe for daily use. Severe weather may occasionally cause damage to the facility either through wind, erosion, or fallen trees. Emergency repair funds for severe weather should be allocated and allowed to rollover from year to year for this inevitability.

Volunteer programs for greenway maintenance can be organized through the "Adopt-A-Park" program or could be coordinated with the existing greenway volunteer programs. Volunteer labor can yield a substantial savings for labor costs on routine maintenance and repair. Materials can be donated by a group, provided through a corporate sponsor, or purchased by the City.

11. PEDESTRIAN OVERPASSES/UNDERPASSES

Pedestrian overpasses and underpasses are intended to allow for safe pedestrian movement across busy thoroughfares. Typically, these structures involve very high construction costs. These facilities can be problematic in many regards and should only be considered when no other solution is expected to be effective. Research shows that pedestrians will avoid using such a facility if they perceive the ability to cross at grade as taking about the same amount of time. ADA requirements for stairs, ramps, and elevators often require the construction of an enormous structure that is visually disruptive.

Attempting to separate pedestrians from the street is often problematic. As shown here, given the opportunity, many choose to cross at street level.

Overpasses and underpasses should be considered only in situations involving rail lines, high volume traffic areas such as freeways, and other high volume arteries. Volumes should exceed 20,000 vehicle trips per day with speeds 35 - 40 mph and over. Minimum widths for these structures should follow the guidelines for sidewalk width. Underpasses should have a daytime illumination minimum of 10 foot-candles achievable through artificial and/or natural light provided through an open gap to sky between the two sets of highway lanes, and a nighttime level of 4 foot-candles. In underpasses, where vertical clearance allows, the pedestrian walkway should be separated from the roadway by more than a standard curb height. Consider acoustics measures within underpasses to reduce noise impacts to pedestrians and bicyclists.

Additional Accessibility Information

The following accessibility standards and guidelines are provided by the **Pedestrian and Bicycle Information Center** (www.walkinginfo.org)

A Checklist for Accessible Sidewalks and Street Crossings

The Americans with Disabilities Act (ADA) requires that new and altered facilities be accessible. Title II of the ADA covers sidewalk and street construction and transit accessibility, referencing the ADA Accessibility Guidelines (ADAAG) or the Uniform Federal Accessibility Standards (UFAS) for new construction and alterations undertaken by or on behalf of a state or local government. The Department of Justice (DOJ) title II regulation specifically requires that curb ramps be provided when sidewalks or streets are newly constructed or altered. (Requirements for existing pedestrian networks not otherwise being altered are also included in the DOJ regulation, available on line at www.ada.gov/reg2.html). The ADA Accessibility Guidelines (www.access-board.gov/adaag/html/adaag.htm) include standards for site development applicable to new construction and alterations in the public right-of-way.

CURB RAMPS

A curb ramp or other sloped area is required wherever a new or altered pedestrian walkway crosses a curb or other barrier to a street, road, or highway. Similarly, a curb ramp is required wherever a new or altered street intersects a pedestrian walkway. A curb ramp maybe perpendicular to the curb it cuts or parallel with the sidewalk. Other designs may also comply, including sidewalks that ramp down to a lesser curb height, with a short perpendicular curb ramp to the street; blended or at-grade connections, or raised crossings that connect at sidewalk level.

The running slope of a new curb ramp should not exceed 1 in 12 (8.33%). Steeper ramps are not usable by many pedestrians in wheelchairs and scooters. Cross slope should be limited to 2%.

A level landing should be provided at the top of a perpendicular curb ramp. A curb ramp must connect at the top to a level landing that is at least 48 inches deep with a cross slope of no more than 2%. The side flares of a curb ramp are not intended for accessible travel (the slope of a side flare is limited so that it will not present a tripping hazard to pedestrians).

The foot of a curb ramp should be contained within the crosswalk markings. Pedestrians who use wheelchairs should not be directed outside the crosswalk or into an active travel lane in order to cross stopped traffic. If a diagonal ramp is used, a 48-inch long bottom landing must be provided in the space between the curb radius and curb line extensions.

The transition from curb ramp to gutter should be flush. Lips are not permitted. Gutter counter slope in the line of travel should not exceed 1 in 20 (5%) and should connect smoothly with other elements of the pedestrian network.

The boundary between the sidewalk and street should be detectable underfoot. A 24-inch strip of truncated dome or other approved detectable warning material should be provided the full width of the ramp or other uncurbed connection to the crosswalk so that pedestrians do not inadvertently travel into the street.

SIDEWALKS

A new sidewalk should be wider than the minimum accessible travel width of 36 inches. Additional maneuvering space is necessary for a pedestrian using a wheelchair to turn, to pass by other pedestrians, to operate and pass through an entrance door, to use sidewalk telephone or to activate a pedestrian crossing button. A 60-inch minimum width can accommodate turns and passing space and is recommended for sidewalks adjacent to curbs in order to provide travel width away from the drop-off at street edge; a 48-inch width can accommodate side-by-side travel with a service animal.

The cross slope of a sidewalk should not exceed 2%. Excessive cross slope requires additional energy to counteract and tends to direct wheelchair users into the street, particularly when it is wet, icy, or snowy underfoot. At driveways there should be a minimum 36-inch (915 mm) wide passage with a cross slope of no more than 1:48 (2%). Corners at intersections should comply in both directions, since the running slope of one walkway will be the cross slope of another.

Street furniture, plantings, and other fixed items should not protrude into travel routes. Pedestrians with vision impairments can detect objects mounted on walls or posts if they are installed so that the leading edge is less than 27 inches above the sidewalk. Items mounted above this height should not project more than 4 inches into any circulation route. Particular care should be taken to locate temporary signage so that it does not impede pedestrian travel.

STREET CROSSINGS

Consider the information needs of blind and low-vision pedestrians at intersections. When pedestrian signals are provided, their crossing and timing information should be available to all users. The audible and tactile information delivered at the pedestrian button of an accessible pedestrian signal (APS) can identify pedestrian signal phases and provide other non-visual information about the nature of a crossing.

Insufficient crossing time may be a barrier for some pedestrians. Every pedestrian cohort should be expected to contain some walkers whose rate of travel is less than 3.5 feet per second. Some jurisdictions add additional time using video technology; others employ a pedestrian button to call for a longer crossing cycle.

TEMPORARY WORK

Temporary work should be accessible. Where construction blocks a public sidewalk for more than a short time, an alternate accessible route should be provided that is cane-detectable. Sidewalk barriers should be continuous and cane-detectable as well. Temporary events and facilities should also meet accessibility criteria.

OTHER PEDESTRIAN FEATURES

Pedestrian facilities on and along sidewalks must be accessible. Signal actuating buttons, drinking fountains, telephones, kiosks, and other pedestrian elements should meet accessibility criteria for approach and maneuvering space, reach range, and operation.

Additional rights-of-way guidelines may be found at the U.S. Access Board's website at www.access-board.gov. The Board also maintains a toll-free technical assistance line at 800/872-2253 (V); 800/993-2822 (TTY).

Information Sources:

Planning and Designing Local Pedestrian Facilities – NCDOT, Office of Bicycle and Pedestrian Transportation, February 1997

North Carolina Bicycles Facilities Planning and Design Guidelines – NCDOT, Office of Bicycle and Pedestrian Transportation, January 1994

James City County Greenway Master Plan June 25, 2002
Greenway Maintenance and Management, www.jccegov.com

American Trails – Resources & Library
http://www.americantrails.org/resources/index.html

Creating Connections
The Pennsylvania Greenways and Trails How-to Manual – Russ Johnson, Pennsylvania Environmental Council, Pennsylvania Greenways Partnership, 1998
http://www.pagreenways.org/toolbox/creatingconnections.pdf

Rail-Trails and Liability
A Primer on Trail-Related Liability Issues & Risk Management Techniques – Hugh Morris, Rails-to-Trails Conservancy in cooperation with the National Parks Service Rivers, Trails and Conservation Assistance Program, September 2000
http://www.americantrails.org/resources/adjacent/RailLiability.pdf

Cary Parks, Recreation and Cultural Resources Facilities Master Plan
http://www.townofcary.org/depts/prdept/greenwayreco.pdf

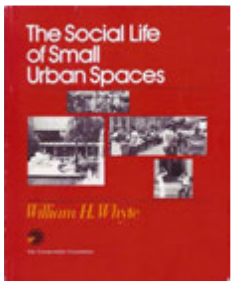
Walkinginfo.org

Trafficcalming.org

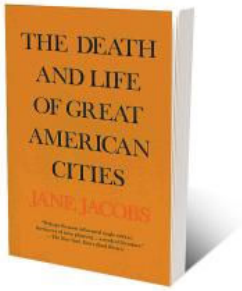
Federal Highway Administration
http://www.fhwa.dot.gov/environment/sidewalk2/contents.htm

Sustainable Environment for Quality of Life - SEQL.org

The Social Life of Small Urban Spaces – Whyte, William H., 1980



The Death and Life of Great American Cities – Jacobs, Jane, 1961



A.4 Articles

The 13 points of pedestrian-oriented development
Duany Plater-Zyberk & Company

1. The neighborhood has a discernible center. This is often a square or a green and sometimes a busy or memorable street corner. A transit stop would be located at this center.

2. Most of the dwellings are within a five-minute walk of the center, an average of roughly 2,000 feet.

3. There are a variety of dwelling types - usually houses, rowhouses and apartments - so that younger and older people, singles and families, the poor and the wealthy may find places to live.

4. At the edge of the neighborhood, there are shops and offices of sufficiently varied types to supply the weekly needs of a household. (Collective neighborhood edges form a town center.)

5. An elementary school is close enough so that most children can walk from their home.

6. There are small playgrounds accessible to every dwelling - not more than a tenth of a mile away.

7. Streets within the neighborhood form a "connected network, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination.

8. The streets are relatively narrow and shaded by rows of trees. This slows traffic, creating an environment suitable for pedestrians and bicycles.

9. Buildings in the neighborhood center are placed close to the street, creating a well-defined outdoor room.

10. Parking lots and garage doors rarely front the street. Parking is relegated to the rear of buildings, usually accessed by alleys.

11. Certain prominent sites at the termination of street vistas or in the neighborhood center are reserved for civic buildings. These provide sites for community meetings, education, and religious or cultural activities.

12. The neighborhood is organized to be self-governing. A formal association debates and decides matters of maintenance, security, and physical change. Taxation is the responsibility of the larger community.

13. For single-family homes: A small ancillary building is permitted within the backyard of each house. It may be used as a rental unit or place to work (e.g., office or craft workshop).

Some Benefits of Greenways

From the Great Rivers Greenway District in St. Louis

Greenways improve everyday living.
An interconnected system encourages neighborhood and community lifestyles that emphasize outdoor recreation and promote walking and bicycling to school, work and shopping. By linking the system to streets, sidewalks and other public spaces, it helps communities and neighborhoods to function in a more connected, healthy and enjoyable way.

Greenways Link a Community's Resources.
By providing physical connections and green "buffers," a system of greenways, parks and trails helps unite spaces within a community. Residential and commercial districts, educational campuses, civic and cultural amenities, and light industry all can be interwoven with a well-designed open space plan that incorporates and respects the natural environment.

Greenways Create a Stronger Tax Base.
Neighborhoods and communities thrive when public investment is made in greenways, parks and trails, encouraging additional public and private investment in the area. The enhancement of "green infrastructure" is an important aspect of redevelopment and contributes to increased property values and, thus, tax revenue. Neighborhoods and communities prosper, job opportunities increase and the region stabilizes financially. In established and growing communities, the additional open space provided by the interconnected system also increases.

Research from the National Park Service:

By conserving a greenway corridor rather than permitting intensive development, local agencies may reduce costs for public services such as sewers, roads, and school facilities. Establishing a greenway in an area prone to hazards, such as flooding, may decrease costs for potential damages. Greenways and associated vegetation can also help control water, air and noise pollution by natural means, resulting in potential decreased pollution control costs. Greenways and trails may promote physical fitness, leading to decreased public health care costs.

Greenway corridors provide a variety of amenities, such as attractive views, open space preservation, and convenient recreation opportunities. People value these amenities. This can be reflected in increased real property values and increased marketability for property located near open space. Developers also recognize these values and incorporate open space into planning, design, and marketing new and redeveloped properties.
Cases and examples: http://www.nps.gov/pwro/rtca/propval.htm)

More information available at: **http://www.nps.gov/pwro/rtca/index.htm**

- **From San Marco Greenbelt Alliance:**
  Several examples of development and tax revenue

  http://www.smgreenbelt.org/benefits.htm
  Trail users generate tax revenue and income for local businesses. A study conducted by the Maryland Department of Natural Resources found that although the Northern Central Rail-Trail cost $191,893 to construct, it generated $303,750 of State tax revenue during one year. (see http://ntl.bts.gov/DOCS/430.html) And the 1992 "Impacts of Rail-Trails" study by Roger L. Moore, et al. found that for the three trails studied, trail users of each trail were responsible for generating over $1.2 million for local businesses. "Users spent an average of $9.21, $11.02, and $3.97 per person per day as a result of their trail visits to the Heritage, St. Marks, and Lafayette/Moraga Trails respectively." For more data on outdoor recreation spending, "Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors" at the National Forest Service site:
  http://www.nps.gov/pwro/rtca/econindx.htm

- **From Florida Greenways, " What is a greenway? Economic Prosperity"**
  Property near but not on the Burke-Gilman Trail in Seattle sold at an average of 6.5 percent more than similar property elsewhere. Property values directly adjacent to the trail were not affected, either in average price or ease of sale. Approximately 60 percent of the owners of homes and condominiums adjacent to the trail believed either their homes sell for more because of the trail or would not be effected. It was also found that homes and condominiums near the trail are easier to sell because of their proximity to the trail (Source: Evaluation of the Burke-Gilman Trail's Effect on Property Values and Crime, by the Seattle Engineering and Department Office of Planning, 1987).
  http://www.geoplan.ufl.edu/projects/greenways/whatisagreenway.html#economicprosperity

Planning on Walking?

http://www.planetizen.com/node/22955<http://www.planetizen.com/node/22955>

20 February 2007 - 9:00am
Author: Wayne Senville
With positive effects on public health, safety, and environmental quality -- walkability has become the new buzzword in planning.

Atlanta Journal-Constitution, "Demand for Walkable Communities Unmet," Jan. 19, 2007: "A report scheduled to be released in conjunction with a panel discussion of Georgia planners and health experts has expanded findings on the benefits of pedestrian-friendly neighborhoods...[the study says] there is a significant, unmet demand for developments that make it easier to walk from place to place."

As editor of the Planning Commissioners Journal <http://www.plannersweb.com/> ("PCJ"), I try to keep up with news on what's happening around the country, and what topics planners are dealing with. The Atlanta Journal-Constitution article cited above is typical of what we're seeing nationwide: a rapidly growing interest in "walkable communities."

A confluence of trends seems to be behind this. For one, there's been growing interest in the health implications of sprawl. From a relatively limited concern, this has exploded into coverage in major national publications and has led to a growing body of research.

The focus of the Winter 2006 issue of the Journal of the American Planning Association ("JAPA"), for example, is on connections between health and planning. Inside that issue, you'll find a detailed analysis of the correlation between health and walkable communities. The researchers found that "individuals who live in counties that are more walkable and have lower rates of crime tend to walk more and to have lower body mass indices." (See "Active Community Environment and Health: The Relationship of Walkable and Safe Communities to Individual Health.")

In the same issue of the JAPA, there's also an article Many Pathways from Land Use to Health <http://www.planning.org/japa/pdf/JAPAFrank06.pdf>, examining the link between walkability and air quality. The researchers asked if more walkable environments led to reduced auto use and, in turn, better air quality. Using a "walkability index" that factored in things like net residential density and street connectivity, they found that more walkable neighborhoods yield at least some improvements in air quality (also pointing out that "greater improvements in walkability should lead to larger effects").

Consider also the rapidly growing "safe routes to school" movement, which seeks to get more kids walking to school -- in large part for the health benefits, but also as a way of promoting neighborhood schools in places where walking to school is still possible (we've reported on "school sprawl" <http://www.plannersweb.com/wfiles/w165.html> in the PCJ, and know that in many places walking to school is simply an impossibility).

Advocating for the opposite end of the age spectrum, AARP has started a major "livable communities" initiative. In Burlington, Vermont, one of the pilot communities in this project, seniors have taken neighborhood walks, where they've evaluated the condition of sidewalks, crosswalks, and signal timing -- with the aim of enabling more seniors to be able to walk from where they live to nearby stores and community services.

Cities where you wouldn't expect it are also focusing on pedestrians. In Kansas City, Missouri, one of the nation's most auto-oriented places, the City has adopted a Walkability Plan <http://www.kcmo.org/planning.nsf/plnpres/walkability?opendocument>, with innovative strategies for promoting more walkable neighborhoods. Kansas City now requires neighborhood walkability audits as a prerequisite to receipt of certain capital improvement funds. The city's development review process also takes into account not just traffic, but pedestrian impacts. PCJ offers a summary of what Kansas City is up to. <http://www.plannersweb.com/Kansas_City_walkable.pdf>

Here's one more force behind the interest in walkable communities: the New Urbanism movement. Those of you familiar with New Urbanism -- which has taken off as an approach to urban design and planning in recent years -- know that it has as a core value a commitment to developing walkable communities. Consider just two of the guiding principles in the Charter <http://209.31.179.62/charter> of the Congress of the New Urbanism (new urbanism's guiding body).

- Many activities of daily living should occur within walking distance, allowing independence to those who do not drive, especially the elderly and the young. Interconnected networks of streets should be designed to encourage walking, reduce the number and length of automobile trips, and conserve energy.

- Concentrations of civic, institutional, and commercial activity should be embedded in neighborhoods and districts, not isolated in remote, single-use complexes. Schools should be sized and located to enable children to walk or bicycle to them. Also connected to the heightened interest in walkable communities is the voice of hundreds of Main Street organizations and downtown business groups. They are seeing how their efforts tie in nicely to promoting walkability. And, of course, there are few places more conducive to walking than downtown main streets.

But even in newer suburbs, town center developments are proliferating -- and are being promoted in terms of their walkability, not just their auto accessibility.

In the current issue of our publication, the PCJ, transportation planner Hannah Twaddell points to many of the developments I've just noted (see excerpts from Let's Plan on Walking <http://www.plannersweb.com/wfiles/w258.html>). But she also highlights another important ingredient in the brewing interest in walkable communities -- economic value:

"One of the keys to regional and local prosperity is the ability to attract and retain high-skilled people. ... Many people can, and do, choose where they want to live based on factors beyond their ability to make a living. "Quality of life" has become the coin of the realm. The economic value of a community's attractiveness as a place to live, work, and play is

becoming widely recognized by business leaders, local officials, and planners. This has led many cities to focus on ... a built environment that encourages a vibrant street life -- elements that require a welcoming, walkable environment for people of all ages."

Twaddell goes on to note, "Walkability isn't just for cities and suburbs. The economic health and livability of small towns and villages depends upon it, too. Participants in surveys and focus groups conducted for a recent national study on integrating land use and transportation in rural communities repeatedly emphasized the need to invest in sidewalks, crossings, and street amenities in order to take advantage of the compact, connected design they already enjoy."

And before I close, it's interesting to note that even the National Highway Traffic Safety Administration is promoting walkability, witness its Partnership for a Walkable America <http://www.nhtsa.dot.gov/people/outreach/safesobr/12qp/walkable.html>. As the NHTSA puts it, "Our nation has simply become 'unwalkable' despite the fact that everyone is a pedestrian!" The NHTSA's objectives: "to make walking in America safer by reducing motor vehicle-related deaths and injuries; to provide information about how to achieve walkable communities; and to encourage walking as one of the easiest ways for Americans to improve their health and lower health care costs."

So what's the bottom line? It seems that walkability is in. It's hard to argue with benefits that range from health, to air quality, to quality of life, to economic value, to safety (and I probably left something out!). What we seem to be witnessing, dare I say, is a walkability movement.

But I'm curious to hear your take on this. Is walkability of growing importance in your city or town? And, if so, what do you think is behind the interest?

Wayne Senville is publisher and editor of the Planning Commissioners Journal (since founding the PCJ in 1991). He served as a member of the Burlington, Vermont, Planning Commission from 1990-1999, including three years' service as Chair. Senville was also honored by the Northern New England Chapter of the American Planning Association, and the Vermont Planners Association, as Citizen Planner of the Year in 1999. Between 1988 and 1991, Senville was Director of Local & Regional Planning Assistance for the Vermont Dept. of Housing & Community Affairs.

Resource: A great resource for anyone interested in this topic is the Walkable Communities web site <http://www.walkable.org/>, put together by Dan Burden.

A.5 How to Build a Sidewalk

A STEP-BY-STEP GUIDELINE FOR BUILDING PEDESTRIAN IMPROVEMENTS

I. PROJECT REQUEST

All requests for new sidewalks (or other pedestrian facilities) should be directed to the Pedestrian Needs Committee (PNC). A request may come from sources such as:

1. A Pedestrian Plan evaluation exercise (see the **Plan Evaluation** section)
2. An unsolicited request from an individual or group
3. Observations of PNC members themselves, elected officials, City Manager, Public Works Director or other City staff members.
4. Other

II. PROJECT EVALUATION PHASE

The PNC should evaluate the project with respect to the following criteria:

1. Appropriateness of the project with respect to the Pedestrian Plan

a. Does the project meet the goals of the Pedestrian Plan?
b. Where does the project fall into the priorities of the Plan?
c. Does the project meet current and anticipated needs and conditions?
d. Can the requested project be altered in some way to meet the above criteria?

2. Ownership of the land

Does the City already own the right-of-way? If not, the PNC should determine and recommend the most appropriate course of action:

a. Purchase the property required by fee simple.
b. Acquire an easement on the property.
c. Condemn the portion of the property needed.
d. Find an alternate project to meet the goal.

3. Source and availability of proper funding

The PNC should determine and recommend a funding strategy that would be most appropriate to the project. The PNC may consider:

a. Powell Bill funds
b. Applicable grants
c. Other sources (see **Funding Opportunities**).

III. PROJECT DESIGN/CONSTRUCTION PHASE

If the project meets the intent of the Pedestrian Plan, and it has been determined that the property required for the project can be obtained, the PNC should then examine the project in terms of the four specific parameters listed below. Each of these parameters will determine some aspect of how the project construction process will play out.

1. Project Area

Larger projects require additional state permitting. If the project involves one acre or more of disturbed earth, a plan must be submitted to the North Carolina Department of Natural Resources (NCDENR) for a 30-day review of the project. The process for submitting projects to NCDENR, as well as the application forms required, can be found at their Division of Land Resources webpage: http://www.dlr.enr.state.nc.us/pages/sedimentforms.html
Additional permits may be required for particular projects depending upon the site involved. For more information, contact the local NCDENR office at 704-663-1699.

2. **Project Cost**
   A rough estimate of the overall project cost should be performed at the outset to determine if the project must be bid publicly.

   Project cost <$300,000
   Project does not require public bidding, however obtaining multiple bids, informally, is recommended to find the most competitive price for project construction.

   Project cost >$300,000
   - Public bid for the project is required according to General Statute.
   - Requires Planning Board Approval
   - Bid projects using a professional list serve. Advertising in newspapers may serve this purpose, but are usually not as cost-effective.

3. **Project Property Owners**
   Owners of properties directly affected by the project must always be contacted, but depending upon the project size as well as its civic importance, this can occur privately or may require a public workshop.

4. **Project Design**
   Some projects are small enough and/or do not require exact measurements for construction, such as some sections of trails. These may be field determined and built according to a standard specification (see **Facility Standards & Guidelines**). But projects that tie into existing streets or other facilities more often require careful coordination and measured plans. An attempt to save money at the front end by not requiring construction plans can likely produce a project that is unsatisfactory, problematic, and reap unexpected expense.

The **North Carolina Association of Rural Planning Organizations** has a website that answers a plethora of transportation questions, including how to fund projects. The following is an excerpt from their page on constructing sidewalks.

> Constructing a sidewalk sometimes involves a variety of players, from the NCDOT and municipalities, to private property owners and utility departments. A range of federal and state and local funding sources are available to assist in the development and construction of these non-motorized improvements; however local financial participation is often required, in the form of matching funds, right-of-way acquisition or in-kind services. Below are some of the resources available to assist in the construction of sidewalks. Please contact the NCDOT early in the process if the sidewalk you would like built is along a state-owned road.
>
> On-Road Pedestrian Facilities
>
> **Federal**
>
> - Enhancement Funds
> - Congestion Mitigation and Air Quality Funds (in qualifying areas)
> - Earmarks (contact local legislator)
> - Safe Routes to Schools (within 2 miles of an elementary or middle school)
>
> **State**
>
> - Independent Projects through the Surface Transportation Program Evaluation Criteria
> - Incidental Projects (in conjunction with road maintenance or widening projects)
> - Governor's Highway Safety Program
> - Board Member Discretionary Funds (via Division Office)
>
> **Local**
>
> - Community Foundations
> - Tourism Authority
> - Health Foundations/Hospitals
> - Powell Bill
>
> To view more, see http://www.nctransportationanswers.org/Construct%20Sidewalks.htm

For further information about funding projects, see **Part 4: IMPLEMENTATION.**

Appendix A.2 - Proposed Pedestrian Infrastructure Projects for the City of Cherryville

PROJECT DESCRIPTIONS

Project Number	Location	Side of Street (LOCATION)	From	To	Additional Features				
SIDEWALKS			**Recommended features* (see Table A.2-1):**			ppkg	midx	trees	width
S-1	NC 150	S	Mountain St.	Cherry St.				○	4'
S-2	NC 150	N	0.1 mi. W of Brown	0.1 mi. E of Weaver				○	4'
S-3	Ridge Ave.	N	Mountain St.	Pink St.		○		○	4'
S-4	Rudisil St.	E	NC 150	Spinners St.				○	4'
S-5	Pine St.	E	Spinners St.	Mauney Rd.				○	4'
S-6	Jacob St. & Chavis Dr.	E&S	Ballard	Mountain St.		○	○	○	4'
S-7	Old Post Rd.	N	Mountain St.	SS ROW W of Melville				○	4'
S-8	Depot St.	E	Main St.	Academy St.		○		○	4'
S-9	Main, Kenwood, Academy	E	Main St.	Bell St.				○	4'
S-10	Delview Rd.	S	NC 150	Black Rock School Rd.				○	4'
S-11	Mountain Rd. & Harrilson Rd.	W	Ridge Ave.	Montgomery St.				○	4'
S-12	Pink St.	E	1st St.	Ridge Ave.		○		○	4'
S-13	Pink St.	W	0.05 mi. S of Ballard	Chavis Dr.		○	○	○	4'
S-14	Academy St.	S	Maple St.	Immerman Dr.				○	4'
S-15	NC 150	N	Cherry St.	Bud Black Rd.				○	4'
S-16	Bud Black Rd.	W	NC 150	Olde Coach Ln.				○	4'
S-17	Old Post Rd.	N	SS ROW W of Melville	Crown Creek Dr.				○	4'
S-18	Chavis Dr.	N	Mountain St.	trail at field		○		○	4'
S-19	Cherry St.	E	NC 150	Main St.		○		○	4'
CROSSWALKS		**Features*:**	4way	count	curbx	isle	mot'n	ohws	noRt	radrx	mph	s-bar	strp	pedlt	txpvt	signs
C-1	NC 150 & Mountain St.	4		○					○	○	○	○	○	○	○	○
C-2	NC 150 & Pink St.	4		○	○				○	○	○	○	○	○		○
C-3	NC 150 & Dalton St.	4		○				○				○	○			
C-4	NC 150 & Houser St.	4										○	○			○
C-5	NC 150 & Cherry St.	4		○					○	○		○	○	○	○	
C-6	NC 150 & 1st St.	2				○		○			○	○	○		○	○
C-7	NC 150 & Rudisil St.	N&E		○		○	○	○			○	○	○			○
C-8	Mountain St. & 1st St.	4		○					○		○	○	○	○	○	
C-9	Mountain St. & Main St.	4		○								○	○		○	
C-10	Mountain St. & Academy St.	4	○		○						○	○	○			
C-11	Academy St. & Elm St.	4									○	○	○			○
C-12	Academy St. & Pink St.	4			○							○	○			
C-13	Academy St. & Depot St.	4	○		○							○	○			○
C-14	Academy St. & Cone St.	4	○	○		○	○	○	○		○	○	○		○	○
C-15	Academy St. & Kenwood St.	S&E	○		○	○					○	○	○			○
C-16	1st St. & Pink St.	4									○	○	○			
C-17	Main St. & Depot St.	4										○	○			○
C-18	Main St. & Rudisil St.	N&E								○	○	○	○	○	○	○
C-19	Dellinger Cr. (E) & NC 150	N&E		○		○	○	○		○	○	○	○			○
C-20	Mountain St. & Old Post Rd.	4		○				○			○	○	○		○	○
C-21	Bud Black & Olde Coach	S&W		○			○				○	○	○			○
C-22	NC 150 & Pinegrove	N&W					○			○	○	○	○			○
TRAILS			**Recommended features* (see Table A.2-3):**			asph	stone	seat	trash	T-hd
T-1	Beaver Dam Trail	EXACT ALIGNMENT TO BE DETERMINED IN FIELD	Chavis Middle Sch.	NC 150 @ Dellinger Cr.		○		9	5	15
T-1a	Ballard Park Trail		South Trail @ Ballard	Rudisil St.			○	0	1	3
T-2	North Trail		NC 150 @ Hester	Black Rock Sch. Rd.		○		13	5	20
T-2a	Ranbar Trail		North TR @ Woodvale	N. Cherry St. @ Ranbar			○	0	1	1
T-2b	Houser Trail		North TR @ Woodvale	Pink St. @ Park St.		○		0	1	2
T-2c	Moss Park Trail		North TR @ Woodvale	North TR @ Leeward Ct.		○		0	1	1
T-2d	Cherryville High School Trail		North TR @ Danielle	Cherryville Jr/Sr High			○	0	1	1
T-2e	Vernon Trail		North TR @ Mtn. Rd.	Vernon St. & Montgomery			○	1	1	2
T-3	Camp Creek Trail		Bud Black	NC 150 @ Rudisil St.		○		8	4	10
T-3a	Roy Eaker Trail		Camp Ck Trail	North Trail @ City line		○		3	2	5
T-4	Westgate Park Trail		NC 150 @ Pinegrove	Old Post @ SS		○		5	3	6
T-4a	Crown Creek Trail		Westgate Park	Old Post @ Crown Creek			○	2	1	4
GATEWAYS										
G-1	Mountain St. @ Main St.	FIELD DETERMINE								
G-2	Mountain St. @ NC 150									
G-3	NC 150 @ 1st St.									
G-4	Main St. @ Rudisil St.									
G-5	Mountain St. @ Old Post Rd.									
LIGHTING										
L-1	Rudisil, Spinners & Pine St.	E	NC 150	Kenwood Rd.						
L-2	N. Dixie & N. Pine St.	TBD	NC 150	full circle						
NEW STREETS										
SS-1	Vernon St. continuation	FIELD DETER-MINE	Summers Place	Delview Road	Curb & gutter, sidewalks, planting strips on both sides, street trees					
SS-2	Max Crowder Dr.continuation		Max Crowder Dr.	Sunset Rd. & Chapman Rd.						
SS-3	South Node development		Tryon-Courthouse	Mauney Rd.						

PROJECT COSTS

Length or Quantity	Unit	Unit Cost	Feature Cost Total	Est. Project Costs	Right-of-Way / Property Owner
				$7,601,000 (total)	
3700	LF	$135	$18,500	**$518,000**	NCDOT
3300	LF	$135	$16,500	**$462,000**	"
2375	LF	$135	$23,750	**$344,375**	"
2300	LF	$135	$11,500	**$322,000**	"
2500	LF	$135	$12,500	**$350,000**	"
1600	LF	$135	$16,000	**$232,000**	"
2750	LF	$135	$13,750	**$385,000**	"
625	LF	$135	$6,250	**$90,625**	"
1175	LF	$135	$5,875	**$164,500**	"
7750	LF	$135	$38,750	**$1,085,000**	"
3700	LF	$135	$18,500	**$518,000**	"
2850	LF	$135	$28,500	**$413,250**	"
1000	LF	$135	$10,000	**$145,000**	"
2725	LF	$135	$13,625	**$381,500**	"
9750	LF	$135	$48,750	**$1,365,000**	"
875	LF	$135	$4,375	**$122,500**	"
3100	LF	$135	$15,500	**$434,000**	"
700	LF	$135	$7,000	**$101,500**	"
1150	LF	$135	$11,500	**$166,750**	"
				$870,900 total	
				$46,250	NCDOT
				$56,250	"
				$61,050	"
				$1,450	"
				$45,650	"
				$61,050	"
				$96,650	"
				$35,850	"
				$25,450	"
				$12,050	"
				$1,650	"
				$11,050	"
				$12,250	"
				$102,050	"
				$27,450	"
				$1,250	"
				$1,450	"
				$26,050	"
				$106,650	"
				$66,050	"
				$41,650	"
				$31,650	"
				$7,576,200 total	
11,375	LF	$135	$17,400	**$1,553,025**	City SS
3350	LF	$25	$2,400	**$86,150**	
17,500	LF	$135	$22,800	**$2,385,300**	City SS
850	LF	$25	$1,200	**$22,450**	City SS
1900	LF	$135	$1,800	**$258,300**	City SS
1250	LF	$135	$1,200	**$169,950**	park
1175	LF	$25	$1,200	**$30,575**	church
1570	LF	$25	$2,400	**$41,650**	City SS
10,000	LF	$135	$13,200	**$1,363,200**	creek
4900	LF	$135	$6,000	**$667,500**	private
6600	LF	$135	$8,400	**$899,400**	City SS
3780	LF	$25	$4,200	**$98,700**	City SS
					NCDOT
					NCDOT
					Sunbelt
					NCDOT
					NCDOT
				$429,750 total	
4650	LF	$45	--	**$209,250**	City
4900	LF	$45	--	**$220,500**	City
				$14,568,750 total	
2575	LF	$750	--	**$1,931,250**	private
1850	LF	$750	--	**$1,387,500**	private
15,000	LF	$750	--	**$11,250,000**	private

SEE INDIVIDUAL FEATURE COST ESTIMATES IN TABLE A.2-2 AT FAR RIGHT.

COSTS ESTIMATES FOR GATEWAY FEATURES REQUIRE PRELIMINARY DESIGNS FOR THESE FACILITIES.

PROJECT EVALUATION

Develop Downtown	City Identity	Linkage	Recreation	Practicality: ROW, costs, barriers	TOTAL POINTS (OUT OF 25)	Public votes	Steer'g Cmte x2	Total Vote	within category	FINAL RANKING
				5 = Best 1 = Worst					Category rank:	**3rd**
5	4	5	1	3	**18**	4	2	6	5th	**25**
3	3	3	4	4	**17**	0	0	0	17th	**39**
1	1	4	2	4	**12**	0	4	4	9th	**58**
4	4	4	3	4	**19**	2	0	2	11th	**22**
1	1	4	3	4	**13**	1	0	1	14th	**57**
4	4	5	3	5	**21**	0	8	8	3rd	**5**
3	4	3	4	5	**19**	3	2	5	7th	**21**
5	3	4	2	5	**19**	0	0	0	16th	**23**
5	3	5	3	5	**21**	0	10	10	2nd	**4**
2	1	3	1	3	**10**	2	0	2	13th	**62**
3	3	3	3	3	**15**	1	2	3	10th	**50**
5	3	5	4	1	**18**	0	2	2	12th	**31**
4	3	5	4	4	**20**	0	0	0	15th	**13**
2	3	4	3	4	**16**	0	6	6	6th	**41**
2	4	4	4	2	**16**	0	0	0	18th	**46**
1	1	2	4	4	**12**	0	0	0	19th	**61**
1	2	2	4	4	**13**	3	2	5	8th	**56**
3	3	4	4	5	**19**	2	4	6	4th	**19**
5	4	5	3	5	**22**	0	10	10	1st	**3**
				5 = Best 1 = Worst					Category rank:	**2nd**
5	**5**	5	1	2	**18**	2	14	16	11th	**27**
5	4	5	4	2	**20**	2	14	16	5th	**9**
5	3	3	2	2	**15**	2	14	16	19th	**51**
5	3	4	2	2	**16**	2	14	16	16th	**42**
5	4	5	5	4	**23**	2	14	16	1st	**1**
4	**5**	5	5	2	**21**	2	14	16	3rd	**6**
3	4	5	5	2	**19**	2	14	16	8th	**20**
5	4	5	3	3	**20**	1	4	5	7th	**11**
5	**5**	5	4	3	**22**	1	4	5	2nd	**2**
5	4	4	4	4	**21**	1	4	5	4th	**7**
5	3	3	3	4	**18**	3	4	7	12th	**28**
5	3	4	3	4	**19**	3	4	7	9th	**16**
4	3	2	2	4	**15**	3	4	7	20th	**52**
4	3	3	2	4	**16**	3	4	7	17th	**43**
4	3	3	4	4	**18**	3	4	7	13th	**29**
5	4	5	2	4	**20**	2	4	6	6th	**10**
5	5	3	2	3	**18**	2	4	6	14th	**30**
3	**5**	3	3	3	**17**	2	4	6	15th	**36**
2	3	3	5	2	**15**	2	4	6	21st	**53**
4	**5**	4	3	3	**19**	2	4	6	10th	**17**
1	2	3	5	4	**15**	2	4	6	22nd	**54**
2	4	3	5	2	**16**	2	4	6	18th	**44**
				5 = Best 1 = Worst					Category rank:	**1st**
3	4	5	5	3	**20**	3	12	15	1st	**8**
1	3	4	5	4	**17**					**35**
3	4	5	5	2	**19**	4	18	22	2nd	**14**
2	3	4	3	5	**17**				(3rd)	**33**
3	3	4	5	5	**20**				(1st)	**15**
2	3	3	5	5	**18**				(2nd)	**24**
2	3	4	4	4	**17**				(4th)	**34**
1	2	3	3	4	**13**				(5th)	**55**
2	4	4	5	4	**19**	3	6	9	3rd	**18**
3	3	5	2		**16**					**45**
1	4	5	5	3	**18**	3	4	7	4th	**32**
1	3	3	4	5	**16**					**49**
				5 = Best 1 = Worst					Category rank:	**4th**
5	5	3	1	2	**16**	1	1	2	4th	**47**
5	5	3	1	2	**16**	1	1	2	5th	**48**
4	5	3	4	4	**20**	1	1	2	1st	**12**
3	5	2	4	3	**17**	1	1	2	2nd	**37**
3	5	2	5	2	**17**	1	1	2	3rd	**38**
				5 = Best 1 = Worst					Category rank:	**5th**
2	3	4	5	4	**18**	0	0	0	5	26
3	2	2	1	4	**12**	0	0	0	1	59
				5 = Best 1 = Worst					Category rank:	**6th**
1	1	4	2	4	**12**	0	0	0	4	60
2	2	3	1	2	**10**	0	0	0	3	63
3	4	3	3	4	**17**	0	0	0	5	40

Table A.2-1 Recommended sidewalk and street features — Average Costs

ppkg	~	on-street parallel parking (TCD) (one or both sides where feasible)	**$5 per LF** for restriping
midx	~	midblock pedestrian crossings (TCD)	
trees	~	street trees ($200 ea.) Cost estimation assumes planting on one side only or half of total length	**$5 per LF** @ 40' OC
width	~	sidewalk width	**$135 per LF**

***Table A.2-2 Recommended crosswalk features — Average Costs**

4-way	~	4-way stop	**$800**
count	~	audible accessible ped-activated countdown signals	**$20,000**
curbx	~	curb extension/bulb out	**$10,000**
isle	~	pedestrian island/median	**$15,000**
mot'n	~	motion-activated warning systems	**$20,000**
ohws	~	overhead warning signals	**$40,000**
noRt	~	restrict right turns on red	**$200**
radrx	~	curb radius reductions	**$10,000**
mph	~	reduce posted traffic speed	**$200**
s-bar	~	advanced stop bars	**$50**
strp	~	striping	**$1,000**
pedlt	~	upfit existing signal w/ ped features	**$10,000**
txpvt	~	textured pavement	**$4,400**
signs	~	pedestrian warning signs (2)	**$400**

***Table A.2-3 Recommended trail features — Average Costs**

asph	~	10' asphalt path	**$135 per LF**
stone	~	10' crushed fines path	**$25 per LF**
seat	~	benches (1 per 1/4 mile)	**$600**
trash	~	trashcans	**$600**
T-hd	~	trailheads (assuming an avg. cost)	**$600**

Table A.2-4 Project Category Totals

SIDEWALKS	$7,601,000
CROSSWALKS	$870,900
TRAILS	$7,576,200
GATEWAYS	TBD
LIGHTING	$429,750
NEW STREETS	$14,568,750
TOTAL	**$31,046,600**