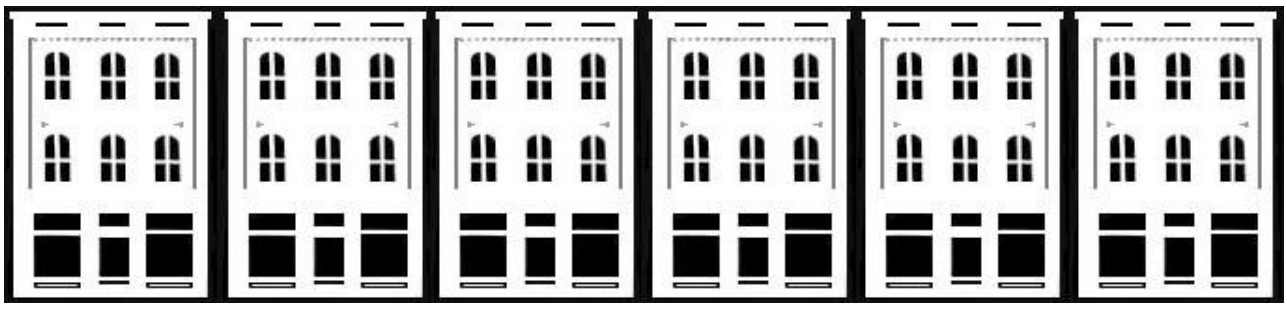
Boiling Springs Pedestrian Plan

OCTOBER 2006

Prepared for the

Town of Boiling Springs,
North Carolina



Boiling Springs Pedestrian Plan

Funded by

North Carolina Department of Transportation
Division of Bicycle and Pedestrian Transportation
104 Fayetteville St. Mall
Raleigh, North Carolina 27601

Planning Consultants

Centralina Council of Governments
1300 Baxter Street, Suite 450
Charlotte, North Carolina 28235

Boiling Springs Pedestrian Plan

TABLE OF CONTENTS

Boiling Springs Pedestrian Plan

GOALS :

·Walkability, connectivity and pedestrian safety become guiding principles for decision-making.

·Pedestrian facilities are accessible to everyone in the community.

·Attractive links to significant destinations that make walking the preferred alternative.

·A local pedestrian network that is linked to larger regional networks.

·That Boiling Springs clearly offers to visitors and residents alike the features that make life in the community rewarding.

CURRENT ANTI-PEDESTRIAN CONDITIONS :

- Segregated land uses
- Disconnected subdivisions
- Dead-end streets
- NC 150 traffic
- Insufficient sidewalks and trails
- Underlit pedestrian corridors
- Crosswalk conditions
- Insufficient driver warnings

IMMEDIATE ACTIONS :

1. Form a Pedestrian Needs Committee
2. Apply for recommended funding and enact revisions to the local budget
3. Revise current development policy documents to ensure that land development plans and regulations support pedestrian transportation.
4. Evaluate current Town staffing needs in order to implement and maintain needed improvements.
5. Encourage bypass traffic through appropriate signage primarily in order to alleviate unnecessary traffic on NC 150.
6. Improve conditions at the inersection of College Avenue and Main Street. Realign traffic lanes according to the NCDOT 1997 Thoroughfare Plan. Adjust or replace existing signalization to meet pedestrian needs.
7. Construct sidewalks and improve sidewalk conditions along existing streets according to the Project Identification and Priority List.
8. Improve existing off-road trails and procure easements or right-of-way for new trails.
9. Initiate recommended enforcement, community awareness, incentive and safety and maintenance programs.

Primary Transportation/Recreational Circuits

CURRENT FUTURE

LONGER-TERM ACTIONS :

1. Construct crosswalks and traffic calming devices as outlined in the Plan.
2. Construct additional off-road trails and supporting facilities through right of access easements and right-of-way dedication or reservation in newly developed subdivisions.
3. Acquire right-of-way where needed and construct on-street pedestrian improvements.
4. Expand and connect the Town street grid in conjunction with new private development.
5. Provide transit assistance to and from major pedestrian destinations.

UNIQUE OPPORTUNITIES :

1. Centralized compact town core
2. Large, underdeveloped parcels in the downtown area
3. Existing road alignments favorable to completing a downtown grid
4. Highway bypass options
5. University setting
6. Nearby greenway
7. Sanitary sewer corridors
8. Existing roadside running circuits
9. Moderate topography
10. Few overly-expansive parking lots

EVALUATION PROCESS :

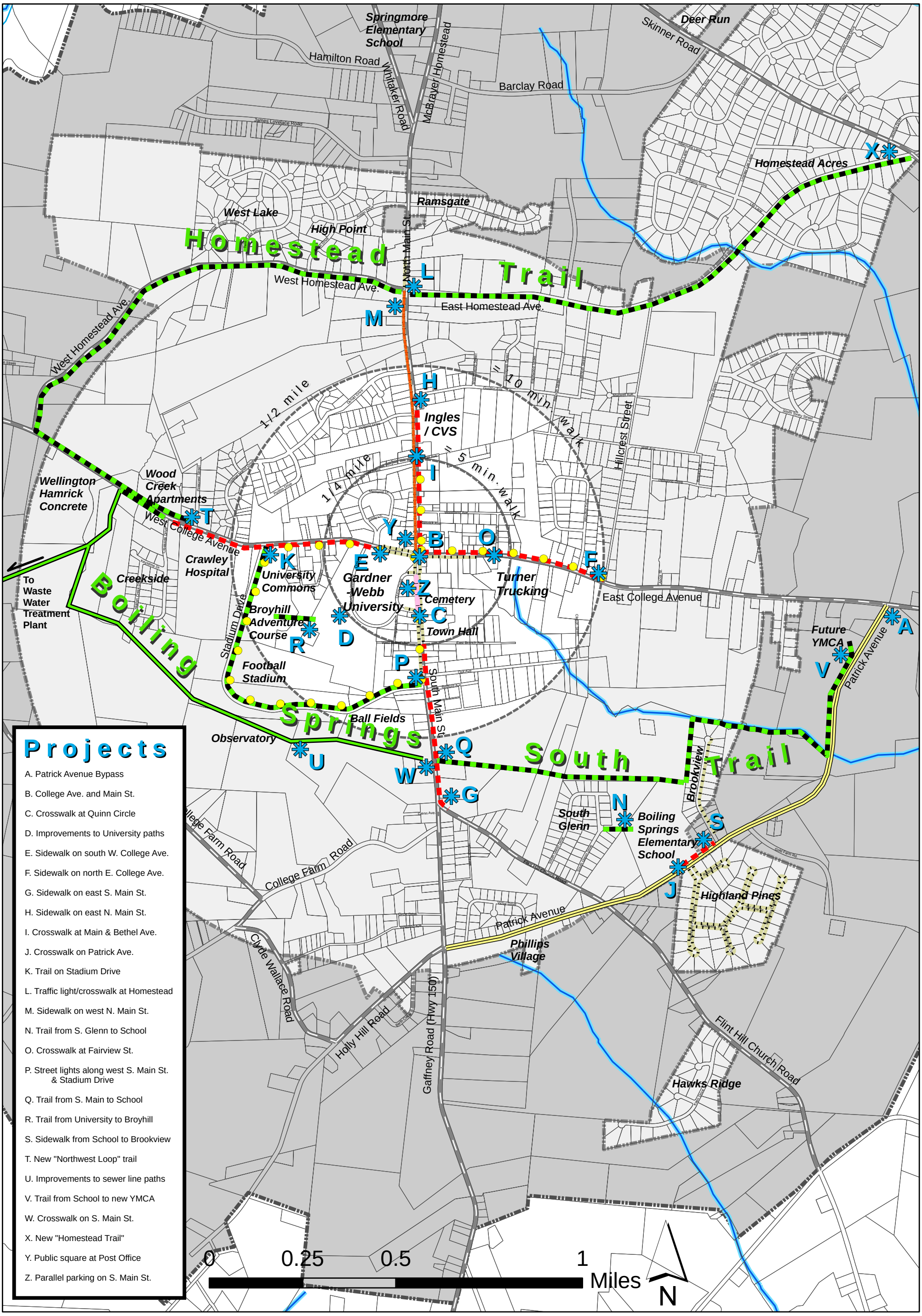
1. The Pedestrian Needs Committee shall periodically meet to con firm and re-evaluate the priorities of this Plan and its recommended projects, particularly as tracts of land are developed.
2. The Public Works Director shall regularly report facility conditions and needs.
3. Public surveys will periodically be taken 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.

Centralina Council of Governments

LAKE NORMAN RPO

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

BOILING SPRINGS N.C. 19 11 CROSSROADS OF OPPORTUNITY



Projects

A. Patrick Avenue Bypass

B. College Ave. and Main St.

C. Crosswalk at Quinn Circle

D. Improvements to University paths

E. Sidewalk on south W. College Ave.

F. Sidewalk on north E. College Ave.

G. Sidewalk on east S. Main St.

H. Sidewalk on east N. Main St.

I. Crosswalk at Main & Bethel Ave.

J. Crosswalk on Patrick Ave.

K. Trail on Stadium Drive

L. Traffic light/crosswalk at Homestead

M. Sidewalk on west N. Main St.

N. Trail from S. Glenn to School

O. Crosswalk at Fairview St.

P. Street lights along west S. Main St. & Stadium Drive

Q. Trail from S. Main to School

R. Trail from University to Broyhill

S. Sidewalk from School to Brookview

T. New "Northwest Loop" trail

U. Improvements to sewer line paths

V. Trail from School to new YMCA

W. Crosswalk on S. Main St.

X. New "Homestead Trail"

Y. Public square at Post Office

Z. Parallel parking on S. Main St.

Existing Features

- Sidewalks
- State Roads
- Streams
- Parcels
- Town
- ETJ

Proposed Improvements

- Street Lights
- New sidewalk
- Sidewalk Improvement
- New Trail
- Trail improvements
- Bypass
- Parallel Parking

Comprehensive System Map

September 28, 2006

Boiling Springs Pedestrian Plan

Centralina Council of Governments

Springmore Elementary School
Hamilton Road
Whitaker Road
McBrayer Homestead
Barclay Road
Skinner Road
Deer Run
James Lovelace Road
Homestead Acres
West Lake
High Point
Ramsgate
North Main St.
West Homestead Ave.
East Homestead Ave.
Hillcrest Street
1/2 mile
1/4 mile
10 min. walk
5 min. walk
Ingles / CVS
Wellington Hamrick Concrete
Wood Creek Apartments
West College Avenue
Crawley Hospital
Creekside
University Commons
Gardner -Webb University
Cemetery
Turner Trucking
East College Avenue
Broyhill Adventure Course
Town Hall
Future YMCA
Patrick Avenue
Football Stadium
Observatory
Ball Fields
South Main St.
Brookview
South Glenn
Boiling Springs Elementary School
College Farm Road
Highland Pines
Patrick Avenue
Phillips Village
Clyde Wallace Road
Holly Hill Road
Gaffney Road (Hwy 150)
Flint Hill Church Road
Hawks Ridge

Cleveland County
Legend
Cleveland County
Existing Railroad
NC Bike routes
Primary roads
Municipalities
Water bodies
Shelby
US 150
Boiling Springs
Broad River

N

0 0.125 0.25 0.5 0.75 1 Miles

LEGEND

Sidewalks
State Roads
Streams
Sewer Corridors
Parcels
Town limit
Contours

Average Daily Traffic (2004)
640 - 2100
2101 - 6100
6101 - 8500

Zoning
B-1
I-1
M-1
R-10
R-15
R-20

Existing Conditions Map

September 28, 2006

Boiling Springs Pedestrian Plan

BOILING SPRINGS N.C. 19 11 CROSSROADS OF OPPORTUNITY

Centralina Council of Governments

PART 1: PLAN OVERVIEW

The Boiling Springs Pedestrian Plan is organized to provide the user with information ranging from the nature of pedestrian planning and its context, to how to get a sidewalk built. The Plan is divided into four parts, each with various sections, and Appendices. The following will help orient the reader in how to use this document:

PART 1: Plan Overview
This portion of the Plan includes the **Executive Summary**, a two-page synopsis of the Plan's most important elements. It also includes the **Vision, Scope and Process** section, which outlines Boiling Springs's need for a plan, the Town's pedestrian vision, and how the plan can work to bring about that vision. A brief description of how the Plan was assembled is also provided. The **Benefits of a Pedestrian Lifestyle** section illustrates the value of pedestrian-based planning, particularly to Boiling Springs.

PART 2: Current Conditions, Needs and Opportunities
A description of the Town's existing layout, pedestrian amenities, and pedestrian barriers and constraints is provided in the **Existing Conditions and Trends** section. It details current conditions that impact pedestrian planning throughout the community, from "big picture" issues, to the condition of individual sidewalks, crosswalks and trails. This portion of the Plan also describes prevailing trends in the growth of the Town that have direct bearing on current and future pedestrian needs. The **Current Policies, Plans, and Programs** section provides detailed analysis of planning documents and Town ordinances, and how they particularly aid or hinder pedestrian-friendly development. The section also describes current pedestrian programs at work. In the **Key Areas and Issues** section, unique opportunities the Town has to better provide for its citizens' pedestrian needs and shape its

future in significantly positive ways is explained. This portion of the Plan sets the stage for the recommendations that follow.

PART 3: Plan Recommendations
This portion of the Plan captures all the recommendations being made to provide for Boiling Springs's pedestrian future. It begins with **Recommended Policies, Programs, and Ordinance Modifications**—the planning framework that puts pedestrian planning in the Town's context and integrates it into the Town's planning processes. The next section lists specific **Project Recommendations and Implementation Strategies**, which includes more focused actions that should be taken to correct current problems and initiate future projects. Specific projects are described in detail in the **Project Identification and Priority List**. Here 26 individual projects are ranked in priority and explanations are provided as to how each of them can be implemented. The succeeding section provides information about **Recommended Maintenance Programs** appropriate to each type of project.

PART 4: Funding Strategies
This portion of the Plan discusses how to pay for projects. It begins with **Sample Cost Estimates for Facilities**, and then discusses **Funding Strategies**, offers **Local Budget Recommendations**, and concludes with the local **Plan Adoption and Approval process**.

Section 1: Executive Summary

See Attachment.

Section 2: Vision, Scope, and Process

The Need

The Town of Boiling Springs has an immediate and increasing need to improve pedestrian opportunities for both residents and students. The Town also has a longer-term opportunity to work toward providing a framework that makes pedestrian travel a truly viable mode of transportation within the Town.

Together, the Town and Gardner-Webb University form a rapidly growing community. As this community expands, the pedestrian traffic in Boiling Springs continues to expand as well. The challenges this pedestrian population encounters are numerous but result generally from the following conditions:

1. Increasing vehicular traffic
2. Recently developed residential communities that feature very little in the way of street, sidewalk or trail connections both internally and to the surrounding area
3. Too few sidewalks and other pedestrian amenities throughout Town
4. Current Town street network

Specific actions are required to address each of these conditions, but such actions are most effective when they flow from an overall strategy that the community can understand, support and implement. This comprehensive pedestrian transportation plan enables the Town to plan for future growth and guide it, instead of simply reacting to it.

The Vision

The Town's vision, which guides this Pedestrian Plan, is one of a thriving community that gives its residents opportunity to visit local businesses and attend activities without having to own or entirely depend upon an automobile—providing viable alternatives to driving. This is particularly important for some significant segments of the Boiling Springs—the elderly, children under driving age, students at Gardner Webb University, and particularly the disabled students of the NOEL program. Because of existing traffic congestion in the Town, the vision places a high premium on finding ways to reduce that congestion in the immediate downtown area, and also places a premium on pedestrian safety.

Furthermore, the community desires to maintain a small town atmosphere where neighbor can meet neighbor and sidewalk conversations are the norm. The community's vision supports amenities that not only permit but encourage its residents and visitors to walk and visit with each other—amenities such as trees, benches, planters, etc. that add comfort, visual interest, and create safe havens and resting points. Boiling Springs is health-focused, with a new YMCA and a fitness course at Gardner Webb, and many people who run—and the Town's pedestrian facilities should send a message that walking (or running) is not only an acceptable but also a desirable way to get around. Finally, Boiling Springs sees its proximity to natural areas such as the Broad River Greenway as important, not only as expressing the community's concern for its natural surroundings, but as a tool for

developing eco-tourism and environmentally-friendly development. Its pedestrian and/or bicycle systems ideally will provide access to a larger, more regional network of greenways both within and outside Cleveland County. Features such as these have been identified in national literature as being of great importance in attracting the intellectual capital that Boiling Springs needs to be able to attract to the University.

In order to see this vision through, an ongoing coordinated effort must be instituted. The charter for this effort is the Boiling Springs Pedestrian Plan. This Plan will serve the Town in the following ways:

1. As a compelling tool to promote the Town's pedestrian vision
2. As an effective source for educating decision makers and the general public about the value and methods of making Boiling Springs a pedestrian-friendly community
3. As a guide for the revision of Town ordinances and policies that address development in order that all will support the same unified goals
4. As a comprehensive guide to the implementation and improvement of pedestrian routes and amenities
5. As a firm basis for seeking 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, both short-term and long-term goals for the Town can be realized:

- Walkability and connectivity become guiding principles for decision-making, so that walking becomes a real option as a transportation choice.
- Pedestrian safety is a top priority, so that pedestrians can feel safe accessing the downtown business district, and when using other facilities in Town.
- Pedestrian facilities are accessible to all persons in the community.
- Attractive pedestrian facilities, both hard-surfaced and pervious, are used to link significant destinations, so that all significant destination points are accessible by foot as well as vehicle. Amenities are provided so that walking is not seen as "the last alternative" but the "preferred alternative" to reach points within walking distance.
- The Boiling Springs pedestrian network is linked, where appropriate, to larger county and regional networks.
- The Boiling Springs Pedestrian Plan provides a clear "road map" of where, when, and how the Town proceeds to make improvements to its pedestrian facilities, to achieve the aforementioned goals.
- Boiling Springs signals to visitors and residents alike that it is the kind of community that anyone might choose to live in if they could.

To realize these goals, the following actions will be needed in the short term:

1. Form a Pedestrian Needs Committee
2. Apply for recommended funding and enact revisions to the local budget

3. Revise current development policies as contained in the Town Zoning Ordinance, Subdivision Ordinance and other related documents to ensure that land development plans and regulations support pedestrian transportation.
4. Evaluate current Town staffing needs in order to implement and maintain needed improvements.
5. Encourage bypass traffic through appropriate signage primarily in order to alleviate unnecessary traffic on NC 150.
6. Address conditions at the intersection of College Avenue and Main Street. Realign traffic lanes according to the NCDOT 1997 Thoroughfare Plan (Fig. 3). Adjust or replace existing signalization to meet pedestrian needs.
7. Construct sidewalks and improve sidewalk conditions along existing streets according to the Project Identification and Priority List.
8. Improve existing off-road trails and procure easements or right-of-way for new trails.
9. Initiate recommended enforcement, community awareness, incentive and safety and maintenance programs.

In the longer term, the following actions will be needed:

1. Construct crosswalks and traffic calming devices as outlined in the Plan.
2. Construct additional off-road trails and supporting facilities through right of access easements and Right-of-Way dedication or reservation in newly developed subdivisions
3. Acquire right-of-way where needed and construct on-street pedestrian improvements
4. Expand and connect the Town street grid in conjunction with new private development
5. Provide transit assistance to and from major pedestrian destinations

The Scope

To meet these goals, this Pedestrian Plan examines a broad scope of pedestrian-related issues and recommends actions that address them in a comprehensive manner, including:

1. Policy and ordinance revision
2. Educational & incentive 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. Individual project evaluation process

The Methodology

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

Step 1: Gather relevant documents relating to pedestrian concerns in the Town.

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

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

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

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

Step 6: Conduct a Community Survey and Stakeholder Interviews on pedestrian needs and preferences.

Step 7: Conduct an interactive public meeting to review survey and interview results, obtain feedback from Town residents, and gather additional input on pedestrian and mobility issues and concerns.

Step 8: Review the survey, interview, and public meeting results with the Steering Committee in order to gather direction for preparation of a draft plan.

Step 9: Preparation of Draft Pedestrian Master Plan based input from the Steering Committee, the survey, and citizen comments.

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

Step 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.

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

Step 13: Submit the Plan to the Town Board and to the Planning Board for review. Additionally, submit the Plan to the Lake Norman RPO for endorsement.

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

Section 3: Benefits of a Pedestrian Lifestyle

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. Towns and cities are full of barriers that discourage walking and often make a pedestrian feel like an alien in a world made only for cars. Addressing these barriers means more than just building sidewalks or adding 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 easy, safe and convenient, and brings vitality back to the streets.

Investments in a community through pedestrian-oriented improvements may, in just a few short years, show visible and economic results. Such improvements can help make the Boiling Springs community healthier, more vibrant and a more attractive place to live, work and own a business. Such revitalized communities offer more incentive to prospective students and faculty, residents and businesses.

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

1. **Traffic, Safety and Air Quality**
   Whenever walking becomes a reasonable alternative to driving, many people will choose to walk rather than drive, and taking those extra cars off the road will help to reduce traffic congestion and vehicle miles traveled, both of which have a positive impact on safety and air quality. In Boiling Springs, the current pedestrian population will experience a safer, higher quality environment as unnecessary traffic decreases, particularly as the Town grows in more pedestrian-friendly patterns.

2. **Public Health**
   A primary 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. As walking becomes a more significant part of daily life in Boiling Springs, this will yield healthier lifestyles and ultimately impact community health care costs in a positive manner.

3. **Local Economy**
   Pedestrian-oriented streets encourage shoppers to linger. Retail and commercial developers have learned that walkable context sells. 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, a pedestrian-oriented community

is more likely to attract as new residents the type of people most likely to help grow the local economy. The current downtown street pattern of Boiling Springs, coupled with the underdeveloped land and street patterns that surround this core, create enormous potential for the Town to develop into a very walkable, fully realized grid system, which would spark increased smaller-scale commercial development in the downtown area.

4. **Transportation**
   Walkable communities have the most affordable and most efficient transportation system. This principle is often best exemplified within university campuses like Gardner-Webb and the communities that surround them. As a town continues to develop around walkable centers, it also better suited for incorporating public transit systems, such as buses or shuttles.

5. **Elderly and Youth Friendly**
   When communities are pedestrian-friendly, there is greater independence for youth and elderly to get around. This is particularly important in Boiling Springs, where elderly care facilities such as Crawley Hospital are located within walkable distance to the Town Center. Having sidewalks and other pedestrian amenities to create better connections to downtown and other destination points would grant more freedom to those who are unable to drive. For those serving in the role of daily chauffeurs to younger students, safe pedestrian connections to schools and after school activities would create more opportunity for younger students to get around on their own. And when young people are accustomed to walking and biking, they are also less likely to depend on automobiles for short trips as they grow older.

6. **Friendly to Disabled Populations**
   Many persons with disabilities cannot drive independently. Their mobility and independence are severely limited in communities that are designed only for car usage. Students in the NOEL program at Gardner-Webb would particularly benefit from increased pedestrian-friendly measures. Walkable communities can be designed to maximize the independence and mobility for disabled persons, in ways that auto-dependent communities cannot.

7. **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.

8. **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—they have more than one way to get to an emergency location. Though Boiling Springs currently has many dead-end streets in its downtown area, numerous opportunities could become available to connect those streets for greatly improved access.

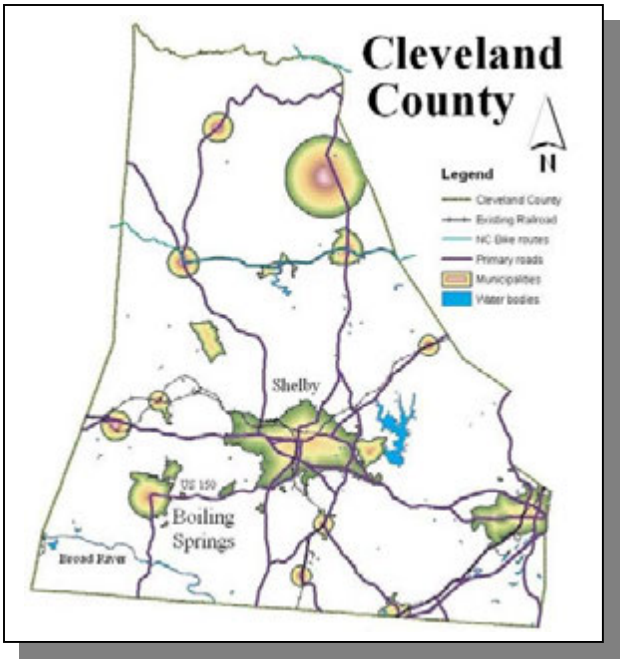
9. Cultural and Community Life

Cities and towns that offer interesting streets with active pedestrian life become vibrant cultural and economic centers that draw visitors from the surrounding region. Social and community norms of engagement and civic participation are more likely to be promoted when there are places for the community -- townsfolk and University students -- to be together and to use civic facilities. Furthermore, intergenerational engagement is more likely to occur in public spaces.

While it would be true to say that "pedestrian friendliness" is not a cure-all for all the economic, social, or political ills that modern society experiences, it is also true that the creation of more livable public spaces and the de-isolation of people by getting them out of their cars, is an important part of the remedy. 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.

Part 2:
CURRENT CONDITIONS, NEEDS & OPPORTUNITIES

Section 4: Existing Conditions and Trends



1. Conditions and Trends in General

The **Town of Boiling Springs** is a small rural community in southwest Cleveland County in the foothills of North Carolina, roughly 8 miles west of the City of Shelby. It is situated approximately three miles north of the Broad River. Most of the terrain is slightly hilly. The physical conditions and layout of the Town, including all existing pedestrian facilities described in this section, are shown on the **Existing Conditions Map** at the end of Part 2.

In its present state, Boiling Springs has a great deal to offer anyone wishing to live a pedestrian-oriented lifestyle. Its compact, small-town core features stores, restaurants, various services and residences all within convenient walking distance of each other. Gardner-Webb University complements the Town with its tree-lined walks, manicured lawns, historic buildings and compact arrangement. Community pride is evidenced in the care given to make both the University and the Town Center an attractive and welcoming setting. Boiling Springs has accomplished a great deal to accommodate pedestrians through various improvement projects. Newer construction around Town also features pedestrian amenities.

Continuing to ride a recent boom in growth, the Town's **population** is quickly approaching 4000 residents. In addition to this number, there are approximately 4000 Gardner-Webb University students, nearly 1300 of which live on campus. As a university town, the pedestrian activity in Boiling Springs is a higher than average. There are over 100 disabled students attending the University drawn by special programs offered through the NOEL Program most of whom live on campus. Residents in Boiling Springs 65 and older comprise nearly 9% of the total population. Boiling Springs also has traditionally had very strong public schools, which has attracted a number of new families to the community. This has created a school-age population of almost 22% of the Town's population. The population, therefore, includes a large percentage of people for whom walking is the only option for transportation, if they wish to travel independently.

In addition to the University, other **employment centers** within the Town include Turner Trucking, Crawley Memorial Hospital, Wellington Hamrick Concrete, and various retail, accomodation and food services. However, despite the array of employment opportunities

within the town, Boiling Springs serves largely as a residential "bedroom" community for commuters. Of the total approximately 1275 daily commuters from the 2000 Census, only 465 remain in Boiling Springs, while 625 commute to Shelby, 55 to Iredell County, 40 to Charlotte, 30 to Kings Mountain, 25 to Forest City, 20 to Gastonia, and 15 to Rutherfordton.

Residential development in Boiling Springs is occuring at a rapid rate due, in no small part, to the continuing expansion of enrollment at Gardner-Webb University. Older residential areas in the Town are arranged in a loosely gridded pattern with most streets connected on one end to the main spine roads of College and Main. Most of these streets are stubbed and present good opportunites for future connectivity.

Recently, a number of new subdivisions have sprung up, particularly in the northern and eastern sides of Town. Most of these subdivisions are layed out in a cul-de-sac pattern featuring low pedestrian connectivity both within and to points outside the subdivision. Some of these subdivisions include sidewalks within them; however, some of the largest do not, and on the north side several of the subdivisions in close proximity do not connect with each other.

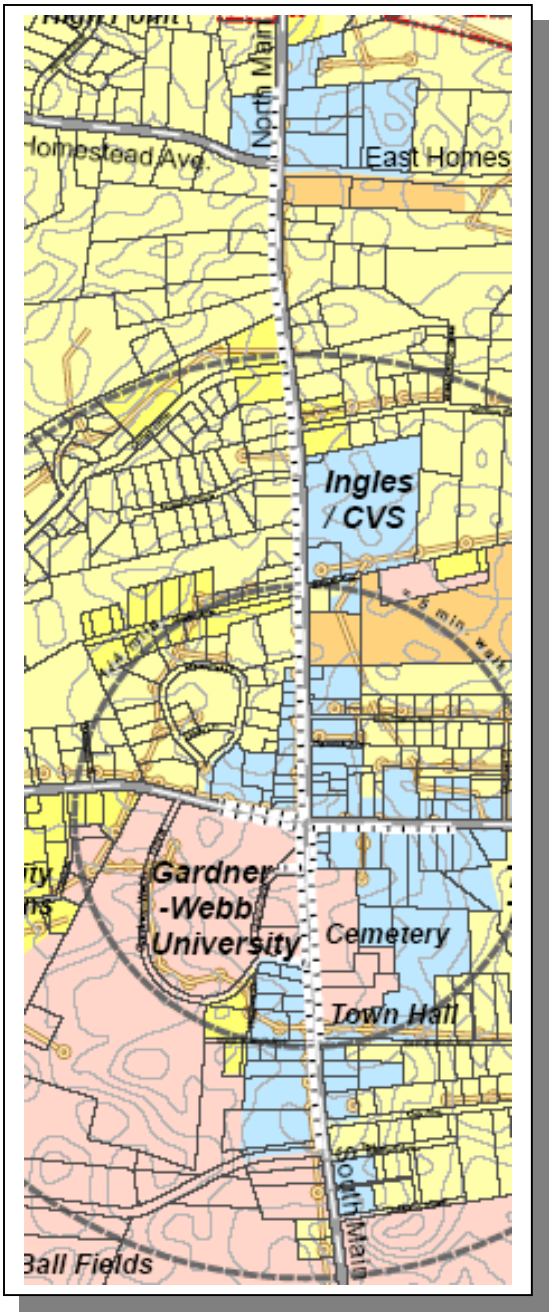
Many large tracts still exist within the Town limits and are ripe for eventual development. As Gardner-Webb University continues to increases its enrollment and carries through with its master plan for growth, it will serve as a powerful draw for continued rapid growth in Boiling Springs, both in residential and commercial development.

Downtown Boiling Springs is situated along the crossroads of Main and College Streets. The intersection of these two streets has become essentially the center of Town. The majority of pedestrian traffic is concentrated within a few blocks of this intersection and the University. The majority of small businesses that attract walking traffic are all within this same area.

Occupying this central intersection is the United States Post Office, the gateway to Gardner-Webb University, popular informal dining establishments, and a lot currently under commercial redevelopment. A **five-minute walk** from this main intersection yields a variety of pedestrian interests. Gardner-Webb University runs most of that ½ mile length along the west side South Main and the southern side of West College Avenue, as it occupies this southwest quadrant of town. A walk north from the center features a mix of popular commercial uses including the Town's only large grocery store, with residential areas running further up the road. More commercial uses line most of the eastern spine, mixed with some light industrial businesses, as well as the Fire Department. Along the east side of South Main Street, a mix of commercial, University, government, church and residential uses co-exist.

In terms of future growth and **development patterns**, the Town is at a crossroads, literally as well as figuratively. The emerging street network in Boiling Springs and the size of the undeveloped tracts in its core area make Traditional Neighborhood Development (TND) patterns a realistic possibility for the Town. Such a pattern would support increased commercial growth within the Town limits, would tend to mitigate against sprawl, and would work toward a highly walkable community. The tendency for this TND pattern to emerge, however, is offset by the fact that Boiling Springs is "in the country", which means there is

little pressure NOT to develop outside its current corporate limits or ETJ. But such sprawling patterns of growth inevitably lead to strip-type development that would, in the long run, prove auto-dependent and not support the vision the Town has articulated.



Sidewalks currently line portions of Main Street and College Avenue. A sidewalk runs along the west edge of North Main Street and extends approximately 0.8 miles from the main intersection, taking it just past the intersection of West Homestead Ave. These sidewalks were installed in a 1997 project. They remain in fairly good condition but are frequently interupted by utility poles and other obstructions. There is no sidewalk along the east side of North Main, nor along the north side of East College. Along the south side of East College, sidewalk extends from Main Street for about 800 feet, largely without interruption. Sidewalks line both sides of West College Ave for a length of roughly 450 feet, or about one block. Along the University side of South Main Street, a sidewalk runs approximately 1800 feet (about 3 blocks) connecting College Ave. to Stadium Drive. On the east side of South Main, the sidewalk only runs as far as Town Hall at East Branch Ave., a distance of about 1200 feet. The Town Board is actively pursuing funds to extend the College Avenue sidewalks to create two bisecting corridors to reach all four sides of the Town.

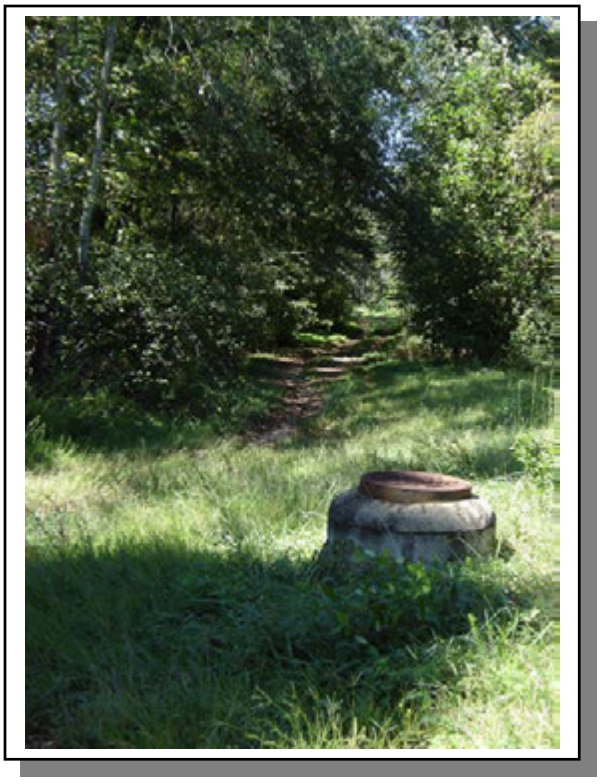
Most sidewalks in Town are 4 feet wide and directly abut the street curbs with no planting strip. However a narrow grass strip (18") separates the sidewalk from the curb along parts of South Main Street. At the intersection of Main and College, sidewalks conditions are more generous. Here, in front of businesses, the sidewalk widens to roughly eight feet, directly abuts the street and offers some occasional pedestrian amenities such as benches, bikeracks, store awnings and pole-mounted flower baskets. In front of the University along South Main, the pedestrian experience is enhanced by a planting strip - approximately four feet in width - and some scattered street trees. Other portions of South Main – particularly in front of the cemetary - are more regularly lined with street trees, providing pleasant shade and a sense of pedestrian scale. Sidewalks throughout the Town vary as to their compliance with current ADA standards.

Crosswalks currently exist at a few strategic points within the Town, namely along the south and west sides of the intersection of College and Main, and across South Main at Quinn Circle. These are prominantly striped with signs to warn drivers of pedestrian activity. The crosswalks at the intersection of College and Main also feature pedestrian activated signals. According to the NCDOT Division 12 Engineering Office, only some minor re-striping work has been done at this intersection since the 1997 Thoroughfare Plan.

Gardner-Webb University campus is highly pedestrian in its arrangement and scale. It is interconnected with well-used paths serving students and faculty. Campus paths also provide additional pedestrian linkages and recreational walking opportunities for the Town. Within the University grounds walking paths connect most of the campus buildings but the connectivity overall of University trails is substandard. Most paths are poorly lit and not accessible to pedestrians in wheelchairs. The system lacks trails to key nearby destinations such as the Broyhill Adventure Course or the Broad River Greenway.

Some popular **trails** have spontaneously developed just off-campus. One example provides a popular shortcut through the businesses along North Main street to the campus entrance on West College. Such informal pathways prove valueable to pedestrians and businesses alike. However, these types of trails often cross private property and may not be desireable to property owners for privacy and liability concerns. These routes also require some degree of attention to keep them safe. Proper lighting is a particular safety concern in these cases, as with all off-road pathways.

Many Boiling Springs residents, particularly University students, are active runners. They require safe paths where they do not constantly encounter automobile traffic. Currently, many runners use **sanitary sewer line corridors** located south of Stadium Drive and the ballfields (see **Existing Conditions Map** at the end of this section) and follow them as far as the Boiling Springs Wastewater Treatment Plant, located along Sandy Run Creek on College Farm Road, a straight-line distance of about 1.5 miles from South Main Street. These wooded corridors provide a practical alternative to the busy streets and narrow shoulders of other popular running loops such as West Homestead Avenue or Stadium Drive. However, the fact that these corridors are so secluded and unlit, with an uneven and non-maintained surface, makes them an unsafe and undesirable choice to many runners.



The **Broad River Greenway** consists of scenic trails running about 15 miles on either side of the Broad River. The Greenway's main facility is equipped with restrooms, trails maps, a picnic shelter, a playground, an observation deck and a parking area. It is located on NC 150

just three miles south of town. A bike lane from the Town to the Greenway has been constructed along Highway 150. Though this designated bike lane appears to meet North Carolina bicycle facility design guidelines, many bicyclists, particularly families with children, consider the bike lanes to be unsafe due to the high-speed traffic along NC 150 and heavy truck use.

2. Specific Pedestrian Barriers and Constraints

Numerous unsafe and uninviting conditions exist for pedestrians within the Town, particularly in central areas most frequented by pedestrians. To date, very few serious accidents have occurred involving pedestrians, but as the population of both the Town and the University grow the potential for such accidents also increases, particularly with the high percentage of less experienced University student drivers.

Both East College and South Main are segments of North Carolina State **Highway 150**, which connects Cleveland County to Gaffney, South Carolina and I-85. This highway, which effectively bisects the Town, supports a high volume of automobile and heavy trucking traffic, including heavy truck traffic from Turner Trucking and Wellington Hamrick Concrete located in Town.

Only one **traffic light** exists currently within the Town, this being at the intersection of College and Main. This main intersection requires a number of improvements in order to provide a safer environment to pedestrian traffic. Some of the current problems include the following:

1. Only two of the four streets at the intersection have striped pedestrian crosswalks.
2. Pedestrians feel that the crossing signal is too short in duration.
3. Pedestrians have trouble hearing the crossing signal, particularly over traffic noise. This is of special concern to visually impaired students.
4. The signal does not audibly indicate which direction is safe to cross.
5. The signal timing is not synchronized correctly with the traffic light.
6. The signal does not feature left (or right) turn lights, making it more difficult for pedestrians to anticipate oncoming traffic.
7. Drivers do not yield well to pedestrians
8. Pedestrians have trouble seeing oncoming cars, partly due to cars parked on the street too close to the intersection.
9. Busy driveways too close to the intersection complicate the traffic pattern, (e.g. the Post Office).
10. Poor lighting makes this intersection more dangerous at night.
11. Current lane configuration of the intersection is not efficient for traffic flow.

Most pedestrians cross Main and College Streets at other points that are more convenient for their travel path. In particular, many students often cross **South Main Street** just south of Quinn Circle, at Stadium Drive, and at Chestnut Street. Several University buildings, including classrooms and dorm rooms, are separated from the main campus by the South Main segment of NC 150. Among these are a large student residence hall, the student counseling office and a communications studio. This arrangement of uses along a busy traffic corridor generates a high degree of vehicular and pedestrian conflict. Some factors contributing to this problem include:

1. On-street diagonal parking
   This parking arrangement along South Main Street facing the main Gardner-Webb campus inhibits visibility and greatly increases the number of points of potential vehicular-vehicular and vehicular-pedestrian conflict (much more so than parallel parking). This makes conditions unsafe for both drivers and pedestrians.

2. Heavy vehicular traffic
   As part of NC 150, South Main Street is host to a great deal of automobile and truck traffic. According to residents, many vehicles using NC 150 travel at excessive speeds and do not defer to pedestrians. Currently, no bypass is indicated for thru traffic traveling along this highway through Town.

3. Lack of traffic control or calming devices
   Insufficient use of such devices in a strategic combination fails to encourage drivers to slow down or look for alternate driving routes.

Despite some designated crosswalks with signage to warn drivers about pedestrian activity, current crosswalk conditions are inadequate for the Town and University. The NOEL program no longer trains deaf or visually impaired students to cross this street on foot at all because conditions are considered too dangerous.

North Main Street sees a great deal of pedestrian crossing traffic. A number of businesses important to the community are concentrated along this street within a few blocks of College Avenue. There are currently no designated pedestrian crossings or warning signs along this section of North Main.

East College Avenue's north side also features a high concentration of businesses near the Town center frequented by pedestrians, including a number of popular fast-food restaurants, and a convenience store. There are no sidewalks or crosswalks along this section to accommodate pedestrian needs.

West College Avenue sidewalks run a minimal distance from the center and do not connect the medical facilities and residential areas along West College to the downtown area. Poor visibility contributes to hazardous pedestrian crossing conditions in front of Washburn Hall.

Patrick Avenue features no crosswalks, sidewalks or paths to safely connect Boiling Springs Elementary School to neighboring communities within easy walking distance to the school, including Highland Pines, the South Glenn neighborhood, and the new Brookview subdivision.

West Homestead Avenue is heavily used by pedestrians, particularly runners as part of a running circuit which includes North Main Street and West College Avenue. Currently there are no sidewalks or paths provided and shoulders are narrow. The intersection of West Homestead and North Main Street has no traffic signals.

Stadium Drive is also part of a heavily used running circuit despite dangerous conditions for pedestrians. The road bends sharply at its southwest extent, presenting a blind curve for oncoming cars.

East Homestead Avenue connects the large residential district of Homestead Acres to North Main and hence to downtown, but there are currently no sidewalks for pedestrian safety along this travel route.

Skinner Road provides an opportunity for truck and automobile traffic to bypass the town around its northeast quadrant. However, when residents living in the communities that line Skinner Road want to walk outside of their neighborhoods, they must share the road with high speed vehicles, as there are no sidewalks provided along this Road.

Gardner-Webb University trails criss-cross the pastoral campus of the University. They serve both the student and faculty populations, and also provide linkages for townspeople. However, many of these potentially useful trails lead nowhere or prove inaccessible to pedestrians dependent upon wheelchairs. Opportunities for some useful connections to nearby destinations, like the Broyhill Adventure Course, remain undeveloped.

General anti-pedestrian oriented conditions:

- New developments tend toward segregated land uses, putting residences farther away and out of convenient walking distance from retail and commercial services.
- New subdivisions tend be disconnected from one another and from schools.
- The high number of dead-end streets makes walking through Town difficult.
- NC 150 carries a high amount of truck traffic on streets that are also heavily populated with pedestrians.
- Existing sidewalks and trails are insufficient to meet current needs.
- Many sidewalks and paths are poorly lit.
- Existing crosswalks do not meet current needs in terms of locations, markings and signalization.
- In general, there are insufficient pedestrian warnings for drivers.

Section 5: Current Policies, Plans and Programs

1. Policies, Plans and Ordinances

Zoning Ordinance and Subdivision Regulations

The Town Zoning ordinance is the most binding legal document affecting the contemporary form of the Town and continuing development patterns. The degree to which Boiling Springs will become an increasingly pedestrian-friendly town – with all the benefits thereof – will depend upon the continuing development of this document and, in particular, the Town's Subdivision Ordinance. As it is, these documents contain a number of sections that directly pertain to pedestrian issues, particularly in regard to the practicality and quality of the pedestrian experience.

Issue 1: Connectivity and Cul-de-Sacs
The Town presently has no regulations in place to promote connectivity or limit the number, placement or maximum length of cul-de-sacs. Section 150.032 (G) of the Subdivision Ordinance states:

> § 150.030(G) Cul-de-Sacs
> 1. *Cul-de-sacs should not be used to avoid connection with an existing street, to avoid the extension of a thoroughfare or collector street, or to avoid connection to adjoining property.*
> 2. *Permanent dead end streets shall not exceed 800 feet in length unless necessitated by topography or property accessibility and approved by the Planning Board. Cul-de-sacs shall be provided with a turn-around meeting Town standards.*

The language above advises but does not *require* limited use of cul-de-sacs. There are also numerous examples in Boiling Springs where cul-de-sacs are greater than 800 feet in length.

Issue 2: Block Length
Section 150.032(b) of the Subdivision Ordinance states that " Blocks shall not be less than 400 feet nor more than 1,320 feet in length." Thus, blocks are in theory allowed a length of up to ¼ mile without any cross-streets. This does not lend itself to a pedestrian-friendly environment, because people tend to judge this distance as "too far to walk" before they can turn a corner to get to a parallel street.

Issue 3: Sidewalks
The Town's sidewalk regulations are at odds with each other. Section 150.039 of the Town's Subdivision Ordinance states:

> § 150.039 Sidewalk Improvements
> *Sidewalks are not required but may be provided by the subdivider. Where sidewalks are to be provided by the subdivider, installation shall be in accordance with NCDOT standards for sidewalk construction in public right-of-way.*

But, Sections 4.01 and 4.06(b) of the Town's Construction Standards Manual state the following:

> 4.01 General
>
> *Curb and gutter shall be installed in any subdivision where any lot is equal to or smaller than 30,000 square feet. A subdivision may be phased in such a way so that an initial phase would not have curb and gutter but a subsequent phase would have curb and gutter (and the associated smaller lots). Once, however, curb and gutter is initiated in a project, it shall be utilized throughout the remainder of a project. To facilitate pedestrian activities, sidewalks shall be required in all projects where curb and gutter is installed…*
>
> 4.06 (b) Curb and Gutter and Sidewalks
>
> *All sidewalks for roadways shall be installed as per Standard Details 3.01 and 3.02.*

(NOTE: Standard Details 3.01 and 3.02 give no further guidance on sidewalk construction other than offset distance from the curb and the width of sidewalk.)

Thus, it is unclear where sidewalks are required, and whether they are to be on one or both sides of the street, what their minimum width shall be or whether a planting strip is to be required. In addition, there are no provisions for addressing the placement of sidewalks in non-subdivision areas.

Issue 4: Greenways

The only public greenway/walking path in the Boiling Springs area is the Broad River Greenway, which lies approximately 3 miles south of Boiling Springs. There currently are no provisions in the Town's regulations nor are there any plans that call for extensions of this greenway into Boiling Springs or for separate greenways within the Town.

Issue 5: Building Setbacks

According to the Boiling Springs Zoning Ordinance, all zoning districts (including the B-1 Business District located in downtown Boiling Springs) require a minimum front yard setback of at least 20 feet. However, there are no maximum front yard setbacks limits, which means buildings can be located at great distances from the street.

Excessive building setbacks are disadvantageous and even problematic to towns for a number of reasons involving safety, economic vitality, and general pedestrian friendliness.

On the other hand, minimum setbacks provide the following advantages:

1. **Safety.** Buildings set far back from streets most often require visitors on foot to navigate significant distances through parking lots to reach their desired destination point. This is the case with the Town's major food store, where pedestrians must negotiate through a large, busy parking lot with no marked pedestrian facilities to help them reach the store's front door safely or comfortably.

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 in. This phenomenon is largely due to a sense of enclosure that buildings can give to a street. Buildings close to the street help make the street viable and interesting public space rather than the vast, open wastelands often found with strip development.

Boiling Springs Subdivision Regulations

The Town's Subdivision Regulations encourage (but do not require) sidewalks in all new subdivisions. New subdivisions that feature sidewalks include Spring Forest, Highland Pines and Brookview. The Regulations require street lighting within town limits at appropriate locations. They also require traffic control signs and pavement markings in accordance with the standards and specifications of the North Carolina Department of Transportation, and which must also meet Town standards within Town limits. The Subdivision Regulations also permit (but do not require) landscaped medians. It is important to note these regulations do not apply to the Town's Extra-territorial Jurisdiction (ETJ).

Thoroughfare Plan

The current Boiling Springs Thoroughfare Plan was prepared by the North Carolina Department of Transportation (NCDOT) Statewide Planning Branch Small Urban Planning Unit, and was adopted in 1997. This document is due for revision in 2007 as a Comprehensive Transportation Plan (CTP). The Thoroughfare Plan process included the development, testing and evaluation of alternate transportation plans that considered Town goals and objectives, and identified deficiencies, environmental impacts, and existing and anticipated land development and travel patterns. Though the document does not directly address pedestrian needs, it does examine the needs for road improvements and recommends new and improved alignments and road facilities to help mitigate traffic congestion.

The Thoroughfare Plan suggests a number of recommendations that would lessen traffic demand on key pedestrian streets in the the downtown area of Boiling Springs. Notably among these are the following recommendations:

Patrick Avenue – "*It is recommended to realign and extend this facility to the intersection of E. Homestead and Skinner Road. The construction of this facitlity will reduce the number of passenger vehicles and remove through traffic travelling into town. This facility can provide an eastern loop for local traffic."*

The Plan states that with current road conditions or without an eastern bypass, East College Avenue and South Main Street will exceed capacity by 2020.

North Main Street – *"The traffic congestion that is created by the Post Office is a source of great concern for the citizens of Boiling Spring."*
Though the plan makes mention of other improvements to this central intersection that it explains will help the congestion, it goes on to claim about North Main Street side: "*The only permanent solution will be to relocate the Post Office in the future."*

Intersection of College Avenue and Main Street – *"The congestion and ease of turning movement is a problem at this intersection. After some investigation, the problems were determined to be:*

- *The traffic signal that is currently in place is a pre-timed traffic signal and will not respond to the peak hour traffic problems or a seasonal change in traffic based on University breaks and various activities in the area.*
- *Parking on the street is taking space that should be used for addition of turn lanes on the roadways."*

NCDOT's statewide Planning Branch along with the Town of Boiling Springs has requested that the Division Engineer replace the existing traffic signal controller with an actuated signal system and to upgrade the signal design to include exclusive turn lane signals.

An illustration of the proposed turn lanes is included in the Thoroughfare Plan.

Hillcrest Street Extension – *"It is recommended to extend Hillcrest Street to cross Oak Avenue. This extension will create a continuity in the minor throughfares and will help reduce the traffic on Main Street."*

Homestead Avenue – *"It is recommended to widen this facility to 24' wide with paved shoulders to meet minimum lane width criteria."*

South West Bypass – *"This project is seen as long range to aid in the movement of traffic through Boiling Springs beyond the year 2020. The bypass uses Holly Hill Avenue by connecting W. Homestead at the intersection of Homestead and College Avenuecreating a loop to the west of Boiling Springs."*

Many of these Thoroughfare Plan recommendations also surfaced during meetings with the Steering Committee and the public regarding the Pedestrian Plan. Each of these recommendations are discussed further in the **Recommended Policies, Programs, and Ordinance Modifications** section.

Boiling Springs Land Use Report

The 1998 Report by Isothermal Planning and Development Commission provides a detailed description of the Town's demographics, physical resources, and public facilities. Among the challenges listed by the Report, the following are particularly pertinent to this Plan:
There is inadequate street lighting and sidewalks.

1. Traffic congestion in the downtown area is aggravated by the lack of alternate routes. All traffic is forced to use the central intersection in the middle of town. The

problem is complicated by the fact that there are currently no convenient ways to bypass the Town.
2. The majority of commercially-zoned parcels are located in the central area of the Town, but there are a lack of existing commercial clusters, with the Town favoring strip development
3. Parking problems are due primarily to insufficient restrictions and inconsistent signage hindering the efficiency of existing parking spaces.
4. Vehicular access the post office is too close to the traffic intersection for cars to enter and exit the site easily and safely.
5. The Town has a disproportionably high amount of residential properties, which increases the cost for its public services.

The report argues for a need to increase commercial/industrial development to improve its tax base. It goes on to suggest that by emphasizing its "small town" and "college town" aspects, where students and townspeople can regularly interact, the Town will improve its attractiveness to new businesses and industry. The report also recommends:

1. Changing the distribution of permitted land uses and expanding commercial districts, creating space for new business in the areas that the Town desires.
2. Increasing the amount of high density housing in the town.
3. Require sidewalks in new subdivisions and locate all utilities underground.
4. Coordinate growth measures with the Gardner-Webb's comprehensive plan and create stronger ties with the University.
5. Town Officials, local businesses, University officials, and other private groups should meet together regularly to coordinate issues relating to land use and development.

On-street Parking Conditions Study

In 1997, a study was completed by NCDOT through their Municipal Traffic Engineering Assistance Program (MTEAP) of on-street parking conditions of Boiling Springs. The study was performed in response to concerns about increased traffic congestion and decreased safety related to on-street parking operations in the downtown central business district. The study sited inefficiencies in the use and regulation of current facilities and concluded that with current demands additional off-street parking facilities were not needed.

The Gardner-Webb University Master Plan

The GWU Master Plan, recently completed by Kimley-Horn Associates, establishes strong pedestrian connections with tree-lined avenues and trails throughout the campus, to destinations such as the Broyhill Adventure Course, Earnest Spangler Stadium, Lake Hollifield, student housing, academic buildings, parking, a proposed conference center, fine arts center and an academic center planned across West College Avenue.

The Cleveland County Land Use Plan

The County Land Use Plan was completed in 2005. It incorporates the input of the citizens of Boiling Springs and its environs during a public meeting at Gardner Webb University, May 20th, 2004. Attendees voiced their preferences for zoning regulations that encourage planned, walkable, distinctive mixed-use communities. They voiced strong preferences for

new developments that are large enough to support neighborhood centers with commercial uses that are within convenient and practical walking distance of residential areas. New developments should feature preserved green space and trees, and more landscaping in commercial areas. Redevelopment of older downtown areas should be encouraged in such a way that enhances their distinctive identity and clearly defines their limits – using surrounding belts of preserved open space, for instance - rather than allowing the Town to bleed out into corridors of strip development. Any development that is visually dominated by parking lots is problematic. Along existing corridors, higher density development should be encouraged. The Plan further states that greenway connections to the Broad River should also be established.

3. Pedestrian Programs and Initiatives:

The **Gardner-Webb University Campus Police Department** has actively promoted pedestrian safety awareness through its Campus Watch Program. The program has featured topics such as Operation Safe Jog and outdoor exercising safety. The Program promotes safety awareness, crime prevention and an open communication between University Police and students. The Police Department also helps organize community watch and other volunteer efforts geared toward pedestrian safety, and monitors and reports streetlight maintenance needs.

Through the **NOEL Program**, the North Carolina Division of Services for the Blind continues to furnish orientation and mobility assistance for visually impaired students, who are served along with hearing and mobility impaired students of all ages.

The **Boiling Springs Police Department** conducts bicycle safety classes and summer programs designed to increase pedestrian safety and awareness.

Crawley Memorial Hospital programs have been designed to equip patients to return to an active life in the community, through medical care, therapy, and a wide variety of life enhancement activities. The facility is located on College Avenue, only three blocks west of its intersection with Main Street.

The Boiling Springs Family YMCA has offered many recreational programs that impact pedestrian activity. One of the special events the YMCA sponsors is a "Turkey Trot" 5-K run and a 1-mile fun run through Town each year at Thanksgiving. Existing YMCA facilities are located at the center of Town, near Main and College Streets. New facilities are currently underway approximately one mile east on East Main Street.

Throughout the year the **Broad River Greenway** hosts numerous events for pedestrians, including scheduled group hikes, canoeing and tubing, fishing, public tours of an historic log cabin, and much more.

The **Boiling Springs Appearance Commission** has a small annual allowance from the Town for beautification projects. Each of their projects has benefited pedestrians in some way, particularly streetscape projects like banners and flower baskets. They have also taken

on a project of improving the condition of the natural spring on the Gardner-Webb campus from which Boiling Springs derives its name. The spring is a significant destination point for pedestrians in terms of local history and culture.

Boiling Springs Baptist Church currently offers transportation assistance for children, students and the elderly who wish to visit their church or campus. Such assistance programs offered by churches or other organizations makes it possible for more citizens to live with greater independence from personal automobiles, and contributes to less automobile traffic on the road.

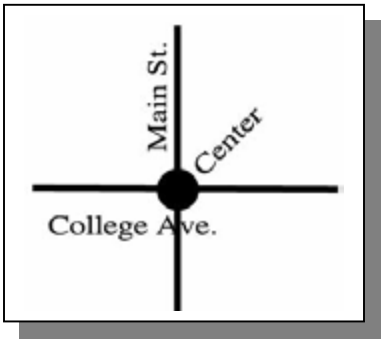
As a member government of the **Lake Norman Rural Planning Organization (LNRPO)**, the Town of Boiling Springs participates in transportation planning initiatives for the region, and enjoys the benefits and resources available through the LNRPO. One of those benefits has been assistance in applying for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

Section 6: Key Areas & Issues

A thorough examination of current pedestrian-related factors throughout the Town reveals key areas that affect the community as whole, as well as particular issues that influence and concern all sectors of its population. These factors are described below.

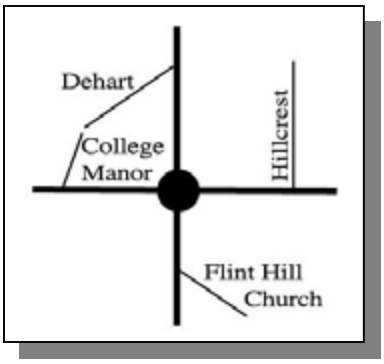
On-Road Pedestrian Corridors (Sidewalks)

The historic pattern of development in Boiling Springs has primarily followed the Town crossroads of Main Street and College Avenue. Hence, these streets act as the main axes of pedestrian linkage. Businesses, medical facilities, and institutions such as the University, various churches, and the Town Hall, are all located along these spines, along with recreational and residential areas. The intersection of these roads effectively serves as the Town's Center.



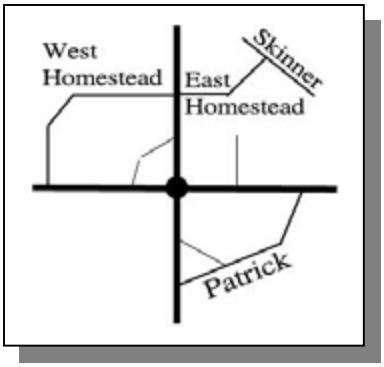
Older residential developments in Town tend to lie within easy walking distance of the Center along the following streets:

- Flint Hill Church Road
- Hillcrest Street
- West College Avenue
- College Manor Drive
- Dehart Drive



As the Town continues to grow, many new residential subdivisions are popping up in areas further from the Center. Pedestrian linkages to these new subdivisions are weak primarily due to their distance from the Center and a lack of sidewalks or trails and points of interest along the way. Many of these newer residential developments are occurring along:

- West Homestead Avenue
- East Homestead Avenue
- Skinner Road
- Patrick Avenue

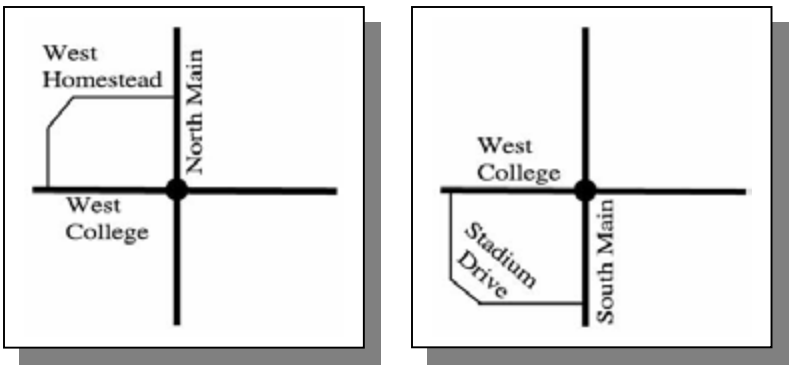


Primary Transportation Corridors

The three sets of streets shown above serve as primary transportation corridors in Boiling Springs, linking residential areas to neighboring uses and the Town Center. Both the older and newer streets could present challenges to retrofitting sidewalks due to right-of-way constraints.

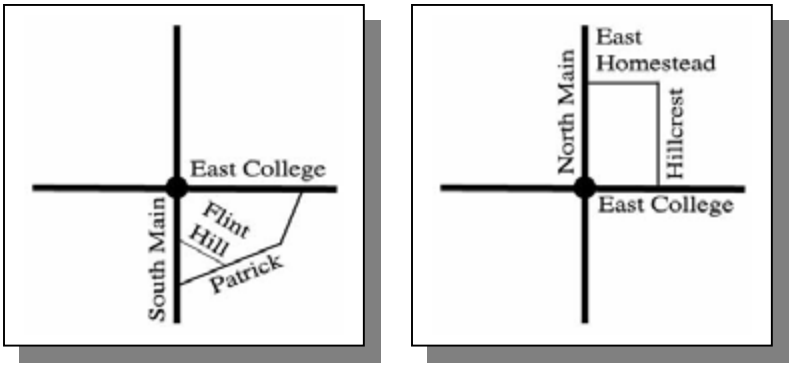
Some of these same corridors serve additionally as primary routes of recreation used by many citizens of the community. In particular, the two circular routes shown immediately below are heavily populated by runners. These two routes lie in the two western quadrants of Town. Considering the number of people who prefer this mode of exercise and recreation in Boiling Springs, a greater variety of on-street circular routes would likely benefit the community.

Primary On-Road Transportation / Recreation Routes currently used



The additional potential corridors, shown below, would serve as segments of complementary eastern routes. Theses would include: North Main Street, East Homestead Avenue, Hillcrest Street and East College Avenue in the northeast quadrant, and East College Avenue, Patrick Avenue, Flint Hill Church Road, and South Main Street in the southeast quadrant.

Potential On-Road Transportation / Recreation Routes



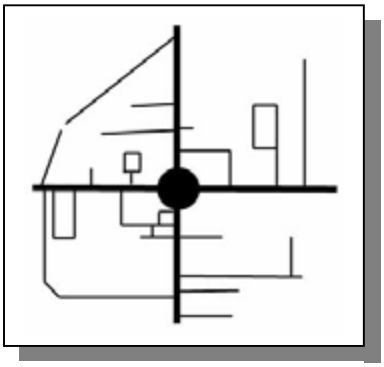
Users could combine these routes to attain various distances and allow a greater variety in running or walking routines, in addition to reaching various destinations like schools and businesses.

On-Road Pedestrian Focus Areas

The main intersection of the Town, at **Main and College**, is the center of pedestrian activity in Boiling Springs. This is due not only to the fact that this intersection lies along the route of a majority of pedestrian trips, but also because of the mix of destinations located there, including:

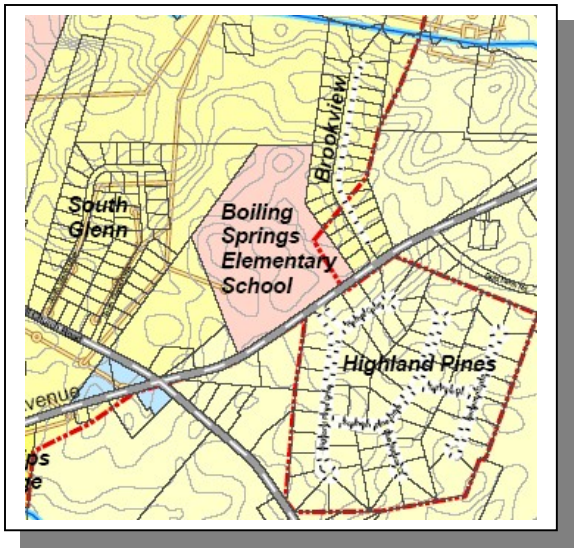
- The Post Office
- Gardner Webb University
- Various restaurants
- YMCA facility
- Gift shop
- Barber shop
- Dentist's office
- Cafés
- Laundromat and Cleaners
- Parking area
- Offices
- Former full service garage
- ATM
- Outdoor seating
- Salon/Spa
- Other pedestrian amenities

The greater **Town Center** has enormous potential for developing into a very walkable community with an interlacing grid of streets. However, currently disconnected streets create a problem for pedestrians. In the southeast quadrant, there are six streets within a quarter-mile radius of the Center. Five of these streets are dead-ends. Across East College Ave., inter-street connectivity within the northeast quadrant is slightly better, but could be greatly improved as that area develops further. Within the northwest quadrant, bounded by North Main, West College, and West Homestead, there are fourteen streets, almost all of which are within a five-minute walking distance of the Center. However, because every one of these fourteen streets is either a dead-end, a cul-de-sac, or part of a loop, that five-minute walk turns into 15 minutes.



Disconnected Streets

Newer residential developments further away from the Center feature equally poor internal connectivity. Typically they have no interconnecting streets and only one way out of the subdivision. With this type of configuration, a resident living at the farthest end of such a development must walk twice as far as the true distance to reach their subdivision's entrance. There is also little or no opportunity for walkers to enjoy a different route or to walk a circuit. While such cul-de-sac style neighborhoods provide some families with a sense of security for their children playing in the streets, this same arrangement can put children and other pedestrians at greater risk. In order to visit another area of the same neighborhood, the child must travel a much longer path in or along the street and thereby increase their chances of encountering an automobile zooming around a curving road. An interconnecting grid of streets allows shorter and more varied paths, and greater visibility for oncoming cars.



Boiling Springs Elementary School is nearly surrounded by residential neighborhoods, including Brookview, the South Glenn neighborhood, and Highland Pines. However, there are no pedestrian connections from these adjacent

neighborhoods to the school. Highland Pines Subdivision, directly across Patrick Avenue, features sidewalks lining both sides of each of its streets. But these sidewalks terminate just inside the entrance of the community. No sidewalks link the community to anywhere else and there is also no crosswalk or any other pedestrian safety amenities to assist anyone wanting to cross the three-lane Patrick Avenue to the school.

The **Post Office** occupies a key place in Boiling Springs, both in terms of location and civic prominence. Many citizens receive their mail from a Post Office box and therefore visit the Post Office almost daily. Consequently the facility is heavily trafficked. Though many of its customers arrive on foot, they must walk through a small but very busy space dominated by vehicular traffic in order to reach the front door. While rather meek and otherwise inconspicuous, this building, per square foot, might generate the most vehicular traffic per day in Boiling Springs. This presents quite a dilemma for the Town due to the fact that its sole customer driveway is located just a few feet from the Town's busiest intersection, Main and College.

The **Ingles Grocery Store** shopping area on North Main Street, just two blocks north of College Avenue, receives a large number of customers daily. Also situated in this complex are a drugstore and a bank, with many other businesses close by. Many customers visit on foot, or might choose to walk if pedestrian conditions were improved. Currently there is no cross walk here on North Main Street. The stores are set off from the road by a vast parking lot with no inviting or safe pedestrian linkage.

The intersection of **North Main and Homestead Avenue** receives a degree of vehicular and pedestrian traffic that presents a growing probability of conflict. East and West Homestead are offset at this intersection by approximately thirty feet. The amount of traffic together with the offset alignment, presents a situation increasingly ripe for vehicular collision likely to involve pedestrians.

The **New YMCA** is planned for construction on East College Avenue, near the intersection of Patrick Avenue, approximately one mile from the center of Town. The YMCA attracts people with active lifestyles. It offers indoor and outdoor facilities for exercise, but can also serve – as it does in other cities – as a rendezvous point for runners and others involved in outdoor exercises. Currently there are no planned pedestrian linkages to the YMCA.

Off-Road Pedestrian Corridors (Trails)

In addition to pedestrian corridors along streets, off-road paths help meet important pedestrian needs, particularly recreational ones. A number of off-road routes run through Boiling Springs, serving both recreation and transportation needs.

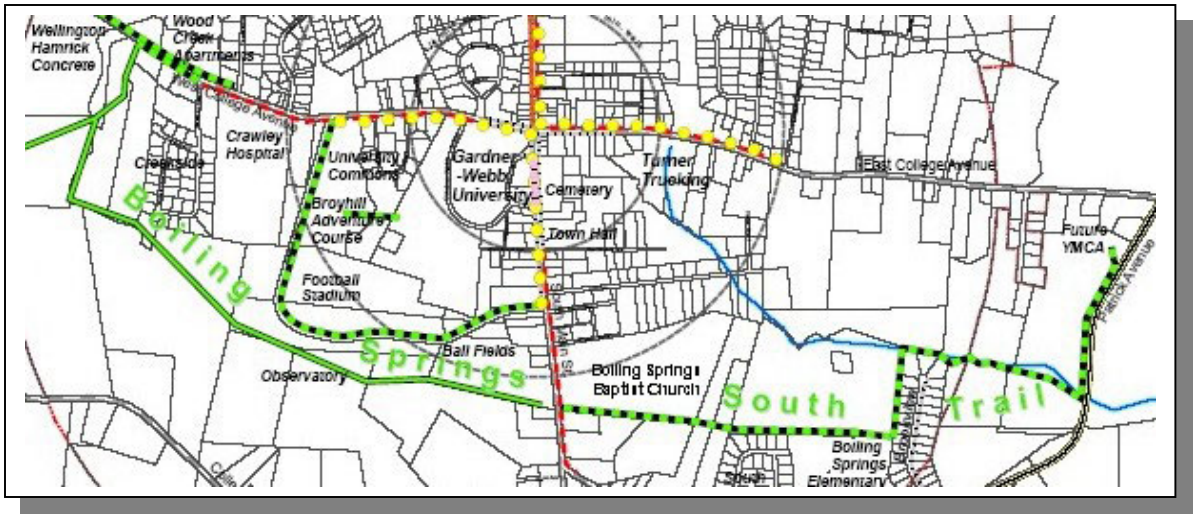
Despite the availability of the running track and sports fields available on the Gardner-Webb campus, perhaps the most utilized off-road trail within Boiling Springs is the **sanitary sewer easement**. This easement runs just south of the campus, adjacent to the ball fields. The corridor stretches roughly from South Main Street to the Boiling Springs Waste Water Treatment Plant on the Sandy Run Creek, approximately ½ mile from the Town limits. The total trail length is approximately three miles.

Though outside of the Town limits, the **Broad River Greenway** provides a valuable recreational resource for pedestrians just three miles south of the center of Town. The 1500-acre greenway runs along both sides of the Broad River.

Further descriptions of the aforementioned corridors are provided in **Section 4: Existing Conditions** section of the Plan. Along with these existing off-road corridors, the Town could be well served by additional pedestrian linkage. There are a number of opportunities for such corridors.

The potential for a short but useful connection runs from the **Gardner-Webb University trail system to the Broyhill Adventure Course.** The University trail system intersects one of the Town's sanitary sewer lines along the western side of Lake Hollifield. The sewer line runs west to cross Stadium Drive. Barely 150 yards away is the Broyhill Adventure Course. A connection between the two could run along the sewer easement or along the stream that runs from the base of the Lake.

Boiling Springs has the potential for a functioning **southern greenway belt** within a ten-minute walk of the Center. This corridor would cross only one existing road, South Main Street, near the southwest corner of the Boiling Springs Baptist Church property. The Church has expressed a desire to build trails throughout its property and make them available for public use. From the southeastern end of the Church parcel, opportunity for a greenway follows the utility corridor adjacent to the north side of the South Glenn neighborhood, to reach Boiling Springs Elementary and Brookview. Highland Pines could access the path once a safe crossing is established across Patrick Avenue. The corridor would provide much needed additional linkage to the school from complimentary residential and institutional uses. This corridor would be required to cross three additional properties, but these downtown parcels range from 9 to 39 acres and may likely, therefore, be redeveloped at some point in the foreseeable future. Extending the corridor eastward along the creek at the north end of Brookview subdivision, the trail could then turn north through two other large parcels and connect to the proposed YMCA facility.



Proposed Boiling Springs South Trail

Westward from Boiling Springs Baptist Church, the southern greenway would cross South Main Street between Chestnut and Flint Hill Church Road, run south a short distance through University property and then connect to the existing sanitary sewer corridor.

Were the connections established as described above, Boiling Springs would offer its residents a single, uninterrupted greenway corridor along its southern side from the proposed YMCA near the eastern gateway of the Town, to the Waste Water Treatment Plant at Sandy Run Creek. The total distance of this corridor would run a total distance of nearly five miles.

A short spur route from this corridor could then run along the (unnamed) creek and extend to Broyhill Adventure Course. This spur would cross Stadium Drive, connecting the greenway to an existing on-road running circuit. The greenway belt, easily accessible from the Town Center, would connect major recreational facilities, an elementary school, a major church facility, a number of residential communities, some large, centrally located undeveloped parcels, the University sports fields and observatory, and an existing three-mile corridor already in popular use.

Off-road Focus Areas

- **Gardner-Webb University Trails** - This dense network is well worn with student, faculty and visitor traffic. This trail system is described in the **Current Conditions** section.
- **Boiling Springs Baptist Church** – Opportunities abound throughout the 35-acre parcel for trail spurs that would weave throughout the property, connecting the Church, sports fields, a school, and a church camp facility.
- **Large, undeveloped parcels –** Much of the incorporated area of the Town is still underdeveloped. Such large parcels particularly in the southeast, southwest and northwest quadrants of Town, will face increasing development pressure as the Town grows. Herein lies enormous opportunity for the Town to shape its future.

Origin-Destination Points

1. Gardner-Webb University
2. Town Center – College and Main
3. Ingles shopping area
4. Boiling Springs Elementary School
5. Crawley Hospital
6. Town Hall
7. Residential subdivisions

Residential communities in need of safe pedestrian connectivity include:

1. Brookview
2. Deer Run
3. Hawks Ridge
4. Highland Pines
5. High Point
6. Homestead Acres
7. Hunters Point
8. Phillips Village
9. Ramsgate
10. South Glenn
11. Spring Forest
12. West Lake

Target Populations

1. **University students living on campus or in-town (non-commuting)** As a significantly large percentage of the Town's population, the needs of Gardner-Webb students deserve thorough consideration in the overall pedestrian strategies for the Town.
2. **Elementary school youth** – Children and young adults are often unduly disadvantaged by development patterns that make driving indispensable. Currently very few pedestrian connections serve Boiling Springs elementary schools.
3. **Elderly** – When people reach an age at which they can no longer drive automobiles, they find they have suddenly lost a profound degree of their independence. Such loss is often accompanied by decreased social and mental stimulation, sense of well being, and overall quality of life. Sidewalks, benches and other pedestrian amenities allow the elderly greater freedom and access to needs, and can encourage them to exercise.
4. **Physically impaired students and residents –** With the special programs offered through the University, Boiling Springs is home to a high percentage of the physically impaired. Pedestrian improvements like accessible sidewalks are of particular importance to mobility-impaired individuals who require smooth and even ground surfaces. Audible crosswalks provide navigational aids and make street crossings much more feasible and safe.
5. **Runners –** As a University Town, Boiling Springs has a large share of runners. Many use existing roads as part of their normal circuit. However, most on-road routes presently offer little or no separation to protect runners from vehicles.
6. **Neighborhood walkers** – People who walk for social or recreational reasons deserve a safe and pleasing pedestrian environment. Greater street and trail connectivity would also mean greater variety of routes for these walkers.
7. **Businesses** – Potential customers tend to linger in areas that are attractive and inviting to pedestrians. Those who may have intended to just pick up a cup of coffee may find themselves enjoying a leisurely walk and eyeing the storefront windows.

Unique Opportunities

The Boiling Springs community is beginning to experience rapid growth. From a pedestrian point of view, this fact carries with it both a positive and negative aspect. With increased demand for development, the Town is now in position to raise its standards for development projects, requiring greater investment from the developers. Such standards can go beyond

requiring sidewalks, to address broader issues such as street patterns, greenway trails, street trees, various sidewalk amenities, etc. However, with increased growth, comes the need to protect the Town's current charm and the civic assets that presently contribute to the pedestrian nature of the Town.

Some of the features that currently help make Boiling Springs pleasant to walk in are obvious. Sidewalks line the main streets in the Town center. Awnings shade many building entrances. Street trees dot the downtown pedestrian ways adding shade, beauty, separation from vehicles, and a sense of pedestrian scale. Flags and flower baskets brighten the downtown and give a sense of civic pride and identity. Trashcans provide a convenient and encouraging way to help keep the Town clean.

Other elements of pedestrian-friendly design may be less obvious but have an even more profound impact on making a town more walkable. Boiling Springs has a number of these important pedestrian-oriented assets. These features deserve the spotlight in order that their value can be more clearly understood to the end that they will be preserved, enhanced and drawn upon as the Town continues to develop.

1. **Centralized compact town core**
   Boiling Springs has the benefit of a fairly compact urban form, centered at the crossroads of Main and College. The majority of the Town's key civic buildings and businesses, as well as many residential neighborhoods are within an easy five-minute walking distance of the Town center.

2. **Large, undeveloped parcels in the downtown area**
   Within the Town's core area many large tracts remain undeveloped. This presents an enormous opportunity for the Town to shape its future character in its most critical area.

3. **Existing road alignments favorable to completing a downtown grid**
   While Main Street and College Avenue provide the primary routes through Town, these busy roads will function best in conjunction with a viable network of secondary streets. Such a grid of streets will relieve congestion along the main streets, give pedestrians more choices for walking routes, and provide additional opportunity for development. Currently the beginnings of such a network exist throughout the central core of the Town.

4. **Existing road alignments favorable to bypass opportunities**
   Though no bypasses are currently indicated by signage for through traffic, opportunity exists for such, particularly for Highway 150 traffic. Current candidate roads for bypasses include Patrick Avenue, Skinner Road, and West Homestead Avenue. Other future bypass opportunities are indicated in the Town's 1997 Thoroughfare Plan.

5. **University setting**
   Gardner-Webb University serves as a cultural hub for the Town and the region itself. The institution hosts numerous events and provides a setting that is pedestrian in

both scale and character. Its students fill the community with a large pedestrian-oriented population. And the Campus itself features extensive trails and pedestrian destinations.

6. **Nearby greenway**
   Broad River Greenway is only three miles from the center of Town. See the earlier description under **Off Road Pedestrian Corridors**.

7. **Sanitary sewer easements**
   This utility corridor just south of the University currently provides runners with a lengthy, off-road shaded route. Despite an uneven surface and poor visibility, this running route is regularly used.

Broad River Greenway

8. **Existing roadside running circuits**
   Despite unsafe conditions, a number of functioning and popular on-road circuit routes already exist in Boiling Springs as noted in the earlier **On-road Corridors** section.

9. **Moderate topography**
   Though close to the mountains, most of the Town enjoys a gentle rolling topography and presents very little hardship for average walkers.

10. **Relatively few large parking lots**
    Unlike many small suburban towns, where strip development shopping centers with "seas of asphalt" may run for miles unchecked, Boiling Springs currently has very few large, unbroken expanses of asphalt to detract from its charm and the quality of its pedestrian experience.

Relevant Issues and Summary of Needs

The factors that determine overall pedestrian quality of life for a community are numerous and interwoven. But in order to make conscious improvements to pedestrian conditions, the individual component issues must be identified and understood. Solving complex pedestrian issues requires an understanding of the major trends that led to current conditions, and that will continue to shape the future. The following represents a summarization of issues and needs previously detailed that are addressed by the Boiling Springs Pedestrian Plan Recommendations.

1. **Current development trends**

Development is coming to the Town at an increasing rate. What was once a sleepy college town is rapidly transforming into a bustling University center. With current growth rates continuing, development pressures will also rise, making the sale of larger tracts in town increasingly more attractive. Large undeveloped or redevelopable tracts in Town need more focused planning.

Much of the recent growth has been residential, in the form of new subdivisions, primarily on the east and north sides of Town. Though some pedestrian amenities do exist within these subdivisions – primarily in the form of sidewalks – larger issues of pedestrian connectivity to the rest of the Town are not being adequately addressed. With current patterns of development, land use types are becoming increasingly isolated, making it more difficult, if not impossible, for people to safely and conveniently walk to popular destination points and acquire basic needs.

2. Current development policy

Land use plans, policies, and ordinances, which are the Town's primary tools for development, are not fully consistent with and do not explicitly support the Town's pedestrian vision. In some cases they may even work against it. Future patterns of development in Boiling Springs will follow the guidelines set forth in these documents. If Boiling Springs is to become a town more attractive to and safer for pedestrians, and less congested with vehicles, current development policy must be carefully scrutinized and amended with these goals in mind.

3. Street Connectivity

The street network of Boiling Springs is largely underdeveloped. While the current downtown road network offers opportunities for connectivity, it is not currently connective. Low connectivity causes a channeling of vehicular traffic into the relatively few roads that do connect within the downtown area. This not only increases vehicular congestion, but also leads to greater pedestrian-vehicular conflict as these corridors are shared by a majority of pedestrians. Low street connectivity further decreases pedestrian friendliness by limiting the choices of routes for pedestrians. When there are few direct routes, short distances from point A to B (as the crow flies) can become lengthy treks.

4. Vehicular traffic

Unsafe and congested traffic conditions are an ever-growing problem in Boiling Springs. The Town's busiest pedestrian corridor is also its most heavily trafficked by cars and trucks, including heavy industrial trucks. The current NCDOT Thoroughfare Plan recognizes this problem and suggests various road-widening strategies to increase traffic flow. However, while increasing the width and number of travel lanes may temporarily decrease congestion, such conditions will encourage increased vehicular speeds and cut through traffic. This would only serve to worsen the pedestrian character of the Town, and make walking a less viable alternative.

5. Current Pedestrian Facilities

At current user levels, there are simply not enough pedestrian facilities. Sidewalks are needed to accommodate pedestrian traffic in many corridors throughout town

where they are currently not available. Off-road paths and trails are inadequate in terms of both quantity and quality.

6. **Available Parking**
   One complaint often heard in Boiling Springs is the lack of convenient parking locations. The need for parking can actually influence the number of cars on the streets, particularly in a relatively compact town like Boiling Springs. Parking is one of the common inconveniences of driving. If parking is available and convenient, some people are more likely to drive to nearby destinations they could otherwise walk to. A number of those surveyed in this pedestrian study stated they would choose to drive more often in Boiling Springs if parking were more conveniently located. This begs the question: will more parking increase vehicular congestion in Boiling Springs?

7. **Available funds**
   Pedestrian improvements like sidewalks and street trees cost money. But many other important infrastructure needs compete for local tax revenue as well. However, specific funding sources are available that are targeted solely at pedestrian streetscape improvements. Also, the cost of many pedestrian improvements could be absorbed by private development in the Town as that development occurs. The funding question relates directly to how high a standard the Town is willing to require of new development within the Town.

8. **Familiarity with choices in urban form**
   Many people are simply unfamiliar with various forms a community's development can potentially take or how those particular forms may potentially encourage or discourage pedestrian life. People who have never personally experienced otherwise often assume the absolute necessity of automobiles for all facets of modern community life. Many citizens are also unfamiliar with how particular development patterns come about, and underestimate the power their community has to shape its own future development. It is the intention of this Pedestrian Plan to convey these options in urban form and describe the means of improving pedestrian conditions in Boiling Springs, and with those improvements, to see the increased civic and economic vitality of the Town itself.

PART 3: PLAN 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 pedestrian barriers and constraints within current conditions
3. Identify and address 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, and so ensure that future development supports pedestrian travel as a practical mode of transportation

While many towns take the first approach, Boiling Springs has indicated their commitment to finding ways to integrate pedestrian needs into their comprehensive planning efforts through this Pedestrian Plan process. In this manner, both current and future pedestrian needs are addressed. Additionally, tools are put into place to ensure that future development considers the pedestrian. Likewise, the developing pedestrian system will work toward the overall vision and goals of the Town: a small town where walking is not only a viable option but often the preferred way of getting to destination points, and a charming community where children, the elderly, the disabled, and everyone else can safely walk and meet on the sidewalks.

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.

This portion of the Plan begins by addressing how that integration of land use and transportation takes place, in the **Recommended Policies, Programs, and Ordinance Modifications** section. The "fixes" recommended in this section all fall under the headings of "planning" or "language," and a table shows what language can be used to accomplish the Town's goals. The next section, **Project Recommendations and Implementation Strategy**, addresses current and expected future needs in Boiling Springs, and takes on those existing issues that make pedestrian travel difficult. These fixes include some planning, but also facility construction or modification.

Section 7:
Recommended Policies, Programs, and Ordinance Modifications

Boiling Springs will find serving pedestrian needs easier if plans, ordinances and policies are coordinated and consistent regarding pedestrian travel. Furthermore, they will find that facilities receive greater utilization if certain programs are in place to support pedestrian travel as a mode of transportation. The following recommendations address the policies and programs that should be amended to integrate pedestrian mobility into the land use and transportation systems, so as to promote maximum use and benefit:

1. **Engage in community planning for infill of large, potentially re-developable parcels in Town.**

Larger parcels are shown in green. Many within Town limits have high redevelopment potential.

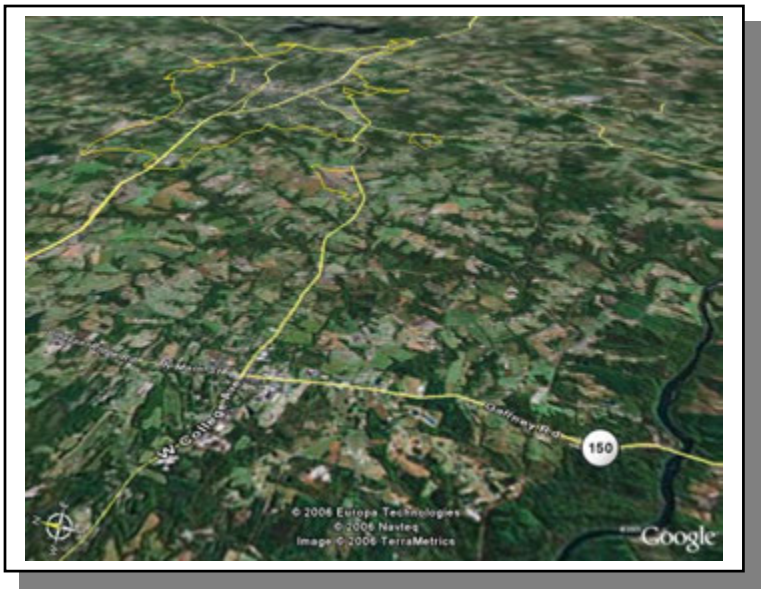
Serious discussions at the community level should determine the extent to which mixed-use infill development on large in-Town parcels should be encouraged, and how much street connectivity and pedestrian-friendly actions should be promoted in that development. These discussions should occur now, before these properties are developed, so that pedestrian facilities can be included in planning (because they are very difficult to successfully retrofit). The Town's current "Traditional Neighborhood Development" option provides an excellent template for creating pedestrian-oriented neighborhoods, and should be strongly considered for these areas. Many of these large, potentially developable parcels are zoned R-15 (3 dwelling units an acre). This density, with sidewalks and trees, can still support walking as a means of transportation, but even slightly greater density (R-10, for example) may be better. As noted previously, widely spaced and dispersed uses tend to discourage walking as a form of transportation between them, no matter how nice the sidewalks and trails are. And if facilities aren't used, any jurisdiction—federal, state, or local—has a hard time justifying a commitment of money to them.

These discussions should lead to amendment of any relevant zoning or other regulations and their attendant maps. Relevant implementation strategies for this recommendation include:

- Activate the Pedestrian Needs Committee (see Item 4).
- Engage the Planning Commission in discussions regarding these topics.
- Amend the Land Use Plan and related regulatory documents as needed to incorporate the changes recommended (see Item 6).

2. Work with Cleveland County on areas outside Boiling Springs's ETJ.

It will be important to track and discuss the impacts of development planned for or occurring immediately outside the Boiling Springs ETJ, in light of Boiling Springs' articulated vision.



Boiling Springs can determine what happens within its corporate limits and ETJ, but not what happens just over the line in Cleveland County's zoning jurisdiction. Cleveland County's land use plan articulates the County's desire to preserve open space and scenic rural areas (in which Boiling Springs is located) by working with the towns to create vibrant town centers of mixed and multiple uses—in other words, preserve rural areas by making cities and towns a very attractive place to live. These visions mesh extremely well and support Boiling Springs's interest in creating a good pedestrian environment to serve as a local transportation alternative. The County's plan also indicates a desire to develop additional commercial areas near the airport just to the east of Boiling Springs. 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, because concentrating development in or outside the ETJ will have a real impact on the use of pedestrian facilities as a viable transportation mode.

The primary implementation strategies for this recommendation include the use of the Pedestrian Needs Committee to monitor development, and frequent communication with the Cleveland County Planning Department, Planning Board, and the Parks and Recreation staff. The County's plan includes an objective related to coordinating planning with the Towns, through the Cleveland Association of Government Officials (CAGO) and other means, and it would be wise for Boiling Springs to use this avenue to suggest coordination. Another Plan objective relates to the development of an updated County Recreation Master Plan, which surely has relevance for its approach to greenway systems. It is also important that the Town coordinate with other organizations, such as the Broad River Council, on greenways and other matters where connectivity across jurisdictional boundaries is important.

3. **Address consistent Transportation Planning.**
Work with NCDOT and the Lake Norman RPO to ensure that future roadway plans, projects, and priorities are consistent with the adopted Pedestrian Plan (or that the Pedestrian Plan is amended if needed). Include the pedestrian plan as an expansion of the Comprehensive Transportation Plan as that is updated in 2007-2008.

NC planning law now calls for communities with planning documents to review those documents and address, in plans reviews and rezonings, issues of consistency of the proposals with the planning documents. For this to work, the documents must be internally consistent. While such a process may seem burdensome, it also makes the planning process more predictable and should lead to greater adherence and success in carrying out long-term goals for community growth.

The primary implementation strategy for this recommendation is ensuring adequate distribution and regular review of the Plan, and staff or Board members referring to it in the decision-making process.

4. **Form a Pedestrian Needs Committee.**
The PNC should represent a wide variety of pedestrian interests and populations in the Town. Various areas of expertise represented by the PNC should include:

- Transportation
- Commerce
- Health
- Safety
- Education
- Aesthetics
- Environment
- Engineering and Design

It is also important that the PNC include representation from target groups, such as the senior community, and students at GWU. The purpose of the PNC is to ensure that the Pedestrian Plan stays in the forefront of public awareness, and that it is implemented and updated as needed to reflect conditions and pedestrian needs. The PNC can be an important avenue for integrating pedestrian needs with other planning processes. The PNC can serve as advocate, monitor, facilitator, and educator, as well as ensure that emerging public needs are addressed in the planning process. The implementation strategy for this recommendation involves action by the Boiling Springs Town Council to appoint members and to charge them regarding Plan follow-up. To be most effective, the PNC should exist as a subcommittee of the Town Planning Board.

5. **Coordinate with Boiling Springs community stakeholders.**
The PNC can help facilitate an ongoing dialogue amongst the community about pedestrian issues, like safety concerns, particularly with such stakeholder groups as the Police Department, the schools, Gardner-Webb, and the senior community. The PNC can also help orchestrate the efforts of these various groups and organizations in their own pedestrian-related programs.

The Police Department can participate in such efforts by distributing materials through their Community Policing program, the Schools by distributing materials to their students and parents, and Gardner-Webb as part of its orientation to new and returning students. It is particularly important that the PNC and the Town work with the

University's NOEL program whenever a change is being implemented that will impact those students, such as the installation of audible signals, changes in paving at crosswalks, etc.

It is also important that changes in facilities, upcoming construction, etc., be announced to all Town residents. Flyers can be sent home in utility bills, but equally valuable will be the posting of information on the Town's website, and at common gathering places such as the Post Office, Ingles, CVS, the banks, and local restaurants.

6. Enact policy and ordinance changes

The table, which follows, summarizes specific policy and ordinance modifications that would positively impact pedestrian facility implementation or utilization.

Boiling Springs Pedestrian Plan

Recommended Policies and Ordinance Modifications

Issues affecting walkability	**Current Ordinance**	**Concern With Current Regulations**	**Revision Recommended**
1. Street connectivity	**SUBDIVISION ORDINANCE-** Section 150.030 (g) states that "cul de sacs shall not be used to avoid connections with an existing street…" No other mentions are made in the Ordinance regarding connectivity.	There is no mandate for connectivity in Boiling Springs' regulations. Subdivisions (particularly ones in previously undeveloped areas, or "greenfields") are not required to connect to existing streets or to have connections with streets in adjoining lots.	**1. Mandating that new subdivisions have at least one stub to adjoining properties**. This would require either a connection to an existing street or providing a stub for an adjoining (future) development to hook into the subdivision. **2. Limit the use of cul-de-sacs to promote internal connectivity within the subdivision**. This could be accomplished by a). Limiting the percentage of streets within a subdivision that can be cul-de-sacs; b). Institute a connectivity ratio for all subdivisions which uses an established mathematical standard for street connections both within the subdivision and connections to other streets and properties at the subdivision periphery.
2. Cul-de-sac street length	**SUBDIVISION ORDINANCE**- Section 150.032(g) allows for cul-de-sacs to be upwards of 800 foot in length.	As most residential zones in Boiling Springs have a minimum lot width of 80 feet, this could allow for up to 20 lots to be located on a cul-de-sac. This defeats the purpose of having cul-de-sacs as being "short streets."	Amend Section 150.032(g) to reduce cul-de-sac lengths. One suggestion is to reduce the cul-de-sac maximum length to 320 feet. This would allow up to 8 lots to front on a cul-de-sac.
3. Block length	**SUBDIVISION ORDINANCE**- Section 150.032(b) allows for blocks to run uninterrupted for up to 1,320 feet (1/4 mile). This conflicts with Section 150.032(G) of the Subdivision Ordinance which references an 800 foot maximum block length.	1. Inconsistency in ordinance needs to be addressed. 2. Long block lengths allow for cars to travel at fast speeds and hinder pedestrian accessibility. 3. Long blocks present pedestrians with fewer route alternatives.	Amend Section 150.032(b) to allow blocks to be no greater than 800 feet in length.

Issues affecting walkability	**Current Ordinance**	**Concern With Current Regulations**	**Revision Recommended**
4. Sidewalks: location, condition, connections	**SUBDIVISION ORDINANCE-** Section 150.039 states that sidewalks in subdivisions are not required. **TOWN CONSTRUCTION STANDARDS-** Sections 4.01 and 4.06(b) state that sidewalks are required in "all projects where curb and gutter are required" and "shall be installed as per Standard Details 3.01 and 3.02." Unfortunately, Sections 3.01 and 3.02 give no further guidance as to sidewalk standards	There is an obvious conflict in Town regulations pertaining to sidewalks and this conflict needs to be addresssed. To promote pedestrian-friendly developments, sidewalks should be required in new subdivisions. Furthermore, sidewalks should meet all applicable ADA standards.	**Amend the Subdivision Ordinance to state that sidewalks shall be required in all new subdivisions** both internally (within the subdivision) and on any frontage roads that the subdivision abuts. **There has been a trend in recent years to require sidewalks on both sides of each street**. Some ordinances waive the sidewalk requirement on short (i.e., 250 feet or less) cul-de-sac blocks. There is also a growing trend to mandate green strips between the sidewalk and the street edge. To make the greenstrip viable in both looks and practicality, many ordinances call for the strip to be a minimum of four feet in width. **The Town's development ordinances need to be made clear as to where sidewalks are required in non-subdivision developments.** This is especially critical for non-residential uses and along major highways (e.g., NC 150). **If sidewalk standards differ from those that are required by NCDOT, they need to be stated.**
5. Greenways, Trails & Open Space	The Town's Zoning and Subdivision Regulations make no mention with respect to greenways, nor to the provision of open space in developments.	The Town has no mechanism in place to secure right-of-way for off-road pedestrian corridors or destination points within town limits, or to connect to destinations just outside of Town, such as the Broad River Greenway.	Amend the Subdivision Ordinance to require the dedication of open space to secure land for greenway (and other open space) development or usage. NCGS 160A-372 gives NC municipalities the authority to require this as part of a subdivision development. These areas should be open to the general public and fall under municipal responsibility for construction, maintenance, security and liability.
6. Crosswalks	The Town's Zoning and Subdivision Regulations do not mandate crosswalks on any public streets to facilitate pedestrian crossings.	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. While there are some crosswalks found in Boiling Springs, their numbers are inadequate for current or projected pedestrian needs.	**1. Use Town funds** to implement proposed crosswalks and improve existing crosswalks as shown in this Pedestrian Plan**.** In this Plan, crosswalks are proposed at strategic locations where increased pedestrian activity, linked to existing or proposed sidewalks, potentially comes into the most conflict with vehicular traffic. **2. Amend the Town's land use regulations** to require crosswalks along principal streets within subdivisions (unless the block length is short enough (less than 500 feet) that a crosswalk would not be required. **3. Amend the Town's zoning regulations** to require that all uses that generate substantial amount of pedestrian traffic (i.e., schools, library, etc.) be subject to a conditional use. A condition that could be placed on such uses is the installation of crosswalks on major streets that abut such facilities.

Issues affecting walkability	**Current Ordinance**	**Concern With Current Regulations**	**Revision Recommended**
7. Off-street Parking Requirements	**ZONING ORDINANCE** Section 151.081 requires all uses in the B-1 zoning district (which is designed to accommodate the central business district) are required to provide off-street parking to the same degree as other zoning districts. The section also requires most retail uses, with only a few exceptions to provide one space per 200 square feet of gross floor area. The ordinance does not mandate that parking lots be paved.	1. Requiring off-street parking for all uses in a downtown inadvertantly 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. Most zoning ordinances either waive or significantly limit the amount of off-street parking required in a downtown setting. 2. There has been a trend to lower the number of required parking spaces for retail uses to avoid the "sea of asphalt" phenomenon from occurring. The one space/200 square foot standard (which the ordinance calls for) has been found in most instances to be excessive. 3. Unpaved parking lots do not easily accommodate pedestrians.	**1.** Waive the requirements for off-street parking in the B-1 district (or if the B-1 district contains parcels that are not in the CBD, create a separate zoning district specifically for downtown Boiling Springs.) The only uses that should be required to have a certain amount of off-street parking are residential uses located in the CBD (and the ordinance would have to be modified to allow to occur.) **2.** Increase the off-street parking ratio to take into account modern trends. Many ordinances now have a 1 space/300 sq. ft. gfa parking standard. **3.** Require all required off-street parking areas to be paved. **4.** Adjust parking regulations to accommodate bike racks.
8. Mixed Land Uses	**ZONING ORDINANCE** Mixed use opportunities are limited in Boiling Springs. Zoning regulations do not allow for the development of residential uses in non-residential districts. Thus, uses for the most part are segregated.	The segregation of land uses does not encourage a pedestrian-friendly environment. The physical distance between uses presents fewer opportunities for pedestrians to walk from one use to another (i.e. "being able to walk to the corner store.") Such an arrangement more often necessitate the use of a car. All too often, such scenarios lend themselves to "strip commercial" development along major highways, which are geared for the motorist as opposed to the pedestrian.	Re-examine the table of permitted uses contained in the Boiling Springs' Zoning Ordinance. Simple changes that could be made include: **1.** Allowing residential uses in certain non-residential zones; **2.** Allowing for mixed residential-commercial developments. **3.** Allowing for planned developments to occur in a variety of residential and non-residential zoning districts and allow these uses to have commercial components.
9. Building Setbacks	**ZONING ORDINANCE** All zoning districts require a minimum front yard setback of 20 feet.	This requirement is not practical in the B-1 Business District downtown. Most downtown buildings have no setbacks. Moreover, current regulations do not establish maximum setbacks (or "build-to" lines.) This allows retailers to place their off-street parking entirely in the front yard thereby causing the front yards to be very deep. Such an arrangement requires pedestrians to walk (and navigate) long distances through parked cars (and moving ones!) in parking lots.	Eliminate the off-street parking requirement in the B-1 district. Establish "build-to" lines or maximum front yard setbacks in the other commercial-oriented non-residential zoning districts (O and CS, and B-2 districts) or establish guidelines as to how much of the required off-street parking shall be allowed to be placed in the front yard.

Section 8: Project Recommendations and Implementation Strategy

Before describing individual projects in detail, this section of the Plan is provided as a guide to understanding issues involved in various types of pedestrian projects, as well as strategies that will prove useful in getting facilities built and maintained.

The general recommendations described below are categorical and are not presented here in an order of priority. Individual projects within those categories are described in detail in the **Section 9: 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.

The project and strategy recommendations are categorized as either "Short-Term" or "Longer-Term" based on the following criteria:

Short-term projects
- 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

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

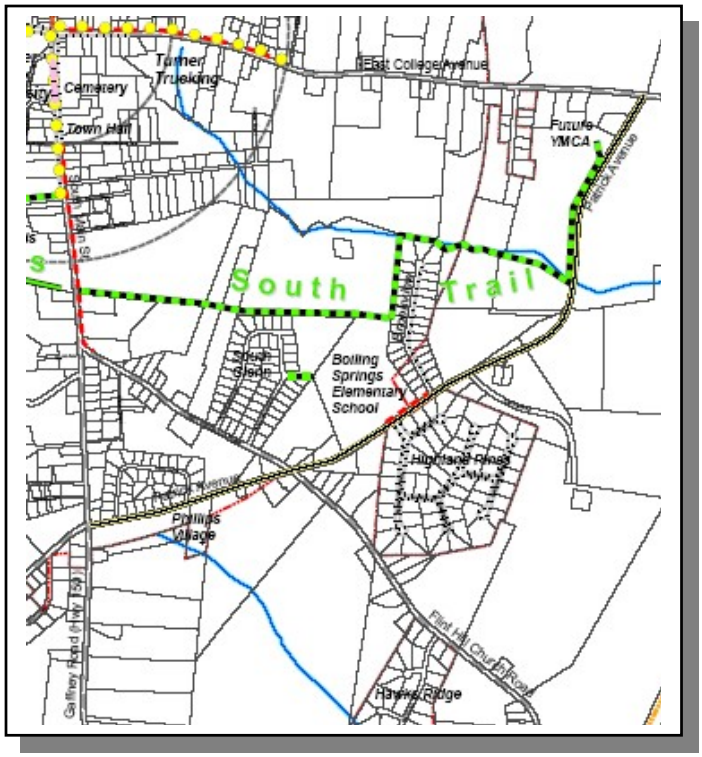
Longer-term projects
- May involve private development and thus public-private cooperation
- May require additional right-of-way or easement acquisition
- May fall within NCDOT right-of-way
- May require NCDOT funding, engineering and construction
- May require ordinance modification

Project Recommendations

Short-term:

- **Develop bypass alternatives for through traffic.**
  Immediate improvement in vehicular and pedestrian conditions in the downtown area of Boiling Springs could be realized with a reduction in the amount of highway through traffic utilizing East College Avenue and South Main Street. According to the NCDOT 1997 Thoroughfare Plan, both South Main and East College will exceed vehicular capacity by the year 2020. These roads make up part of Highway 150, which serves as the primary route between Shelby to Gaffney. The highway currently bisects both the Town and the University. However, current conditions also allow for a bypass with very few improvements required.

Patrick Avenue provides a southeast loop around Town as it connects East College Avenue, at a point approximately 1.25 miles east of the Town Center, to South Main Street, at a point approximately 1 mile south of the Center. This bypass would benefit both driver and pedestrian. Drivers who utilize Hwy 150 through Boiling Springs could take the Patrick Avenue bypass and reduce their route through Town from 2.25 miles to approximately 1.5 miles. For pedestrians crossing or traveling along these primary pedestrian spines of East College or South Main, vehicular traffic could be significantly reduced.



Potential NC 150 bypass on Patrick Avenue

The Thoroughfare Plan 2020 projections for Patrick Avenue show a capacity of 6400 average trips daily (ADT), in its present 2-lane configuration, but the trips projected number only 1900. Accordingly, from a capacity standpoint, Patrick Avenue's current configuration could readily accommodate projected through traffic.

However, a significant factor affecting peak traffic demand on Patrick Avenue is the standing cars at Boiling Springs Elementary School during pick up and drop off times for students. Since a high proportion of the student population is currently dependent on automobile transport, standing traffic queues on this section of Patrick Avenue would hinder proposed through traffic during these peak times.

Solutions for potential conflict between school traffic and bypass traffic could include a combination of the following options:

a. Advise bypass use only during non-peak hours for school pick/drop-off.
b. Construct a stacking lane for the school alongside Patrick Avenue (this may require additional right of way and be less feasible).
c. Develop greater pedestrian access to the school, by linking the school with at least Highland Pines, Brookview, and South Glenn.
d. Organize an informal voluntary vanpool system for students by neighborhood

e. Construct a stacking drive within school property. This would require funding from the school system and planning/design coordination so as not to impede pedestrian access or safety.

Aside from any actions taken to resolve the above, implementation of the Patrick Avenue bypass would minimally require only the installation of signage. Appropriate bypass signage would be placed along Hwy 150, at and prior to its two intersections with Patrick Avenue, according to NCDOT specifications and Manual of Uniform Traffic Control Devices (MUTCD) standards.

- **Improve conditions at the intersection of College and Main.**

The Thoroughfare Plan proposes improvements for the intersection of College Avenue and Main Street. To date, none of the proposed improvements have been made. Among the improvements mentioned are:

- Adjust or replace existing signalization to meet pedestrian needs.
- Create exclusive turn lanes with complementary signalization.
- Remove a portion of on-street parking to allow for turn lanes.

Though the removal of some length of parallel parking near this intersection may be necessary for the addition of turn lanes, the number removed should be kept to a minimum to retain the pedestrian and economic benefits of this arrangement. (For more about parking, see **Appendix: Facility Standards and Guidelines,** Item 7.) It is important to remember that the Thoroughfare Plan focused on those improvements needed to support vehicular traffic, and that the Town will need to consider the vehicle-pedestrian trade-offs particularly at this main downtown intersection.

Additional and more immediate improvements for the intersection recommended in this Plan include:

1. Improve the two existing crosswalks and provide crosswalks on the east and north side of the intersection.
2. Install corresponding crosswalk signage to alert motorists.

- **Improve existing crosswalks in accordance with Plan Priorities.**

Immediate attention should be given to the alignment and condition of the main pedestrian crosswalks at the intersection of Main Street and College, and on South Main Street linking the Gardner Webb Campus with the business district. See other individual projects in **Section 9: Project Identification and Priority List.**

- **Construct sidewalks and improve sidewalk conditions along existing streets in accordance with the Plan's priorities.**

Sidewalk "conditions" refers to a variety of improvements including:

a. Changing pavement condition and type
b. Path width
c. Lighting
d. Drainage
e. Clearance from obstructions
f. ADA compliance
g. Planter islands
h. Landscaping

These improvements should be made with Powell Bill funds and as part of the Town's Capital Improvement Program over time. The Town Beautification Committee should be contacted regarding participation in landscaping projects. The Town may also want to consider an "Adopt a Sidewalk" program.

- **Improve existing trail conditions,**
  Trail "conditions" may include:
  a. Surface material
  b. Slope
  c. Drainage
  d. Lighting
  e. Clearance from obstructions
  f. Accessibility/ADA compliance
  g. Visibility

  As noted previously, an "Adopt a Trail" approach may be one way to accomplish this with public participation (which also may contribute to a sense of stewardship toward the trail).

Longer-term:

- **Construct additional pedestrian trails and supporting facilities through acquired easements.**
  New trail easements may be acquired through the subdivision process, as proposed in **Implementation Strategies Short Term Goals,** Item 3, or through 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

  It should be noted that although the term "trails" usually connotes a path used for recreation, in this Plan it 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.

- **Acquire right-of-way where needed.**
  In order to construct additional on-street pedestrian improvements (sidewalks, ramps, etc.), as recommended in **Project Identification and Priority List**, the Town must acquire the additional property required for the improvement or reach an agreement with the property owner. See the **Funding Strategies** section for various options of land acquisition and public-private partnerships.

- **Construct new crosswalks as recommended in Plan Priorities.**
  As stated above, individual projects are described in the **Project Identification and Priority List** of the Pedestrian Plan and are shown on the **Comprehensive System Map.**

- **Replace Post Office parking with a public square**

Current adverse traffic conditions at the intersection of Main and College are further aggravated by heavy visitor traffic to the Post Office located on the northwest corner. The single driveway to this on-site parking lot empties onto North Main Street barely 30 feet from the edge of the intersection.

In order to alleviate the vehicular traffic problem caused by Post Office traffic and enhance the pedestrian experience at this prominent intersection, this Plan proposes negotiating with the Post Office to remove the 6-space off-street parking lot and the replace the entrance drive with curb and gutter.

Current on-street parallel parking lines westbound West College, adjacent to the Post Office and inset from the travel lane. Sufficient space exists for additional inset on-street parallel parking along the southbound side of North Main Street. This arrangement would present considerably less vehicular conflict than the current driveway and off street lot, while providing adequate visitor parking for the facility. These alterations would require shifting the sidewalk along North Main closer to the buildings.

Removing the parking lot would also give the Town a unique opportunity to create a prominent public square at its central point of arrival, and in a space that enjoys a great diversity of adjacent civic and commercial uses. Complimenting the Gardner-Webb University gateway, directly across West College Avenue, this square would present an opportunity to signify the identity of the Town and provide a prominent public space for civic and cultural functions. For further information on the benefits and recommendations on public spaces, refer to the SEQL document on Urban Open Space in the **Recommended Policies, Programs, and ordinance Modifications** Section.

- **Realign South Main Street diagonal parking to parallel parking**

  On street parking, for the most part, should be maintained wherever possible; however, realignment of some existing facilities could create a safer and more pedestrian-friendly environment. See the **Facility Standards and Guidelines** section for standards and general comments regarding on street parking.

  The **Comprehensive System Map** depicts areas where parking facilities should be realigned or added. As existing diagonal parking is converted to parallel parking, the curb line can then be moved into additional the space available. This additional room will allow for wider planting strips and the addition of street trees, which enhance pedestrian facilities.

- **Complete the Town street grid in conjunction with new private subdivision development.**

  New street right-of-way may be acquired through the subdivision process according to the procedure outlined in the **Recommended Policies, Programs, and Ordinance Modifications** section of this Plan. The proposed conceptual street grid alignment for Boiling Springs central urban area is depicted on the **Comprehensive System Map.** The grid is designed to increase connectivity within the Town in order to:

a) Ease the vehicular traffic burden on existing streets by providing alternative routes
b) Provide a greater variety of pedestrian linkages throughout Town
c) Create opportunity for town growth, in a well-integrated mix of land uses according to traditional pedestrian-friendly principals
d) Increase economic opportunities within the Town Center

Individual projects are described in the **Project Identification and Priority List** of the Pedestrian Plan. All improvements should be constructed in accordance with the **Facility Standards and Guidelines** section.

- **Construct additional bypass roads.**
  The 1997 NCDOT Thoroughfare Plan describes a number of additional bypass opportunities, which would help relieve traffic demands along the central spine streets of Boiling Springs. While the Pedestrian Plan does not fully endorse all the recommendations of the Thoroughfare Plan, diverting through traffic and providing alternative routes for traffic intending not to stop in Town, would contribute to improving pedestrian conditions in the Town. The actual construction of new facilities may not be feasible in the foreseeable future due to budget constraints; however, the Town should consider steps that will preserve future potential bypass corridors from becoming overbuilt and thus not usable for this purpose.

Implementation Strategies

Specific strategies are listed below under the classifications of, again, Short-term and Longer-term. Each of these strategies has long-term benefits but Short-term strategies meet the most immediate needs, can be most readily addressed, and will beneficial to later steps of implementation.

Short-term:

- **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 contained in the Town Zoning Ordinance, Subdivision Ordinance and other related documents, to increase connectivity.**
  The character of Boiling Springs to this day remains largely rural in nature. Currently within the Town limits there are over two-dozen tracts exceeding ten acres, with no more than a single dwelling unit. These largely undeveloped parcels, zoned residential, are prime candidates for subdivision and redevelopment. If current Town ordinances are revised according to the Recommended Policies, Programs, and Ordinance Modifications section of this Plan, new streets and pedestrian trails will become available to the Town through the development process, with minimal cost to the Town. Refer to the Comprehensive System Map for conceptual street and trail alignment.

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

- **Initiate recommended enforcement, community awareness, incentive and safety and maintenance programs.**
  See the **Recommended Policies, Programs, and Ordinance Modifications** section in this Plan.

Longer-term:

- **Evaluate existing and ongoing pedestrian projects and strategies**
  See **Evaluation process** in this Plan.

- **Provide transit assistance to and from the Town Center and major pedestrian destinations.**
  Transit opportunities can reduce the overall amount of vehicular traffic on the road, while providing people opportunities to live with greater independence, particularly those who cannot drive.

- **Procure easements for new trails through ongoing parcel subdivision and redevelopment.**
  All proposed corridor locations are depicted on the **Comprehensive System Map**. Individual projects are described in the **Project Identification and Priority List**. See the **Recommended Policy, Programs, and Ordinance Modifications** section for recommended changes to existing ordinances in order to acquire easements.

Section 9: Project Identification and Priority List

Prioritizing projects is by nature a fluid process, dependent upon factors subject to change: individual parcel sales, development trends, employment opportunities, and traffic demands. However, despite fluctuations in local conditions, the community has expressed its resolve to turn its pedestrian vision, stated earlier in the Plan, into a reality. That vision requires that each project meet certain **goals**, expressed here as:

1. Decreasing vehicular traffic and congestion that present obstacles to pedestrian use
2. Greater pedestrian connectivity
3. Increased safety
4. Thorough accessibility to all potential user groups
5. Increased community identity, social interaction, and beautification
6. Positive environmental impact

In addition to meeting community goals, the 26 projects listed below are also weighted by the following **criteria**:

7. Physical/geographic constraints
8. Availability of right-of-way
9. Estimated project expense
10. Support by existing transportation plans and initiatives
11. Community-expressed support based on where people walk or would like to walk, particularly as a means of transportation between destination points.

See the **Project Recommendations and Implementation Strategy** section for background, justification and further explanation of each project. All improvements shall be 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.

<u>Proposed Projects</u> (in order of priority)

A. Patrick Avenue bypass

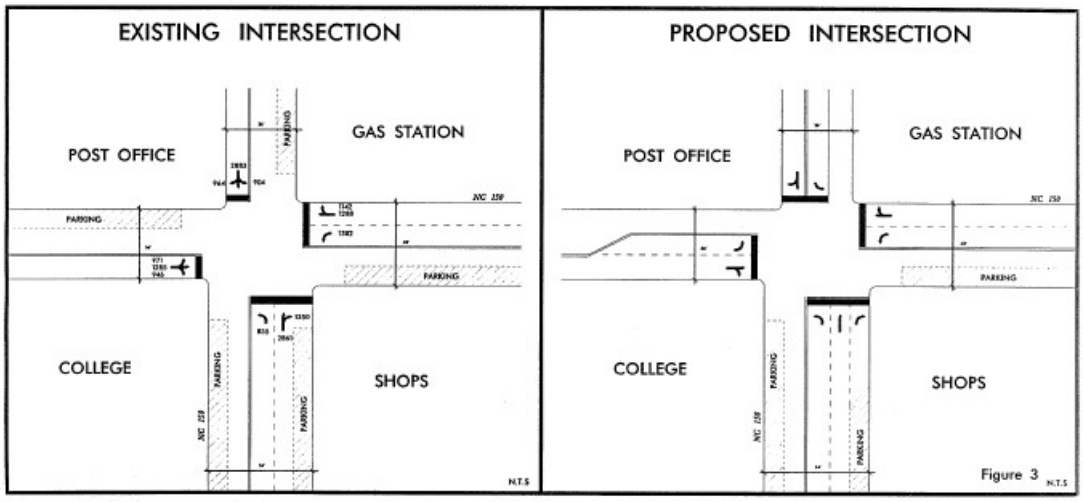
1) Arrange a forum to include the PNC, Boiling Springs Elementary School officials, PTA members, the Police Department, and other concerned parties, to determine viable options for alleviating school commuter peak traffic problems along Patrick Avenue.
2) Place bypass directional signage at the intersection of Patrick Avenue and South Main Street indicating the Boiling Springs bypass toward

Shelby. Incorporate with existing Boiling Springs Elementary School sign.

3) Place bypass directional signage at the intersection of Patrick Avenue and East College Avenue indicating the Boiling Springs bypass toward Gaffney, SC.
4) Place bypass approach signs prior to the above directional signs at recommended site distances.
5) Consider the following options for alleviating standing traffic on Patrick Avenue during peak commute times for Boiling Springs Elementary School and providing greater pedestrian access to the School:
   a) Install signage and striping to direct stacking traffic to use current center lane during peak student commute times.
   b) Construct additional stacking lane on school property between existing parking and Patrick Avenue.
   c) Develop greater pedestrian access to the school through off-road trails and crosswalk (See Projects **J**, **M**, **P** & **R**).
   d) Organize informal voluntary programs such as vanpools, Walk-to-School Days, etc. for students (See **Recommended Programs**).

B. College Avenue and Main Street intersection improvements

1) Implement realignment specified in the NCDOT 1997 Thoroughfare Plan for Boiling Springs, page 11, Figure 3.
   a) Create exclusive turn lanes with complementary signage and signalization.
   b) Remove the minimal number of on-street parallel parking spaces required to create the turn lanes specified.
2) Realign and improve overall conditions of the two existing crosswalk facilities (south and west sides) and provide crosswalks on the east and north side of the intersection.
3) Install crosswalk signalization with audible pedestrian activation mechanisms for all four street crossings.
4) Provide crosswalk-warning signage for motorists.



NCDOT 1997 Thoroughfare Plan for Boiling Springs, page 11, Figure 3.

C. Improved crosswalk across South Main Street at Quinn Circle

1) Install curb Neckdown on west side of South Main Street at south side of Quinn Circle (South) and choker directly opposite on the east side of South Main Street.
2) Restripe existing crosswalk.
3) Construct sidewalk connection to existing sidewalks on each side of South Main Street.
4) Install crosswalk signalization with audible pedestrian activation mechanism.
5) Provide crosswalk-warning signage.

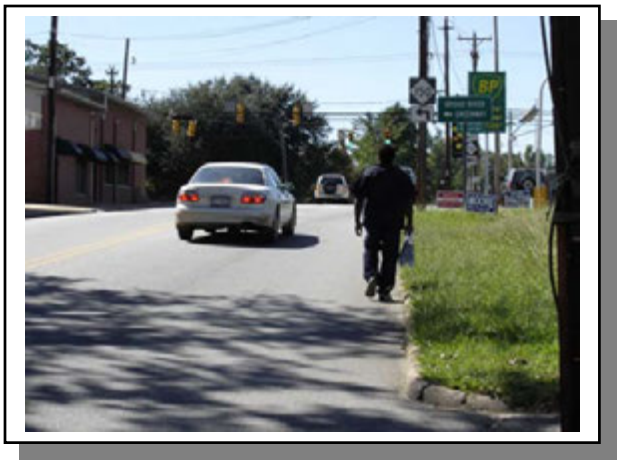
D. Spot improvements to existing University paths

1) Make needed repairs to existing paths in order to provide adequate pedestrian access to all University buildings.
2) Provide alternative ADA compliant paths where needed.
3) Establish ADA compliant path to University Commons pedestrian facilities.

E. Continue sidewalk along south side of West College Avenue

1) Construct sidewalk segment (0.6 miles) on south side of West College Avenue from existing sidewalk, 200 ft. east of Gardner-Webb Drive, to Creekside Drive.
2) Continue with roadside trail (750 ft.) to connect to existing sewer easement. Trail may be converted to sidewalk when future conditions warrant.
3) Create planter strip between new sidewalk and edge of curb.
4) Plant small maturing street trees in planting strip along entire length of new sidewalk. Alternate: Bury existing utility lines and plant large maturing trees.
5) Install decorative streetlights along entire length of new sidewalk and to intersection with Main Street.

F. New sidewalk along north side of East College Avenue



1) Construct sidewalk segment (0.4 miles) on north side of East College Avenue from Main Street intersection to Hillcrest Street.
2) Create planter strip between new sidewalk and edge of curb.
3) Plant small maturing street trees in planting strip along entire length of new sidewalk. Alternate: Bury existing utility lines and plant large maturing trees.

G. Sidewalk extension along east side of South Main Street

1) Construct sidewalk segment (0.45 miles) along east side of South Main Street from existing sidewalk at East Branch Avenue to Flint Hill Church Road.
2) Create planter strip between new sidewalk and edge of curb where right-of-way permits.
3) Plant small maturing street trees in planting strip along length of new sidewalk. Alternate: Bury existing utility lines and plant large maturing trees.

H. New sidewalk along east side of North Main Street

1) Adjust North Main Street alignment to create 12 ft. lane width to maximize pedestrian corridor in the right-of-way on both sides of the street.
2) Construct sidewalk segment (0.4 miles) from College Avenue intersection to Gordon Avenue.
3) Create planter strip between re-aligned sidewalk and edge of curb and with remaining pedestrian right-of-way.
4) Plant small maturing street trees in planting strip along length of new sidewalk. Alternate: Bury existing utility lines and plant large maturing trees.

I. New crosswalk across North Main Street at Bethel Avenue

1) Stripe crosswalk across North Main Street at the north side of Bethel Avenue.
2) Construct sidewalk connection to existing sidewalk on west side and proposed sidewalk on east side of North Main Street.
3) Install crosswalk signalization with audible pedestrian activation mechanism.
4) Provide crosswalk-warning signage.

J. New crosswalk across Patrick Avenue at Highland Pines Drive

1) Stripe crosswalk across Patrick Avenue at the south side of Highland Pines Drive.

2) Construct sidewalk connection to Boiling Springs Elementary School sidewalk and existing sidewalk on southwest side of Highland Pines Drive.
3) Construct pedestrian refuge median along crosswalk alignment in existing center lane.
4) Install crosswalk signalization with audible pedestrian activation mechanism.
5) Provide crosswalk-warning signage.

K. New trail along University side of Stadium Drive

1) Adjust Stadium Drive alignment to create 12 ft. lane widths.
2) Construct trail (0.94 miles) from South Main Street sidewalk to West College Avenue along north and east sides of Stadium Drive.
3) Create planter strip between new trail and edge of street.
4) Plant large maturing street trees in planting strip from South Main Street to existing tree line southwest of the Stadium (coordinate with **Project P**).
5) Install decorative streetlights in planting strip along entire length of Stadium Drive.

L. New traffic light and crosswalk at North Main Street and Homestead Avenue

1) Install traffic light and crosswalk signalization with audible pedestrian activation mechanism.
2) Provide warning signage.

M. Improved sidewalk along west side of North Main Street

3) Adjust curb along west side of North Main Street from West College Avenue to West Homestead Avenue to create 12-foot lane width to maximize pedestrian corridor in the right-of-way.
4) Realign existing sidewalk in order to create continuous 5-foot wide travel path in this segment free of obstructions (such as existing utility poles).
5) Create planter strip between re-aligned sidewalk and edge of curb in remaining pedestrian right-of-way.
6) Install decorative streetlights in planting strip.

N. New trail from South Glenn Drive to Boiling Springs Elementary School

1) Acquire trail right-of-way (or easement) between school property and east side of South Glenn Drive (.05 miles/265 ft.)
2) Construct trail to existing road in right-of-way and continue trail in school property to connect to existing pedestrian facilities.
3) Provide trail signage.

O. New crosswalk across East College Avenue at Fairview Street

1) Stripe crosswalk across East College Avenue at the west side of the Fairview Street intersection.

2) Install crosswalk signalization with audible pedestrian activation mechanism.
3) Provide crosswalk-warning signage.

P. New street lights along South Main Street and Stadium Drive

1) Install signature streetlights from along west side of South Main Street from West College Avenue to Stadium Drive.
2) Install decorative streetlights along the University side of Stadium Drive from South Main Street to West College Avenue (coordinate with **Stadium Drive Trail Project**).

Q. New trail from South Main Street to Boiling Springs Elementary School

1) Acquire trail right-of-way (or easement) from north boundary of school property through large private parcel north of South Glenn neighborhood along existing utility corridor (.31 miles). Alternate path: acquire trail right-of-way (or easement) along connecting parcel lines of two small residential lots along the northwest quadrant of South Glenn neighborhood and use South Glenn Drive to connect the two trails.
2) Acquire trail right-of-way (or easement) along existing utility corridor through two large private parcels to southeast corner of Boiling Springs Baptist Church property (.06 miles/330 ft.)
3) Coordinate with Boiling Springs Baptist Church to continue trail through church property to South Main Street. (.25 miles)
4) Construct trail in acquired right-of-way/easement, School property and Church property. Connect to existing pedestrian facilities of the School. Connect to existing Church pedestrian facilities and to proposed sidewalk at southeast corner of property at South Main Street.
5) Provide trail lighting.
6) Provide trail signage.

R. New trail from University path system to Broyhill Adventure Course

1) Determine closest, feasible trail alignment from University path around Lake Hollifield to Broyhill Adventure Course clearing.
2) Construct trail.
3) Provide trail signage.

S. New sidewalk from Boiling Springs Elementary School to Brookview neighborhood

1) Construct sidewalk along west side of Patrick Avenue from proposed crosswalk on Patrick Avenue to existing sidewalk in Brookview neighborhood.
2) Create planter strip between new sidewalk and edge of street.

3) Plant small maturing trees in planter strip

T. New Northwest Loop trail

1) Acquire right-of-way along south and east side of West Homestead Avenue from North Main Street to West College Avenue (1.2 miles).
2) Acquire right-of-way along north side of West College Avenue from West Homestead Avenue to Pinecrest Street (0.5 miles).
3) Construct roadside trail in acquired right-of-way and connect to existing sidewalk on North Main Street.
4) Provide trail signage.
5) Stripe crosswalk across West College Avenue at Pinecrest Street intersection.
6) Construct pedestrian refuge median in West College Avenue along crosswalk alignment in existing striped median.
7) Install crosswalk signalization with audible pedestrian activation mechanism.
8) Provide crosswalk-warning signage.
9) Trail may be converted to sidewalk when future conditions warrant.

U. Improvements to existing sewer line paths and connection to proposed trail

1) Renovate existing trail (1.5 miles) in sewer right-of-way running adjacent to south side of University playing fields from South Main Street westward to Boiling Springs Wastewater Treatment Plant on College Farm Road.
2) Extend this trail to South Main Street right-of-way and establish trailhead across from proposed trailhead in Boiling Springs Baptist Church property.
3) Renovate existing connections to trail and establish trailheads.
4) Provide trail signage.

V. New trail from Boiling Springs Elementary School to proposed YMCA

1) Acquire trail right-of-way (or easement) from north boundary of school property along west edge of Brookview neighborhood northward to Poplar Branch stream.
2) Acquire trail right-of-way (or easement) along Poplar Branch stream to Patrick Avenue.
3) Acquire trail right-of-way (or easement) along west side of Patrick Avenue to edge of YMCA property.
4) Construct trail in acquired right-of-way/easement and continue trail in YMCA property to connect to proposed YMCA pedestrian facilities.
5) Provide trail signage.
6) Trail along Patrick Avenue may be converted to sidewalk when future conditions warrant.

W. New Crosswalk across South Main Street to connect existing and proposed trails to create the "Boiling Springs South Trail"

1) Establish continuous trail (3.0 miles) requiring only one road crossing by connecting renovated sanitary sewer easement trail with proposed trail at Boiling Springs Baptist Church property by a crosswalk on South Main Street between proposed trailheads.
2) Stripe crosswalk across South Main Street between proposed trailheads near southeast corner of Church property.
3) Install crosswalk signalization with audible pedestrian activation mechanism.
4) Provide crosswalk-warning signage.

X. New "Homestead Trail"

1) Procure right-of-way along south side of East Homestead Avenue from North Main Street to Skinner Road (1.5 miles).
2) Construct roadside trail along acquired right-of-way.
3) Designate 3.2-mile long "Homestead Trail" with trail signage. The Homestead Trail shall run from West College Avenue along West Homestead (See **Project T**) cross Main Street (See **Project L**) and continue along East Homestead Avenue to Skinner Road.
4) East Homestead trail section may be converted to sidewalk when future conditions warrant.

Y. New public square to replace existing Post Office parking lot and driveway

1) Negotiate agreement with Federal Post Office over relocation of parking facilities and site alterations.
2) Replace existing driveway, curb and sidewalk alignment on North Main Street in front of Post Office and adjacent buildings with continuous, realigned curb and sidewalk to provide additional lane of inset parallel parking spaces.
3) Create additional parallel parking spaces along West Main Street adjacent to P.O.
4) Provide signage and striping to designate newly created parking spaces for exclusive use by Post Office customers.
5) Demolish existing eight-space Post Office parking lot and replace with selected public square design.

Z. New parallel parking to replace diagonal parking on South Main Street west side

1) Remove diagonal parking spaces on South Main Street within Quinn Circle.
2) Realign curb to provide for parallel parking lane along South Main Street.
3) Create planter strip between existing sidewalk and new edge of curb.
4) Plant small maturing trees within planter strip.

Section 10: 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 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

Volunteer programs for greenway maintenance can be organized through the "Adopt-A-Park" program or could be coordinated with the existing Broad River Greenway volunteer program. http://www.broadrivergreenway.com/volunteer
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 Town.

Section 11: Recommended Evaluation Process

As the Boiling Springs Pedestrian Plan is implemented and pedestrian facilities are constructed, it is recommended that the Town perform a periodic evaluation of the goals and the processes described in the Plan. Plans in themselves are static and unchanging documents, but circumstances change constantly. Though the Town remains true to the vision described in this Plan, the means of achieving that vision may change with fluctuating economic conditions, 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 should periodically meet 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, similar to the one conducted in formulating this Plan, 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: FUNDING

Section 12: 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. Together these may be considered "project costs." In addition to the project costs, there are also ongoing costs associated with the facility, such as maintenance, security, and particular 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

Costs Per Mile

Surface Material	Costs Per Mile	Longevity
Concrete	$300 -500,000	20 years +
Asphalt	$200 -300,000	7-20 years
Crusher fines	$ 80 -120,000	7-10 years
Wood chips	$ 65 - 85,000	1-3 years
Soil cement	$ 60 -100,000	5-7 years
Native soil	$ 50 - 70,000	variable
Boardwalk	$1.5 - 2.0 M	7-15 years
Recycled materials	variable	variable

Costs Per Unit

Conventional Concrete	10 ft. wide path=$35/LF or $10/square foot.
Pervious Concrete	10 ft. wide path=$42/LF.
Asphalt	10 ft. wide path = $20/LF.

Crusher fines – Typically costs about 1/3 the price of concrete paths, installed.

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

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

Total Cost of Resurfacing Trails

Concrete	$ 25 LF
Asphalt	$ 10 LF (per linear foot) ($ 5 LF to overlay with top coat)
Crushed Stone	$ 5 LF

Street Improvements

Crosswalks
Approximate installation costs per unit:

Regular striped	$ 100
Ladder crosswalk	$ 300
Patterned concrete	$3,000
Raised	$4,000

4-way pedestrian signals: **$20,000 per unit**

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.

Curb extensions: $40,000 - 80,000 for four corners

Concrete curbing: $15/LF

Speed humps: $1,700 per unit

General Facilities

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 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.

References:

Rails-To-Trails Conservancy
"Trails For The 21st Century," 2001.
http://www.railtrails.org/

Fehr & Peers Transportation Consultants
http://www.trafficcalming.org/measures2.html

FHWA
http://www.nysphysicalactivity.org/site_beactiveenv/nybc/source_files/3_pedfac_improve/FHA_EmergTechPedXWalk.pdf

Charlotte Department of Transportation
http://www.charmeck.org/Departments/Transportation/About+Us/Speed+Humps.htm

Section 13: 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 are only part of an overall strategy, which includes both the public and private sector. The most successful strategy for a municipality to develop and improve its pedestrian system will involve an appropriate combination of all possible sources.

Private Funding Sources

As shown earlier in this Plan, improving the pedestrian quality of Boiling Springs may have more to do with guiding the Town's growth patterns than it has with building individual sidewalks or trails. These patterns of development are guided by the Town's ordinances. If these documents are directing privately funded growth in a coordinated, pedestrian-friendly manner, private development will accomplish many of the Town's pedestrian-friendly goals through private initiative and investment. For examples of how the Town's Subdivision and Zoning Ordinance 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 Town 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 Town to accomplish mutual goals.

Public-private 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.

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

Federal Funding Sources

Certain Federal-aid transportation funding sources may be used for building, or improving accessible pedestrian facilities through rural planning organization (RPO) process. Federal funding sources for bike and pedestrian facilities are available mainly in the form of:

1. Enhancement program, since 1991
2. Safe Routes to Schools program under the new SAFETEA bill.

STP funds may be used only if the new bike/ped facilities are built as parts of a new highway construction project.

Transportation Enhancement Program

Congress created the Transportation Enhancements (TE) program under the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 to address growing concerns about air quality, open space, and traffic congestion. This program is the first Federal initiative to focus on enhancing sidewalks, bike lanes, and the conversion of abandoned railroad corridors into trails. The new transportation bill - the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), signed into law in 2005, continued the transportation enhancement activities through a set aside of 10% funding from the surface transportation program (STP).

Safe Routes to School

The SAFETEA-LU bill established a new Safe Routes to School program. This new program receives $612 million in transportation funds over five years to make it safer for children to walk or bicycle to school. Funding for Safe Routes to School will be distributed to states in proportion to the number of primary and secondary school students in the state, with no state receiving less than $1 million annually. Communities will be able to use the funds to fix hazards and slow traffic on roads, pathways or trails near schools while increasing safety through focused enforcement and education programs. Each state is being directed to create a position of a Safe Routes to School coordinator, and the bill also provides funds for a national Safe Routes to School clearinghouse.

Eligible projects and activities include: planning, design, and construction of infrastructure-related projects that will substantially improve the ability of students to walk and bicycle to school, on any public road or any bicycle or pedestrian pathway or trail within approximately 2 miles of a primary or middle school; and non-infrastructure-related activities to encourage walking and bicycling to school, including public awareness campaigns and outreach to press and community leaders, traffic education and enforcement, student training, and funding for training, volunteers, and managers of SR2S programs. The Program is designed to assist projects that will result in:

- Increased bicycle, pedestrian, and traffic safety
- More children walking and bicycling to and from schools
- Decreased traffic congestion
- Improved childhood health

- Reduced childhood obesity
- Encouragement of healthy and active lifestyles
- Improved air quality
- Improved community safety
- Reduced fuel consumption
- Increased community security
- Enhanced community accessibility
- Increased community involvement
- Improved physical environment for increasing the ability to walk and bicycle to and from schools
- Improved partnerships among schools, local municipalities, parents, and other community groups, including non-profit organizations

Contact:
Theresa (Terry) A. Canales, PE - Safe Routes to School Coordinator
Highway Administrator's Office, NCDOT Transportation Building
1536 Mail Service Center
Raleigh, NC 27699-1536
Phone: 919-733-7384 Fax: 919-733-9428
e-mail: tcanales@dot.state.nc.us

Accessible pedestrian projects can also be funded through other Federal-aid Highway Programs including Federal Lands Highway Program, National Scenic Byways Program, Recreational Trails Program, Transportation and Community Systems Preservation Pilot Program (TCSP), and Job Access and Reverse Commute Grants. (U.S. Department of Transportation, 1998).

For additional information about Federal programs as well as grant writing assistance, visit the American Trails website at:
http://www.americantrails.org/resources/fedfund/index.html

USDA Rural Business Enterprise Grants
http://www.rurdev.usda.gov/rbs/busp/rbeg.htm
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 may be used for sidewalk and other community facilities. For more information from the local USDA Service Center, see http://offices.sc.egov.usda.gov/locator/app?service=page/ServiceCenterSummary&stateCode=37&cnty=045

Community Development Block Grant Program
http://www.hud.gov/offices/cpd/communitydevelopment/programs/index.cfm
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. 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. Funding targets projects that benefit low- and moderate-income persons, and development projects designed to improve the health or welfare of the community.

Wetlands Reserve Program
http://www.nrcs.usda.gov/programs/wrp/
http://www.ngpc.state.ne.us/wildlife/wrp.html - informational site
The Department of Agriculture also 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 therefore assist with trail/greenway funding efforts.

Rivers, Trails, and Conservation Assistance Program
http://www.ncrc.nps.gov/programs/rtca/ContactUs/cu_apply.html
The National Parks service operates this program aimed at conserving land and water resources for communities. Eligible projects include conservation plans for protecting these resources, trail development, and greenway development.

State Funding Sources

North Carolina Department of Transportation
Projects under $100,000 involving pedestrian facility improvements and related landscaping can qualify for North Carolina Department of Transportation (NCDOT) funds. Contact the NCDOT Division 12 Division Operations Engineer.

FHWA Recreational Trails Program
The Recreational Trails Program is actually 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. For FY 2006 states will share in $60 million, increasing to $85 million by FY 2009. The Recreational Trails Program North Carolina Administration contact is:
Darrell L McBane, State Trails Coordinator, NC Division of Parks & Recreation
12700 Bayleaf Church Road, Raleigh NC 27614-9633
http://www.ils.unc.edu/parkproject/trails/home.html
919-846-9995; Fax 919-870-6843, darrell.mcbane@ncmail.net

The North Carolina Division of Forest Resources
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

Other Grant Sources

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. Learn more about available grant opportunities at: http://www.rwjf.org/applications/independent/overview.jhtml

Local Public Revenue Strategies

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 Town 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 or off road trail improvements. The Town can initiate public outreach efforts to merchants, Chamber of Commerce and property owners. In these meetings Town staff will discuss the proposed apportionment and allocation methodology and will explore implementation strategies.

The Town can manage maintenance responsibilities either through its own staff or through private contractors. The public and, in particular, those within the FMD, should periodically informed about who to contact in the Town about maintenance issues. The Town should provide a link on the Town Website that clearly refers to reporting maintenance issues.

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.

Local Budget Recommendations

The Town's pedestrian goals, as expressed in this Plan, cannot be accomplished overnight. They must continually take shape as the community itself grows. However, that growth is progressing at a constant, if not accelerating, rate. In order for pedestrian improvements to keep pace, the Town must maintain an unwavering commitment to implementing pedestrian projects. This will require an annual allotment from the Town's public works budget for such projects. The Town may choose to commit a regular percentage of its Capital Improvements Program toward that end, in addition to its Powell Bill allotment for street-related pedestrian projects.

Additional information Sources:

Facility Maintenance Districts

http://www.ci.livermore.ca.us/firststreet/streetscape/DowntownLandscapeMaintenanceDistrict.html

Streetscape Utility Fees - City of Salem (Oregon)
http://www.cityofsalem.net/~spubwork/press_releases/pr_s-scape.htm

Federal Funding Sources
http://www.pagreenways.org/funding-federal.htm

Section 15: 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 Town 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 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 Town Board for review.

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

Boiling Springs Pedestrian Plan

Appendices:

1. **Statement of Community Support**
2. **Facility Standards and Guidelines**
3. **How to Build a Sidewalk**
   A step-by-step guideline for building pedestrian improvements
4. **Additional References**

COPY OF A RESOLUTION PASSED BY THE CITY/TOWN COUNCIL
OF THE TOWN OF BOILING SPRINGS, NORTH CAROLINA

A motion was made by John Glenn and seconded by Jimmy Beason for the adoption of the following Resolution, and upon being put to a vote was duly adopted:

WITNESSETH:

WHEREAS, according to G.S. 136-66.2, Section 1, the General Assembly requires each municipality, with the cooperation of the Department of Transportation (the "Department") to develop a comprehensive transportation plan that will serve present and anticipated travel demand, and,

WHEREAS, the Department may provide financial assistance in the preparation of such plans, and,

WHEREAS, the Department is initiating a new program to encourage the development of comprehensive municipal bicycle plans and pedestrian plans, and,

WHEREAS, to encourage the development of comprehensive local bicycle plans and pedestrian plans, the Department's Division of Bicycle and Pedestrian Transportation (DBPT) and the Transportation Planning Branch (TPB) have created a matching grant program to fund plan development, and,

WHEREAS, the Department and the Municipality have agreed that a comprehensive plan is needed to evaluate and identify critical municipal needs for planning and/or implementation of pedestrian improvements, and,

WHEREAS, the Department and the Municipality have agreed to participate in the cost of this comprehensive plan with the Municipality agreeing to coordinate and oversee the study in accordance with the provisions hereinafter set forth, and,

WHEREAS, the Town of Boiling Springs desires to enter into a municipal agreement with the Department whereby the Municipality shall develop a Bicycle or Pedestrian Comprehensive Plan (Estimated cost of Study is $20,000), and,

WHEREAS, the Department shall reimburse 80% (Eighty Percent) of the Municipality's actual costs of the Study in an amount not to exceed $16,000 in accordance with the approved sliding scale, based on municipal population.

NOW, THEREFORE, BE IT RESOLVED that this Study is hereby formally approved by the City/Town Council of the Town of Boiling Springs and that the Mayor and Clerk of this Municipality are hereby empowered to sign and execute the Agreement with the Department of Transportation.

I, Kim Green, Clerk of the Town of Boiling Springs, do hereby certify that the foregoing is a true and correct copy of excerpts from the Minutes of the meeting of the Town Board duly held on the 3rd day of August, 2004.

WITNESS, my hand and the official seal of said Municipality on this the 4th day of August, 2004.

(SEAL)

Kim Green
CLERK
TOWN OF BOILING SPRINGS
NORTH CAROLINA

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

- **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 12. Contact the Division 12 Engineer before considering implementation of any improvements in the NCDOT right-of-way: Mike Holder, Division 12 Engineer, P.O. Box 47, 1710 E. Marion Street, Shelby, NC 28151, email: mholder@dot.state.nc.us.

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

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 method, refer to Town Standard Specifications and Construction Details for method of standard sidewalk paving and construction method. http://www.boilingspringsnc.net/

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 in order to visually cue pedestrians (and drivers) and provide a tactile warning to the visually impaired.
- Textured pavements can be used to add significant aesthetic value and help define a unique place.

2. Pedestrian Buffer Zones

Buffer zones between pedestrian paths and vehicular traffic provide a sense of security to those on foot or in wheelchairs and give the path a comfortable scale and clear definition. Buffers can also provide other benefits to pedestrians depending on the type used.

A. **Planting Strips –** Planting strips provide an area for street trees that give needed shade for a comfortable pedestrian environment. They also allow for other landscaping that can add beauty the pedestrian environment. The recommended planting width to permit healthy tree growth is 6 to 8 ft. measured from the back of curb. Planting strips are the preferred means a providing a buffer, but are not feasible or appropriate in all pedestrian situations. Areas of high foot traffic may preclude landscaping due to maintenance considerations.

B. **Paved buffer zones -** In locations where planting strips are not feasible, a buffer zone of some kind should be provided. This zone is located between the travel path of the sidewalk and the curb. 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 located in the buffer zone can include street furniture, trees planted with tree grates, streetlights, street signs, fire hydrants, etc. Such items are placed in the buffer zones so as not to restrict pedestrian flow in the travel path. An additional buffer zone may also exist along the opposite side of the travel path, adjacent to buildings, open space, or off-street parking.

C. **On street parking** – Another opportunity to provide a buffer zone between pedestrian and vehicular traffic is on-street parking. As with other buffers, pedestrians feel safer with such a physical barrier between them and moving vehicular traffic, but that still allows them to clearly see into the street and drivers to clearly see pedestrians.

3. Street Trees

This Plan strongly recommends adopting a Town Tree Ordinance to give complete guidance for tree installation and maintenance. For guidance in developing a Tree Ordinance and other related policy 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 - In order to maintain visibility, provide shade, and a comfortable pedestrian corridor, street trees should primarily 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 inherent 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' Pine
- 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. Their placement should always be supported by other measures that help reduce speeds and warn drivers to be prepared to stop.

The effectiveness of crosswalks can be greatly enhanced by curb extensions. They 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. See: **Traffic Calming Devices**.

For crosswalk markings, dimensions and other standards, refer to the Manual on Uniform Traffic Control Devices (MUTCD).

5. Striping, Signage & Signalization

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

- 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.
-
- Traffic signals are intended to assign the right-of-way for vehicular and pedestrian traffic. Most traffic signals are installed based on vehicular traffic considerations, but some high-volume pedestrian circumstances warrant traffic signals themselves. 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. However, simply meeting one of the MUTCD warrants for signalization does not necessarily justify installation of a traffic signal. Even where warranted, traffic signals can cause excessive delay for drivers and pedestrians alike, and can increase certain accident types.

- All signalization should feature controlled timing operable by pedestrians and ADA compliant.

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.

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 Town on a project-by-project basis:

- **Speed humps** - raised "bumps" 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.
- **Raised crosswalks** - Speed Tables outfitted with crosswalk markings and signage. 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 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. Textured paving should be incorporated into the edges in order to provide visual and tactile cues.
- **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.
- **Neckdowns** – intersections with curbs that are extended to the edge of the vehicular travel lanes, reducing total roadway width from curb to curb. Curb Extensions slow vehicles by alerting drivers to potential pedestrians, visually tightening the vehicular path, and physically reduces turning radii. Curb Extensions also increase safety for pedestrians by shortening the road crossing distance.
- **Chokers** - curb extensions at midblock locations, usually combined with a crosswalk. Also known as “pinch points”.
- **Medians** – 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.

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. Among them is on-street parking.

7. On-street Parking

Through a variety of means, on street parking benefits both pedestrians and drivers, and can contribute to the economic viability of a street.

- On-street parking provides a comforting 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 interior 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.

3.) **Perpendicular parking** has many of the disadvantages of angled parking but requires the even more depth in right-of-way.

For further information about parking management, see:
http://www.seql.org/actionplan.cfm?PlanID=13

For further parking information specific to the Town, refer to the findings of the *Division of Highways 1997 Parking Study for Boiling Springs.*

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 Town'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.
- 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.

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.

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).

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

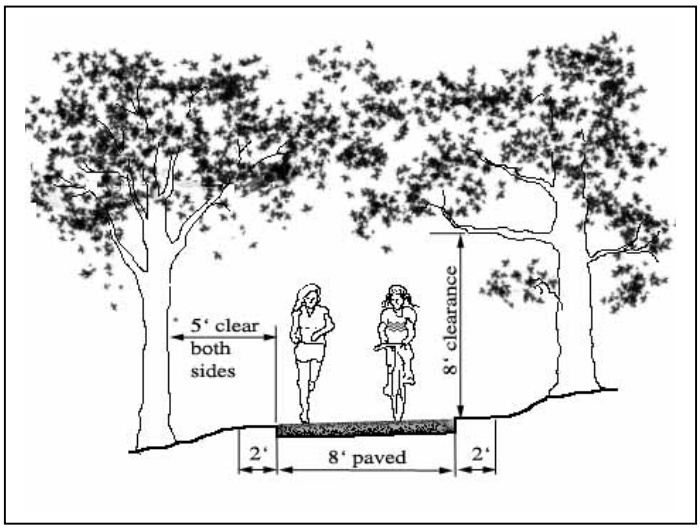
Trail types

1.) **Existing GWU Paths –** All GWU paths should be inspected and maintained according to standards specified in **Maintenance & Operations.**

2.) **Proposed GWU Paths –** All proposed additions to the GWU path system (unless otherwise indicated on the Plan) should match existing GWU paths in terms of dimensions, materials and construction, signage, light fixtures and other elements. All GWU destination points must be ADA accessible pedestrian routes.

3.) **Existing Sanitary Sewer R.O.W. Paths** – All existing path segments indicated in the Pedestrian Plan should be brought to standards described for **Proposed Footpaths**.

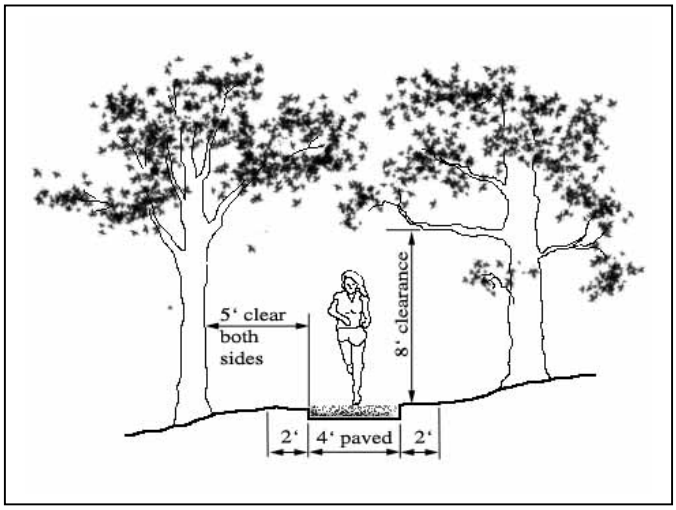
4.) **Proposed Urban Paths** – Pavement types may vary between conventional or pervious concrete, asphalt or crusher fines. Width of pavement should be maintained at 8 ft., with 2 ft. improved shoulders. Deviations for very short distances are acceptable when existing conditions do not physically permit 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

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

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.



Foot Path

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, and aesthetics. 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**.

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 by establishing 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.

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.ncaonline.org/monographs/1trail-surfaces.shtml

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

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 Town 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, such the Broad River Council, 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 Town 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 Town'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 Town's trail system through whichever legal instruments are specified in the Town's Subdivision Ordinance. The Town 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 Broad River Greenway volunteer program. http://www.broadrivergreenway.com/volunteer
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 Town.

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

Sustainable Environment for Quality of Life - SEQL.org

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

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, Town Manager, Public Works Director or other Town 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 Town 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 Town 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.

Additional References

Listed below are some additional specific references to existing documents that may aid implementation of the Plan.

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

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. For more information, visit www.activelivingbydesign.org or call: 919-843-2523.
For trail-related information, see: http://www.activelivingbydesign.org/index.php?id=29