



Town of Banner Elk

Pedestrian Plan

July • 2009 • **FINAL** • Banner Elk, NC

NCDOT Division of Bicycle & Pedestrian Transportation The Louis Berger Group, Inc.



TOWN OF BANNER ELK PEDESTRIAN PLAN

ACKNOWLEDGEMENTS

Stakeholder Committee Members

Cheryl Buchanan	Town of Banner Elk (Staff)
Ried Estes	Lees-McRae College
John Mejaski	Town of Banner Elk (Staff)
John Swinkola	Grandfather Home for Children
Penny VonCanon	Town of Banner Elk (Planning Board)

Project Management Team

Staff Project Manager: John Mejaski, Banner Elk Town Manager

Consultant Project Team: Don Kostelec, AICP; *The Louis Berger Group, Inc.*
Alison Carpenter; *The Louis Berger Group, Inc.*
Garry Cooper, FAICP; *Garry Cooper Associates*

NCDOT Liaison: Bob Mosher, AICP; *NCDOT Division of Bicycle and Pedestrian Transportation*

Acknowledgements

The participants of the Banner Elk Pedestrian Plan wish to thank the Mayor and Town Council as well as the citizens of Banner Elk for making this Plan a reality. Thanks is also owed to the North Carolina Department of Transportation for the NCDOT Pedestrian Planning Grant, which partially funded this planning process.

Table of Contents

Executive Summary.....	i
Section 1: Goals & Objectives.....	1
Section 2: Existing Conditions.....	7
Section 3: Plan & Policy Review.....	27
Section 4: Design Guidelines.....	45
Section 5: Project Recommendations.....	69
Section 6: Policy & Program Recommendations.....	83
Section 7: Implementation.....	97

Appendices

- Appendix A. Demographic Analysis
 - Appendix B. Public Involvement Materials
 - Appendix C. Survey Results
 - Appendix D. Itemized Cost Figures for General Construction Cost Estimate
-

TOWN OF BANNER ELK PEDESTRIAN PLAN

TABLE OF CONTENTS

Section 1

Table 1-1. Pedestrian Plan Steering Committee

Figure 1-1. Developing a Shared Community Vision

Section 2

Table 2-1. Pedestrian Plan Steering Committee

Table 2-2. Results of Banner Elk Recreation Survey

Figure 2-1. The Grid Pattern of Streets in Banner Elk

Figure 2-2. Town of Banner Elk Gateway Sign

Figure 2-3. Location of Banner Elk, North Carolina

Figure 2-4. Banner's Elks population statistics by age

Figure 2-5. Vehicle Availability in Banner Elk

Figure 2-6. Pedestrian Mode Share in Banner Elk

Figure 2-7. Banner Elk's Downtown Area

Figure 2-8. Existing Greenway Trails in Banner Elk

Figure 2-9. Lees McRae College

Figure 2-10. Map of Existing Conditions and Local Destinations in Banner Elk

Figure 2-11. Pedestrian Crash Map for Banner Elk, 1990-2008

Figure 2-12. Photos from January 22, 2009 Focus Groups

Figure 2-13. Preliminary Projects and Pedestrian Needs Identified by Stakeholders

Section 3

Table 3-1. 2007-2015 TIP Projects within the Town of Banner Elk

Table 3-2. ARRA Stimulus Projects for Avery County

Figure 3-1. Sidewalk Plan Element of the 1999 Streetscape Plan

Figure 3-2. Greenway Element of the 1999 Streetscape Plan

Section 4

Table 4-1. Mid-Block Crossing Treatment Design Criteria (Charlotte DOT, 2005)

Table 4-2. DWQ Policy on Permeable Pavement Uses

Figure 4-1. Appropriate curb ramp placement

Figure 4-2. Detail of an ADA-complaint curb ramp design with truncated dome measurements

Figure 4-3. Examples of acceptable and unacceptable design solutions for driveway-sidewalk interface

Figure 4-4. Horizontal clearance "zones" for a sidewalk, most typically found in a central business district

Figure 4-5. Typical styles for marked crosswalks

Figure 4-6. Countdown pedestrian signals

Figure 4-7. Examples of Pedestrian-activated signals and mid-block crossings

Figure 4-8. The City of Charlotte's solution space for analyzing mid-block pedestrian crossings

Figure 4-9. Diagram of various crossing treatments

Figure 4-10. Pedestrian crossing signs

TOWN OF BANNER ELK PEDESTRIAN PLAN

TABLE OF CONTENTS

- Figure 4-11. Example standard pedestrian warning signs
- Figure 4-12. Example of a wayfinding sign in Charlotte, NC
- Figure 4-13. Example cross-section for a typical greenway
- Figure 4-14. Typical greenway cross-section with bollard treatments at roadway crossing
- Figure 4-15. Examples of Porous Pavement Uses
- Figure 4-16. Permeable Pavement Treatments
- Figure 4-17. Downtown Banner Elk Streetscaping
- Figure 4-18. Sample School Area Signage
- Figure 4-19. Sample Signage Plan for Temporary Sidewalk Closure and Re-routed Pedestrian Crossing
- Figure 4-20. Exemplary Parking Lot Design
- Figure 4-21. An example of pedestrian-friendly parking lot design
- Figure 4-22. An example of bulb-out placement
- Figure 4-23. An example of well-designed median and refuge islands
- Figure 4-24. Roundabout Design Diagram
- Figure 4-25. Example of a travel lane diet for retrofit installation of a median refuge island and neckdowns

Section 5

- Table 5-1. Proposed Sidewalk Projects in Alphabetical Order
- Table 5-2. Proposed Sidewalk Projects Outside of Banner Elk Town Limits
- Table 5-3. Proposed Pedestrian Crossing Improvements
- Table 5-4. Proposed Greenway Trail Projects in Alphabetical Order
- Table 5-5. Phased Sidewalk Project Recommendations
- Figure 5-1. Greenway Cross-section Diagrams
- Figure 5-2. Map of Proposed Sidewalk Projects
- Figure 5-3. Summary Map of Project Phasing Recommendations
- Figure 5-4. In-Street "Yield to Pedestrians" Sign
- Figure 5-5. Photos of Sidewalk Maintenance Needs

Section 6

- Table 6-1. Proposed Amendments to Local Ordinances
- Table 6-2. Proposed New Internal Policies and Policy Amendments
- Table 6-3. Proposed New Planning Efforts and Plan Amendments
- Figure 6-1. "Chatwalk" or Greenway Trail Connection Diagram
- Figure 6-2. Sample SRTS Materials
- Figure 6-3. Pedestrian Safety Materials
- Figure 6-4. Pedestrian Wayfinding Signage
- Figure 6-5. Active Speed Monitor
- Figure 6-6. Durham PACE Car Program Example

Section 7

- Table 7-1. Short-term Recommendations (1 – 5 years)
 - Table 7-2. Mid-term Recommendations (6 - 10 years)
-

TOWN OF BANNER ELK PEDESTRIAN PLAN

TABLE OF CONTENTS

Table 7-3. Long-term Recommendations (11+ years)

Table 7-4. Greenway Trail Recommendations

Table 7-5. Recommendations for Pedestrian Crossing Improvements



Executive Summary

The intent of the Banner Elk Comprehensive Pedestrian Plan is to provide guidance for making the Town of Banner Elk a more pedestrian-friendly community. Partially funded by a grant from NCDOT and matching funds from the Town, the Pedestrian Plan serves several purposes including:

- To promote a better understanding of the measures that can be taken to create more and safer walking trips in Banner Elk;
- To identify in the Plan a clear schedule of projects, programs, and policies that Banner Elk and partnering agencies can provide to improve the walking environment; and
- During the planning process and afterwards, to create a better awareness of walking as a viable mode of transportation that can serve as a reliable substitute for some trips being made by private auto now; contribute to a healthier lifestyle; and reduce carbon and other emissions associated with motorized travel.

The Pedestrian Plan recommends future pedestrian-related projects and infrastructure improvements throughout the Town, as well as programs and policies that will support a pedestrian-friendly culture and help to further improve local walking conditions. The results of the Plan will be a safe, accessible pedestrian system that includes sidewalks, greenways and safe intersections, in addition to programs and policies that encourage residents and visitors alike to walk for health, recreation, fitness, cost-savings and basic transportation. The vision statement for the Plan is:

“The Town of Banner Elk is a more walkable and bicycle-friendly community that meets the needs of students, visitors, businesses, and residents of all age groups through an integrated network of greenways, walkways, and bicycle paths.”

Using this plan as a guide, the Town of Banner Elk should be able to create a better, safer network of sidewalks, greenway trails and crossings for pedestrians. The Town's next steps should begin to immediately address the short-term priority program, policy, and project recommendations. At

The Town of Banner Elk's Comprehensive Pedestrian Plan makes recommendations for policies, programs and projects that - when implemented - will improve walkability and help make Banner Elk a more pedestrian-friendly community.

TOWN OF BANNER ELK PEDESTRIAN PLAN

EXECUTIVE SUMMARY



BENEFITS OF A WALKABLE COMMUNITY

- More people walking means **fewer cars on the road** and **less pollution**
- Walkable communities offer more **mobility independence for youth and elderly residents**, as well as those who are physically-disabled
- Not of all Banner Elk's residents drive – walkability means more **transportation choices** for everyone
- More active communities are healthier communities; walking for recreation or transportation **improves health and well-being** for all residents who choose to do so
- Improved health results in **decreased health care costs**
- Less pollution, multiple transportation choices and more recreational facilities lead to a **higher quality of life** for residents
- More “liveable” communities with greenway trails and other pedestrian amenities **attract residents, businesses and tourists**, according to national research, which leads to town-wide economic benefits.

the same time, the Town should also start to lay the groundwork for the longer term recommendations by developing relationships with potential partners such as the Avery County Chamber of Commerce, the Avery County Health Department, the North Carolina Department of Transportation and Lees McRae College, among others, and by starting to budget for future projects. Most importantly, the Town should continue its efforts to raise awareness about the importance of making a community more walkable in order to continue to cultivate support for more pedestrian improvements and programs. Residents, visitors, and local leaders should be familiar with the economic, health, and environmental benefits of a community in which there is less dependence on automobiles and more reliance on foot travel as not only a form of recreation, but also as a form of transportation.

As a small college town with a tourism-based economy, Banner Elk can anticipate continued growth and development in the future and is in an ideal position to develop an even more walkable community. The Town should capitalize on its location and its attractions, such as WildCat Lake, Mill Pond, local hiking trails and the historic downtown, to reinforce its existing pedestrian infrastructure with new projects and improvements. With careful planning, deliberate steps and persistence, Banner Elk can become an even more vibrant, livable community.

Action Steps for Implementation

Completing the following action steps will help guide the development of the proposed pedestrian network, and create a supportive program and policy environment for a more walkable Banner Elk.

1) Adopt this Plan. Adoption of this Plan will be the first step to implementation for Banner Elk. Once adopted, the Plan should be forwarded to regional and state decision-makers, such as the RPO and NCDOT Division office, for inclusion in a regional planning and development processes.

2) Form a Bicycle/Pedestrian & Trails Advisory Committee. The pedestrian planning process has engaged many citizens in visioning and goal-setting for Banner Elk. Building on this momentum to keep citizens engaged in a

TOWN OF BANNER ELK PEDESTRIAN PLAN

EXECUTIVE SUMMARY

permanent committee structure will allow continued citizen involvement in the Plan's implementation.

3) Secure funding for the top priority projects. In order for Banner Elk to become a more pedestrian-friendly town, it must have the priorities and the funding available to proceed with implementation. The Town should work to secure funding for implementation of several high-priority projects (see Section 7.3) and develop a long-term funding strategy. This will help reinforce the commitment to the Pedestrian Plan and reaffirm to residents that the Plan is moving forward.

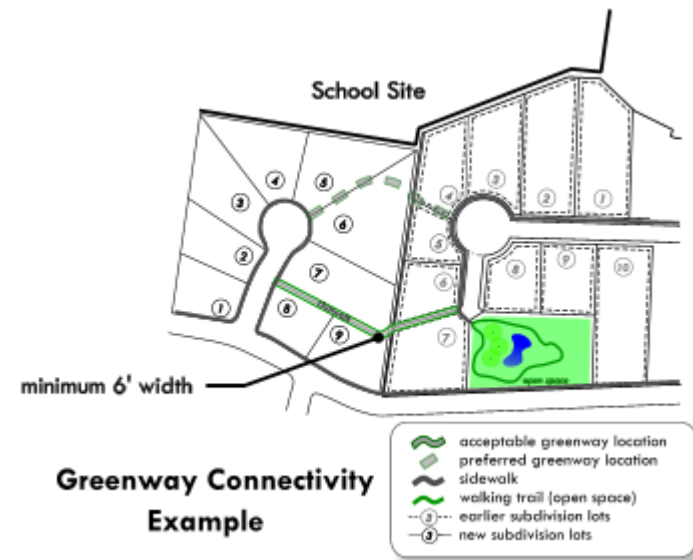
4) Begin work on top priority projects listed in Section 7.3. In addition to committing local funds to high-priority projects in the Pedestrian Plan, the Town is in a unique position to work with NCDOT on a local Safe Routes to School (SRTS) project and/or seek other state, national or private funding sources for continued, long-term success in implementing the Plan.

5) Adopt policy changes that support the goals of the Pedestrian Plan.

Proposed ordinance changes that will be crucial to balancing the public/private burden of implementing this Pedestrian Plan are listed in Section 6 and below in Section 7.3. These include requiring sidewalks in all new development projects, establishing a street tree ordinance, and requiring the dedication of greenway easements to "bank" land for future trail construction.

6) Embark on complementary planning efforts. The Town should incorporate the recommendations of the Pedestrian Plan into future and existing Plans developed and updated at the local, regional and statewide level. For instance, the recommendations of the Banner Elk Pedestrian Plan should be incorporated into the statewide Comprehensive Transportation Plan, which is currently under development for Division 11.

7) Develop supportive education, encouragement and enforcement programs. Pedestrian facilities alone do not make a town pedestrian-friendly. A variety of programs should also be implemented to create and support a pedestrian-friendly culture. Programs and policy priorities should be implemented alongside infrastructure improvements.



The Pedestrian Plan includes many project, policy and program recommendations to improve walking conditions around schools, parks and neighborhoods. A policy change that requires short greenway connections between new cul-de-sac developments and adjacent parks, schools or residential uses is recommended. Often, these "cut-throughs" or "chatwalks" are an informal network that can be formalized to greatly shorten walking distances and enhance the local pedestrian network by providing short, safe links for pedestrians of all ages and abilities.

TOWN OF BANNER ELK PEDESTRIAN PLAN
EXECUTIVE SUMMARY

Table S-1. Short-term Recommendations (1 – 5 years)

SIDEWALK PROJECTS				
Proposed Sidewalk Location	From	To	Length (Miles)	Est. Project Cost (one-side only)
Main St E (Priority #3)	Park Ave	Shawneehaw	0.51	\$ 202,650
NC184 S (Priority #1)	Central Way SW	Hickory Nut Gap	0.23	\$ 92,100
Main St W (Priority #2)	Grace Hartley	NC194/NC184	0.23	\$ 89,700
Banner Rd	Existing Sidewalk	Shawneehaw	0.20	\$ 77,700
POLICIES				
Description			Type	
Update Minimum Sidewalk & Greenway Trail Requirements			Planning Effort/Ordinance	
Develop Trail Design Standards, including Greenway Crossings			Policy/Ordinance	
Modify Curb Ramp Design Standards for ADA Compliance			Policy/Ordinance	
Establish Internal Policy & Ordinance Language for Local School Zone Improvements			Policy/Ordinance	
Formalize Policy for Countdown Pedestrian Signals			Internal Policy	
Establish Improved Parking Lot Design Standards for Pedestrian Access			Local Ordinance	
Conduct Parks & Open Space Plan, including Greenway Feasibility Study (where more detail necessary)			Planning Effort	
PROGRAMS				
Description		Type	Potential Partners	
Safe Routes to School Program		Education	Avery County Schools	
Bicycle & Pedestrian Program Website		Education	Lees McRae College	
Establish Weekly Walking Tours		Encouragement	Avery County Chamber of Commerce	

TOWN OF BANNER ELK PEDESTRIAN PLAN
EXECUTIVE SUMMARY

Table S-2. Mid-term Recommendations (6 - 10 years)

SIDEWALK PROJECTS				
Proposed Sidewalk Location	From	To	Length (Miles)	Est. Project Cost (one-side only)
NC194 (Banner Elk Hwy)	NC184	Town Limits	0.56	\$ 147,600
NC 184 N	Main St W (NC 194)	Town Limits	0.68	\$ 179,200
Orchard Ln	NC184	Existing sidewalk	0.5	\$ 132,200
Old Turnpike Rd E	NC194 E	NC194 E	0.54	\$ 143,050
POLICIES				
Description			Type	
Develop and Adopt Street Design Criteria			Planning Effort/Ordinance	
Establish Bicycle/Pedestrian & Trails Advisory Committee			Planning Effort	
Establish Sidewalk/Crosswalk/Greenway Maintenance Program			Internal Policy	
Conduct Complementary Bicycle Plan			Planning Effort	
Establish Sidewalk Petition Process			Internal Policy	
Incorporate Conditional Uses for Multi-Modal Developments into Local Zoning Ordinances			Local Ordinance	
PROGRAMS				
Description	Type		Potential Partners	
Pedestrian Safety Education Campaign	Education		Avery County Schools; Lees McRae College	
Establish Pedestrian Wayfinding & Route Maps	Encouragement		Avery County Chamber of Commerce	
Establish PACE Car Program	Enforcement		Banner Elk Police & Avery County Sheriff Department	

TOWN OF BANNER ELK PEDESTRIAN PLAN
EXECUTIVE SUMMARY

Table S-3. Long-term Recommendations (11+ years)

SIDEWALK PROJECTS				
Proposed Sidewalk Location	From	To	Length (Miles)	Est. Project Cost (one-side only)
NC184 S (sidepath)	Hickory Nut Gap	Orchard Ln	0.94	\$ 659,015
Hickory Nut Gap Road (sidepath; Priority #4)¹	NC 184 S	WildCat Lake	0.88	\$ 618,051
NC184 S	Orchard Ln	Glove Factory	0.51	\$ 134,750
Dobbins Rd	NC 184 N	City Limits	0.38	\$ 100,550
POLICIES				
Description			Type	
Establish Pedestrian-friendly Overlay Districts			Planning Effort/Ordinance	
PROGRAMS				
Description		Type	Potential Partners	
Traffic Enforcement		Enforcement	Banner Elk Police & Avery County Sheriff Department	

¹ Project is intended to be constructed parallel to Hickory Nut Gap Road, either adjacent to the roadway or along the south side of the Lees-McRae athletic fields near the creek. Either option will likely require agreements with the college and/or NCDOT.

TOWN OF BANNER ELK PEDESTRIAN PLAN

EXECUTIVE SUMMARY

Other Physical Improvements

In addition to the proposed sidewalk improvements listed in the implementation schedules above, a number of other recommendations have been made throughout the Plan to produce beneficial changes in the pedestrian environment. These include construction of several new greenway trails, which will produce a valuable recreational and transportation asset to Banner Elk. The final greenway trail recommendations are shown in Table S-4.

Table S-4. Final Greenway Trail Recommendations (in alphabetical order)

Proposed Greenway Trail	From	To	Description	Length (Miles)	Length (Feet)	Estimated Cost (unpaved)	Estimated Cost (paved)
Hemlock Trail	Lees McRae College	Wildcat Lake	Re-establish Hemlock Trail and work with Lees McRae to provide routine maintenance and upkeep. Project requires agreement with college to implement.	1.06	5604	\$140,100	\$745,332
NC 184 Alternate Trail	NC 184 (Tynecastle Rd)	NC 194 (Main St E)	Construct parallel pedestrian path along NC184 Alternate if/when constructed or construct trail independent of roadway project to connect residents in eastern Banner Elk with destinations to the north and south.	1.01	5351	\$133,775	\$711,683
Sugar Mountain Connector Trail	Hickory Nut Gap Rd (SR1342)	Sugar Mountain	Determine ownership and re-establish this foot trail from WildCat Lake to the back side of Sugar Mountain.	1.23	6505	\$162,625	\$865,165
TOTALS				3.31	17,460	\$436,500	\$2,322,180

TOWN OF BANNER ELK PEDESTRIAN PLAN
EXECUTIVE SUMMARY

Crossing improvements have also been recommended to enhance pedestrian safety at local intersections and key pedestrian crossings. The proposed crossing improvements are included in Table S-5 below.

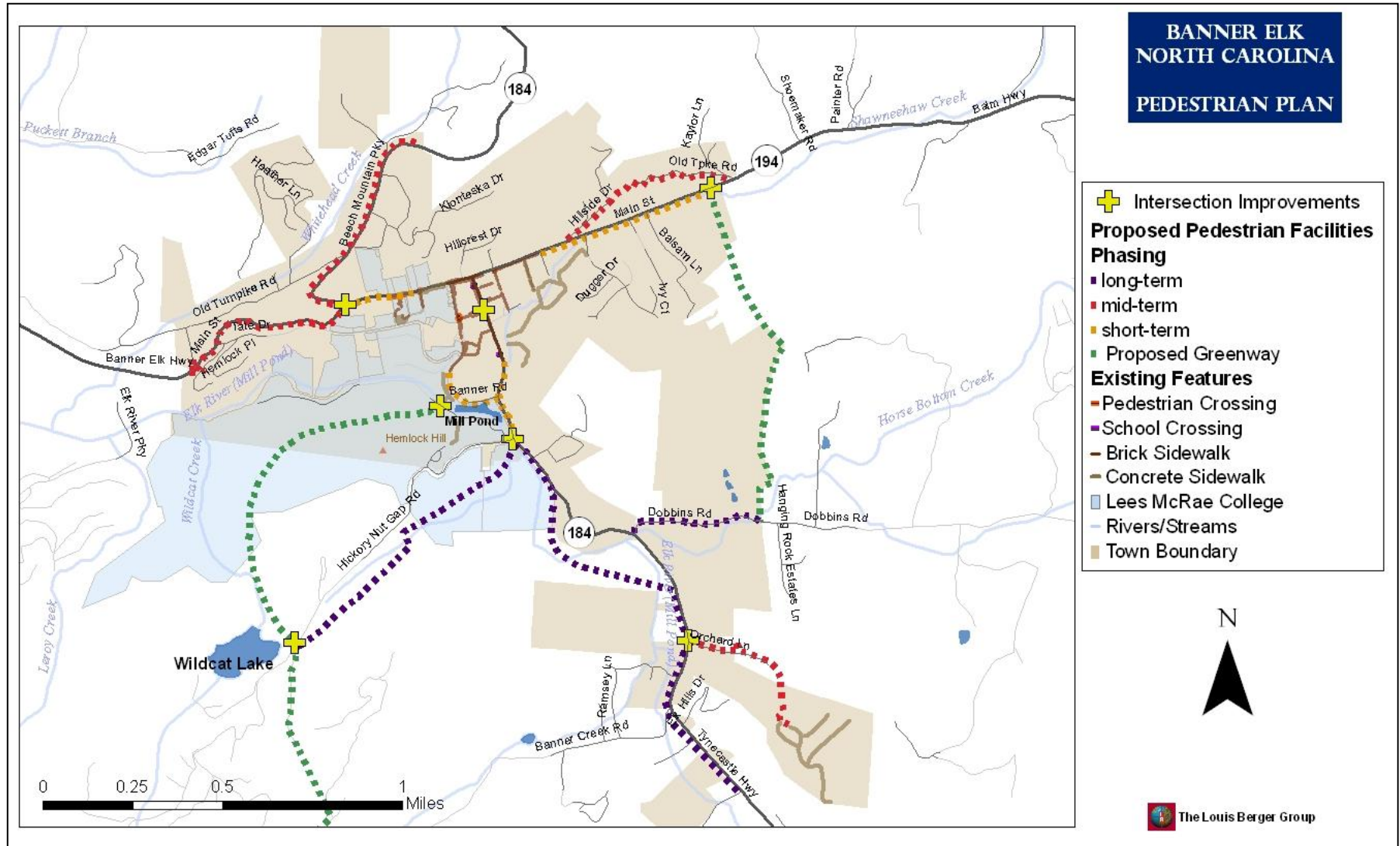
Table S-5. Final Crossing Improvement Recommendations

Intersection Location	Recommended Treatment
E Main Street & Shawneehaw Heights Road	Install high-visibility crosswalks and pedestrian crossing signage; consider flashing beacon warning and/or overhead "Yield to Pedestrians" signage to help pedestrians access the Dollar General and other destinations from the proposed sidewalk on the south side of W Main Street (NC194 East).
W Main St & NC184 North	Consider pedestrian signalization of intersection with addition of high-visibility crosswalks and countdown pedestrian signals.
Mill Pond Rd & Hemlock Trail Crossing	Install high-visibility crosswalks along roadway for trail crossing; consider advanced "Ped Xing" pavement markings. Add stop signage and collapsible bollards on trail to warn pedestrians and cyclists of roadway crossing ahead.
Shawneehaw Ave & Central Way SW	Install textured, high-visibility crosswalks at this downtown intersection to match other downtown streetscaping and raise motorist awareness of high pedestrian use.
NC184 South & Orchard Lane	Upon school completion, provide high-visibility crosswalk and school crossing signage at minimum for safe pedestrian crossing from sidewalk on west side of NC184 South to Orchard Lane (site of new Banner Elk Elementary School).
NC184 South & Hickory Nut Gap Road	Provide high-visibility crosswalks and pedestrian countdown signal at signalized intersection, in order to improve safety for pedestrians crossing from east to west sidewalk on NC184 South and for access to nearby shopping.
Hickory Nut Gap Road at Sugar Mountain Connector Trail Crossing	Upon trail establishment, add high-visibility crosswalk on Hickory Nut Gap Rd and consider advanced "Ped Xing" pavement markings. Install stop signage and collapsible bollards on trail to warn pedestrians and cyclists of roadway crossing ahead.

TOWN OF BANNER ELK PEDESTRIAN PLAN

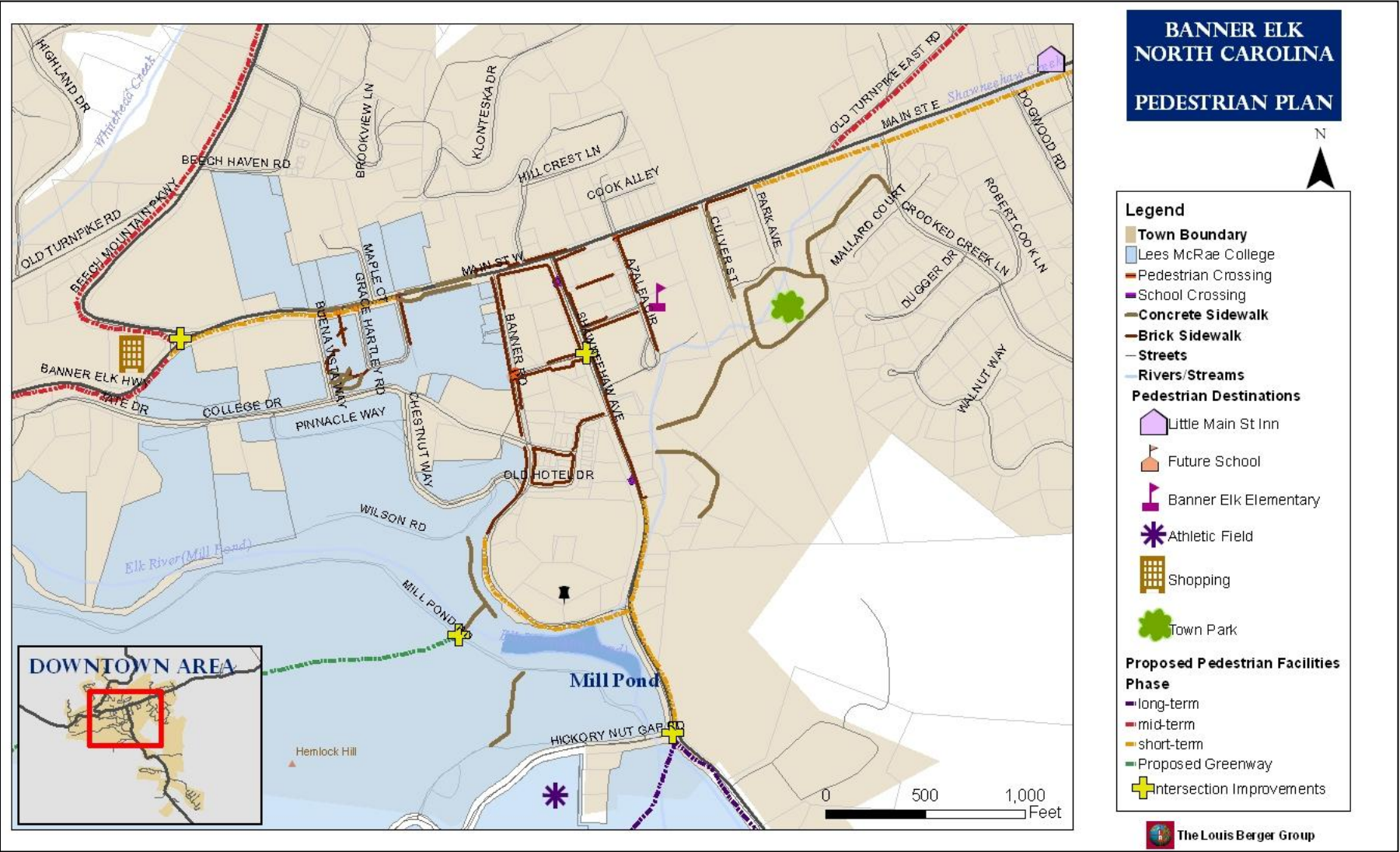
EXECUTIVE SUMMARY

Summary map of recommended pedestrian improvements for the Town of Banner Elk.



TOWN OF BANNER ELK PEDESTRIAN PLAN

EXECUTIVE SUMMARY



Section 1. Vision & Goals

In 2008, the Town of Banner Elk, North Carolina applied for and received a grant from the North Carolina Department of Transportation (NCDOT) to partially fund a comprehensive pedestrian plan for the Town. NCDOT regularly funds pedestrian and bicycle planning plans so that towns and cities in North Carolina can prepare for creating better pedestrian (and bicycling) environments for their citizens. Banner Elk contracted with a professional consulting firm, The Louis Berger Group, Inc., to help the Town prepare the plan, conduct public engagement exercises, and assist with managing a plan Steering Committee comprised of citizens, businesses, Town staff and pedestrian advocates.

The purposes of the Banner Elk Comprehensive Pedestrian Plan (“Plan” or “Pedestrian Plan”) are:

- To promote a better understanding of the measures that can be taken to create more and safer walking trips in Banner Elk;
- To identify in the Plan a clear schedule of projects, programs, and policies that Banner Elk and partnering agencies can provide to improve the walking environment; and
- During the planning process and afterwards, to create a better awareness of walking as a viable mode of transportation that can serve as a reliable substitute for some trips being made by private auto now; contribute to a healthier lifestyle; and reduce carbon and other emissions associated with motorized travel.

The Pedestrian Plan recommends future pedestrian-related projects and infrastructure improvements throughout the Town, as well as programs and policies that will support a pedestrian-friendly culture and help to further improve local walking conditions. The results of the Plan will be a safe, accessible pedestrian system that includes sidewalks, greenways and safe intersections, in addition to programs and policies that encourage residents and visitors alike to walk for health, recreation, fitness, cost-savings and basic transportation.

The Plan attempts to capture and address the needs of Banner Elk’s varied population, including those of current and future residents,

This section introduces the key concepts behind the Banner Elk Comprehensive Pedestrian Plan, as well as the goals and objectives set by the Steering Committee.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 1: VISION & GOALS

students, and tourists. The benefits of the Plan are as varied as the population it serves, including improved air quality, a healthier and more physically active population, reduced traffic congestion, and improved pedestrian safety for children and the elderly. These benefits amount to an overall improvement in quality of life and will continue to make the town attractive to newcomers and visitors, as well as to boost the town's economy and vitality.

1.1 Plan Process

The Banner Elk Pedestrian Plan was begun in October 2008 and completed in the summer of 2009. Banner Elk contracted with a professional consulting firm, The Louis Berger Group, Inc., to help the Town prepare the Plan, conduct public engagement exercises, and assist in facilitating a Steering Committee comprised of citizens, business representatives, Town and County staff, and local pedestrian advocates. Two public "Open House" workshops and a city-wide survey were conducted as part of the planning process to gather feedback from residents on the vision for the future of Banner Elk's pedestrian environment. In addition, the Consultant conducted a field inventory of existing pedestrian facilities in Banner Elk, which combined with public feedback, led to the identification of project and program needs in the community. Existing conditions analyses and recommended pedestrian improvements were refined through the development of two "working papers" reviewed in full by the Steering Committee. A draft of the Plan was presented for public comment at the June 11, 2009 Open House and the final Plan was adopted by the Town Council on July 13, 2009.

1.2 Vision and Goals

The first meeting of the Banner Elk Comprehensive Pedestrian Plan was conducted on October 30, 2008, in part to capture the opinions of the Steering Committee about important guiding principles for the Plan. The process began with a context focus question: "*how can Banner Elk develop a more walkable and bicycle-friendly community over the next 20 years?*" Following a visualization scenario relating to the focus question, participants brainstormed vision components, organized these components by categorical relationships, named each categorical

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 1: VISION & GOALS

group, and lastly reflected about the results. The resultant Banner Elk pedestrian plan vision consists of five component parts or goals: 1 - *Connecting locations*, 2 - *Integrating engineering and design*, 3 - *Obtaining funding*, 4 - *Building a network*, and 5 - *Promoting benefits*. In addition, each component has sub-components, or objectives, that relate to policy and program initiatives that can guide plan development and community decision-making over the next 20 years. Below is a summary of the results.

Developing a more walkable and bicycle-friendly community over the next 20 years will require that the town meet the needs of present and future residents, transients (to include both students and visitors), businesses, and all age groups ... through an integrated network of greenways, walkways, and bicycle pathways ... and the town will try to realize this vision by:

Goal #1: Connecting locations

- Connect the park – pond – lake as focal points
- Develop walking trails for historical places
- Emphasize connectivity and looping
- Maximize use of existing terrain features (e.g., streams, ponds, and fields)
- Provide walking trails for sports activities
- Provide walking tour maps for nature activities
- Utilize water features as connecting links

Goal #2: Integrating engineering and design

- Incorporate special engineering and design considerations for both challenging terrain areas and local weather implications
- Integrate pedestrian pathways with existing church locations
- Maximize the separation of pedestrian and bicycle pathways
- Obtain easements from landowners for pedestrian and bicycle pathways



Figure 1-1. Developing a Shared Community Vision



TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 1: VISION & GOALS

- Re-evaluate the town's parking plan
- Work with NCDOT to provide for dedicated bike lanes on select streets

Goal #3: Obtaining funding

- Aggressively develop an economic benefits package ... emphasizing potential benefits relating to various publics in town
- Consider development of a pathway tax ... and/or an impact fee
- Pursue grant funding
- Work with adjacent land owners and existing businesses

Goal #4: Building a network

- Encourage various community groups to become active participants
- Foster extensive community involvement
- Involve NCDOT
- Network with surrounding communities (i.e., think beyond just Banner Elk)
- Plan community activities that highlight pathway connections

Goal #5: Promoting benefits

- Advertise amenities and walkability
- Challenge Elder Hostel (and other special interest groups) to become involved in plan development
- Produce printed maps for trails and pathways

These statements will be further modified as the Plan progresses, and additional refinements are created by the Steering Committee and planning project staff. Each Goal is accompanied by objectives that further describe the impetus behind the Goal, and provides a connection to the implementation strategies.

Name	Position/Affiliation
Cheryl Buchanan	Town of Banner Elk (Staff)
Ried Estes	Lees-McRae College
John Mejaski	Town of Banner Elk (Staff)
John Swinkola	Grandfather Home for Children
Penny VonCanon	Town of Banner Elk (Planning Board)

Table 1-1. Banner Elk Pedestrian Plan Steering Committee Members

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 1: VISION & GOALS

From these five broad Goals, a succinct vision of the Banner Elk pedestrian environment can be then be created:

“The Town of Banner Elk is a more walkable and bicycle-friendly community that meets the needs of students, visitors, businesses, and residents of all age groups through an integrated network of greenways, walkways, and bicycle paths.”

This is the Vision for how the Town will be viewed, perhaps in 20 years, perhaps over an even longer span of time – but always, the Town of Banner Elk should be moving towards this Vision. As the Plan proceeds, implementation strategies will be added to this Section to define exactly how this important Vision is to be carried out in the months and years ahead. For now, we will begin to look at the existing conditions that face Banner Elk’s pedestrians, and identify some of the obstacles that can be overcome or lessened through a consistent effort by Banner Elk and its partners.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 1: VISION & GOALS

This page left intentionally blank.

Section 2. Existing Conditions

As part of the recommendation process, an existing conditions analysis was conducted to assess the current pedestrian network and community needs in Banner Elk. The existing conditions analysis is an important element of the planning process, as it builds the foundation and guides the development of any project, program, and policy recommendations.

To address the needs of pedestrians, the existing conditions analysis considers not only physical conditions, such as roads, parks, and schools, but also less concrete items, such as demographic information, public perceptions, and travel behaviors. This section contains the following items:

- History of Development in Banner Elk
- Demographic Analysis
- Existing Facilities Analysis
- Pedestrian Crash Analysis
- Community Concerns and Needs

2.1 History of Banner Elk

Banner Elk originally went by many names before Martin Banner and his five brothers moved into the area: Hix Improvement, Moses Deadening, and Larkin Chopping. Banner Elk was a part of Watauga County until 1911, when Avery County was formed and included Beech Mountain, as well as Banner Elk. Between the brothers and their families, 32 Banners lived in the area which, along with the Elk River and abundant deer and (real or imagined) elk in the area, gave the place its permanent name. While the English predominated the ethnic mix of the original settlers that followed the Banners to this area, Welsh, Irish, Scotch, German and Dutch were all present and, later, African American slaves. Life was incredibly difficult for these early settlers, but the vast forests that still cover much of the mountains made for good, unfenced grazing lands for pigs, sheep, and cattle and a ready supply of forestry products. The construction of transportation facilities to move children to distant schools and food and

This section describes factors that contribute to current pedestrian transportation mode shares in Banner Elk, as well as the physical landscape that affects how today's average pedestrian experiences the Town.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

agricultural products to markets and railroads were early motivators for county road-building.

The new county of Avery did not originally have any paved roads within its boundaries. Roadways are narrow in Banner Elk today in part because the N.C. State Legislature decreed in the mid-1850's that all roads built in Watauga County should not be more than 12 feet wide where side-cutting (cut slopes) and just eight feet wide in instances where rock blasting was necessary. Convenience was sacrificed at the expense of cost where road building was concerned, although these narrow streets were given the local moniker "Governor Scott's Death Traps" during this era. While the ribbon pavement roads in place today are seldom 12 feet wide, many are not much wider and almost all built before current era subdivision regulations are not more than 20 feet wide. One such narrow road was the Parallel Road that ran between Cranberry to Banner Elk, so-named because it was constructed by Mitchell County to avoid a nearby toll road that connected Elk Park to Banner Elk in 1895 by S.T. Kelsey's Turnpike Company at a cost of a thousand dollars per mile. River rock was crushed by hand, and nearby river sand used to help mortar and maintain the road.

It is hard to overstate the poor condition of the transportation network during most of the 1800's in this area and throughout the State. The condition of the stage road that the far-traveling Frederick Law Olmstead traveled upon was so "as bad as anything, under the name of road, can be conceived to be." The plank road era, sponsored in part by the plentiful nature of wood in the State, proliferated during the period between 1849 and 1860, when 81 plank road companies were chartered in North Carolina; in one year alone, 1852, thirty-two such charters were passed by the general assembly. These charters generally had minimum widths of 8-10 feet, and maximum widths of thirty to sixty feet. Two to five acres of land could be condemned for a toll house. Originally a Russian invention, the plank road was readily adapted here, and consisted of heart pine from nine to 16 inches wide and three-to-four inches in depth. Frequently, the finished roads had uneven edges to reduce edge wear from wagons pulling on and off the road in passing maneuvers, and had a covering of sand that would harden and protect the wood surface. Costs of construction varied from \$1,000 to \$2,400 per mile. The Plank Road



Figure 2-2. Town of Banner Elk gateway sign located on NC 184.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

Movement died before it reached Avery County, with the closest charter being the Asheville to Greenville, SC line that was interrupted by the Civil War. However, the poor economic conditions in the 1850's, high costs of repairs due to flooding, and several poor crop years translated into most of the plank roads being abandoned by 1860. Up until nearly 1920, the financial burden of maintaining roads was eased considerably by the fact that all eligible young men were required by state law to show up at a designated location for several days each year to work on roadway maintenance.

In 1916, an event happened that would change the mountain people of this region forever, and it had nothing to do with the roadways and did not even pass through Banner Elk. After fifteen years and a million dollars, the Tweetsie Railroad ran the 66 miles from Boone to Johnson Town, Tennessee. At speeds of five to 40 miles per hour, the train was actually comprised of at least 12 engines during the lifetime of the railway that ended in abandonment in 1950. People would wait trackside and flag down Tweetsie, which would always stop for them. Many credit the railroad with bringing civilization to this country, just as it still draws tourists today.

Privately-built footbridges hewn from logs helped the early pedestrians ford streams and, much less frequently, wire swing bridges. The steep slopes and clay soils (renowned in Avery County for modeling characteristics) produce high stormwater runoff volumes and velocities, which have frequently washed away bridges, dams, roads, buildings, and lives. Walking and riding in the mud were common experiences, prompting Avery County to issue bonds for roadway improvements in the early 20th century. The State of North Carolina took over the responsibility of building and maintaining roadways in 1921 and, by 1955, the County had 125 miles of paved roads.

Places to walk to were somewhat limited in Banner Elk's earlier days. Frankie Brown McClure writes that Banner Elk, when her family started camping off of Main Street in 1919, consisted of the (Mrs. Banner's) Tea Room and (Mr. Banner) General Store that sold everything from saddles to cheese. Stinson's ice cream shop and the Candy Kitchen were popular. The Banner Elk Hotel on Banner Street still stands after 110 years, but is not in operation. Farther away from town, the Beech Haven Camp for Girls

An Account of Traveling to Banner Elk, Circa 1917

"There were no good roads and horseback was the only sensible way to travel.... On each trip I had to leave Johnson Town at seven in the morning on the Narrow Gauge (there was no possible other way to go); arrive at Elk Park 32 miles away at eleven and get to Banner Elk – seven miles – at noon.... I had to stay over till next morning, ride with the mail boy, leaving Banner Elk at seven; catch the Narrow Gauge there at eight and get back to Johnson Town at 10."

-D.R. Beeson, October 10, 1974

TOWN OF BANNER ELK PEDESTRIAN PLAN

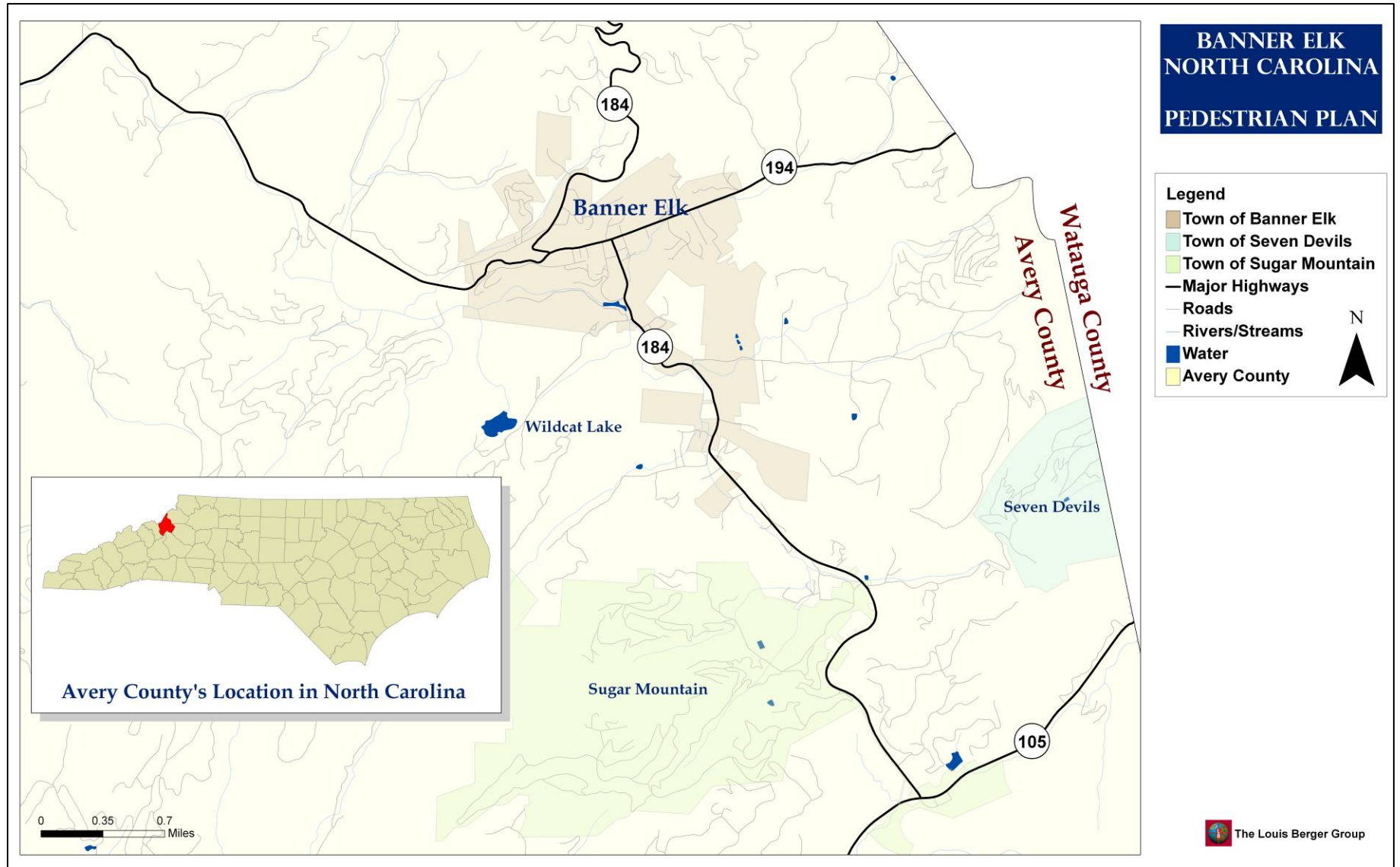
SECTION 2: EXISTING CONDITIONS

would go horseback riding on small trails, occasionally encountering natural and man-made barriers presented by fallen trees and moonshine operations.

The histories of the Town of Banner Elk and that of Lees-McRae College are inextricably bound together. The Lees-McRae Institute was chartered in 1907, named in the former place for a famous benefactor, and in the latter for a Christian teacher much admired by the Reverend Edgar Tufts. The Reverend Tufts also founded what is now known as Grandfather Home for Children, a home for abused children. The school became Lees-McRae College in 1930. Starting off with just a few hundred students Lees-McRae College is still a small school that houses about 1,000 students on a campus generously populated by stone and mortar architecture.

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 2: EXISTING CONDITIONS

Figure 2-3. Location of Banner Elk, North Carolina.



2.2 Demographic Analysis

It is important to examine a city’s demographics before developing a pedestrian plan because demographic information provides valuable clues about citizen travel behavior and preferences. Characteristics such as age, income, vehicle ownership, and commute time can suggest a population’s potential for walking as a mode of transportation. The following paragraphs provide a summary of the demographic analysis for the Town of Banner Elk and explain the implications of the analysis for the recommendations made in the Banner Elk Pedestrian Plan. The complete demographic analysis can be found in Appendix A.

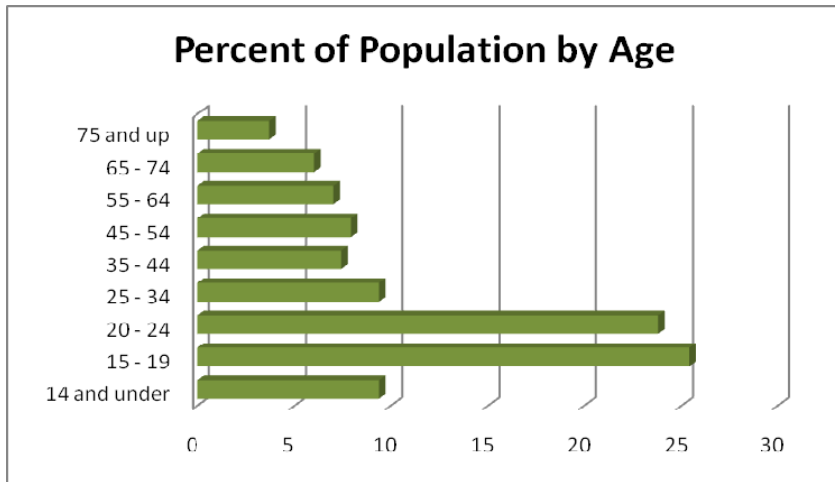


Figure 2-4. Banner’s Elks population statistics by age. One can see clearly that young people between the ages of 15 – 24 make up nearly half of the total population of the Town.

According to 2000 U.S. Census data, the Town of Banner Elk’s population tips heavily towards younger people aged 24 and below who make up 58.6 percent of the town’s overall population. This is significantly higher than state and national demographics where people 24 and younger account for only 34.42 percent of the North Carolina population and 35.33 percent of the United States population. Interestingly, the two cohorts that skew Banner Elk so heavily to the young side are the 15-19 group which is 25.4 percent of the population and the 20-24 group which is 23.8 percent. At the state level, the 15-19 group is only 6.71 percent and the 20-24 group is only 7.17 percent of North Carolina’s population. Similarly, for the United States as a whole, the 15-19 group accounts for 7.18 percent of the overall population and the 20-24 group accounts for 6.74. Meanwhile, Banner Elk actually has fewer very young people than the state and nation. The 14 and under cohort is only 9.4 percent of Banner Elk’s population while it is 20.54 and 21.41 percent of the state and national populations respectively.

So relative to the state and nation, Banner Elk has a much higher percentage of 15 to 24 year olds, while having less persons 14 and under. Banner Elk also leans relatively low on the 25-34, 35-44 and 45-54 cohorts when compared to North Carolina and the United States as a whole. It is only slightly below the state and nation in the 55-64, 65-74 and 75+ cohorts. Overall, when looking at Banner Elk’s age-distribution pattern, the 15 to 24 year old age group really stands out and should be considered an important factor in the creation of the pedestrian plan.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

Banner Elk's population is 90.3 percent Caucasian with no other racial groups occupying a significant share of the population. The second largest group is African-Americans who account for 3.9 percent of the population, much lower than the 21.6 percent and 12.3 percent this population occupies at the state and national level.

Banner Elk has a Median Household Income (\$33,750) and Median Family Income (\$41,964) below state and national averages which might be due to the relative youth of the population (younger individuals and families tend to be less affluent than middle aged persons further into their careers). Banner Elk also has a higher percentage of people below the poverty level. Poverty levels in Banner Elk appear to affect children more than seniors as compared to state and federal numbers. While 22.2 percent of children under age 5/6 live below the poverty level in Banner Elk, only 12.8 percent of the state's children and 9.7 percent of the nation's children do so. In contrast, 17 percent of Banner Elk's seniors live below the poverty line, while 31.5 percent of the state's seniors and 33.6 percent of the nation's seniors do so.

The town's household vehicle availability statistics are close to the state and national numbers though Banner Elk has a smaller percentage of households with no car availability with only 3.4 percent of housing units served by no vehicles whatsoever. This might reflect the small size and remote location of the town and thus the need of its inhabitants to access some goods and services beyond its borders via automobile. Despite the widespread availability of vehicles, 19.4 percent of commuters walk to work, which is significantly higher than the state and national percentages. It is also interesting to note that the town has no bicycle commuters, according to the 2000 Census data. The demographic analysis also reveals that Banner Elk has a much higher percentage of work commuters who travel less than 10 minutes to work, 50.5 percent compared to 13.5 percent in the state and 14.4 percent in the nation. The data indicates that most Banner Elk residents (61.8%) live within 14 minutes of work, suggesting that people who work in the town also live within the town, which means that increasing pedestrian commutes can be a realistic goal.

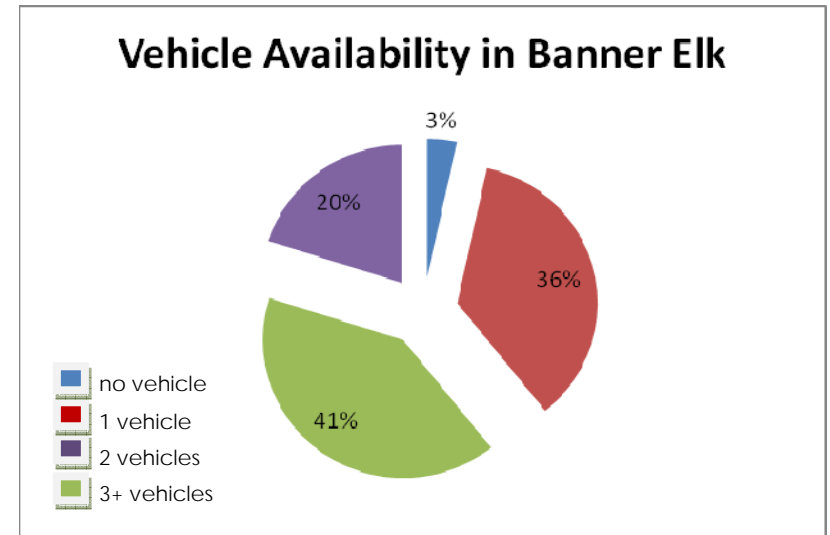


Figure 2-5. Vehicle availability statistics for Banner Elk indicate that most residents have access to a car or truck. However, approximately 19% of residents choose to walk to work.

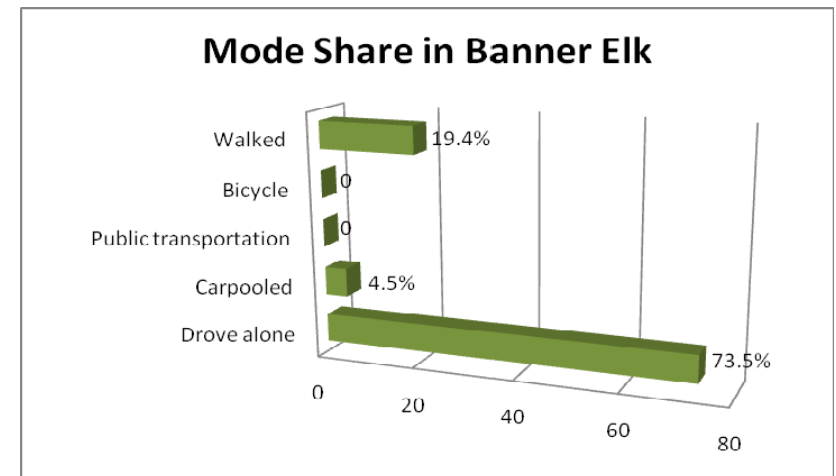


Figure 2-6. Mode share statistics for Banner Elk show that a nearly 1/5 of Town residents walk to work.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS



Figure 2-7. Banner Elk's downtown area (above) features brick sidewalks, landscaped planters, benches and pedestrian-scale lighting while many outlying areas (below) lack pedestrian amenities.



Overall, Banner Elk is heavily weighted towards being young, Caucasian, and well-educated with somewhat low income levels. The results of the demographic analysis suggest that the town's population would be amenable to walking for transportation purposes. Based on the age-distribution, existing commuting patterns, income levels and poverty rate, commuting by foot seems to be a potentially practical and desirable option for many workers. Therefore, the Banner Elk Pedestrian Plan should make recommendations that focus on improving pedestrian facilities to encourage people to travel to work by foot, as well as make recommendations to promote walking for recreational or non-work trip purposes. In addition to the environmental and air quality benefits of increased walking and decreased automobile use, the effects of adopting these pedestrian improvements will also ease vehicle traffic congestion while potentially improving the overall health and wellness of the residents of Banner Elk.

2.3 Existing Facilities Analysis

According to the 2000 U.S. Census, approximately 19% of Banner Elk residents walk to work. Part of the answer as to why so many people walk in Banner Elk – and why more people don't walk – can be found in the level of accommodation for pedestrians. It is tempting to limit the observations of pedestrian accommodations to sidewalks or greenway trails alone, but the way that intersections are designed; the way that the shops, businesses and homes are located and developed; and the policy environment in the Town, County, and State are all important considerations as well.

Important destinations for pedestrians (and motorists, bicyclists, and so forth) are shown in [Figure 2-10](#) (pg 17). This map includes an inventory of existing sidewalk facilities in Banner Elk, most of which are concentrated in the downtown area and around Lees McRae College. Many of these existing brick sidewalks have been recently constructed through the Town's sidewalk program and offer a very walkable environment in the downtown area. In addition, the Town has invested significant resources in its greenway trails, installing nearly a mile of off-road trails around the Town Park, connecting Shawneehaw Avenue with Crooked Creek Lane.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

While the Town has made great progress on these and other pedestrian amenities, there are many gaps in the sidewalk network outside of the central business district. As in most North Carolina cities, sidewalks were likely constructed in the historic downtown when automobiles were less prominent in the transportation network, but outside of the downtown area sidewalks are less frequent, reflecting the post 1950's era jump in automobile ownership across America as well as the rural character of Banner Elk's location.

In addition to sidewalk facilities, [Figure 2-10](#) illustrates major destinations in Banner Elk. The town has a number of parks, an athletic field, an elementary school and the historical Lees McRae College, which should all be considered pedestrian generators and given special attention when prioritizing local pedestrian projects. The central Town Park, Lees McRae Athletic Field, Mill Pond and Wildcat Lake are especially important recreation facilities in Banner Elk. Town Park is readily accessible to pedestrians via the existing greenway trail and downtown sidewalk network, but Mill Pond, the athletic field and Wildcat Lake are less accessible by foot. Interestingly, an old walking path to Mill Pond still exists and could be re-established through some pruning and blazing to better link the downtown area and Lees McRae with the Mill Pond destination. The college athletic field is located south of Mill Pond on Hickory Nut Gap Rd, and could be connected to the Mill Pond recreational area by way of a north-south connector trail or via sidewalks on Mill Pond Rd and Hickory Nut Gap Rd. West of the athletic fields, via Hickory Nut Gap Rd, lays Wildcat Lake. Sidewalks or a parallel greenway trail along Hickory Nut Gap Rd could then connect the athletic fields with Wildcat Lake and create a continuous pedestrian/bicycle connection between three of the Town's major recreational destinations.

In addition to parks and trails, local schools are major pedestrian generators and top priority should be given to creating connections between Banner Elk's residential areas and schools. The local elementary school, Banner Elk Elementary, is located in the heart of downtown and benefits from the downtown sidewalk network and Town Park greenway trail. However, there are few residential linkages to/from these existing sidewalks and trail facilities; tying in neighborhoods and residences east, west and south of downtown will be important in encouraging safe



Figure 2-8. The Town's existing greenway system offers stress-free pedestrian access to the Town Park, local elementary school and Town Hall from nearby downtown locations.



TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS



Figure 2-9. Lees McRae College is a major employment center for Banner Elk, as well as a residential area for students and destination for visitors and newcomers to Town.

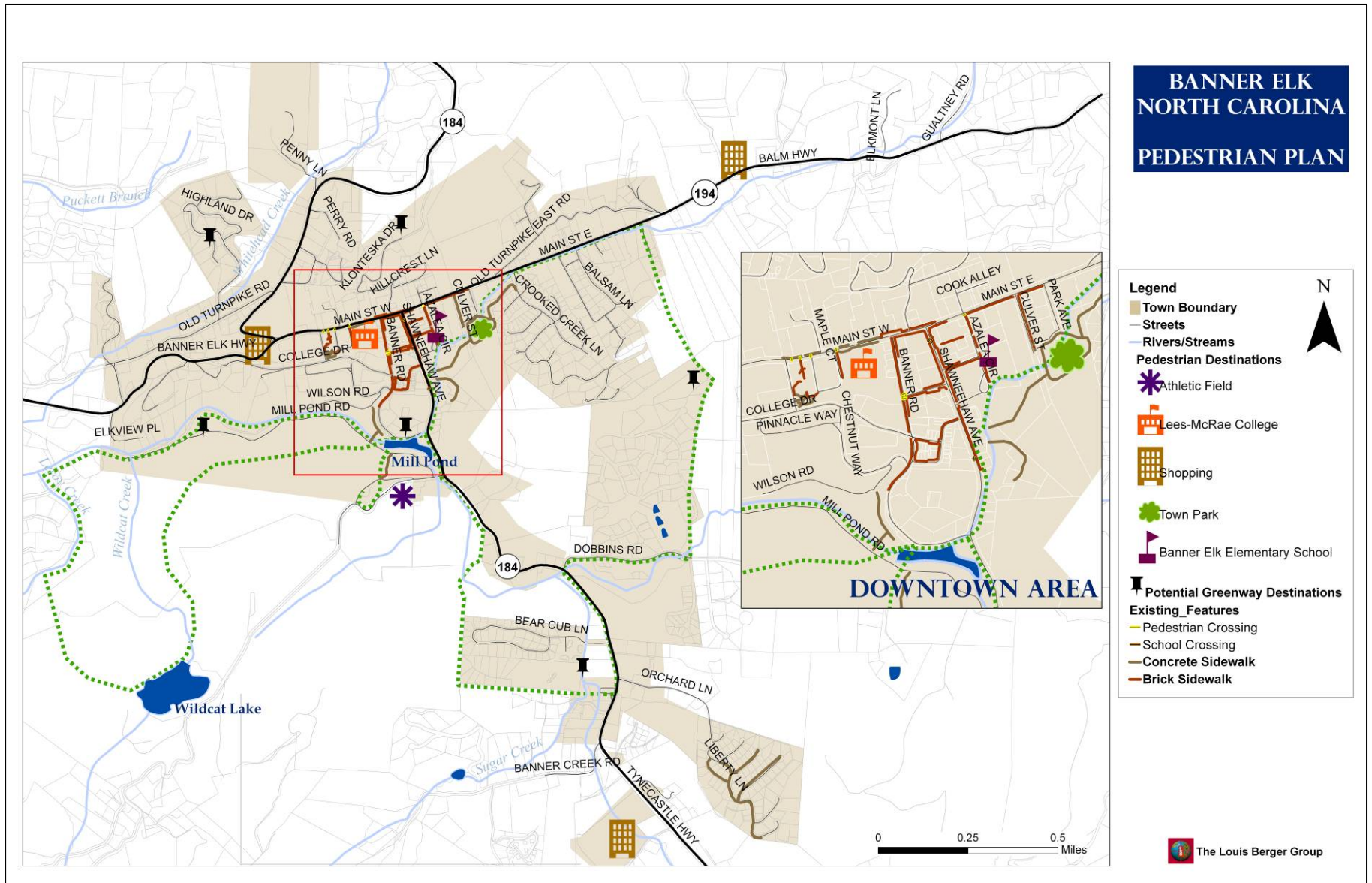


pedestrian travel to/from school. Sidewalks along major roadways (outside of downtown) may be a good start in helping to link existing and future residential developments to the school. In addition, traffic calming and intersection improvements might be considered to improve pedestrian safety and create “safe routes to school,” especially along Banner Elk’s busier rural highways. In addition to the elementary school, pedestrian access to/from Lees McRae College will be an important consideration in the Pedestrian Plan. Better connections to/from the college and surrounding commercial development will be especially important in helping to keep the college and its residents connected to town services and businesses.

Finally, connections to major employment destinations and retail areas should be considered further in project selection and prioritization. Lees McRae College and the Town government are Banner Elk’s largest employers, while local shopping centers and service industries collectively account for the majority of jobs in the Town and thereby employ and attract significant numbers of town residents and visitors. As the community grows, the Town should focus on linking outlying commercial developments such as new shopping centers, B&B’s and vacation resorts to the downtown area and existing residential areas via an expanded sidewalk and/or greenway network.

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 2: EXISTING CONDITIONS

Figure 2-10. Pedestrian Destinations and Facilities Map



2.4 Pedestrian Crash Analysis

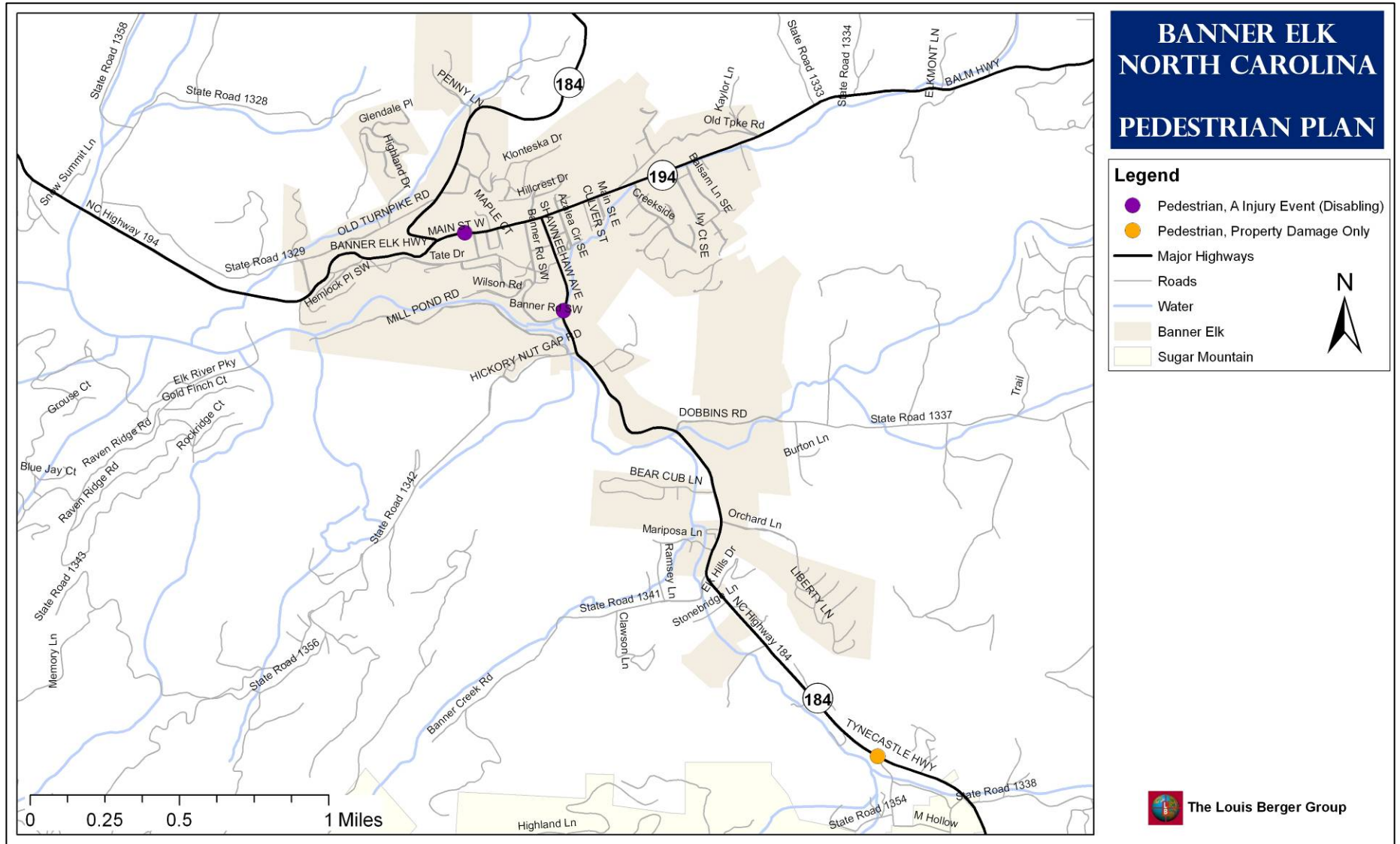
A pedestrian crash analysis is useful because it can be an indicator of the pedestrian-friendliness of a community, and can also provide information on key locations or educational outreach areas where improvements could be made to enhance safety. A crash analysis can often indicate popular walking routes, and sometimes illustrate conflict areas between pedestrians and cyclists. Crash data for Banner Elk was available from the North Carolina Department of Transportation (NCDOT) for 1990 – 2008; three crashes occurred over the course of this period. Given Banner Elk's exceptional walk rate of 19% for work commutes, this crash rate is fairly low overall.

All three pedestrian crashes in Banner Elk occurred on major thoroughfares; one crash occurred on NC 194 (Main Street) just west of downtown, while two crashes occurred on NC 184 south of Main Street. This data reinforces the notion that pedestrian amenities are needed along major thoroughfares to improve the safety of pedestrians. Two out of three of these crashes were severe with evident and/or disabling injury incurred by the pedestrian. All three crashes occurred at or near an intersection. These facts could indicate that one of Banner Elk's strongest needs is to make safety improvements at intersections, such as pedestrian signalization, crosswalk improvements, traffic calming and/or signage. These crash types also reinforce the notion that educational outreach could be used to encourage pedestrians to obey traffic signs and signals and use caution when crossing busy streets.

Figure 2-11 provides a summary of crashes in Banner Elk from 1990 to 2008.

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 2: EXISTING CONDITIONS

Figure 2-11. Pedestrian Crash Map



2.5 Community Concerns & Needs

Public input has played a critical role in the Town of Banner Elk Pedestrian Plan, helping to guide the development of the project list, identify program and policy recommendations, and assist with prioritization. The process to gather public input has included multiple elements, incorporated into the Pedestrian Plan throughout the planning process. At the project onset, a Steering Committee was created to serve a guiding role for the Plan. Members of the Steering Committee included Town staff, citizens and local business representatives. A public outreach effort was developed in parallel with the regular Steering Committee meetings, which included a town-wide survey, public appearances at the Woolly Worm festival and focus groups. During public involvement activities, participants were provided an opportunity to speak directly with Town staff and their consultants about the vision for the Plan and potential project recommendations. Maps were available for participants to indicate the locations of pedestrian-related issues and desired improvements, and flyers and surveys were distributed. In total, approximately 50 participants stopped by the Pedestrian Plan booth at the Woolly Worm festival. Copies of the sign-in sheets, flyers, and survey are available in Appendix B.

2.5.1 Steering Committee Feedback

At the first two Steering Committee meetings on October 30, 2008 and March 3, 2009, stakeholders were given the opportunity to provide input on walking conditions in Banner Elk. Specifically, Steering Committee members created an overall vision for the Pedestrian Plan (discussed in Working Paper #1) and specified areas where they would like to see sidewalk improvements, greenway connections and crossing upgrades. Committee members highlighted major “hot spots” or problem areas for pedestrians, as well as some priority criteria for ranking pedestrian connectivity projects. These criteria are listed below in order of importance as designated by the Steering Committee, and will be used to help prioritize the project recommendations of the Plan.

- Town marketability contribution
- Project Cost
- Proximity to Shopping/retail
- Connectivity to existing sidewalk/walkway/greenway

Name	Affiliation / Representation
Cheryl Buchanan	Town of Banner Elk (Staff)
Ried Estes	Lees-McRae College
John Mejaski	Town of Banner Elk (Staff)
John Swinkola	Grandfather Home for Children
Penny VonCanon	Town of Banner Elk (Planning Board)

Table 2-1. Pedestrian Plan Steering Committee

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

- Bicycle linkages
- Park and walk potential
- Proximity to Parks
- Lighting requirements
- Elevation issues
- Connectivity and tourism
- Visibility (to be seen by others...encouraging use)
- Proximity to College
- Mode conflicts
- Maintenance impact/considerations
- The customers we'll serve
- Average daily traffic potential
- Protect pristine water areas
- Environmental considerations
- Proximity to Schools
- Safety considerations
- Visibility factor 1: quick and easy
- Proximity to Thoroughfares
- Spur Potential
- Critical (or first-step) building block
- Focal point creation (or enhancement)
- Phasing potential
- Project complexity
- Proximity to Major employers
- Uniqueness (or memory creation) factor
- Visibility factor 2: difficult but important

Figure 2-13 illustrates sidewalk needs, greenway connections and crossing improvements identified by the Steering Committee and other stakeholders (e.g. survey respondents and participants of the Open House and focus groups).

2.5.2 Survey Results

A Pedestrian Plan survey was developed for the Town of Banner Elk and distributed through the public event held in October at the Woolly Worm Festival. Prior to the Pedestrian Plan, the Town of Banner Elk had also conducted a detailed survey of area residents to determine services for

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

the town to focus on as they develop their budget and capital improvement plans.

Banner Elk’s town services survey included a major pedestrian facilities component and resulted in more than 200 responses favoring the Town’s efforts to construct projects to expand the Town’s sidewalk and greenway system.

Additionally, several open-ended responses to the Town of Banner Elk’s survey highlighted areas where residents felt the Town could connect with

a more complete sidewalk, greenway and trail system.

These included:

- Connections to Hickory Nut Gap Road, the Lees
- McRae athletic fields and Wildcat Lake;
- Sidewalks along NC 184 south of Town to connect to The Great Train Robbery, Lowe’s and points further south near Sugar Mountain; and
- Programs and special events focused on walking and recreational activities.

Input from the public, focus groups and the project Steering Committee was through the development of the Banner Elk Pedestrian Plan was consistent with the results of the Recreation Survey. As such, the recommendations contained in this plan reflect the priorities of the numerous stakeholders in and around Banner Elk who will likely use these facilities in the future.

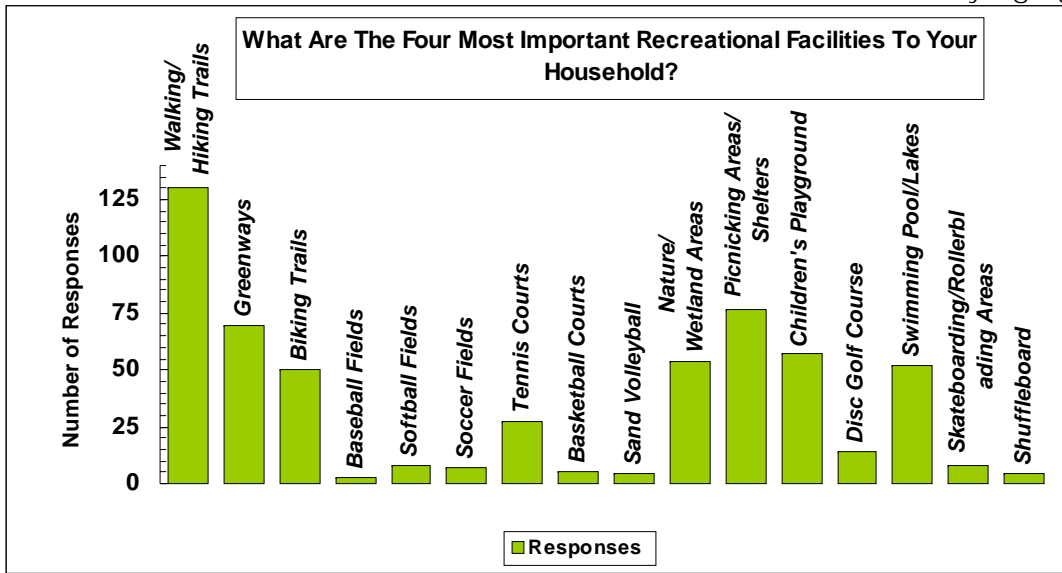


Table 2-2. Results of Banner Elk Recreation Survey.

2.5.3 Public Meetings and Focus Group Feedback

In addition to regular Steering Committee meetings and public outreach through the town website and survey mechanism, the consultants and Town staff attended the October 18, 2008 to engage attendees in discussions on the Pedestrian Plan process. This activity was conducted in lieu of a traditional Open House. Participants were able to complete the Banner Elk pedestrian survey, speak with Town staff and planning consultants, and engage in a mapping exercise to identify projects for the Pedestrian Plan. Suggestions that arose during the festival were based on

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

the unique perspectives, interests and needs of Banner Elk's citizens, public sector staff, business leaders, advocates, elected officials and tourists who all attended the event. Feedback from participants has been included in the project, program and policy recommendations of the Plan.

Additionally, three focus groups were held on January 22, 2009 to gather feedback from various target populations in Banner Elk. Focus group discussions are a qualitative research tool that can help to explore, clarify, and validate planning concepts. Eighteen persons participated in the January 2009 focus groups. The selection of participants for each focus group was by stakeholder interest: students/young adults, town/college staff and town residents, business community, and elected/appointed town officials. The purpose of each focus group was to explore pedestrian connections and relate the connections to design considerations. Participants worked in small groups of 2-3 persons.

Each focus group worked to identify activity centers within the town, identify major residential areas and employment centers in Banner Elk, and identify areas with high pedestrian volumes, as well as areas where pedestrian connectivity might be improved. The three groups then came back together into one group and identified common themes. Together, participants identified 15 pedestrian *activity centers* in Banner Elk, where people shop, work, and go for leisure time activities. These were:

- Avery Arts Council
- Banner Museum House
- Dam
- Lees-McRae athletic fields
- Lees-McRae College (the general campus and the library, student recreation complex, and theater facilities)
- Mill Pond
- Old elementary school
- Post office
- Shopping area on NC 194 North
- Shopping/dining/lodging area on NC 184 East
- Town center shopping area
- Town hall and town park



Figure 2-12. Photographs from the January 22, 2009 Focus Groups for the Banner Elk Pedestrian Plan. Participants engaged actively in the identification of projects and prioritization criteria for pedestrians in town.



TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

- Viewshed points
- Wildcat Lake
- Winery

Focus group attendees identified “priority” routes for improvement, which included the town center area (e.g. Town Hall, town park, the post office, shopping/dining establishments, and the old elementary school) to/from Mill Pond, Wildcat Lake and the college athletic fields, as well as along NC 184 East. The Lees McRae’s main campus was also identified as a high pedestrian area, and NC 194 North (to include a loop created using NC 194 and Old Turnpike Road) was identified as a potential walking route if pedestrian amenities are provided.

Lower priority local and regional *spurs* were also identified and included the Beech Mountain turn-off area, the small housing areas in town west of NC 194, and the area from Apple Orchard connecting to the new school site and extending west behind the old hospital. In addition, a potential regional spur extends from Wildcat Lake to the Sugar Mountain area. Lastly, Hemlock Trail has special significance. Although this trail is only a partial trail segment, it provides important linkages to Lees McRae College (to include the athletic fields), the Grandfather Home, Wildcat Lake, and the town center.

In addition to particular routes and activity centers, focus group participants helped identify design goals for pedestrian facilities in Banner Elk. Many of the design considerations discussed at the meeting are links between plan elements that can nurture user experiences and enhance appreciation of the various plan elements. Some of these design considerations are general, and some are more specific. Generally, focus groups participants discussed the need to connect to the town center area; flexibility in the in-town versus out-of-town appearance; the need to provide for multi-modal uses yet minimize modal conflicts; balance maintenance and safety requirements; provide for only minimal lighting; design for efficient and green operation/maintenance; and design in ways that will later help the town to market the system as a community asset. The more *specific* design considerations that participants identified included: incorporation of a wayfinding system (consisting of signage,

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

markings, and kiosks); provision of pedestrian amenities (e.g., benches, water fountains, engagement activities such as exercise points, etc); maximized usage of natural and green materials/styles with consistency in appearance; pedestrian linkages to parking areas; improved street crossings; opportunities that might integrate the walking experience with cultural activities in proximity to the walking paths; make the town center area distinctive; and integrating a micro-hydro project at the dam with the walking system.

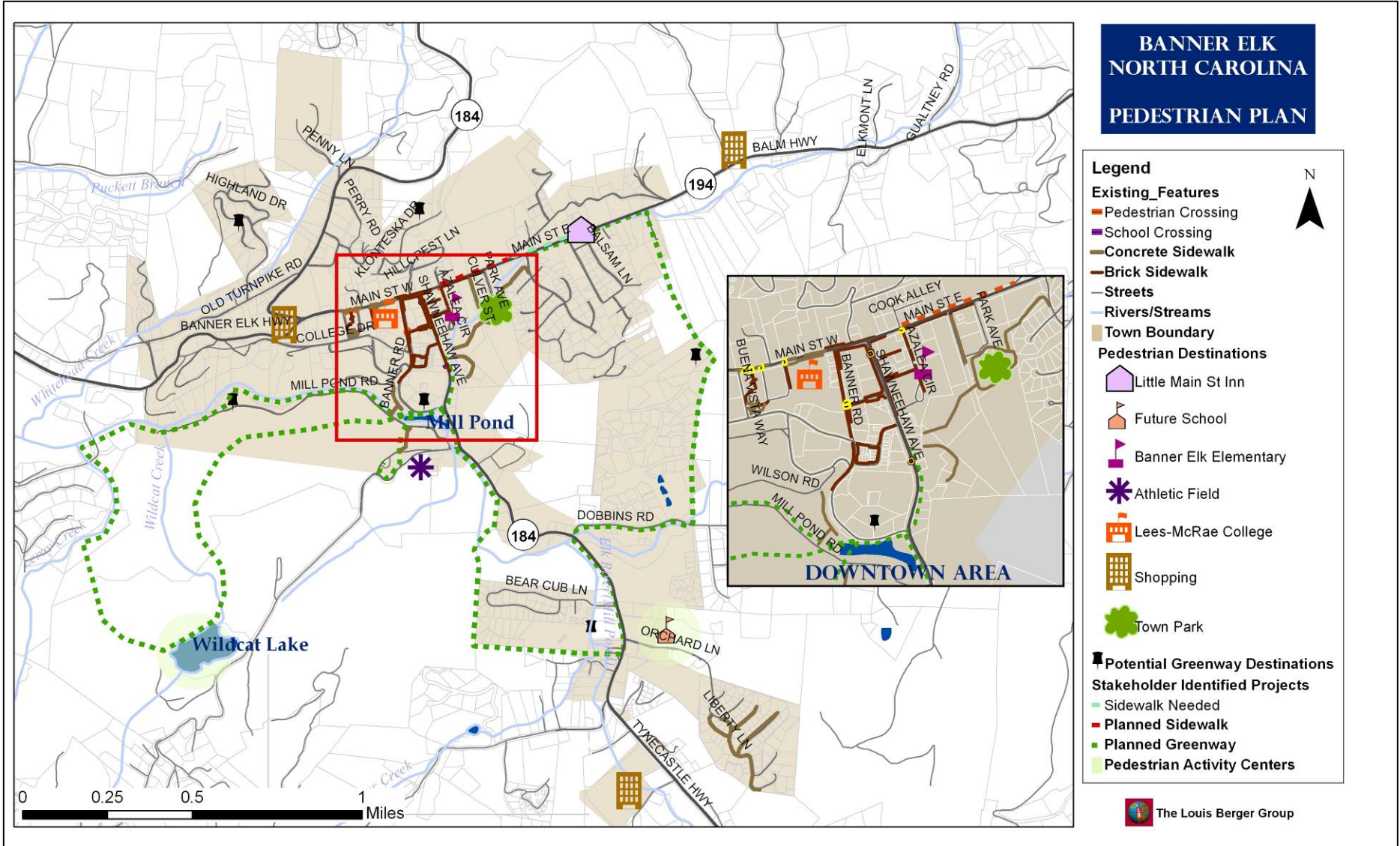
Focus group participants also identified several concerns/suggestions. Some of their comments are in the nature of *reality checks* to plan-making, and others are *issue-related*. Below is a list of the various concerns/suggestions.

- Construction/trail-clearing procedures
- Environmental impacts, to include protecting wildlife
- Establishment of an *after the plan* advisory committee
- Post-construction maintenance ... trash control and also how the town will obtain maintenance funding
- Providing ease of access for police/fire personnel and equipment
- Right-of-way acquisitions
- Safety
- Town-college relationships
- Transparency of the college (i.e., as part of the larger system)
- User conflicts in general (e.g., mode conflicts, illegal activities such as camping, dogs, etc.)

Overall, there was a great deal of consistency between the results that each focus group produced. All of the focus group feedback will be used to develop project, program and policy recommendations for the Pedestrian Plan.

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 2: EXISTING CONDITIONS

Figure 2-13. Stakeholder Identified Projects and Related Feedback



Section 3. Plan & Policy Review

The decisions that shape the quality of pedestrians' experience are made every day, every time a new shopping center is built, an intersection is widened, a street paved. In turn, the Town of Banner Elk makes decisions about how streets are designed, the way that new private developments are constructed, the priorities given to various kinds of improvements. The following is an assessment of the various policies, plans and regulations that directly or indirectly affect walking in Banner Elk:

- Code of Ordinances;
- 1999 Streetscape Plan;
- 2003 Thoroughfare Plan; and
- 1967 Banner Elk Development Plan.

It is important to recognize here that the North Carolina Department of Transportation (NCDOT) plays a preeminent role in the financing, operation, and design of the streets and other transportation elements in our State. However, NCDOT has become more amenable in recent years to looking at non-traditional street design standards; integrating context sensitive design and land use objectives into their practices; managing roadway access; planning for and funding pedestrian improvements; and actively seeking out new partnerships to help improve secondary road systems across the State.

3.1 Existing Plans

1999 Streetscape Plan

The Banner Elk Streetscape Plan was completed in 1999 and included a number of plan elements primarily focused on the pedestrian environment. The Streetscape Plan included a sidewalk plan element detailing the design of brick sidewalks in downtown Banner Elk, with landscaped seating areas and pedestrian-scale lighting proposed throughout the central business district. The Plan also recommended that sidewalks be extended west of downtown along NC 194 to the Sunrise Shopping Center, east of town along NC 194 to the Police Department,

This section reviews current planning documents and policies in Banner Elk that shape the day-to-day experiences of those who walk for recreation and transportation.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

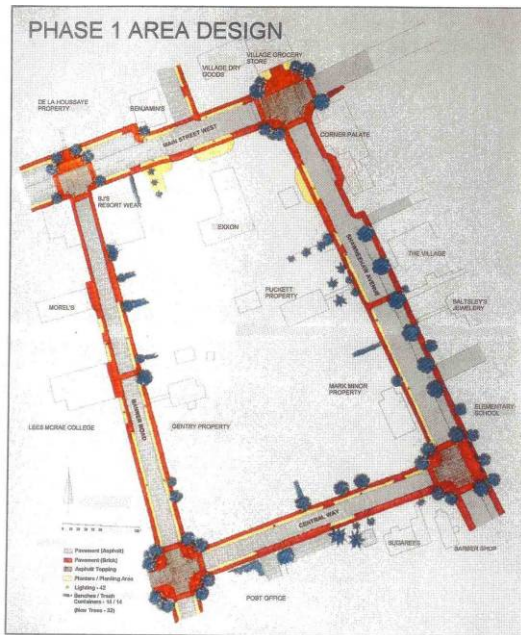
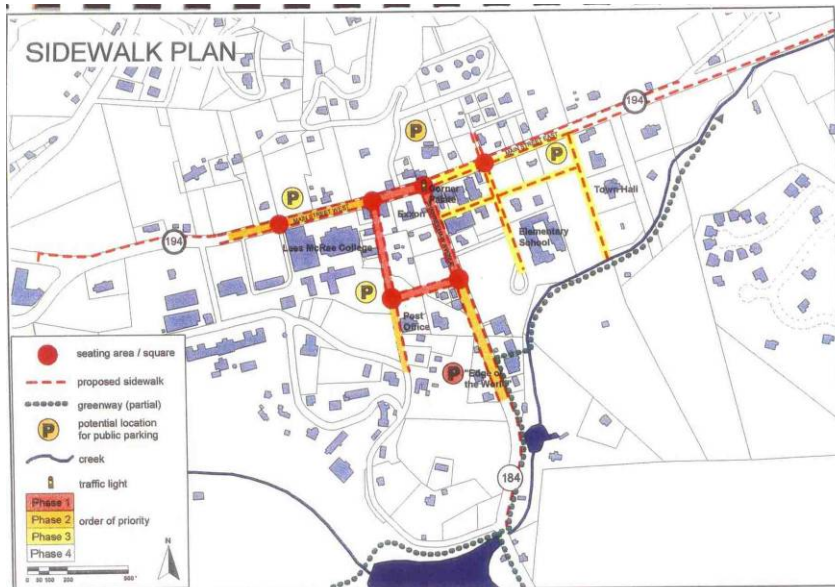


Figure 3-1. Sidewalk Plan Element of 1999 Streetscape



and south of town along NC 184 to Mill Pond Rd. The proposed phasing schedule for these improvements called for the main downtown area (highlighted in red in Figure 3.9) to be completed first, with three additional phases of implementation working from downtown outward. Many of these improvements have been completed since the Plan was approved, with the exception of the Phase 4 recommendation for sidewalks along the far west and east sections of the NC194 corridor and south along NC184 to Mill Pond Rd. These previous recommendations and the existing sidewalk connections built since the adoption of the 1999 Streetscape Plan will be considered in the pedestrian planning effort and incorporated into the project recommendations.

In addition to the proposed sidewalk element, the Streetscape Plan called for an extensive greenway trail network in and around Banner Elk. The proposed greenway trails create two giant loop systems on either side of NC 184 that connect at Mill Pond. The western loop trail connects Lees McRae with Mill Pond, the athletic fields and Wildcat Lake. The eastern loop trail connects downtown Banner Elk with the Dollar General and other commercial/residential destinations to the east, then runs south along Horse Bottom Ridge to High Country Square and back to Mill Pond. Several trail segments have been constructed since the Plan's approval, including a portion of the eastern loop through Town Park, and a portion of the western loop around Mill Pond (see Figure 3.7). The pedestrian planning effort will consider these previous recommendations and denote any changes in greenway alignments that have occurred since 1999. The greenway network will be an important element of the Pedestrian Plan and proposed pedestrian system in Banner Elk.

Finally, the Streetscape Plan proposed intersection improvements at major intersections in the central business district. The Plan calls for brick crosswalks and landscaped curb extensions at street corners to create a safer, traffic calmed pedestrian environment in downtown Banner Elk. The locations for these improvements, as recommended in the Plan, include the intersections of:

- Shawneehaw Avenue and Main Street
- Shawneehaw Avenue and Central Way
- Banner Road and Central Way

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

- Banner Road and Main Street
- Main Street and Azalea Drive
- Main Street and Grace Hartley Road

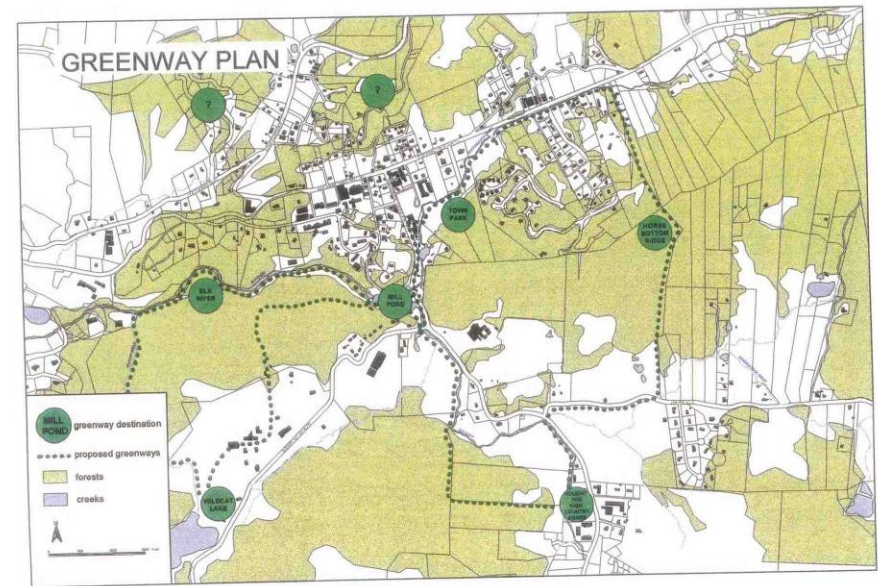
The Pedestrian Plan will build on these proposed improvements and recommend safety improvements at intersections and pedestrian crossings throughout the Banner Elk community.

2003 Thoroughfare Plan for the Towns of Banner Elk and Beech Mountain

The Thoroughfare Plan calls for several road widenings, new bypass routes and intersection safety improvements to major and minor thoroughfares in Banner Elk. It should be noted that the 2003 Thoroughfare Plan was adopted by the NC Department of Transportation, but not by the Banner Elk Town Council. Citizens and elected leaders of Banner Elk felt that the previous 1985 Thoroughfare Plan better represented the Town's interests, and that the proposed widening of NC 184 and NC 194 would harm the Town's central business district and village character. The Banner Elk Pedestrian Plan recognizes the Town's opposition to roadway widening and emphasizes pedestrian-scale development, road diets and traffic calming where possible to encourage multi-modal transportation. Where physically feasible, all roadway construction projects should include 5ft sidewalks on both sides of the street with appropriate buffers (i.e. planting strips) between the road and sidewalks. Pedestrian safety should be considered during all intersection realignments or redesigns, with marked crosswalks and pedestrian countdown signals installed at all signalized intersections at a minimum. Specific project arrangements include:

- NC184 Alternate – the Plan calls for a new two-lane roadway parallel to NC184 with limited control of access. This proposed facility is located west of the current NC184 alignment, providing access to/from Lees McRae College and destinations west of downtown. Sidewalks or a parallel greenway trail should be considered to provide pedestrian access along this corridor. Pedestrian tunnels or bridges should be constructed over perpendicular greenway easements, such as at Mill Pond Road, in order to ensure long-term pedestrian access and connectivity.
- NC184 Widening – the Plan calls for roadway widening from a two-lane to multi-lane facility. North-south pedestrian access should be

Figure 3-2. Greenway Plan Element of 1999 Streetscape Plan



TOWN OF BANNER ELK

MASTER STREETScape PLAN

DESIGN: WOLFRAM MOHR

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

maintained and/or enhanced along NC184 during any future construction that may occur.

- NC 194 Widening – the Plan calls for roadway widening from a two-lane to multi-lane facility. East-west pedestrian access should be maintained and/or enhanced along NC194 during any future construction that may occur.
- Eastside Connector – the Plan calls for a new two-lane roadway that will connect Dobbins Road with Main Street (from behind Town Hall), providing access to destinations east of downtown. Sidewalk or a parallel greenway trail should be considered to provide pedestrian access along this corridor. Pedestrian tunnels or bridges should be constructed over perpendicular greenway easements, such as the Town Park greenway, in order to ensure long-term pedestrian access and connectivity.
- NC184 (Beech Mountain Road) – the Plan calls for addition of passing lanes, a turning lane and additional shoulders. Five-foot sidewalks should be provided on both sides of the street and pedestrian safety should be a primary design consideration at intersections during any future construction that may occur.
- NC184 and Dobbins Road – the Plan calls for intersection realignment at this location. Pedestrian safety and access should be a major design consideration, especially accommodation of the proposed east-west greenway crossing of NC184 at Dobbins Road. The presence of child pedestrians at this intersection should be recognized, and safe access to Banner Elk Elementary included as an element of the project design.
- NC194 and NC184 – the Plan calls for an intersection widening. This intersection is a very busy pedestrian zone in the heart of downtown Banner Elk. Plans for a widening should be reconsidered, as wide crossing distances are not ideal for pedestrians and could completely alter the character of the central business district. If deemed necessary, pedestrian features should be a primary design focus, particularly the inclusion of colored, textured crosswalks and neckdowns at corners, to ensure

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

continuation of existing and planned streetscaping features per the Town's Master Streetscape Plan.

1967 Banner Elk Development Plan

The Banner Elk Development Plan was adopted for purposes of guiding the town's growth through 1985. More than 40 years have passed since it was adopted and the Town is more than 20 years beyond the horizon year of the Plan; however it still serves as a guiding document.

The Development Plan consists primarily of demographic trends for the Town of Banner Elk as they compare and are dependent upon Avery County. The Plan clearly denotes the dependence of the town's economy and future employment base on the presence of Lees-McRae College and the now-abandoned hospital.

To plan for the future, it was noted that the Banner Elk "should realize the recreational potential of the area and should encourage private recreational development" and take steps to develop some recreational areas with public funds.

For transportation, the Plan is heavily oriented toward the automobile, which typifies the era in which it was developed and the characteristics of Banner Elk at the time. Even without a focus on pedestrian travel, the plan outlines goals that are consistent with present-day thought regarding provisions of facilities for non-automobile trips, including recognition that: Work areas should be conveniently located in proximity to interconnected transportation facilities (called "transit" routes) to provide for "economical" access;

Residential areas should be located a convenient distance from work areas where there are routes to provide easy access from home to work; and

Recreational and leisure activity areas should be located in "convenient proximity, by transit and thoroughfare, to living areas."

It is recommended that the town update the 1967 in the form of a Comprehensive Plan that incorporates existing plans and ordinances that impact the growth and development of Banner Elk.

3.2 Policies & Codes

Code of Ordinances – Zoning Ordinance

A Town adopts and modifies its ordinances under the regulatory powers granted by the State of North Carolina to guide development, identify the appropriate uses for land in the municipal boundary and extra-territorial jurisdiction (ETJ), and provide guidance on appropriate actions for its citizens to protect their health and well-being. Banner Elk's Zoning Ordinance was adopted on March 14, 2005 and most recently revised on December 8, 2008. The Zoning Ordinance divides Banner Elk into 12 separate zoning districts. The zoning of a parcel of land controls its range of allowed "by right" uses, permitted variances under certain conditions, and design specifics such as parking requirements. The purpose of this review is to note impacts of the said requirements on ongoing quality of the pedestrian environment.

The range of conditional uses (land uses that might be allowed under certain circumstances) is tightly proscribed, as it is in most towns in North Carolina. By separating these different uses, property owners are more reassured that the value of their properties will not decline, but the lack of proximity between compatible land uses (e.g., neighborhood shopping and the neighborhoods they serve) combined with no provisions ensuring pedestrian connectivity, rear accessibility, lighting, etc. can create a sterile pedestrian environment that requires a lot of effort to traverse. An option that municipalities have begun to explore is to protect the value of properties by ensuring appropriate design standards regarding visual, material, and mass elements of the built landscape. For example, a small convenience store can be designed to fit in comfortably with nearby homes, provided the parking, exterior lighting, and construction materials are well-designed and context sensitive.

The Town's Zoning Ordinances frequently reference pedestrian safety, access, convenience and aesthetics. In some cases, more detail could be provided to ensure pedestrian-friendly development. Upon its adoption and as deemed appropriate, the Town should consider updates to the Code of Ordinances to include further recommendations of the

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

Banner Elk Pedestrian Plan and ensure consistency in Town standards. Important considerations for pedestrians in the Banner Elk Code of Ordinances include the following:

- Article III addresses the application of regulations included in the Code of Ordinances. Importantly, the Town of Banner Elk zoning districts include opportunities for compact and walkable developments, especially in the mixed use district and through allowances for conditional use permits. Additionally, the designated mixed use district and several residential districts allow for non-residential development, allowing for complementary, mixed land uses that lend to multi-modal transportation options. (Section 306)

The application of the Heritage Overlay District in Banner Elk allows for preservation of the walkable “village” character of the downtown core. (Section 307)

Setback provisions allow for protection of natural resources, such as mature trees, allowing for aesthetic appeal and shade in the pedestrian environment. (Section 308)

The Active Recreation Area Requirements for development require dedication of open space areas, including greenway trails, and further requires community access to those areas through street and/or greenway easements. Payment in-lieu is an option under this ordinance, whereby funds collected are required to be used for recreational functions elsewhere in the Town, such as construction of greenway trails. (Section 312)

Article IV of the Code addresses the Town’s Parking and Loading Regulations. These regulations require that parking and site circulation does not conflict with pedestrian traffic. Parking design cannot extend into sidewalk areas (with a setback of at least 5ft from adjacent right-of-way. Maximum parking requirements are allowed for certain uses so as to reduce underutilized parking areas and help create more compact, walkable development. Parking is encouraged to be located at the side or rear of buildings in the Heritage Overlay District; shared parking is allowed in some circumstances. **It is recommended that parking lot design**

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

be further addressed in Section 402, with detailed guidance on provision of pedestrian walkways through parking lots.

Driveway design is also addressed in this section of the Zoning Ordinance; shared driveways are encouraged where possible. **Specific design standards for driveways could be included to address driveway apron design to ensure access for the physically disabled, as outlined in the Americans with Disabilities Act (ADA).** (Section 402)

- Article V (Architectural Design Standards) address site aspects, building aesthetics and design scale of new developments. Ordinance requirements will positively impact the pedestrian environment by encouraging human scale development with attractive building facades. The standards address greenway connections to/from buildings and require buffer zones around greenways. (Section 501)

The Streetscape subsection requires adequate setback from street edge to allow for sidewalk (in downtown area and Heritage Overlay District) and requires room to accommodate a planting strip between the sidewalk and roadway. Street furniture (e.g. benches, water fountains, trashcans) are encouraged.

The Streets subsection discourages roadway alignments through difficult topography, with a focus on bicycle/pedestrian accessibility. This section also notes that the Town uses the *NCDOT Subdivision Roads Minimum Construction Standards* to suggest parameters for new streets. **The Town should consider a local Street Design Manual to supplement State guidelines and encourage better design elements for pedestrians.** Landscaped medians with marked crosswalks are encouraged for “large” streets, but specific parameters are not included.

Section 501 also includes a subsection on Sidewalks, which addresses the provision of safe, convenient pedestrian accommodations. Sidewalks are required to connect internal destinations (e.g. buildings) within a development, as well as to connect to parking areas and nearby pedestrian paths (e.g. greenway/sidewalk network). Wheelchair access is addressed

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

(per NC State Building Code specifications) and sidewalks are required along the frontage of all public streets. Sidewalks in the Heritage Overlay District are required to be brick. The section refers to the *NCDOT Subdivision Roads Minimum Construction Standards* for sidewalk construction standards, but later (in Article VII) refers to *Banner Elk Sidewalk Construction Standards*. **One universal document should be used as the reference guide; a minimum width of 5ft for sidewalks and 10ft for greenways should be cited within the ordinance, in order to ensure conformity to the Americans with Disabilities Act (ADA) and other national guidelines.**

- Article V also includes a subsection on Lighting, which calls for pedestrian-scale lighting on sidewalks; low light sources are required for walking paths and greenways to provide sufficient light but avoid light pollution.
- Section 502 addresses building design, again referencing scale, proportionality, massing and setbacks to promote attractive and pedestrian-friendly development.
- Section 503 lays out specific requirements for the Heritage Overlay District (HOD) and requires sidewalk to be constructed on both sides of the street unless land features preclude such construction, in which case payment in-lieu is required. Sidewalks are required to match the Town's Master Streetscape Plan. This Section also requires the provision of bicycle and pedestrian amenities, such as bike racks, benches and trash receptacles placed at a distance of one per 200ft. The ordinance requires that ancillary facilities match the existing items as laid out in the Master Streetscape Plan. **It is recommended that further guidance be included on colors, construction specifications and type of facilities to ensure the highest quality (e.g. a bicycle parking matrix for various land uses and densities, or a sample bench style/color for compliance). Pictures and suggested vendors would be useful.**
- Article VI addresses signage requirements and standards. **Section 600.1 and 600.2 should include language allowing MUTCD-approved pedestrian signage, such as retro-reflective pedestrian**

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

crossing signs and in-street “Yield to Pedestrians” signage, along roadways as necessary to improve pedestrian safety.

- Article VII addresses landscaping and sidewalks. Section 702 defines the “Street Yard,” or planting strip, requirements. However, the language is somewhat confusing and it is unclear what the minimum/maximum width is for a planting strip on a given roadway classification. **It is recommended that a set of local Street Design Guidelines be created (see above) that includes reference to such specific standards.**

This section does include requirements for shade trees every 50 ft along street frontage and other landscaping/shrubbery in planting strips. These features will help to ensure an attractive and comfortable built environment that pedestrians can enjoy.

Section 703 addresses parking lot yards – **it is recommended that language be included here to encourage that walkways be provided through parking lot at various intervals, possibly housed in required islands or medians (Section 703.e).**

Article VII should include a requirement that prevents parking lot encroachment into adjacent walkways, such as an 18” minimum, 3ft preferred buffer between parking lots and adjacent sidewalks/walkways.

Protective tree ordinances in Section 705 will help to ensure a safe, attractive and comfortable walking environment.

Section 709 addresses sidewalk requirements and references the 1999 Master Streetscape Plan, as well as Town of Banner Elk Sidewalk Construction Standards and Specifications. **It would be useful to include the latter as an Appendix of the Code of Ordinances. Furthermore, these standards should be included and/or counter-referenced in any future Street Design Guidelines recommended by the Pedestrian Plan.**

- Other items that might be addressed more thoroughly in Banner Elk’s Code of Ordinances include:
 - Sidewalk petition process and cost assessments;

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

- “No stopping, standing or parking” regulations for vehicles to ensure that cars do not park on local sidewalks;
- Sidewalk bicycling (e.g. a ban on cycling along sidewalks in the central business district due to setbacks);
- Construction provisions for sidewalks and/or temporary sidewalk closure treatments;
- Maximum cul-de-sac lengths;
- Right-of-way dedication and dedication of greenway easements; and
- Vehicles blocking movement of pedestrians at intersections.

Subdivision Regulations

The Town of Banner Elk’s subdivision regulations are intended to “establish procedures and standards for development and subdivision of the real estate within the corporate limits and extraterritorial jurisdiction (ETJ) of the Town of Banner Elk.” All proposed subdivided developments must follow plat submission requirements as laid out in the regulatory document.

Section 50.60 of the Subdivision Regulations defines specific street classifications for Banner Elk, including:

- s 50.61 Highway. A traffic artery designed primarily to carry heavy volumes of local vehicular traffic.
- s 50.62 Major Streets. A street designed primarily to carry heavy volumes of local vehicular traffic.
- s 50.63 Collector Street. A street designed to carry medium volumes of vehicular traffic, provide access to the major street system and collect the vehicular traffic from the intersecting minor streets.
- s 50.64 Minor Streets. A street, the principal purpose of which is to provide vehicular access to the properties abutting it.
- s 50.65 Cul-de-Sac. A street permanently terminated by a turn-around.
- s 50.66 "Y" or "T" Turning Spaces. The termination of a street which will allow a vehicle to turn around with the use of one backing movement.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

- s 50.67 Marginal Access Street. A minor (service) street which parallels and is immediately adjacent to a minor street or highway; and which provides access to abutting property.

It is recommended that this section be expanded and sidewalk requirements (for one or both sides) be assigned to each classification.

Streets that will be dedicated to the North Carolina Department of Transportation (NCDOT) are required to receive written approval from the appropriate NCDOT Division and abide by the State's *Subdivision Roads, Minimum Construction Standards* publication of roadway requirements.

Sections 60 - 68 address plat requirements for submittal. Each section should specifically require sidewalk alignments and other pedestrian walkways to be identified, as well as greenway easements.

Section 71 address improvements and approval of the final plat. It is stated in this section that sidewalks should be installed within the street right-of-way and in accordance with Town standards, but does not identify the design standards document that should be applied (e.g. the *Banner Elk Sidewalk Construction Standards*).

Article VIII, Section 80, addresses standards and designs, referring again to the State's *Subdivision Roads, Minimum Construction Standards* document and additional local requirements including:

- Subdivision streets shall be laid out so as to intersect as nearly as possible at right angles, and no street shall intersect any other street at an angle less than sixty (60) degrees.
- Cul-de-sacs should not exceed five hundred (500) feet in length unless necessitated by topography or property accessibility, and in no case shall be permitted to be over nine hundred (900) feet.

Environmental considerations are addressed in the Appendix and should help ensure public pedestrian access to natural resources, especially through scenic open space corridors and via greenway linkages, such as along local streams and rivers.

Conclusion & Policy Recommendations

Overall, Banner Elk's ordinances are well-structured to provide for substantial pedestrian accommodations and design elements essential to a pedestrian-friendly community. Allowing for proximity of compatible land uses through PUD's will encourage more compact "liveable" developments, while the inclusion of architectural design standards regarding visual, material, and mass elements of the built landscape will help to ensure a pleasant walking environment. It is strongly recommended that the Town clearly require 5ft minimum sidewalk widths in all related ordinances, and 10ft minimum greenways intended for shared use (8ft minimums could be allowed for pedestrian-only trails). Additionally, the Town's Subdivision Regulations should clearly assign sidewalk requirements to each street classification. It is recommended that sidewalks be required on both sides of arterial and collector streets, on at least one side of local/residential streets, and along the frontage of all residential and commercial developments, to create pedestrian linkages along major/minor thoroughfares in the City. In addition to considering these and other recommendations highlighted in bold in the paragraphs above, several additions to the Code of Ordinances could enhance the pedestrian environment and include:

- Develop improved trail design standards that address consistency of materials, width and accessories for local greenway trail projects.
- Develop a GIS inventory of the Hemlock Trail and trail from Wildcat Lake to backside of Sugar Mountain.
- Modify curb ramp design standards to conform to ADA requirements.
- Consider developing a pedestrian focus area south of downtown to target connectivity to/from and within the new residential and commercial development taking place at this location.
- Create a Parks and Open Space Master Plan that incorporates and expands upon the ultimate recommendations of this Plan.
- Modify the Code of Ordinances to reference specific street design criteria, including maximum curb radii in the downtown area and pedestrian activity centers; street cross-sections that include mandatory five-foot-wide sidewalk or public greenway access on the full perimeter of each adjacent public street; and suggest driveway

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

spacing criteria on all streets to be adhered to in the subdivision and design of new developments.

- Require the construction of minimum 8' (typical: 10') asphalt greenways during new development to connect to existing greenways and create the proposed network of greenways throughout the Town.
- Modify the Code of Ordinances to consider the expansion of conditional uses to include neighborhood retail opportunities in even low- to medium-density residential districts pursuant to adherence to basic design standards and review.
- Create a set of place-making design standards (or "overlay districts") for rural, downtown, and other design markets for the Town, respecting the unique character of the rural heritage as well as recognizing the urbanizing trends of the central business district. Reward and recognize developers that adhere to these design standards by streamlining the project review process and awarding best practice certificates at Planning Board and Town Council meetings.

3.3 NCDOT Policies and Program

2009-2015 Transportation Improvement Program (TIP)

The NC Transportation Improvement Program (TIP) is a seven-year plan for funding and constructing major transportation projects on State roadways. The TIP covers projects in each of the 14 Division offices across the State. Banner Elk falls within Division 11, and works with the region's Rural Planning Organization (RPO), the Eastern Carolina Council of Governments, to submit projects for inclusion in the TIP based on local and regional priorities.

The 2009-2015 TIP for the Town of Banner Elk includes the projects listed in Table 3-1.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

TIP #	Project Name	Project Description	Project Status
R-2811	NC184	NC 105 TO NC 194 (MAIN STREET) IN BANNER ELK. WIDEN TO MULTI-LANES.	Unfunded
E-4567	Shawneehaw Greenway	SHAWNEEHAW GREENWAY, TOWN PARK TO DOWNTOWN, TO THE MILL POND AND ALONG SHAWNEEHAW AVENUE AND ELK RIVER.	In Progress
E-4957	NC194	NC 194 (SCENIC BYWAY), CENTER OF TOWN TO LEES-MCRAE COLLEGE. CONSTRUCT SIDEWALKS ON BOTH SIDES.	Under Construction

Table 3-1. 2007-2015 TIP Projects within the Town of Banner Elk

In addition to the projects above, the Town of Banner Elk and Avery County have amended the TIP to include an additional project to be funded with stimulus funding through the American Recovery and Reinvestment Act (ARRA).

TIP #	Project Name	Project Description	Project Status
R-5158	NC194	Widening and pavement rehab from US221 to US19 E (4.2 miles).	Funded at \$800,000 with a July 2009 let date

Table 3-2. ARRA Stimulus Projects for Avery County

North Carolina Department of Transportation Policies

The North Carolina Department of Transportation (NCDOT) has adopted a number of policies addressing routine accommodation for bicycles and pedestrians on state maintained roadways. These policies and guidelines should be applied when new construction or resurfacing projects impact the bicycling environment in Wilson and include the following:

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

- **Board of Transportation Resolution on Mainstreaming Non-motorized Transportation** – This policy reaffirms the importance of bicycle and pedestrian facilities as an integral part of the overall statewide transportation system, and states that “bicycling and walking accommodations shall be a routine part of the North Carolina Department of Transportation’s planning, design, construction, and operations activities.”
(http://www.ncdot.org/transit/bicycle/laws/laws_resolution.html)

- **NCDOT Pedestrian Policy** – This policy offers guidance providing pedestrian accommodations on state maintained roadways, and details standards for planning, design, construction, maintenance, and operations pertaining to pedestrian facilities and accommodations.
(http://ncdot.org/transit/bicycle/laws/laws_pedpolicy.html)

- **NCDOT Guidelines for Accommodating Greenways with Road Improvement Projects** – This policy addresses the intent of NCDOT to accommodate planned greenways, existing greenways, and greenway crossings in all highway planning and construction projects. The policy states that it “was incorporated so that critical corridors which have been adopted by localities for future greenways will not be severed by highway construction.”
(http://www.ncdot.org/transit/bicycle/laws/laws_greenway_admin.html)

3.4 Federal Highway Administration (FHWA) Policy

Since the 1990’s, significant changes have been made to Federal transportation policy and programs to improve bicycle and pedestrian safety and access. The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and the 1998 Transportation Equity Act for the 21st Century (TEA-21) were the basis for these changes. Each of these federal transportation bills extended the consideration of non-motorized users in all roadway projects, and TEA-21 mandated an FHWA policy for mainstreaming non-motorized transportation
(<http://www.fhwa.dot.gov/environment/bikeped/bp-guid.htm>).

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 3: PLAN & POLICY REVIEW

The most recent version of the federal transportation bill, SAFETEA-LU, “confirms and continues the principle that the safe accommodation of non-motorized users shall be considered during the planning, development, and construction of all Federal-aid transportation projects and programs. To varying extents, bicyclists and pedestrians will be present on all highways and transportation facilities where they are permitted and it is clearly the intent of SAFETEA-LU that all new and improved transportation facilities be planned, designed, and constructed with this fact in mind.”

“While these sections stop short of requiring specific bicycle and pedestrian accommodation in every transportation project, Congress clearly intends for bicyclists and pedestrians to have safe, convenient access to the transportation system and sees every transportation improvement as an opportunity to enhance the safety and convenience of the two modes. ‘Due consideration’ of bicycle and pedestrian needs should include, at a minimum, a presumption that bicyclists and pedestrians will be accommodated in the design of new and improved transportation facilities. In the planning, design, and operation of transportation facilities, bicyclists and pedestrians should be included as a matter of routine, and the decision to not accommodate them should be the exception rather than the rule. There must be exceptional circumstances for denying bicycle and pedestrian access either by prohibition or by designing highways that are incompatible with safe, convenient walking and bicycling.”

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 3: PLAN & POLICY REVIEW

This page intentionally left blank.

Section 4. Design Standards and Guidelines

This section provides guidance for the Town of Banner Elk as they, private developers, and the State Department of Transportation (NCDOT) construct new pedestrian facilities and reconstruct existing pedestrian facilities to meet better standards. This section is divided into the following topics:

- legal rights of pedestrians
- pedestrian facilities and their design
 - sidewalks
 - crossings: signalized or unsignalized
 - greenways
- ADA requirements
- downtown area standards
- school standards
- sidewalk construction policy and maintenance
- parking lots

Currently, the Town has few standards for pedestrian facilities – sidewalks, crosswalks, and other pedestrian-related amenities are constructed on an ad-hoc, as-needed basis. This section of the Plan is important because it provides a consistent set of guidelines within the Town to help create a uniform appearance to Banner Elk's sidewalks and a more connected system.

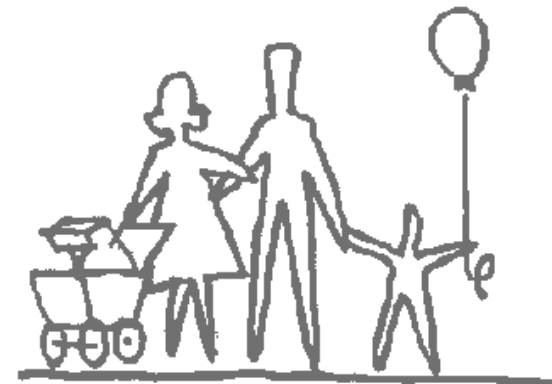
4.1 Legal Rights of Pedestrians

It is important to understand the legal rights of pedestrians because these guide and define how pedestrian facilities are constructed and provided. Some of the legal rights of pedestrians are defined in Sections 20-172 through 20-175.2 of the North Carolina General Statutes.

More information can also be found in the NC Bike/Pedestrian Laws Guidebook, available at the NCDOT's Division of Bicycle and Pedestrian Transportation webpage:

<http://www.ncdot.org/transit/bicycle/laws/resources/BikePedLawsGuidebook-Part-1.pdf>.

This section provides a set of standards for the design of pedestrian facilities recommended as part of the Town's Comprehensive Pedestrian Plan.



TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

Some of the items which should be considered are the following:

- Drivers must yield to pedestrians (or cyclists) crossing a driveway, alley exit, or parking garage exit on a sidewalk. (§20-173)
- Pedestrians crossing any roadway other than at a marked crosswalk must yield to vehicles.
- Pedestrians should cross at street intersections or in marked crosswalks.
- If there are sidewalks, pedestrians are not to walk in the roadway. Where sidewalks are not provided, any pedestrian walking along the roadway will walk to the extreme left, facing in the direction of approaching traffic.
- Every driver must consider pedestrians at all times, especially exercising care in the presence of children or incapacitated persons on the roadway. (§20-174)
- Special emphasis on leaving adequate crossing room at intersections is noted for visually handicapped persons. (§20-175.2)

In addition, pedestrian access is also governed by the requirements of the American Disabilities Act of 1990, a civil rights law which prohibits discrimination against people with disabilities in all aspects of life. As done throughout the US, the Town of Banner Elk must provide transportation facilities, including sidewalks and other pedestrian facilities, which comply with the guidelines set forth in the ADA Accessibility Guidelines (ADAAG) in order to meet the standards of the American Disabilities Act. Some of the major items related to pedestrian facilities that are addressed by ADAAG include curb ramps and cross-slopes. The following bullets describe ADAAG-compliant design for these items:

- **Curb ramps: design and placement.**

DESIGN: Curb ramps are a significant and required feature of accessible pedestrian transportation systems, and must be designed carefully to fulfill their function and the requirements of the Americans with Disabilities Act. Curb ramps should not have a slope greater than 1:12, meaning that for every foot of travel, the slope should not rise more than one inch. To provide a tactile warning to the visually impaired, raised truncated domes with a color contrast to the background material (typically concrete) should be used, with measurements shown in Figure 4-2. The ADA Accessibility Guidelines



Figure 4-1. Appropriate curb ramp placement (above) directs pedestrians into the crosswalks. Detectable warning strips with truncated domes (left) should be used in all curb ramps for compliance with ADA standards for the visually-impaired.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

for Buildings and Facilities (<http://www.access-board.gov/adaag/html/adaag.htm#A4.29.2>) has an easy-to-use format for locating specific design criteria related to curb ramps, rise/run restrictions on ramps, and figures illustrating basic concepts.ⁱ

PLACEMENT: Curb ramps should be placed entirely within the area of a marked crosswalk, so that a pedestrian can enter the ramp space at an angle perpendicular to the direction of travel. Generally, the standard is to have separate curb ramps on each corner; if a shared (sometimes called corner or diagonal) curb ramp is constructed, then the width and radius should accommodate the user so that entry onto the ramp is parallel to the direction of travel. Figure 4-1 provides examples of the acceptable relationship between crosswalk and curb ramp location/widths.

- **Cross-Slopes.** Cross-slopes, or a slope along the travelway surface which is perpendicular to the direction of travel, can often make it very difficult for wheelchair travel. In addition, it can also make for treacherous walking conditions for individuals with problems with their balance and coordination. Cross-sloping most frequently occurs in conditions in which a driveway meets a sidewalk, but can also occur in other situations. In order to minimize the risk of a dangerous and difficult travel condition for some, cross-slope is regulated by ADAAG such that cross-slopes should not exceed two percent, and preferably not exceed 1.5 percent where possible. Figure 4-3 indicates the preferred (left), conditionally acceptable (middle), and unacceptable (right) design solutions for new driveways as they interface with sidewalks.

For a complete guide to ADA requirements, please see the National Access Board's website: www.access-board.gov.

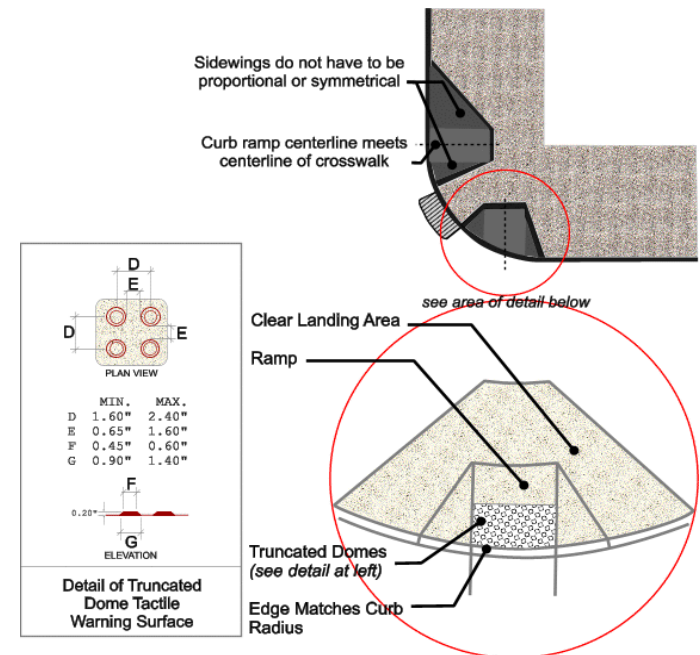


Figure 4-2. Detail of an ADA-compliant curb ramp design with truncated dome measurements.

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 4: DESIGN GUIDELINES

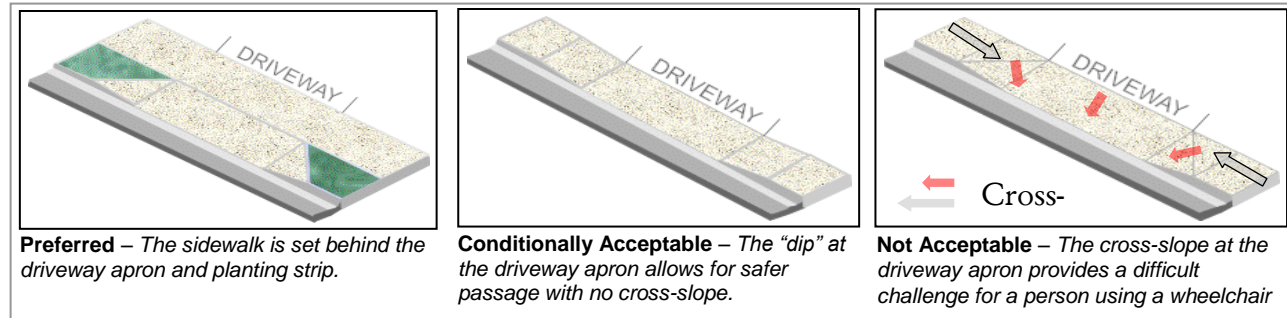


Figure 4-3. Examples of acceptable and unacceptable design solutions for minimizing cross-sloping at a driveway and sidewalk interface.

4.2 Pedestrian Facilities and their Design

There are a variety of sources for design guidance for pedestrian facilities, including the following:

- NCDOT Highway Design Manual (2002)
- NCDOT Traditional Neighborhood Street Design Guidelines (2002)
- The American Association of State Highway and Transportation Officials' *Guide for the Planning, Design, and Operation of Pedestrian Facilities* (AASHTO, 2004)
- Manual on Uniform Traffic Control Devices (MUTCD), frequently updated
- Federal Highway Administration (FHWA)

The North Carolina Department of Transportation adheres to the design guidelines provided in the AASHTO and MUTCD guidebooks. In general, pedestrian facilities can be described in the following categories:

- sidewalks
- crossings
- greenway trails

The Town currently does not have its own standards for pedestrian facilities. The following paragraphs provide national standards and best practices for pedestrian facilities by category.

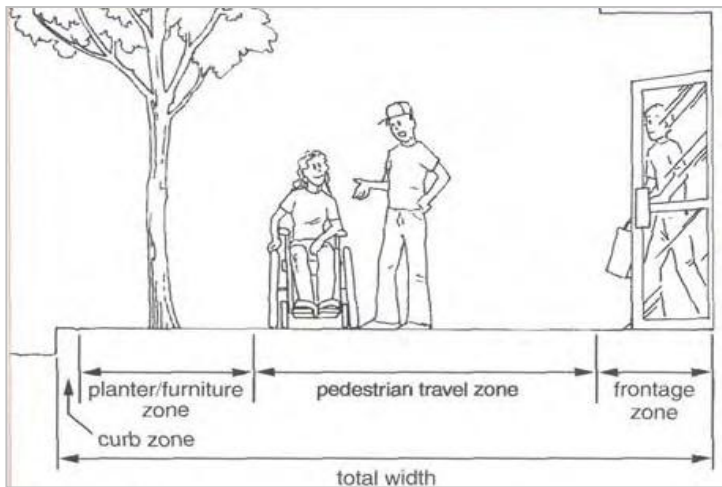


Figure 4-4. Horizontal clearance “zones” for a sidewalk, most typically found in a central business district.

Source: FHWA/USDOT “Accessible Sidewalks and Street Crossings” Informational Guide.

4.2.1 Sidewalks

Standard sidewalk is usually five feet minimum in width, concrete, and placed along roadways with curb and gutter. In general, the width of sidewalks should accommodate two persons walking past one another, a width generally perceived to be five feet, at a minimum. Other circumstances that may require additional sidewalk width are to accommodate: (1) high pedestrian volumes, such as in a central business district; (2) the overhang of parked vehicles from off-street or angled on-street parking areas; and (3) additional buffer from traffic when a planting strip cannot be installed.

Additional design considerations for on-street sidewalk facilities include the following:

- Eliminating both high and low contact points with tree branches, mast-arm signs, overhanging edges of amenities or furniture, and
- Providing clear space between walls on one side of the walkway and amenities, parking overhang, or plantings on the curb side of the walkway (see Figure 4-4 which diagrams the relationships between pedestrian features, building facades, and roadway).

In general, standard sidewalks should be concrete, which is more durable than asphalt. However, as in downtown Banner Elk, brick and other decorative materials can be used to create a thematic streetscape. A more flexible material, such as rubberized paving, can also be considered in situations in which there is the potential for tree roots to crack and lift the concrete. Using these types of materials can reduce the risk of a tripping hazard, and also lower maintenance costs. More permeable materials, such as porous pavers, can be considered for all pedestrian-ways, and in particular for greenways near streams, in order to reduce run-off from storm events.

4.2.2 Crossings

Pedestrian-friendly crossings are a critical feature in a well-connected pedestrian system because they provide the linkages between one segment of sidewalk to another as a pedestrian may cross a street, connect to another existing piece of sidewalk, or pass to a new development. A well-placed crossing can dramatically reduce pedestrian

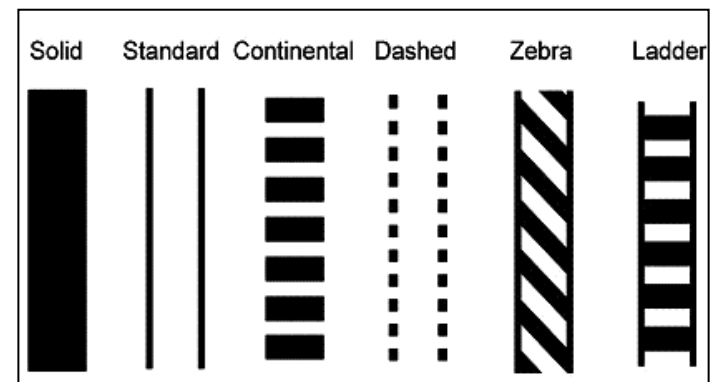


Figure 4-5. Typical styles for marked crosswalks.

Source: Federal Highway Administration.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

travel time and improve pedestrian safety – greatly increasing the convenience of walking as a mode of travel. Crossings can be either signalized or unsignalized, and located at intersections or at mid-block locations. The Town of Banner Elk has several signalized and unsignalized crossings at various intersections throughout the Town.

The most basic crossing is an unsignalized intersection with standard, continental or zebra crosswalk markings. Other potential treatments for unsignalized crossings include raised crosswalks and/or signage. In-street or overhead “yield to pedestrian” signs are an effective treatment for unsignalized intersections, encouraging motorists to stop for pedestrians as they cross the street. These signs offer a visual cue and instill some friction in the roadway, as they are typically placed in the middle of a bi-directional, two-lane road. Additional treatments can be added for crosswalk visibility at unsignalized and signalized locations, including decorative brick, textured crosswalks or experimental paint colors.

All signalized intersections should be outfitted with countdown pedestrian signals and crosswalks, per NCDOT and MUTCD standards. MUTCD recommends that signals are operated on a 4ft/second pedestrian travel speed. In some cases, the built environment or user context may require audible pedestrian signals or special treatments like a High Intensity Activated Crosswalk (HAWK) Signal. Marked crosswalks (at signalized and unsignalized locations) should not be less than 6 ft in width, with 10 ft or greater for downtown areas and locations of high pedestrian traffic. Advance stop bars should be placed 4 - 10 ft from the pedestrian crosswalk (with 6 - 15 ft recommended in uncontrolled locations or multilane roads). Pedestrian push buttons should accompany pedestrian signals that are not phased into the regular traffic signal cycle; push buttons should be placed in a convenient and wheelchair accessible location. Pedestrian-activated signals should be used for roadways with long traffic signal cycles where pedestrians are to be given preference when present, and/or for signals where the pedestrian cue is not phased into the traffic cycle unless a button is activated. Pedestrian-activated signalization can also be used to provide lead pedestrian intervals in high-conflict areas, in order to give pedestrians a few seconds of full use of the intersection or crosswalk prior to allowing right or left turning movements



Figure 4-6. Countdown pedestrian signals
indicate to pedestrians how much time is left to safely cross the street before the close of the traffic cycle.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

for motorists. These options reinforce pedestrian safety at high-conflict intersection locations with significant crash history.

Mid-block crossings are typically unsignalized crossings, but can also utilize pedestrian-activated signalization. There is still no national consensus for when a crossing should be created mid-block, and when the mid-block crossing should be signalized. The City of Charlotte Department of Transportation has created a set of guidelines for assessing mid-block crossings, based in part on the work of FHWA and Charles Zegeer of the Pedestrian and Bicycle Information Center. In addition to numbers of pedestrians, vehicle speed, and vehicle volume on the roadway, there are a variety of other considerations which must be accounted for when determining whether to construct a mid-block crossing. These considerations include: lighting conditions, sight distance, numbers of lanes, and roadway width. Figure 4-8 shows the “solution space” identified by the City of Charlotte for considering a mid-block crossing. Table 4-1 shows the decision matrix created by the City of Charlotte for determining when to construct a mid-block crossing and identifying appropriate treatments.

Given the sensitive nature of mid-block crossings, every new mid-block crossing treatment will require a specific investigation by the City/Town and NCDOT (on State-maintained streets) prior to initiating design and construction. Nevertheless, mid-block treatments can be useful in improving safety in areas with fairly high pedestrian crossings and low numbers of vehicles and vehicle speeds, if located and designed properly. All mid-block crossings will require advance warning signage and good visibility for both pedestrians and vehicles. On State-maintained roadways, mid-block crossings are not permitted within 300 ft of another signalized crossing point. Though NCDOT does not have established guidelines for the placement of pedestrian signals, they generally use MUTCD and AASHTO warrants for the installation of traffic signals.



Figure 4-7. Examples of pedestrian- activated, signalized, mid-block crossings.

Top: An example of a pedestrian-activated signalized mid-block crossing.

Bottom-right: Guide for pedestrians to assist them in understanding the meaning of the push-button signals.



TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

Figure 4-8. The City of Charlotte's solution space for considering when to apply signalized mid-block pedestrian crossings.

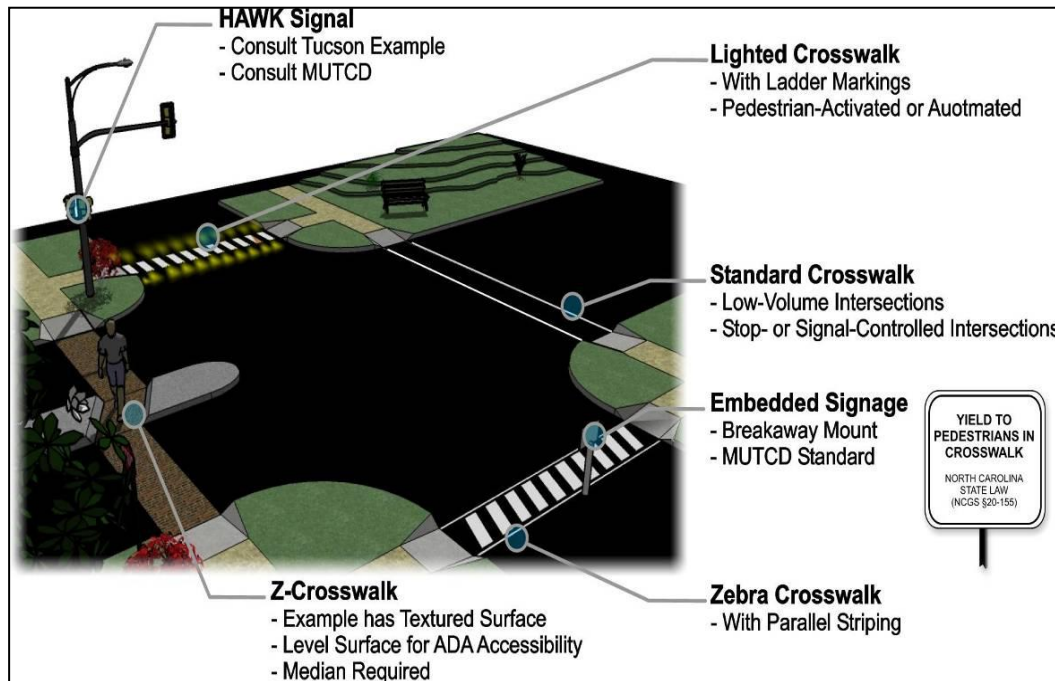
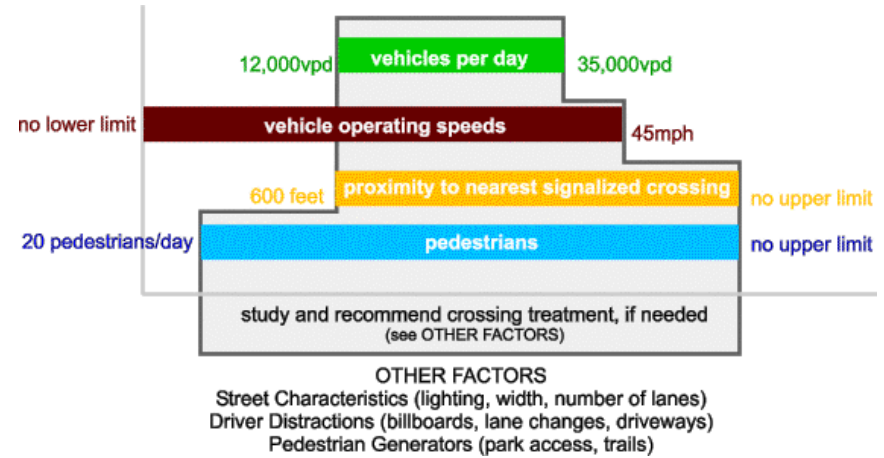


Figure 4-9. A diagram of various crossing treatments Banner Elk might consider in order to improve pedestrian accessibility and safety at intersections.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

Table 4-1. Mid-Block Crossing Treatment Design Criteria (Charlotte DOT, 2005).

Pedestrian Mid-block Crossing Treatment	AADT	Operating Speed	Approx. Cost
Signs	5,000 – 35,000	Less than 45 mph	\$250 - 350
High-Visibility Markings	5,000 – 12,000	Less than 35 mph	\$500 – 1,500
Colored and Textured Markings	5,000 – 12,000	Less than 35 mph	\$5,000+
Curb Extensions	5,000 – 12,000	Less than 35 mph	\$5,000 – 25,000
Raised Crosswalks	5,000 – 15,000	Less than 30 mph	\$2,000 – 15,000
Refuge Island	12,000 – 30,000	Less than 40 mph	\$10,000 – 40,000
Median	15,000 – 35,000	35 - 45 mph	Varies greatly
In-Pavement Illumination	5,000 – 15,000	Less than 35 mph	\$40,000
Pedestrian-Only Signal*	15,000 – 35,000	35 – 45 mph	\$40,000 – 75,000
HAWK Signal**	15,000 – 35,000	35 – 45 mph	\$35,000 – 60,000

**Note: MUTCD recommends pedestrian volumes of at least 400 for a four-hour period. **A HAWK (High-Intensity Activated Crosswalk) signal is a pedestrian-activated system used for high-volume crossings found to be useful in increasing the rate of driver responses to pedestrian crossings, especially in Tucson, AZ where they have been utilized extensively.ⁱⁱ*

4.2.3 Signage

In addition to sidewalks and crossings, pedestrian facilities also include signage along major pedestrian routes. Regulatory and warning signs serve primarily to reinforce traffic laws and rules of the road, and notify motorists and others of the presence of pedestrians. Often, the intended effect is to instruct motorists to drive more cautiously and reduce their speeds, thereby improving the safety for pedestrians in the given area.

Regulatory and warning signs can be used in a variety of places, including at crosswalks, at intersections, in-street, and near schools.

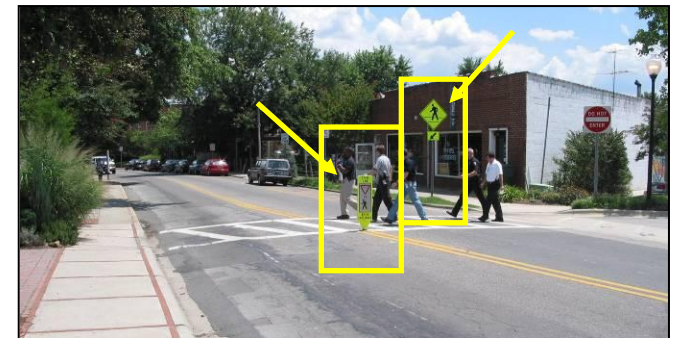


Figure 4-10. An example of two types of signs used to notify motorists of a pedestrian crossing.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

National standards for sign placement and use can be found in the Manual for Uniform Traffic Control Devices (MUTCD). The MUTCD provides guidance for warning signs which can be used at both crosswalks, or along the roadway:

“Non-vehicular signs may be used to alert road users in advance of locations where unexpected entries into the roadway or shared use of the roadway by **pedestrians**, animals, and other crossing activities might occur.” (Page 2C – 21, 2003 Edition)

The following are some recommended regulatory and warning signs which Banner Elk should consider installing. Regulatory signs, such as R10-15 and common speed limit signs, gives notice to road users of traffic laws or regulations. Warning signs, commonly seen in yellow diamond shapes, gives notice to road users of a situation that might not be readily apparent. For more signs and more detailed guidelines for sign installation and use, Banner Elk should consult the MUTCD.



Figure 4-11. Example standard pedestrian warning signs. The first sign (far left) is usually installed within the street to warn motorists to yield to pedestrians in a crosswalk - it does not have to be near a school. The second and third signs are common general pedestrian warning signs, while the fourth and fifth signs notify motorists of specific instances to watch for pedestrians. The fourth sign, “Turning Traffic”, is usually placed at intersections to warn motorists that are turning right or left to yield to pedestrians in crosswalks. For the fifth sign, the top sign can either be combined with the smaller “ahead” sign or the arrow symbol to indicate the presence of a crosswalk to motorists in a school zone.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

In addition to regulatory and warning signs, many communities are adding non-traditional wayfinding signage to their public streets as an added amenity to pedestrians, cyclists and motorists. Pedestrian wayfinding signs typically give directional cues to pedestrians navigating a dense central business district or downtown area by foot. These signs include general directional information to major cultural, civic, institutional or historic landmarks, and sometimes include distances to those destinations (by mile or by block). Wayfinding signs can also indicate local "districts" or neighborhoods via specialized color-schemes or other symbolic gateway décor. Pedestrian wayfinding signs can be in the form of gateway banners, kiosks or maps, placed in the "furniture zone" of the walkway, out of the way of pedestrian traffic and at a height of 7ft or more for appropriate clearance but within legible distance of the reader. Associate hardcopy maps are often used to complement these signs. Figure 4-12 is an example of pedestrian wayfinding signage in Charlotte, NC's central business district.

4.2.4 Greenways

Greenway trails, sometimes called multi-use trails or simply "greenways," are one of the most popular pedestrian facilities, especially for recreation. Greenway trails can be paved or unpaved paths, often unassociated with a roadway. They can be used by pedestrians, cyclists, and other non-motorized users. Greenways are typically no less than 10 feet wide with minimum 2 feet wide graded shoulders on each side of the trail. Surface options include paving with standard or permeable asphalt or concrete, or using pea gravel or granite screenings. Trail design and maintenance should provide for an 8 ft minimum vertical clearance from obstructions, including tree canopy. Proper pedestrian-scale lighting is essential if the trail will be open to commuters or recreational users in the early morning or late evenings. Bushes, trees and undergrowth should be well-maintained to ensure user safety. Often, additional amenities are added to greenways for user convenience, such as benches, water fountains, interpretative trail signs, map kiosks with distance and landmark information, and even emergency telephones if crime is considered a problem. Additional guidance on greenway design and standards can be found at:

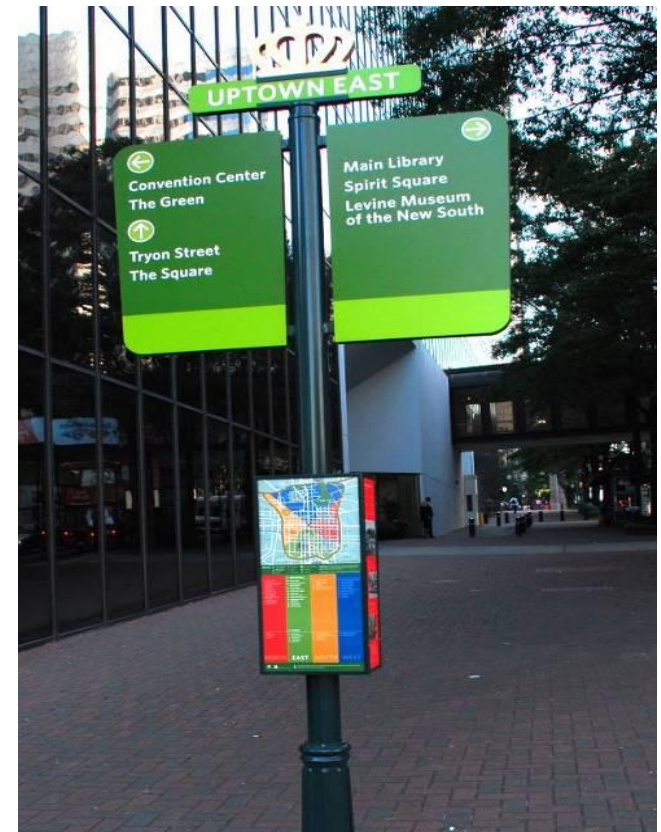


Figure 4-12. Example of a wayfinding sign in Charlotte, North Carolina's central business district.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

www.ncdot.org/transit/bicycle/projects/project_types/Multi_Use_Pathways2.pdf.

An example greenway cross-section is provided in Figure 4-13.



Figure 4-13. Example cross-section for a typical greenway.



Figure 4-14. Typical greenway cross-section with bollard treatments at roadway crossing.

Source: www.pedbikeimages.com

4.2.5 Porous Paving Materials and Stormwater Management Best Practices

The use of porous, or “permeable,” paving materials offers a means by which to conserve resources and practice environmentally-friendly stormwater management. Appropriate stormwater management practices during sidewalk and greenway construction projects will have a huge impact on water pollution from stormwater runoff. The North Carolina Department of Environment and Natural Resources (NCDENR) Division of Water Quality (DWQ) has published a “Best Management Practices (BMP) Manual” for stormwater systemsⁱⁱⁱ, which provides guidance on design elements, stormwater calculations, plantings and soils for various systems. The BMP Manual includes a discussion of permeable pavement options, as well as stormwater treatment systems increasingly used along sidewalks, greenways and private/public streets, such as vegetated swales, filter strips and stormwater wetlands or “raingardens.” Banner Elk should consider all such options as appropriate and/or

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

combinations thereof for future sidewalk, greenway and street construction projects.

According to the BMP manual, permeable pavements are only allowable under the conditions listed in Table 4-2. DWQ Policy on Permeable Pavement Uses.

Major Design Elements Required by DWQ Policy. These are based on available research, and represent what DWQ considers necessary to achieve the stated removal efficiencies.

1	Completed permeable pavement installation must have a slope less than 0.5%.
2	Soils must have infiltration capacity of at least 0.52 in/hr permeability.
3	Only 2 acre-feet of soil per acre disturbed can be graded for the permeable pavement footprint.
4	The top 3-ft of soil must have no finer texture than Loamy Very Fine Sand as determined by a soil analysis.

Table 4-2. DWQ Policy on Permeable Pavement Uses.

In addition to design standards, the BMP manual requires a maintenance agreement with the local government to ensure regular maintenance of permeable pavement surfaces. NCDENR suggests that permeable pavements be inspected “once a quarter and within 24 hours after every storm event greater than 1.0 inches (or 1.5 inches if in a Coastal County).” *Regular maintenance is necessary to avoid clogging of porous media by sedimentation and/or debris.* The City of Olympia, WA, has a well-documented history of porous concrete use for sidewalks and recommends regular maintenance with a leaf/litter vacuum machine (1-2 vacuum cleanings per year), as well as periodic pressure-washing (every 5-10 years) to restore porosity below the surface level at which the vacuum can reach. Additional information and resources on Olympia's porous pavement use is available on the City's website at <http://www.ci.olympia.wa.us/cityutilities/stormwater/scienceandinnovation/porouspavement.htm>



Figure 4-15. Top: Vegetated swale and porous concrete sidewalk help to make a “green street” in the new urbanist development of High Point in West Seattle. **Right:** Porous asphalt allows the passage of water through small openings, or pores, that are atypical of standard asphalt. Source: Rhode Island Cooperative Extension



TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

Figure 4-15 illustrates a combination use of porous concrete sidewalks with vegetated swales along a neighborhood street in the new urbanist High Point development in west Seattle, WA. Communities across the country (especially those in the Northwest with high annual rainfall) are turning to porous concrete and asphalt, as well as block pavers and other permeable pavement options, to reduce impervious surfaces and stormwater runoff issues associated with parking lots, sidewalks and greenway trails. These trials are proving permeable pavement treatments to be quite successful and cost-effective. Olympia, Washington, for instance, has a long and well-documented history of success using porous concrete installations. The Town has found that the initial installation of porous concrete is less expensive than traditional concrete installations, though more frequent maintenance is necessary to ensure continued porosity of the paving material.^{iv} Even so, a 2005 memorandum to Olympia's Stormwater Management Supervisor from a local project engineer noted that the overall sidewalk construction and maintenance costs were less than traditional concrete installations over time, as the initial savings on installation costs balanced out any long-term maintenance costs. Initial cost savings include decreased material costs since porous concrete mixtures use less concrete mix and more water. Though many standard sidewalk installations trigger stormwater mitigation requirements, the use of permeable pavement materials can often countermand that need, resulting in significant cost savings. Given the overall successes and cost benefits of using permeable pavement materials and other stormwater management best practices, it is recommended that Banner Elk utilize these options for public projects (such as through the continued use of brick pavers downtown) and incentivize their use in private developments.

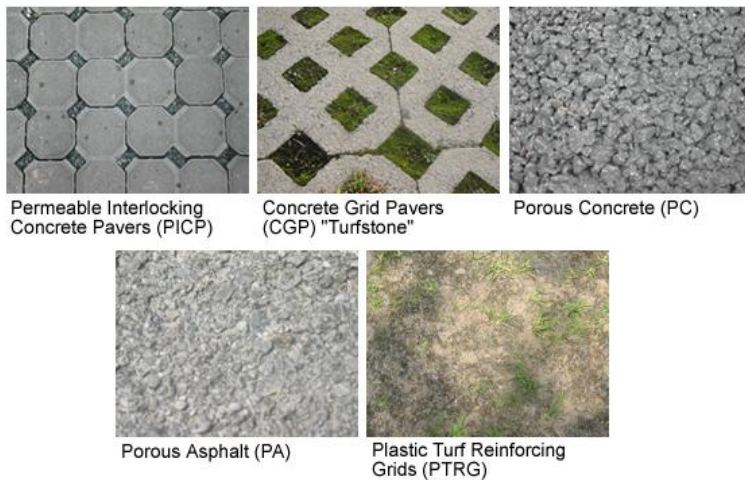


Figure 4-16. Permeable pavement treatments.

Source: NCSU Permeable Pavement Research Site.

<http://www.bae.ncsu.edu/info/permeable-pavement/index.html>

4.3 Downtown Area Standards

Many municipalities consider their town center the starting point and standard for creating a pedestrian-friendly Town. Downtowns were typically constructed in a time period where walking was a much more functional mode of transportation, not an amenity or form of optional exercise. In order to maintain its pedestrian-oriented nature, and also to enhance the area's attractiveness and visual appeal, Banner Elk's

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

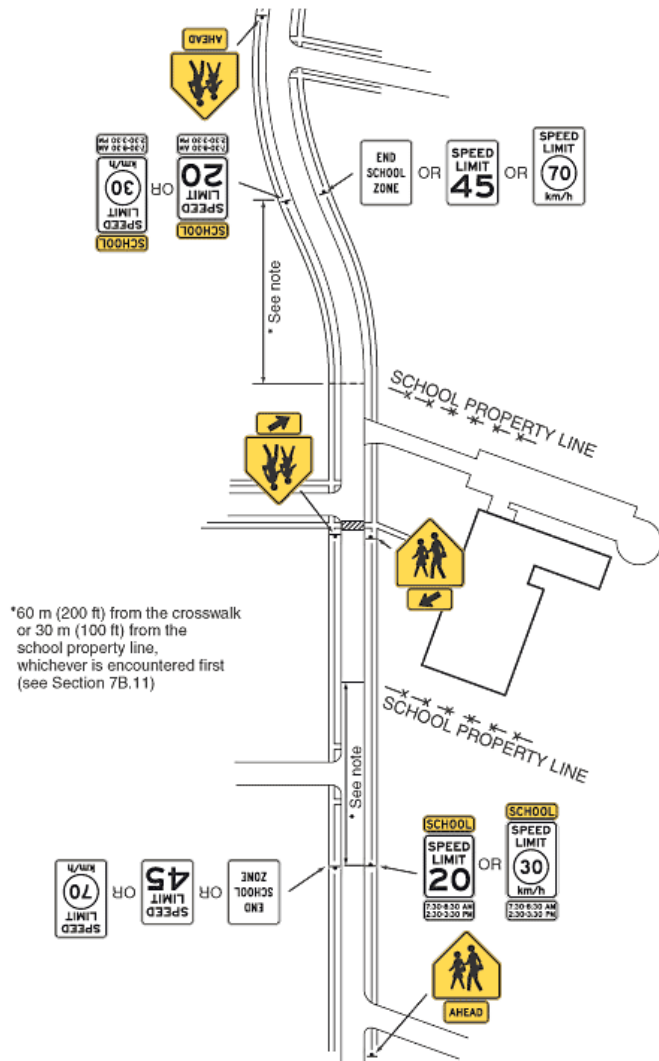
downtown area should have certain standards which may or may not be required beyond the downtown area. Some of these recommendations are as follows:

- **Build on the Downtown.** Already, the downtown area has good height-to-width (of street) ratios, architectural detailing, and well-connected sidewalks that are the foundation of a good walking environment. Figure -17 illustrates these features and describes how both expensive and more costly treatments could improve the streetscape.
- **Provide wide sidewalk.** Currently, the sidewalk in the downtown area is approximately 5 to 8 feet wide. New or reconstructed sidewalk should be kept at a minimum of 10 feet, if not wider, in the downtown. Pedestrians need space to window shop, stroll, walk side-by-side with their families, and even stop for a rest in the sidewalk space. The Town should also consider accommodating restaurants or cafes interested in creating outdoor, on-street seating, which is often a major booster to making a street look more popular and pedestrian-friendly. It also attracts even more visitors and potential shoppers and diners.
- **Provide many pedestrian amenities.** In addition to sidewalk width, the Town should also provide pedestrian amenities such as benches, trash cans, and water fountains to make walking in downtown more comfortable for the visitors that come to the downtown. The Town should consider adding more street trees and allowing a few street vendors (through a permitting process) to add life to the street. Finally, public restrooms should be available for visitors to use while touring downtown or using any of the recreational amenities near downtown, such as the Town Park and trail system. The more pedestrian amenities available in a particular area, the more inviting the area for pedestrians and visitors.
- **Provide accessible, safe pedestrian crossings.** The downtown area already has many marked crosswalks at intersections and mid-block crossings. In order to improve upon these features and maintain the accessibility of the downtown area, crosswalks should be accompanied by countdown pedestrian signals at signalized



Figure 4-17. Banner Elk’s downtown streetscaping already includes wide brick sidewalks, human-scaled street lamps, benches and trash cans, many street-level windows and high-visibility crosswalks to enhance the visual aesthetic and pedestrian appeal of the area. Wayfinding signage could be included as a standard treatment, in addition to ADA-compliant curb ramps, pedestrian countdown signals and in-street “Yield to Pedestrians” signage at intersections. Other potential treatments include potted or hanging planters, additional public restrooms and additional street furniture sponsored in part by downtown merchants.

Figure 7B-3. Examples of Signing for School Area Traffic Control with School Speed Limits



intersections, as well as ADA-compliant curb ramps for wheelchair access.

- **Provide wayfinding signage to guide visitors.** Downtown Banner Elk offers many attractions for out-of-town tourists and visitors who live outside of the central business district. Pedestrian wayfinding signage provides directional cues and helps visitors navigate the area effectively. Such signage can take the form of kiosks with maps and information, historical markers, theme-based pedestrian signage or other forms.

4.4 Schools

In addition to Downtown, schools are public spaces that merit special treatment for child safety and well-being. Schools require special treatment because of the presence of both children and very high levels of traffic during drop-off and pick-up. Especially during drop-off and pick-up, traffic near schools can be incredibly varied - consisting of small and large personal vehicles, school and other activity buses, pedestrians, and cyclists. Specific design features should be required around schools to improve safety within a ½-mile radius of the school, emphasizing higher-density residential areas first. Some of these design features include:

- Requiring sidewalks on both sides of the street;
- Placing crosswalks and pedestrian signals at all intersections near the school;
- Reducing speed limits along adjacent streets; and,
- Providing signage to warn drivers of the school's presence and the potential for children in the street.

4.5 Construction Zones

It is important that during construction of any kind, convenient and safe pedestrian access to destinations remain open and accessible. During the construction or expansion of private development, roadways, utilities, the entity responsible for the construction is also responsible for providing adequate pedestrian access through or around the site as well as signage that provides advance warning to pedestrians and motorists of the closure. Both the MUTCD (Manual on Uniform Traffic Control Devices),

Figure 4-18. Sample School Area Signage.

Source: MUTCD.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

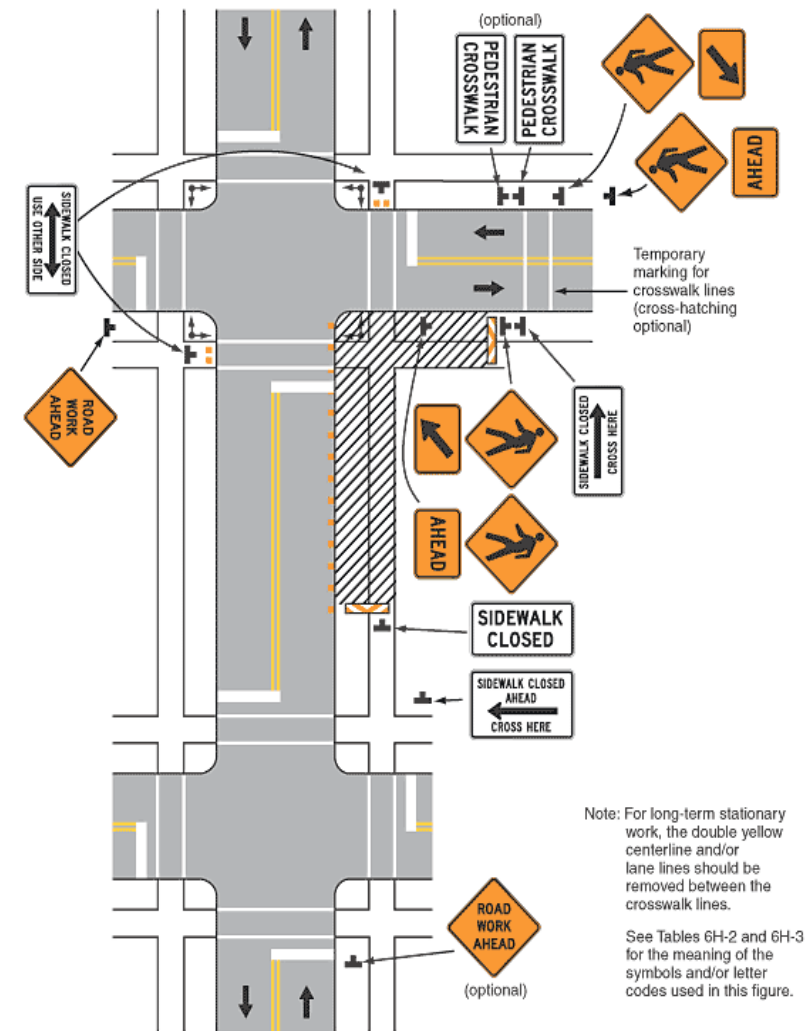
NCDOT's Planning and Designing Local Pedestrian Facilities^{vi}, and the ADA (Americans with Disabilities Act)^{vii} stipulate that safe passage should be maintained throughout a temporary closure unless it occurs during an extreme situation such as a natural or man-made emergency. During private construction within Town limits, it is the responsibility of the Town of Banner Elk to ensure compliance with these rules by regular monitoring.

The following should be considered whenever a sidewalk or trail will be closed temporarily:

- **Accessibility for Mobility Impaired Citizens.** At least one accessible route should be provided to transportation or transit facilities; accessible parking areas/spaces; public streets/sidewalks; and public parking areas to an accessible entrance of the building. This route(s) will comply with all other accessibility provisions contained in the ADA regardless of whether they are temporary or permanent. A barrier shall be placed across the full width of the sidewalk or trail to be detectable by a visually impaired person using a cane. An audible information device may be needed in cases where there are especially high traffic volumes challenging a visually impaired person making a street crossing.
- **Temporary Obstructions.** Parked construction equipment, erosion control fencing, storage of materials/construction debris, and other potential obstructions should be kept away from roadside pedestrian access and pedestrian or multi-use trails so as to keep a permanent passageway open for pedestrians crossing the site. Signs and other devices should not protrude more than 4" into the pedestrian passageway and 7' or less above a sidewalk (8' min. preferred).
- **Advance Warning and Signage.** Advance warning may consist of a single sign to a flashing strobe, depending on the nature of the construction or context (such as vehicular volumes) of the work area. Advance signage should be placed so that pedestrians have an opportunity to read the sign and make a safe crossing at a street intersection to the opposite side of the roadway. Smaller, mid-block closures will require fewer treatments, but will still retain the "Sidewalk Closed Ahead Cross Street" advance warning at an appropriate and safe crossing point in advance of the closure, at a minimum.

Figure 4-19. Sample Signage Plan for Temporary Sidewalk Closure and Re-routed Pedestrian Crossing.

Source: MUTCD, Figure 6H-29.



Typical Application 29

- *Route Design.* Temporary traffic barriers like jersey barriers (although not intermittent short sections of jersey barriers) and breakaway bollards should be considered as tools to help delineate a buffer from moving vehicles in areas with high pedestrian traffic volumes and/or to help ensure worker safety.

4.6 Parking Lot Design

Everyone becomes a pedestrian once they park their car, but there are many examples of poor parking lot design. Poor parking lot design at the least will deter customers that may be walking or riding transit to a store, and at the most can create a dangerous safety hazard by increasing pedestrian-vehicle interaction. The most common design issue is that the primary carriageway for vehicles in the parking lot happens to coincide with where the greatest number of pedestrians cross: directly in front of the main entrance. Other issues include poor sight lines to spot pedestrians; bad transition areas from the public domain (e.g., streets) to the private parking area; and inconvenient pedestrian access between parking areas, shops, and adjacent communities. Figure -20 illustrates a preferred set of suggestions to overcome these common problems. The larger the parking lot, the more vehicles and pedestrians, and therefore the more important it is to carefully design treatments to minimize vehicle-pedestrian interaction. Some suggested treatments:

1. **Parking in the rear and sides.** One way to attract pedestrians to a store and to reduce pedestrian-vehicle interaction is to minimize the amount of parking lot that a pedestrian must walk through to get to the store entrance. This can be done by placing parking in the rear or sideyards of a building, which will reduce travel time for pedestrians approaching the store from the street-front and sidewalk. It will also minimize pedestrian-vehicle interaction by keeping pedestrian customers separate from vehicles by allowing the pedestrian to access the store directly from the sidewalk rather than through a parking lot. Parking lots in the rear also create a more attractive streetscape – something that encourages pedestrian use.
2. **Create safe “landing areas”.** Provide continuous transitions from the street into a safe “landing” area in the parking lot; don’t just “dump” pedestrians into the throat of a driveway.

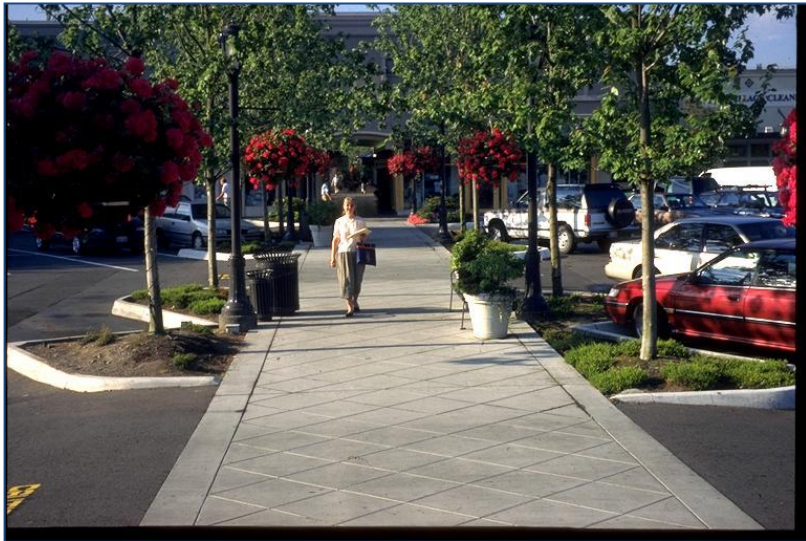


Figure 4-20. Exemplary parking lot design considers pedestrian egress to the building entrances/exits, as well as comfort and aesthetics such as landscaping and shade trees.

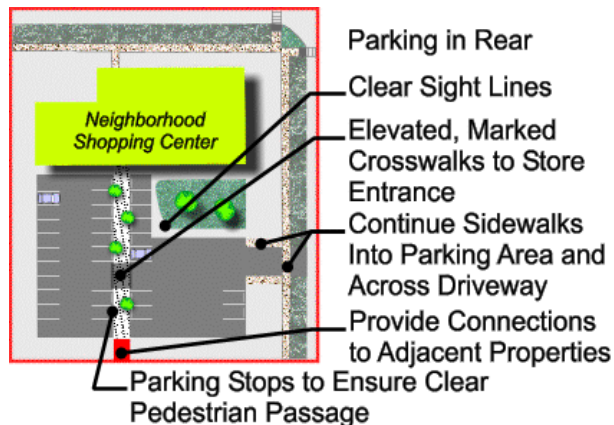


Figure 4-21. An example of pedestrian friendly parking lot

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

3. **Maintain good sight lines** at major turning points inside the parking area.
4. **Provide well-marked pedestrian access perpendicular to store fronts.** Whenever possible, provide perpendicular pedestrian access into the front of a high volume land use such as major retail uses. The final crossing to the store entrance(s) should be well-marked, preferably with a raised crosswalk and/or colored demarcations to provide good visual cues to the driver. Moving the main parking aisle away from the principal entrance is another option.
5. **Supply adequate, pedestrian-scale lighting.** Adequate lighting is often perceived as a personal security issue in many large parking areas, and should be provided while avoiding disabling glare (looking into a direct light source and being partially blinded) or causing light pollution to adjoining properties. In order to make customers and pedestrians feel more comfortable, lighting should also be provided at a pedestrian scale. This means lowering the height of some light poles and providing lighting at key locations, such as the entrances and exits to stores, and not just in the parking lots.
6. **Provide awnings.** Especially for some “big box” stores, it is important that the transition for customers from inside the store to the outside be gradual and protected as much as possible from conflicts with vehicles. By providing awnings, a store protects its customers from the rain while allowing for a more comfortable pedestrian environment for customers to window shop and wait for rides or a bus to arrive. This can make a store seem much more comfortable while encouraging customers to remain within the protected awning area and out of conflict with vehicles in the travelway.

Banner Elk has minimal shopping centers and areas with large parking lots, but others may be on the way. It is important that the Town keep the pedestrian's access and safety in mind when reviewing development proposals. Through better design and better design review, the Town will be able to create parking lots that are both convenient for a car and comfortable for a pedestrian.

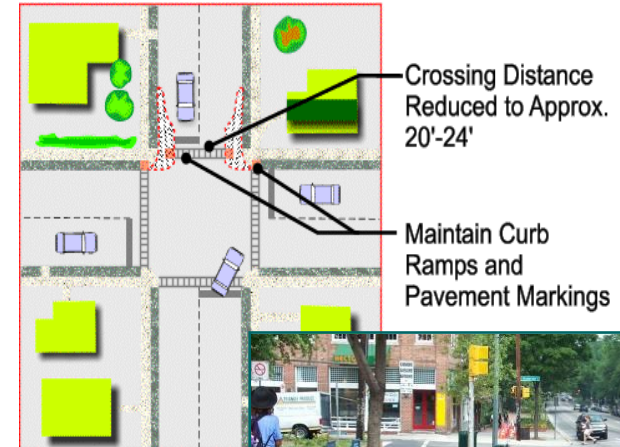
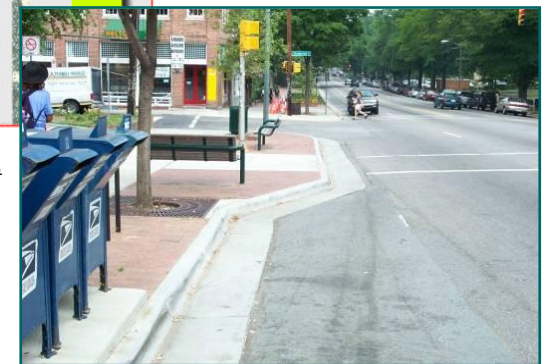


Figure 4-22. An example of bulb-out placement to reduce curb radii and shorten travel distance for pedestrians crossing at an intersection in Chapel Hill, NC.



4.7 Traffic Calming Considerations

Traffic calming is the term used to describe a toolbox of improvements that can be used to “calm”, or slow, traffic along a street, usually in a neighborhood or similar area with low traffic speeds and relatively lower traffic volumes. Although not directly pedestrian-related, traffic calming efforts can help to create a safer, more comfortable pedestrian environment by reducing vehicle speeding. Traffic calming comes in a variety of forms. Some of the most common techniques are described in the paragraphs below.

4.7.1 Curb Extensions (Bulb-Outs) and Curb Radii

The primary purpose of bulb-outs is to shorten the distance that pedestrians must travel to cross a street. In addition, they may encourage motorists to drive slower by narrowing the travel lane and reducing vehicular speeds during turning movements at intersections. Motorists will travel more slowly around corners with smaller curb radii even without the use of curb extensions. Landscaping and other aesthetic treatments such as special paving textures should be carefully designed to avoid hazards to drivers and visually-impaired citizens while minimizing maintenance costs. Figure 4-22 shows an example image bulb-out placement to reduce curb radii and make an intersection more pedestrian-friendly.

4.7.2 Medians and Refuge Islands

Figure 4-23 illustrates the design and markings associated with refuge islands. Note that pavement markings delineate the approach to the islands; that the islands are “split” to allow for a level platform for wheelchair use; and that in cases where there are wide roads and high traffic volumes, a push-button pedestrian signal may be mounted in the refuge area to allow a pedestrian to split their trip into two halves as they cross the street. Note that the crosswalk on the right side of the diagram is configured at a skewed angle as it crosses the median. This allows pedestrians to have a better angle of sight as they approach and cross each side of the street. In all cases, a minimum 10-foot travel lane is maintained. Sensitivity to large vehicles (buses, trucks and fire equipment) dictates some elements of the median design, curb style, and placement. Median-controlled roadways reduce the number of turning conflicts and

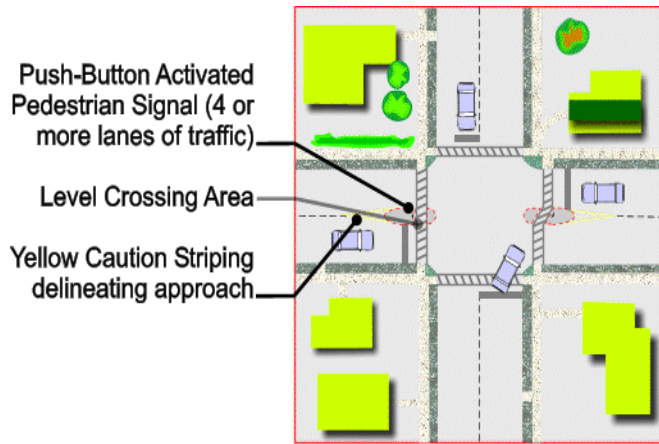


Figure 4-23. An example of well-designed median and refuge islands

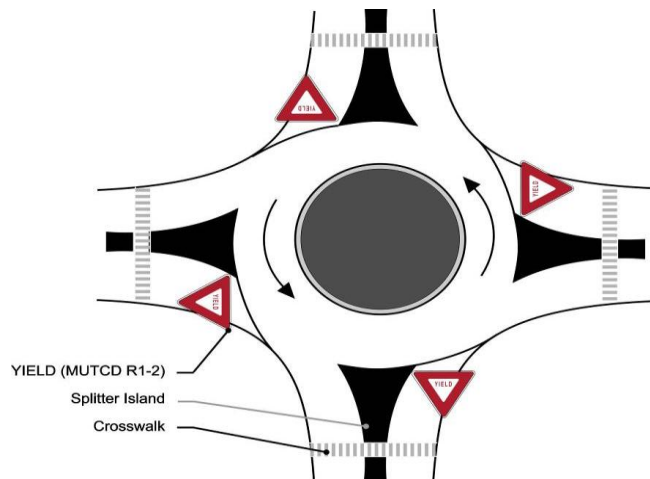


Figure 4-24. Simple roundabout design graphic.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 4: DESIGN GUIDELINES

are generally preferred for both pedestrians and cyclists over a two-way, left-turn lane (TWLTL) roadway.

4.7.3 Roundabouts

Traffic circles and roundabouts are also an increasingly popular traffic calming technique, used instead of a stop control or traffic signal installation at an intersection. No roundabout is expressly recommended in the Pedestrian Plan, but may be considered for future intersection designs in Banner Elk. Federal design guidance for roundabouts is available at <http://www.tfhrc.gov/safety/00068.htm> and should be consulted when necessary to ensure compliance with the Americans with Disabilities Act (ADA). Figure 4-24 illustrates preferred placement of crosswalks and signage at a roundabout.

4.8 Road Diets

Many roadways across the United States have been built over the years with future [car] traffic capacity in mind to the detriment of other roadway users. This has led to a number of unnecessarily wide roadways that encourage speeding and create unsafe circumstances for pedestrians. As more and more people are turning to bicycles, transit and walking for increasing cost-effective and healthy travel modes, many cities are re-thinking the old paradigm and looking for new opportunities to add bicycle lanes, sidewalks, traffic calming treatments and transit access. A growing trend nationwide is to shrink travel lane or effective street widths through “road diets.” Road diets trim down unnecessary width of existing roadways to create safer, more multi-modal access along those streets. Often, road diets are used on four and five-lane roads with a traffic capacity that could be served more safely and effectively with fewer lanes. By taking a four-lane roadway to a three-lane facility, there is an “extra” 10-12 feet of space in which to fit sidewalks, bike lanes or other multi-modal accommodations. Similarly, a four-lane roadway with 12ft travel lanes may be dieted and remain a four-lane roadway but with 10ft travel lanes; the additional 4ft in each direction could then be used for bicycle or pedestrian facilities. Finally, some road diets are more appropriately termed travel “lane diets” because they essentially shrink wide travel lanes in order to install traffic calming and other pedestrian facilities.

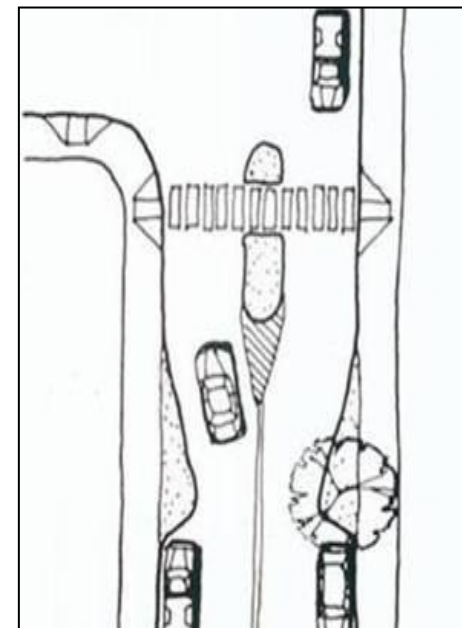


Figure 4-25. Example of a travel lane diet for the retrofit installation of a pedestrian refuge island and neckdowns.

Source: www.pedbikeimages.com

4.9 Pedestrian-Friendly Street Design

In addition to all the treatments noted above, it is often important to consider pedestrians as part of the built environment from roadway design to architectural standards. Including pedestrian-friendly elements throughout a roadway or development project - from the creation of conceptual alternatives to construction and maintenance phases - can greatly impact the long-term walkability of an area. In recognition of this fact, NCDOT has developed a set of Traditional Neighborhood Development Street Design Guidelines (<http://www.ncdot.org/doh/preconstruct/altern/value/manuals/tnd.pdf>). These guidelines are available for proposed TND developments and permit localities and developers to design certain roadways according to TND guidelines rather than the conventional subdivision street standards. The guidelines recognize that in TND developments, mixed uses are encouraged and pedestrians and bicyclists are accommodated on multi-mode/shared streets.

4.10 Summary

Pedestrian facility use is a function of a variety of factors, including the connectivity of the facilities, their safety, their convenience, and their comfort. For this reason, pedestrian facility design should be thoughtful and sensitive to the needs of its users. By following the guidelines provided in this section for sidewalk, crossing, and trail design, as well as other items associated with pedestrian facilities, Banner Elk should be able to create a built environment that will promote walking and continue to support and increase pedestrian traffic in the Town.

References & Resources

- i United States Access Board, ADA Accessibility Guidelines Homepage, accessed November, 2005.
(<http://www.access-board.gov/adaag/html/adaag.htm#A4.29.2>)
- ii James W. Glock, Letter Correspondence to Regina McElroy, Director, FHWA Office of Transportation Operations, January 11, 2006.
- iii Stormwater "Best Management Practices Manual," July 2007 Edition. NC Department of Environment and Natural Resources, Division of Water Quality.
http://h2o.enr.state.nc.us/su/documents/BMPManual_WholeDocument_CoverRevisedDec2007.pdf
- iv Analysis Summary Memorandum: "Traditional Versus Pervious Concrete Sidewalks - Construction and Maintenance Cost." February 11, 2005. Melissa McFadden, P.E., City of Olympia.
<http://www.ci.olympia.wa.us/NR/rdonlyres/B32AC0F1-A7A7-4C70-88B1-167E329C6687/0/TraditionalvsPerviousConcreteSidewalksMemo.pdf>
- v *Manual on Uniform Traffic Control Devices for Streets and Highways*, 2003 Edition. Federal Highway Administration, 2003. Especially Sections 6B-1, 6D, 7, and Figures 6H-28, 6H-29, 7A-1, and 7B-4.
- vi *Planning and Designing Local Pedestrian Facilities*, North Carolina Department of Transportation Office of Bicycle and Pedestrian Transportation. February, 1997, Chapter 10.
- vii Americans with Disabilities Act, US Code 28 CFR Part 36: ADA Standards for Accessible Design. Page 496 (www.usdoj.gov/crt/ada/adastd94.pdf).

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 4: DESIGN GUIDELINES

This page intentionally left blank.

Section 5. Project Recommendations

Pedestrian facilities can include sidewalks, greenways, and intersection improvements, as well as streetscaping projects and traffic calming efforts. Such facilities can be built “incidentally” as part of a roadway construction project, or independently. The Banner Elk Comprehensive Pedestrian Plan identifies a number of proposed pedestrian facilities that can help make Banner Elk a more walkable community. Project recommendations for the Pedestrian Plan are broken out into three distinct categories: Sidewalks, Greenway Connections and Crossing Improvements. These projects were identified through the public involvement process, survey results, discussions with staff and Steering Committee members, as well as field and data reviews by the consultants.

Recommended locations and treatments for each project type are summarized, respectively, in the tables below. Each table shows the project and proposed action. Recommended sidewalk projects within Banner Elk are listed in Table 3-1, while several sidewalks outside of the town limits are recommended in Table 3-2. The proposed greenway connections in Table 3-2 are intended to seek safe, scenic connections between key pedestrian destinations, such as schools and parks, as well as to enhance tourism and economic development opportunities for Banner Elk. Finally, the crossing improvements recommended in Table 3-3 recognize the need for important safety improvements at key intersections and crossings, including the installation of crosswalks, signage, and/or pedestrian signals.

5.1 On-Road Pedestrian Improvements

The eleven sidewalk projects recommended in Table 3-1 include a variety of short “spot improvement” projects that will fill gaps in the existing sidewalk network, as well as more significant sidewalk corridor projects. The sidewalk corridor projects are more extensive in nature and will help create connectivity along major thoroughfares. Though the corridor projects are typically more costly and/or difficult to construct, they will have a significant impact on the walkability of Banner Elk as a whole. All sidewalk projects have been prioritized based on criteria set by the Steering Committee, which included proximity to local shopping venues,

This section provides a set of project recommendations to improve the physical conditions for pedestrians in Banner Elk, as well as suggestions for phased implementation of these projects.

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 5: PROJECT RECOMMENDATIONS

parks and the Town Center, as well as factors such as connectivity to existing walkways or trails, elevation and cost issues. Town marketability contribution was also an important consideration, as Banner Elk depends on an attractive tourism environment for its continued economic vitality. Sidewalk project prioritization and phasing recommendations are discussed in Section 5-3 and summarized in Table 5-5.

Priority Rating	Proposed Sidewalk Project Location	From	To	Length (miles)	Length (feet)	Estimated Cost (one-side only)
78	Banner Road	Existing Sidewalk	Shawneehaw Avenue	0.20	1036	\$ 77,700
36	Dobbins Road	NC 184 North	Town Limits	0.38	2011	\$ 100,550
52	Hickory Nut Gap Road (sidepath)	NC 184 South	WildCat Lake	0.88	4647	\$ 116,175*
100	Main Street E (NC194)	Park Ave (existing sidewalk)	Shawneehaw Heights Rd	0.51	2702	\$ 202,650
84	Main Street W (NC194)	Grace Hartley Church Rd (existing sidewalk)	NC194/NC184 intersection	0.23	1196	\$ 89,700
71	NC 184 North	Main St W (NC 194)	Town Limits	0.68	3584	\$ 179,200
88	NC184 South	Central Way SW (existing sidewalk)	Hickory Nut Gap Rd	0.23	1228	\$ 92,100
65	NC 184 South (sidepath)	Hickory Nut Gap Rd	Orchard Ln	0.94	4955	\$ 134,750
47	NC 184 South	Orchard Ln	Glove Factory Lane	0.51	2695	\$ 123,875*
73	NC 194 (Banner Elk Hwy)	NC184 North	Town Limits	0.56	2952	\$ 147,600
77	Old Turnpike Rd E	NC194 E	NC194 E	0.54	2861	\$ 143,050
41	Orchard Lane	NC184 South	Existing sidewalk	0.50	2644	\$ 132,200
TOTALS				6.16	32,511	\$ 1,539,550

Table 5-1. Proposed Sidewalk Projects in Alphabetical Order

* Sidepath cost estimates are for 10' unpaved trail surface

In addition to those needs identified within the Banner Elk town limits, one potential project was identified just outside of town that could improve overall connectivity to/from/around Banner Elk. Table 5-2 summarizes these recommendations, identified through stakeholder input and connectivity analysis.

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 5: PROJECT RECOMMENDATIONS

Proposed Sidewalk Project Location	From	To	Length (Miles)	Length (Feet)
NC 184 South (Tynecastle Road)	Glove Factory Ln	NC105	2.44	12,876

Table 5-2. Proposed Pedestrian Projects Outside of Banner Elk Town Limits (in Alphabetical Order)

The following crossing improvements will help pedestrians safely navigate Banner Elk’s on-road and off-road pedestrian network.

Intersection Location	Recommended Treatment
E Main Street & Shawneehaw Heights Road	Install high-visibility crosswalks and pedestrian crossing signage; consider flashing beacon warning and/or overhead “Yield to Pedestrians” signage to help pedestrians access the Dollar General and other destinations from the proposed sidewalk on the south side of W Main Street (NC194 East).
W. Main Street & NC 184 North	Consider pedestrian enhancements to intersection with addition of high-visibility crosswalks and countdown pedestrian signals.
Mill Pond Rd & Hemlock Trail Crossing	Install high-visibility crosswalks along roadway for trail crossing; consider advanced “Ped Xing” pavement markings. Add stop signage and collapsible bollards on trail to warn pedestrians and cyclists of roadway crossing ahead.
Shawneehaw Ave (NC 184) & Central Way SW	Install textured, high-visibility crosswalks at this downtown intersection to match other downtown streetscaping and raise motorist awareness of high pedestrian use.
NC184 South & Orchard Lane	Upon school completion, provide high-visibility crosswalk and school crossing signage at minimum for safe pedestrian crossing from sidewalk on west side of NC184 South to Orchard Lane (site of new Banner Elk Elementary School).
NC184 South & Hickory Nut Gap Road	Provide high-visibility crosswalks and pedestrian countdown signal at signalized intersection, in order to improve safety for pedestrians crossing from east to west sidewalk on NC184 South and for access to greenway.
Hickory Nut Gap Road at Sugar Mountain Connector Trail Crossing	Upon trail establishment, add high-visibility crosswalk on Hickory Nut Gap Rd and consider advanced “Ped Xing” pavement markings. Install stop signage and collapsible bollards on trail to warn pedestrians and cyclists of roadway crossing ahead.

Table 5-3. Proposed Pedestrian Crossing Improvements in Banner Elk (in Alphabetical Order)

5.2 Off-Road Greenway Recommendations

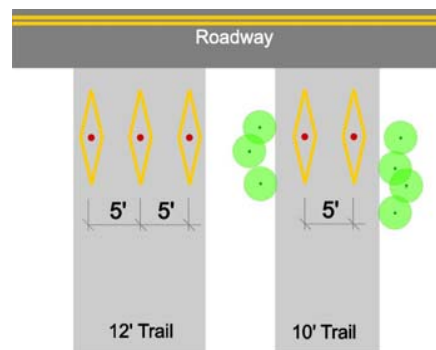
Shared-use paths, greenways and trails are among the terms used to describe off-road facilities for pedestrians, bicyclists, skaters and other non-motorized users. Such facilities are often along linear parks, stream buffers or green space corridors, and are favored by recreational walkers and cyclists for their scenic qualities. Shared-use paths can provide important links to on-road bicycle facilities and complete a network that is more convenient and accessible for bicycle transportation. These paths can also be useful for child and senior cyclists, as well as important recreation routes for exercise.

Several greenway trails are recommended in the Banner Elk Pedestrian Plan. Though it may take time for the Town to acquire contiguous easements for trail construction through future development and right-of-way purchase, these facilities can be a worthwhile investment and valuable asset for any community. In addition to providing transportation and recreational options for residents, greenway trails can be an economic development tool that help to attract tourists and newcomers, and have also been known to raise property values for adjacent landowners. The Town of Banner Elk should consider policy changes and new ordinance language that requires dedication of trail easements for future construction and/or construction of connector trails to proposed and existing greenways during all new development.

Minimum easements for a greenway trail include width for an 8-10 foot trail surface (10-14 feet if facility allows cycling), in addition to a minimum 4 foot buffer (2 feet on each side) with a recommended 10-20 foot buffer, depending on the nature of the corridor. Typically, a wider buffer provides a more scenic greenway. The Town should consider inclusion of the recommended greenway trails into any future Open Space and Trails or Parks and Recreation Plans, and may also consider educating development review staff and developers on any new requirements for trail easements to ensure appropriate right-of-way dedication. Additionally, the Town might work with the proposed Bicycle and Pedestrian Advisory Committee on concept development for the proposed greenway trails and related amenities.



Figure 5-1. The greenway cross-section provides two-way bicycle and pedestrian traffic. Bollards and markings (below) help ensure that only pedestrians and cyclists use the trail; the bollards can be of the lock-down variety to help emergency vehicles to gain access to the trail.



TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 5: PROJECT RECOMMENDATIONS

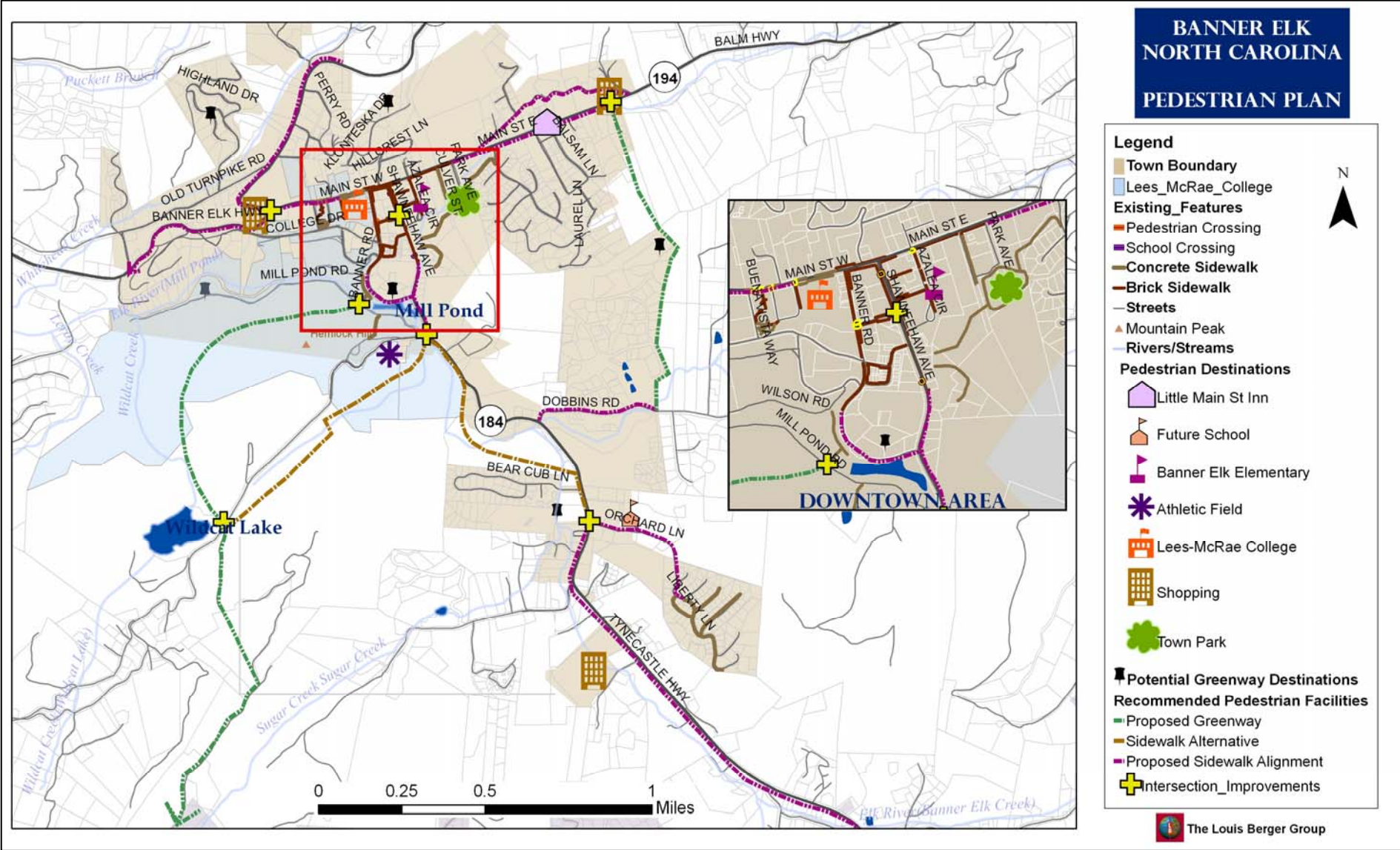
Greenways have not been prioritized in this Plan, but it is recommended that the Town prioritize proposed trails in a detailed future greenway study. Table 5-4 and Figure 5-5 include all proposed greenway locations. Note that many of these trail alignments or sections of trail are outside of Banner Elk’s town limits. Some may fall within the ETJ and could be acquired through future development, while the Town may need to work with Avery County and/or other neighboring towns on other trail alignments.

Proposed Greenway Trail	From	To	Description	Length (Miles)	Length (Feet)	Estimated Cost (unpaved)	Estimated Cost (paved)
Hemlock Trail	Lees McRae College	Wildcat Lake	Re-establish Hemlock Trail and work with Lees McRae to provide routine maintenance and upkeep. Project requires agreement with college to implement.	1.06	5604	\$140,100	\$745,332
NC 184 Alternate Trail	NC 184 (Tynecastle Rd)	NC 194 (Main St E)	Construct parallel pedestrian path along NC184 Alternate if/when constructed or construct trail independent of roadway project to connect residents in eastern Banner Elk with destinations to the north and south.	1.01	5351	\$133,775	\$711,683
Sugar Mountain Connector Trail	Hickory Nut Gap Rd (SR1342)	Sugar Mountain	Determine ownership and re-establish this foot trail from WildCat Lake to the back side of Sugar Mountain.	1.23	6505	\$162,625	\$865,165
TOTALS				3.31	17,460	\$436,500	\$2,322,180

Table 5-4. Proposed Greenway Trail Projects in Alphabetical Order

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 5: PROJECT RECOMMENDATIONS

Figure 5-2. Map of proposed Sidewalk Projects



5.3 Sidewalk Project Prioritization and Phasing

Following project development, sidewalk projects were then prioritized. As can be seen in Table 5-1, the proposed sidewalk corridor projects are extensive – they cover over 4.62 miles of roadway in Banner Elk on five named roads. In addition, 3.31 miles of greenway trails have been identified to fill gaps in the pedestrian network. Even if Banner Elk plans to expand its budget for pedestrian facilities, it will still take a long time for all of these projects to be constructed. To help the Town determine which projects to construct first, an analysis was performed to prioritize projects and create a recommended phasing schedule of short-term, mid-term, and long-term projects for construction.

Factors

Prioritization and scheduling were based on the following factors:

- **Public input:** Comments from the Steering Committee and participants in the Open Houses, survey, and other public forums
- **Project characteristics:** During the second Steering Committee meeting, committee members were asked to identify their priority projects regardless of cost. Members then discussed the priority criteria that contributed to the identification of those projects, including access to schools, parks and existing greenway trails. Other priority criteria included access to commercial areas and major employment centers, as well as safety factors such as whether the project was along a major thoroughfare. From this discussion, the following items were identified as important project characteristics to making a project a priority:
 - Accessibility: Proximity to schools, parks, commercial areas, Lees McRae College, and the Town Center.
 - Safety: Measured by the average daily traffic (ADT) on the roadway where the sidewalk is proposed, as well as crash data for the project corridor.
 - Connectivity: Project’s potential to complete a critical connection from one location to another, measured by the project’s connection to existing sidewalks.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 5: PROJECT RECOMMENDATIONS

- **Constructability and Cost:** Ease of constructing the project, including preliminary design analysis and engineering preparation, right-of-way purchase as well as actual construction

Process

Project prioritization and scheduling was a layered process which incorporated all of the above factors in the following steps:

1. **Rate projects on key characteristics.** Projects were rated on accessibility, safety and connectivity. A project received points for any of the following characteristics:
 - **Accessibility: Commercial Areas.** Is a major shopping venue located within the project limits?
 - Yes, between 0 - .125 miles = 4 points
 - Yes, between .125 - .25 miles = 3 points
 - Yes, between .25 - .5 miles = 2 points
 - Yes, between .5 – 1 mile = 1 point
 - No = 0 points
 - **Accessibility: Parks.** Is a park located within the project limits?
 - Yes, between 0 - .125 miles = 4 points
 - Yes, between .125 - .25 miles = 3 points
 - Yes, between .25 - .5 miles = 2 points
 - Yes, between .5 – 1 mile = 1 point
 - No = 0 points
 - **Accessibility: Schools.** Is a school located within the project limits?
 - Yes, between 0 - .125 miles = 4 points
 - Yes, between .125 - .25 miles = 3 points
 - Yes, between .25 - .5 miles = 2 points
 - Yes, between .5 – 1 mile = 1 point
 - No = 0 points
 - **Accessibility: Lees McRae College.** Does the sidewalk project provide connections with the University campus?
 - Yes, between 0 - .125 miles = 4 points
 - Yes, between .125 - .25 miles = 3 points

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 5: PROJECT RECOMMENDATIONS

- Yes, between .25 - .5 miles = 2 points
 - Yes, between .5 - 1 mile = 1 point
 - No = 0 points
 - o **Accessibility.** *Town Center.* Does the sidewalk project provide connections to the Central Business District?
 - Yes, between 0 - .125 miles = 4 points
 - Yes, between .125 - .25 miles = 3 points
 - Yes, between .25 - .5 miles = 2 points
 - Yes, between .5 - 1 mile = 1 point
 - No = 0 points
 - o **Safety.** What is the average daily traffic (ADT) count of the roadway?
 - Residential Street or Cul-de-Sac = 1
 - Collector Street = 2
 - Marginal Access Street = 3
 - o **Safety.** Was there a crash in the project corridor between 1990-2008?
 - (Yes = 1 point, No = 0 points)
 - o **Connectivity.** Does the project link one destination to another by way of existing sidewalk?
 - (Yes = 1 point, No = 0 points)
2. **Assess cost estimates and constructability.** Next, projects were assessed a cost estimate based on proposed treatments and existing conditions. Cost estimates for treatments were as follows:
- o *High Cost: > \$300,000 (one-side only)*
 - Generally, high cost projects entail construction of significant sections of sidewalk or installation of sidewalk on roadways without existing shoulder width to accommodate sidewalks as is. The latter would prove costly due to the need to pipe existing drainage ditches and install curb and gutter on roadways with shoulder sections.
 - o *Moderate Cost: \$150,000 - \$300,000 (one-side only)*
 - Projects in this range generally have some curb and gutter and are less lengthy sidewalk installations on

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 5: PROJECT RECOMMENDATIONS

roadways that may have some existing sidewalk in place.

- o *Low Cost: < \$150,000 (one-side only)*
 - Projects in this category are generally short sidewalk segments (“spot improvements”) on roadways with adequate width to install new sidewalks without significant roadway engineering.

3. **Place projects into schedule.** The project cost analysis was then compared to the list of projects organized by rating to determine the appropriate phased implementation schedule. Projects which were estimated to be low cost and also received high ratings were placed in the short-term project category, whereas projects with high cost and low ratings were placed in the long-term project category. Mid-term projects included those projects with low costs and low ratings, and those with high cost but high ratings. By organizing projects in a short-term, mid-term, and long-term fashion, the Town has a list of projects that it can implement quickly in order to take immediate steps towards making Banner Elk more pedestrian-friendly in the interim before more intensive, long-term projects are undertaken. Table 5-5 and Figure 5-3 shows projects organized by short-, mid-, and long-term phases.

All recommended sidewalk projects listed in Table 5-5 total to \$1,539,550 of which \$462,150 would be spent on short-term projects (0-5 years), \$602,050 on mid-term projects (6-10 years), and \$475,350 on long-term projects (11+ years).

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 5: PROJECT RECOMMENDATIONS

Phase	Proposed Sidewalk Location	From	To	Length (Miles)	Est. Project Cost (one-side only)	Est. Project Cost (both sides)
<i>Short</i>	Main St E (#3 Priority)	Park Ave	Shawneehaw Heights	0.51	\$ 202,650	\$ 405,300
<i>Short</i>	NC184 S (#1 Priority)	Central Way	Hickory Nut Gap Rd	0.23	\$ 92,100	\$ 184,200
<i>Short</i>	Main St W (#2 Priority)	Grace Hartley	NC194/NC184	0.23	\$ 89,700	\$ 179,400
<i>Short</i>	Banner Rd	Existing	Shawneehaw Avenue	0.2	\$ 77,700	\$ 155,400
<i>Mid</i>	NC194 (Banner Elk Hwy)	NC184	Town Limits	0.56	\$ 147,600	\$ 295,200
<i>Mid</i>	NC 184 N	Main St W (NC	Town Limits	0.68	\$ 179,200	\$ 358,400
<i>Mid</i>	Orchard Ln	NC184	Existing sidewalk	0.5	\$ 132,200	\$ 264,400
<i>Mid</i>	Old Turnpike Rd E	NC194 E	NC194 E	0.54	\$ 143,050	\$ 286,100
<i>Long</i>	NC184 S (sidepath)*	Hickory Nut	Orchard Ln	0.94	\$ 123,875*	n/a
<i>Long</i>	Hickory Nut Gap Road (sidepath)* (#4 Priority)	NC 184 S	WildCat Lake	0.88	\$ 116,175*	n/a
<i>Long</i>	NC184 S	Orchard Ln	Glove Factory Lane	0.51	\$ 134,750	\$ 269,500
<i>Long</i>	Dobbins Rd	NC 184 N	City Limits (proposed	0.38	\$ 100,550	\$ 201,100
TOTALS					\$ 1,539,550	\$ 2,599,000

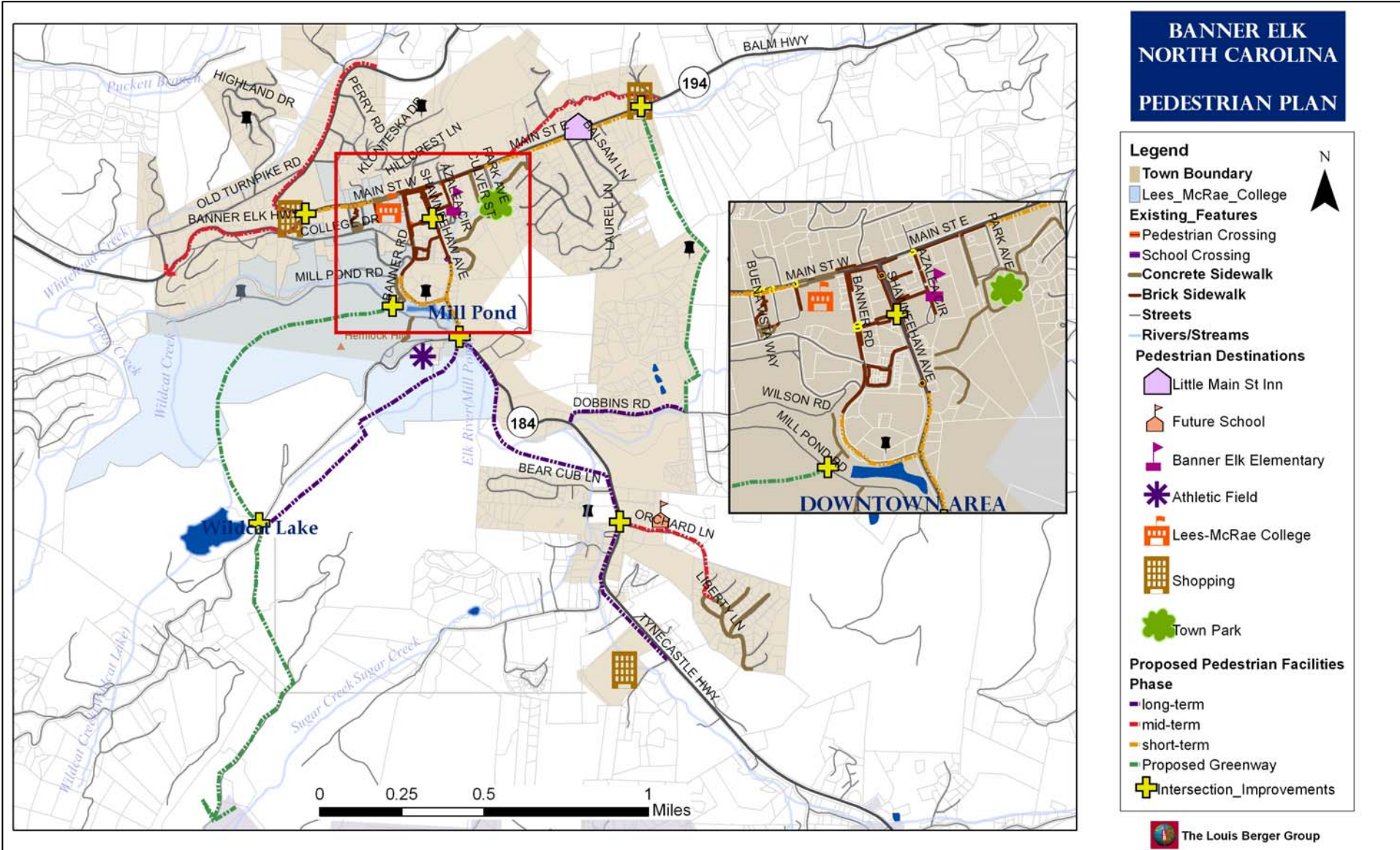
Table 5-5. Phased sidewalk project recommendations

Notes: Priorities determined by Steering Committee evaluation
Typically, phasing terms are considered to be as follows:
Short-term = 0-5 years
Mid-term = 6-10 years
Long-term = 11+ years

*Sidepath cost estimates are for 10' unpaved trail surface

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 5: PROJECT RECOMMENDATIONS

Figure 5-3. Summary map of project phasing recommendations



5.4 Other Physical Improvements

Beyond the construction of new sidewalks and greenways, there are a number of actions and improvements to the physical environment that can greatly improve pedestrian conditions at a fairly low cost. Sidewalk maintenance, for instance, can increase accessibility along existing walkways, especially for wheelchair users, as well as decrease liability for the Town. Installing curb ramps at street corners greatly enhances accessibility for wheelchair users, visually-impaired residents and Banner Elk's growing senior community. The provision of landscaping, pedestrian scale lighting and street furniture can complement other pedestrian amenities and offer visual and practical respite for pedestrians. Benches, in particular, are a welcome addition to any well-trafficked pedestrian corridor and provide "rest stops" for walkers and runners. Finally, the improvement of local intersections with crosswalk and pedestrian signal installations can drastically help improve safety on many walking routes, and crosswalks can be maintained annually to correct fading. Below are some additional ideas for "non-construction" projects:

- Create a regular maintenance schedule for existing sidewalks and crosswalks.
- Provide crosswalks and pedestrian countdown signals at all signalized intersections throughout Banner Elk, as a routine pedestrian accommodation.
- Consider the use of in-street and overhead "Yield to Pedestrians" signage at problem intersections, as well as countdown pedestrian signals at all new and existing signalized intersections.
- Connect existing parks, trails and cultural landmarks with gateway treatments, information kiosks, and wayfinding signage to provide better pedestrian access and recognition. Such treatments should be thematic in appearance and help with visual recognition of trails and destinations "off the beaten path." For instance, the wayfinding signage could designate a loop trail consisting of downtown sidewalks connecting to proposed trails along NC 184 / Hickory Nut Gap Road and the re-established Hemlock Trail.
- Provide pedestrian-scale lighting, street trees and landscaping along proposed greenway trails and sidewalks. Consider other pedestrian amenities (such as benches, water fountains and trash cans) for long

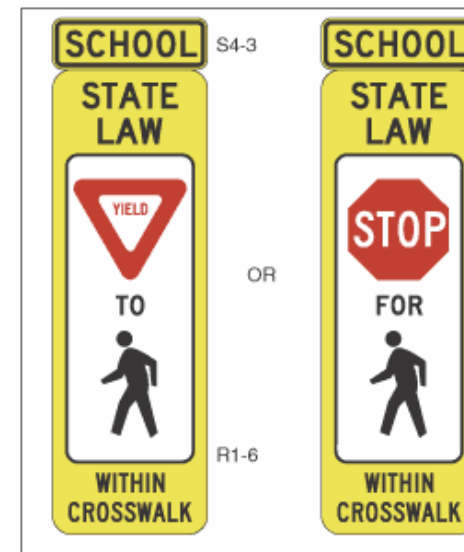


Figure 5-4. In-street "Yield to Pedestrians" sign.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 5: PROJECT RECOMMENDATIONS



Figure 5-5. Greenway & Sidewalk Maintenance. *While many of Banner Elk's sidewalks and trails are new and therefore in good repair, both will eventually need repair for cracking (below sidewalk on Main Street), overgrowth, debris removal, or undercutting caused by runoff (see Town Park Trail below).*



or high-use corridors as funding allows. Ensure all street furniture purchases are coordinated and meet the town standard for color, texture, material, etc.

- Formalize a town-wide 35mph speed limit (unless otherwise signed) and post related regulatory signs at major gateway entrances into the Town.
- Build upon the work of Banner Elk's artist community by developing a public arts fund, whereby 1% of all Town construction program funds derived from bond revenue are dedicated to public arts projects. These projects could be spread into the pedestrian focus areas and other locations outside of downtown to create aesthetic appeal through murals, sculpture, and functional art (benches, bike racks, manhole covers, etc) for pedestrians throughout the Town.

Section 6. Policy & Program Recommendations

Local policies, plans and programs can heavily influence the walkability of a community, and often shape the pedestrian environment, sometimes even without the intent of doing so. Creating strong policies and plans that help to actively create good walking conditions will mean a more balanced future transportation network and a shared private/public burden for providing that benefit. Policy amendments, planning activities and program offerings can often be achieved at low-cost to a municipality while resulting in substantial outcomes that could help Banner Elk make notable progress in becoming a more walkable environment.

6.1 Improvements to Existing Policies and Plans

Along with the rest of the state, Banner Elk and Avery County will experience growth and development in the years to come. The shape and quality of future development will greatly impact the pedestrian-friendliness of the Town. If the Town can work with the development community to create a more multi-modal transportation network that includes sidewalk connections and greenways, Banner Elk will continue to stand out as a community with a high quality of life that attracts new residents, businesses and further economic development. For this reason, it is strongly recommended that the Town work to update and/or create local ordinances to include more pedestrian-oriented language and guidance for walkable future development.

While private/public partnerships are important, it is also recommended that the Town create new internal policies to help guide Town staff in serving the local pedestrians' needs. Such policies will help "institutionalize" good pedestrian design and programming throughout all Town departments, and create a truly balanced and comprehensive approach to implementing the Pedestrian Plan. Policy changes might include the creation of a formal sidewalk petition process for "spot improvements" in the pedestrian network and the development of "green streets" design guidelines to encourage an aesthetically consistent and environmentally-sound approach to future streetscaping, roadway and sidewalk projects. This and other policy recommendations are summarized in Table 6-1.

This section provides a set of policy and program recommendations to help create a well-balanced approach to improving walkability in Banner Elk.

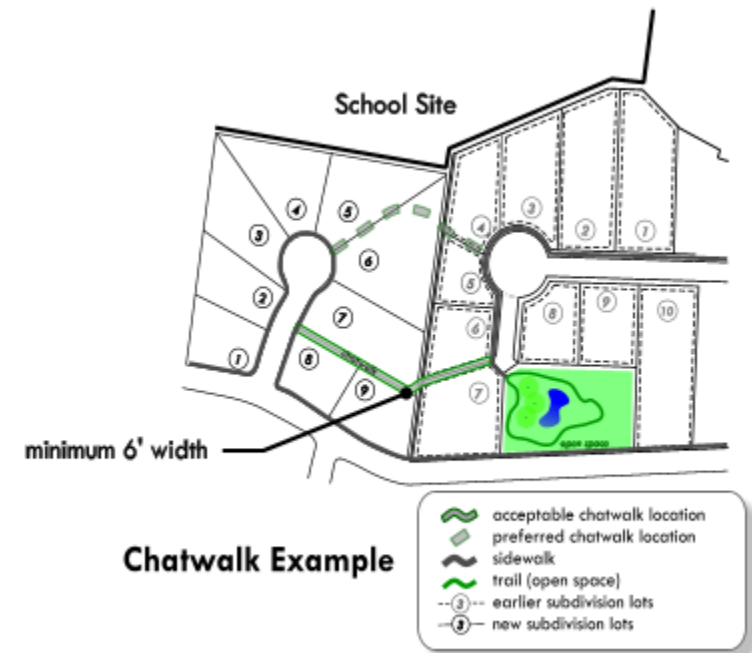


Figure 6-1. It is recommended that Banner Elk require short greenway or "chatwalk" connections between new cul-de-sac developments and adjacent parks, schools or residential uses, where appropriate. This can greatly shorten walking distances and enhance the local pedestrian network by providing short, safe links between neighborhoods and commercial centers.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 6: POLICY & PROGRAM RECOMMENDATIONS

Table 6-1. Local Ordinance Recommendations	
“Green Streets” Design Criteria	<ul style="list-style-type: none"> ■ Modify the Code of Ordinances to reference specific street design criteria, including maximum curb radii in the downtown area and pedestrian activity centers; street cross-sections that include mandatory five-foot-wide sidewalk or public greenway access on the full perimeter of each adjacent public street; and suggest driveway spacing criteria on all streets to be adhered to in the subdivision and design of new developments. Design criteria should also address curb ramps and driveway design to ensure accessibility for the physically disabled, as outlined in the Americans with Disabilities Act (ADA). Design criteria could also address best practices for stormwater control, such as allowable uses of permeable pavement.
Minimum Sidewalk Requirement	<ul style="list-style-type: none"> ■ All sidewalk requirements in the Land Use Ordinance should clearly state that 5 feet is the minimum width required to meet local, state and national standards, including ADA requirements.
Greenway Trail Requirements	<ul style="list-style-type: none"> ■ Require the construction of minimum 8’ (typical: 10’) greenways during new development to connect to existing greenways and create the proposed network of greenways throughout the Town. Additionally, language should be added to allow the Town Council to require greenway connections between adjacent cul-de-sacs and/or from cul-de-sacs to nearby schools or greenways, or other public destinations.
Multi-Modal Land Use Incentives	<ul style="list-style-type: none"> ■ Modify the Code of Ordinances to consider the expansion of conditional uses to include neighborhood retail opportunities in even low- to medium-density residential districts pursuant to adherence to basic design standards and review.
Trail Design Standards	<ul style="list-style-type: none"> ■ Develop improved trail design standards that address consistency of materials, width and accessories for local greenway trail projects.
School Zone Improvements	<ul style="list-style-type: none"> ■ Consider developing an ordinance that requires sidewalk along all roads within a quarter-mile of a school (a typical “no transport zone” or walk zone) and that all signalized intersections within a quarter-mile of a school should have high-visibility crosswalks and countdown pedestrian signals. If the school is accessed from a mid-block location, then a signalized mid-block crossing should be provided for safe pedestrian access.
Pedestrian-friendly Overlay Districts	<ul style="list-style-type: none"> ■ Create a set of place-making design standards (or “overlay districts”) for rural, downtown, and other design markets for the Town, respecting the unique character of the rural heritage as well as recognizing the urbanizing trends of the central business district. Reward and recognize developers that adhere to these design standards by streamlining the project review process and awarding best practice certificates at Planning Board and Town Council meetings. EXAMPLE: Consider developing a pedestrian focus area south of downtown to target connectivity to/from and within the new residential and commercial development taking place at this location.
Parking Lot Design	<ul style="list-style-type: none"> ■ Section 402 of the Town’s zoning ordinances should be amended to address pedestrian access and safety in parking lot design. Walkways should be required through a parking lot to a business for nonresidential development, in order to provide better access from a public street, through the development to the business entrance in the case of “big box” developments.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 6: POLICY & PROGRAM RECOMMENDATIONS

Internal policy changes and complementary planning efforts could be achieved in order to reinforce the Pedestrian Plan’s recommendations and proposed outcomes. During the Plan’s development, several pedestrian-friendly policy and program recommendations specific to Banner Elk were identified and discussed. Recommendations for all such policy and plan development are included in Tables 6-2 and 6-3 below.

Table 6-2. Internal Policy Recommendations	
Countdown Pedestrian Signals	<ul style="list-style-type: none"> Formalize a town-wide policy of installing “countdown” pedestrian signal heads and crosswalks with the installation of all new signalized intersections. Provide pedestrian signals even in locations without sidewalk on one or both sides of an intersection.
School Zone Improvements	<ul style="list-style-type: none"> Create a policy that requires “safe zones” around schools (i.e. school zones) in which speeds are reduced by 10 mph within a quarter mile of the school and signs are posted warning of school and student presence.
Greenway Crossings	<ul style="list-style-type: none"> Create a policy for standard greenway crossing treatments, and develop with NCDOT a mutually acceptable mid-block crossing policy for greenways.
Sidewalk Petition Process	<ul style="list-style-type: none"> Develop a sidewalk petition process and budget allocation to handle “spot improvements,” allowing citizens to make requests for short sidewalk connections that will quickly and easily fill gaps in the pedestrian network.
Curb Ramps	<ul style="list-style-type: none"> Modify curb ramp design standards to conform to ADA requirements and ensure new curb ramps are constructed during all new street/intersection construction, as mandated by federal ADA requirements.
School Siting	<ul style="list-style-type: none"> Work with Avery County to consider pedestrian needs during all new school placement and design decisions.
Sidewalk/Crosswalk Maintenance	<ul style="list-style-type: none"> Develop a sidewalk and crosswalk maintenance budget and schedule to keep up with regular repair needs.
Table 6-3. Complementary Planning Recommendations	
Bicycle/Pedestrian & Trails Committee	<ul style="list-style-type: none"> Consider appointing a Bicycle, Pedestrian and Trails Committee to help engage the public in the implementation of the Pedestrian Plan, as well as to help complete future planning efforts.
Bicycle Plan Development	<ul style="list-style-type: none"> Create the bicycling counterpart for this pedestrian master plan. Bicycling is an important accompaniment to walking, and increases the range as well as the number of destinations available.
Greenway Feasibility Study	<ul style="list-style-type: none"> Develop a GIS inventory of the Hemlock Trail and trail from Wildcat Lake to backside of Sugar Mountain.
Parks Plan Development	<ul style="list-style-type: none"> Create a Parks and Open Space Master Plan that incorporates and expands upon the ultimate recommendations of this Plan.



6.2 Programs and Partnering Opportunities

Pedestrian facilities alone do not make a town pedestrian-friendly. A variety of policy changes and programs should also be implemented to cultivate and support a pedestrian-friendly culture. A pedestrian-friendly culture has several different characteristics, including the behavior of people when they are walking, the attitude of motorists in the community towards pedestrians, and the role of police and other law officials in enforcing pedestrian safety. To address all of these elements, programs are often created to fit within the “three E’s” of pedestrian programming: education, encouragement, and enforcement.

Education programs teach others about safe pedestrian behaviors, the benefits of walking, and can assist people in feeling more comfortable with their “new” mode of travel. Education programs can also be used to teach motorists how to interact safely with pedestrians. Encouragement programs, like education programs, can also teach about the benefits of walking, and serve to promote walking and pedestrian-friendly behavior through various activities and incentives. Finally, enforcement programs provide the “teeth” of a safe and legal pedestrian environment. When law enforcement officers and other officials protect pedestrians and encourage walking, this sends a clear message that the presence of pedestrians is a legitimate and permanent condition in the town’s transportation network.

The sections below include recommendations for a well-rounded pedestrian program in the Town of Banner Elk.

6.2.1 Education Program Recommendations

Safe Routes to School Program

According to the Federal Highway Administration’s website for Safe Routes to School, in 1969, about half of all students walked or bicycled to school. Today, however, over half of all children arrive at school in private automobiles and only 15 percent of all school trips are made by walking or bicycling¹. Designed to address these dramatic statistics, the Safe Routes to School Program is intended to create and promote safe walking

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 6: POLICY & PROGRAM RECOMMENDATIONS

and cycling to school in order to improve safety near schools, promote active lifestyles, and reduce pollution and congestion caused by school traffic. The first Safe Routes to School program was begun in Europe in the late 1970's, but the first program in the United States began in the Bronx, NY, in 1997. Now, less than 10 years later, the Safe Routes to School Program has become both a federally-funded and grassroots national movement.

A Safe Routes to School (SRTS) program is a school-based effort that involves young students, teachers, law enforcement officers and parents in the development of school safety and encouragement initiatives such as Walk to School Day, Walking Wednesdays, pedestrian safety assemblies and bicycle rodeos. These programs can help engage children in safe walking behaviors and encourage more walking and healthier lifestyles. Common steps to creating a successful program are to kick-off with an event on International Walk-to-School Day, then subsequently work with PTA members, teachers and students to identify needs and program ideas while incorporating encouragement measures and education into the school curriculum for students to learn safe walking and bicycling skills and the benefits of an active lifestyle.

Funds are available through the North Carolina Department of Transportation for planning and infrastructure work intended to encourage safe walking and bicycling to elementary and middle schools. Development of a SRTS Action Plan could help with program development and in making key physical improvements within the vicinity of local schools. SRTS workshops are also available through NCDOT to aid in the development of local SRTS Action Plans and are an opportunity to bring together school administrators, faculty, staff, and representatives from related agencies such as health departments, law enforcement, engineering, and city planning to discuss local issues and solutions. Resources and information are available at www.saferoutesinfo.org. NCDOT funding applications and information on local resources are available at <http://www.ncdot.org/transit/bicycle/saferoutes/SafeRoutes.html>.

Did you know?

In 1969, about half of all students walked or bicycled to school. Today, however, only 15 percent of all school trips are made by walking or bicycling¹.



Figure 6-2. Sample SRTS Materials. Using inexpensive materials, such as these simple stickers – available for free online and printed on Avery labels – can help create a fun, effective Safe Routes to School outreach program.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 6: POLICY & PROGRAM RECOMMENDATIONS

Recommendation: A Safe Routes to School program is a recurring activity and will require support from Town and County Staff, school administration, and parents and faculty; however, the benefits will continue with children into adulthood. Town of Banner Elk staff should coordinate with the Avery County public school administration at either a system-wide or individual school level, to encourage and support the establishment of a Safe Routes to School program at Banner Elk Elementary, as well as other County schools serving local children. In addition, when new schools are planned and constructed, Avery County public school system representatives should work with Town staff to plan for and design safe walking and cycling routes to new schools.

Pedestrian Safety Education Campaign

A pedestrian safety campaign can be a branded townwide effort involving multiple Town departments (e.g. Public Works, Planning, Police Department), civic organizations and neighborhood groups in an awareness building effort to address local pedestrian issues. Pedestrian safety initiatives might focus on speeding, reckless driving, unsafe pedestrian behavior, child safety or failure to yield issues. For instance, speeding motorists might be targeted with a “Keep Kids Alive, Drive 25” campaign, while common but unsafe pedestrian behavior is addressed through educational materials and handouts distributed at local events and public venues like the library and schools. TV and radio PSAs on pedestrian safety might be utilized to create local awareness of issues such as school zone safety. Finally, the Town might also consider posting bicycle and pedestrian related laws and safety information permanently on the Banner Elk Town website for reference. For a list of relevant state statutes, visit www.ncdot.org/transit/bicycle.



Figure 6-3. Well-designed pedestrian safety and promotional materials are available for free from FHWA and the National Center for SRTS.
Source: www.saferoutesinfo.org

The simplest way to spread information about safe pedestrian behavior is to create promotional and educational materials for distribution at various venues throughout the Town, and to Town staff, major employers, and future residents. The purpose of these materials would be to educate Banner Elk’s citizens about safe walking behaviors, safe driving behaviors around pedestrians, the proper use of pedestrian facilities like pedestrian signals, and the benefits of walking on health and the environment. Such

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 6: POLICY & PROGRAM RECOMMENDATIONS

educational materials can be distributed to outdoor groups and outdoor supply vendors, as well as distributed at Town events, kiosks, or Parks and Recreation Department activities. In addition, materials could be created for distribution to developers to educate them about pedestrian-friendly design and construction techniques.

Recommendation: Town staff should design and distribute educational and promotional materials to Town staff, major employers, and future residents, as well as for display at Town Hall and other public locations (for example: parks, bus stops, recreational facilities).

Bicycle and Pedestrian Program Website

The Town of Banner Elk and the surrounding communities have so many public events that collectively work to create a walkable community through recognition of local heritage, cultural sites and the arts. Events held by Lees-McRae College, the Banner House museum and other local entities are typically accessible for pedestrians and bicyclists due to the geography of the town and a culture of walking and biking that has evolved with the college and other nearby recreational influences. A bicycle and pedestrian program website could provide links to local event calendars, hiking and fitness walking program information, host a pedestrian safety webpage and/or interactive child safety site, and provide PDF links to walking route maps and other information. Such a website would be a clearinghouse for all pedestrian-related information and would offer a great resource to citizens and visitors interested in active living opportunities and foot tours of the Town.

Recommendation: It is recommended that the Town develop a bicycle and pedestrian program website to act as a clearinghouse for all pedestrian-related information for residents and visitors. Such a website could use its own catchy domain name, like "BikeWalkBannerElk.org" and be linked to the Town's website from the homepage. The bicycle and pedestrian program website would be educational in nature, and further promote the existing tours and outings in Banner Elk for residents and tourists.

6.2.2 Encouragement Program Recommendations

Bicycle/Pedestrian and Trails Advisory Committee

One approach to formalizing the Town’s commitment to pedestrian-friendliness is to establish a standing Pedestrian and Bicycle Advisory Committee. The Committee should be a standing committee comprised of Town residents committed to making Banner Elk a more bicycle- and pedestrian-friendly community. Members of the advisory committee would provide input on town decisions, actions, plans, and policies from a bicycle and pedestrian perspective. They would also lead volunteer efforts at Town-sponsored events and generally advocate for a more bicycle- and pedestrian-friendly community. A Town staff member should be appointed to liaison with the Committee and work part-time or full-time to help coordinate bicycle and pedestrian planning and programming activities and implement recommendations of the Pedestrian Plan.

Recommendation: The Town Council should establish a Bicycle and Pedestrian Advisory Committee and appoint citizen members to support encouragement efforts and help to monitor progress on implementation of the Pedestrian Plan recommendations.

Pedestrian Wayfinding System and Route Maps

More and more communities are using pedestrian and bicycle wayfinding systems to provide visitors and residents with directional and distance information to major landmarks, parks and other local attractions. Given Banner Elk’s tourism attractions, cultural destinations and well-used parks, a similar system would be very useful here.

Pedestrian wayfinding signs should be at an appropriate height of 7-8ft, with a font and orientation appropriate for pedestrian viewing. Distance information should be provided in blocks or miles; a map is also quite useful for visitors. Such a system could incorporate local themes, allowing Banner Elk or Avery County artists a hand in designing the sign templates. Opportunities for private-public partnerships exist, such as working with area retailers or B&B’s along the route to sponsor signage and/or complementary brochures in exchange for a mention in the guide.



Figure 6-4. Pedestrian wayfinding signage along the waterfront in Seattle, WA. This signage especially helps visitors and tourists with directional information, but also visually reinforces a local aesthetic in a cost-effective manner and highlights the shorefront as an attraction.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 6: POLICY & PROGRAM RECOMMENDATIONS

Recommendation: Develop a system of wayfinding signs to direct pedestrians to major landmarks, parks, greenway trails, and other public attractions in the Town with wayfinding signage. Develop a complementary map and brochure for visitors and residents to use in navigating the Town by foot. Pedestrian safety information could be included, as well as information on local cultural sites, landmarks and businesses (e.g. Mill Pond, Lees McRae College Athletic Fields and Banner House Museum). The map might be available for distribution at Town Hall, local retail venues, restaurants, on the internet and through the Avery county Chamber of Commerce.

Weekly Walking Tours

With Banner Elk's high pedestrian commute rates and seasonal influx of tourists, it is apparent that many residents and visitors enjoy Banner Elk by foot. More communities are capitalizing on existing sidewalks and trails by offering walking tours that highlight cultural and ecological attractions. Providing route maps and working with volunteers to lead the tours can be a cost effective way to add value to visitors, and offer a healthy group activity for residents to enjoy.

Recommendation: Establish regular pedestrian outings in Banner Elk for residents and/or tourists, which highlight the natural resources of the Town and surrounding area, historical and cultural landmarks or popular parks and meeting places. This could be a weekly or monthly endeavor, organized to meet regularly at the same place/time, but using different routes and/or facilitators to spice things up. The walking tours might highlight local historic homes, arts and crafts, Appalachian heritage and cultural facts, gardens or other natural resources. For examples of a successful set of heritage tours in New Bern, NC, visit http://www.visitnewbern.com/heritage_tours.htm

Healthy Living Initiative

One of the major characteristics of a pedestrian-friendly town is to have a body of citizens, town staff and elected leaders who support and encourage pedestrian-friendliness. Usually this requires that residents and town officials are educated about the economic, health, and general

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 6: POLICY & PROGRAM RECOMMENDATIONS

quality of life benefits of a pedestrian-friendly city. In order to facilitate this, it is recommended that Town establish a Healthy Living Initiative that consists of several outreach activities. One event could be a Walk to Work Day at Town Hall, perhaps in conjunction with the annual Bike to Work Week in May of each year. During this day, residents of Banner Elk, Town Hall employees, Lees McRae students, and others could be encouraged to walk to work and school. Other events could include a 5K Walk/Run each year in Banner Elk. Additionally, educational activities could be held at Town Hall, such as presentations on pedestrian- and bicycle-friendliness to learn about the projects, programs, and policies that can encourage a more bicycle- and pedestrian-friendly city. Several organizations, such as the National Center for Bicycling and Walking (www.bikewalk.org), Walkable Communities, Inc., and the Complete the Streets initiative (www.completestreets.org), provide resources such as speakers, handouts, guides, and publications which can be used for the education and encouragement component of the event. Local businesses might be asked to encourage employee participation in workplace walking clubs and events, along with the promotion of a local walking route and corresponding map (see below).

This program should be promoted in local schools, health centers and at City/County events (e.g. Woolly Worm Festival). A "Fitness Challenge" event and/or regular senior walking program could be incorporated. Business sponsors could help purchase low-cost pedometers and walking route maps for distribution.

Recommendation: Consider working with the Avery County Health Department and other local partners to create a healthy living initiative that promotes walking for fitness. The initiative could engage adult and child residents, Lees McRae students and visitors in fun activities, such as a 5K Walk/Run Event and workplace walking challenges.

6.2.3 Enforcement Program Recommendations

Traffic Enforcement

Many communities rely on a traffic enforcement unit of the local police or Sheriff's department to conduct periodic ticketing and speed



Figure 6-5. Active speed monitors are often used in school zones to discourage speeding. Source: www.saferoutesinfo.org

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 6: POLICY & PROGRAM RECOMMENDATIONS

enforcement efforts on problem streets. Speeding, failure to yield to pedestrians in a crosswalk, and rolling stops are often targets of traffic enforcement for pedestrian safety. Because of the expenses involved and staffing resources needed to conduct traffic enforcement, it is often used as a follow-up activity to educational and encouragement efforts, and/or as a last result for addressing a problem location or issue. However, in many cases it can be a worthwhile expense and helps to reinforce new behaviors when traffic calming, speed limit changes, educational campaigns or other pedestrian improvements have been implemented.

Other, effective passive enforcement options include active speed monitor signs and speed trailers. Like a standard speed limit sign, active speed monitors indicate the permanent speed limit for a given street but also use radar to detect the speeds of passing cars. Below the permanent speed limit text, a digital display shows the speed of passing cars and flashes to indicate to speeding drivers when to slow down. These signs are very appropriate for high pedestrian areas where drivers need to constantly aware of pedestrians, such as in a school zone. Similar to active speed monitors, a speed trailer is a speed detection device that monitors the speeds of passing vehicles and displays to drivers their travel speeds on a digital screen. Speed trailers also often flash when drivers are speeding, but unlike active speed monitors, they are typically used on a temporary basis for problem streets to reinforce local speed limits and make drivers aware that the Police and Public Works department are monitoring the area.

Recommendation: Work with the local police department to enforce speeding, failure to yield to pedestrians in crosswalks, and other violations in targeted areas such as school zones, pedestrian focus areas or downtown. Other passive enforcement options could include the purchase and rotating display of a speed trailer at problem spots where speeding and traffic issues are reported as a problem. Active speed monitors should be considered in areas where speeding is a continual problem.

Pace Car Program

A pace car program is a participatory program for citizens to pledge to act as “pace cars” that obey signed speed limits at all times on Banner Elk streets. Pace car participants self-enforce the local speed limit by committing to always driving at or below local speed limits, and typically display their participation in the program with a bumper sticker and/or window stickers. In addition to self-enforcement, pace car participants help to set a normative speed in their community and set examples for courteous, law-abiding traffic behavior in their neighborhoods.

Typically, pace car programs are voluntary efforts run by the local police department. Costs are generally low for implementing such a program; supply needs include digital/hardcopy pledge forms, bumper stickers and/or window stickers and postage/printing costs for membership notifications. Typically, a police department will promote the program through local neighborhood associations and other civic organizations.

Recommendation: The Town’s Public Works, Planning and Police departments should work together with the Avery County Sheriff’s Department and nearby communities to implement and promote a joint pace car program. Promotional efforts should focus on the

The City of Durham Pace Car Program

The City of Durham Pace Car Program is a citizen-based traffic calming initiative jointly coordinated by the Crime Prevention Unit of the Durham Police Department and the Transportation division of Public Works. Modeled after similar programs in other U.S. cities, the goal of the Pace Car program is to effect safer Durham streets by encouraging citizens to proactively promote motorist responsibility and roadway safety through a unique educational and awareness campaign.

Citizens and neighborhood groups participate in the Pace Car program on a yearly basis by pledging and following through to -

- ◆ Drive within the speed limit of City streets—especially in residential areas.
- ◆ Stop at all Stop Signs.
- ◆ Stop at all Red Lights.
- ◆ Stop to let pedestrians cross the street
- ◆ Be courteous to bicyclists and other motorists.
- ◆ Reduce car usage and explore alternative methods of transportation (that will help improve air quality, the environment and lessen traffic congestion)
- ◆ Display the Durham Pace Car Program stickers.

Citizens Setting the Pace

Not only do Pace Car participants set the example by adhering to the speed limit, they literally set the pace for other vehicles driving behind them.

Citizens who commit to the Pace Car Pledge agree to display a Durham Pace Car program magnet on the rear of their vehicle. This yellow and black magnet, featuring a bull slowing his speed, is designed to alert other motorists to be mindful of the designated speed limit.

In addition, a static window sticker featuring a triangular version of the program logo is to be placed inside the Pace Car vehicle as a reminder to the driver of the Pace Car Pledge.

In The Driver’s Seat - How To Join

By joining the Durham Pace Car Program campaign in one year intervals, you will play an significant role in creating safer streets for residents and visitors and enhancing the City’s overall quality of life.

Simply fill out the information below:

Full Name: _____
 Address: _____
 City/State/Zip: _____
 Phone: () _____
 Email: _____

Sign to acknowledge Pace Car Pledge:


“I pledge to drive within City speed limits: stop at all stop signs, red lights ad cross walks; be courteous to bicyclists and other motorists; seek out ways to reduce car usage and to prominently display pace car program stickers on my primary vehicle.”

Signature: _____ Date: _____

Return completed form to address on reverse side.

Neighborhood groups should make copies of this form and collectively send batch of completed forms as directed on the reverse side of this form.

Upon receipt of pledge form(s), the City of Durham will send your Pace Car display stickers.



Magnet

Static Window Sticker

For information about the Pace Car Program, call the Durham Police Department at 560-4582 ext 238.

Figure 6-6. Durham is one of several NC cities using a Pace Car program.

benefits of lower traffic speeds, most importantly child and adult pedestrian safety, a more comfortable and appealing pedestrian environment, and benefits for individual participants including “good Samaritan” status and gas savings from reduced travel speeds.

6.3 Partnership Opportunities

Many of the education, encouragement and enforcement programs will be carried out by partnerships between Town departments, local nonprofit and civic organizations, business owners, developers and others. Creating strong partners in the town-wide effort to improve pedestrian safety and increase walkability will help spread the word and awareness of the importance of walking in the community, as well as lead to programs that can withstand the test of time. Potential partners for implementation of the Banner Elk Pedestrian Plan include:

- Avery County Chamber of Commerce
- Avery County Health Department
- Local Neighborhoods Groups
- Avery County School System
- Local Parent Teacher Associations (PTAs)
- Town of Banner Elk Police Department
- Avery County Sheriff’s Department
- Banner Elk Tourism Development Authority
- Local Kiwanis, Lions and Rotary Clubs
- Lees McRae College
- Grandfather Home for Children
- High Country Council of Governments
- Local Business Owners

6.4 Program Evaluation

Evaluation is a useful tool for measuring local progress after the adoption of a Plan. Following up on program activities to verify successes and make changes as needed, and tracking key indicators such as crash statistics, can help provide a focus for future implementation and re-evaluate new needs. It is recommended that the Town of Banner Elk consider working with a citizen committee, such as the Recreation Committee or a new Bicycle/Pedestrian/Trails Committee to help implement the Plan, track successes, re-evaluate needs and help to conduct future Plan updates. Key indicators that Town staff, citizens and committee members might track include:

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 6: POLICY & PROGRAM RECOMMENDATIONS

- Number of students walking/biking to school
- Records of pedestrian crashes in Banner Elk
- Participation in programs, such as the Pace Car Program or Safe Routes for Seniors Program
- Database of sidewalk, greenway & intersection improvements

Resources & References

¹ FHWA Safety: Safe Routes to School Program
(<http://safety.fhwa.dot.gov/saferoutes/>).

Section 7. Implementation Plan

7.1 Introduction

Completion of the Banner Elk Pedestrian Plan is only the first step in creating a walkable community. The implementation of the Pedestrian Plan will require a coordinated effort amongst Town officials, leaders, and citizen volunteers. This section provides a series of actions steps for moving forward with the recommendations of the Plan, as well as potential funding sources and partners for proposed projects. Additionally, this section identifies a phased implementation schedule that considers priority and cost with the goal of creating a pedestrian-friendly community over the next 20 year horizon.

7.2 Action Steps

Completing the following action steps will help guide the development of the proposed pedestrian network, and create a supportive program and policy environment for a more walkable Banner Elk. These steps will be crucial in moving forward with the overall recommendations of the Pedestrian Plan.

- 1) Adopt this Plan.** Adoption of this Plan will be the first step to implementation for Banner Elk. Once adopted, the Plan should be forwarded to regional and state decision-makers, such as the RPO and NCDOT Division office, for inclusion in a regional planning and development processes.
- 2) Form a Bicycle/Pedestrian & Trails Advisory Committee.** The pedestrian planning process has engaged many citizens in visioning and goal-setting for Banner Elk. Building on this momentum to keep citizens engaged in a permanent committee structure will allow continued citizen involvement in the Plan's implementation.
- 3) Secure funding for the top priority projects.** In order for Banner Elk to become a more pedestrian-friendly town, it must have the priorities and the funding available to proceed with implementation. The Town should work to secure funding for implementation of several high-priority projects (see Section 7.3) and develop a long-term funding strategy. This will help

This section summarizes project, program and policy recommendations into a set of short-term, mid-term and long-term implementation strategies for Banner Elk.



Banner Elk has already begun implementing various high priority pedestrian projects, including the Mill Pond boardwalk, shown in this artist's rendering of the final project.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

reinforce the commitment to the Pedestrian Plan and reaffirm to residents that the Plan is moving forward.

4) Begin work on top priority projects listed in Section 7.3. In addition to committing local funds to high-priority projects in the Pedestrian Plan, the Town is in a unique position to work with NCDOT on a local Safe Routes to School (SRTS) project and/or seek other state, national or private funding sources for continued, long-term success in implementing the Plan.

5) Adopt policy changes that support the goals of the Pedestrian Plan.

Proposed ordinance changes that will be crucial to balancing the public/private burden of implementing this Pedestrian Plan are listed in Section 6 and below in Section 7.3. These include requiring sidewalks in all new development projects, establishing a street tree ordinance, and requiring the dedication of greenway easements to “bank” land for future trail construction.

6) Embark on complementary planning efforts. The Town should incorporate the recommendations of the Pedestrian Plan into future and existing Plans developed and updated at the local, regional and statewide level. For instance, the recommendations of the Banner Elk Pedestrian Plan should be incorporated into the statewide Comprehensive Transportation Plan, which is currently under development for Division 11.

7) Develop supportive education, encouragement and enforcement programs.

Pedestrian facilities alone do not make a town pedestrian-friendly. A variety of programs should also be implemented to create and support a pedestrian-friendly culture. Programs and policy priorities should be implemented alongside infrastructure improvements.

7.3 Project, Program and Policy Priorities

The following tables summarize specific project, policy, and program recommendations that have been made in order of short-term, mid-term, and long-term time frames. Each table should be used by the Town as a flexible framework for implementing the recommendations in the Plan – recognizing that it is important to capitalize on unexpected opportunities while also pursuing long term goals. In general, the Town should consider working with a wide range of partners, such as those listed in Section 7.3,

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

to implement various elements of the Plan and conduct periodic evaluations of projects, policies and programs after implementation.

Table 7-1. Short-term Recommendations (1 – 5 years)

SIDEWALK PROJECTS				
Proposed Sidewalk Location	From	To	Length (Miles)	Est. Project Cost (one-side only)
Main St E	Park Ave (existing)	Shawneehaw	0.51	\$ 202,650
NC184 S	Central Way SW	Hickory Nut Gap	0.23	\$ 92,100
Main St W	Grace Hartley	NC194/NC184	0.23	\$ 89,700
Banner Rd	Existing Sidewalk	Shawneehaw	0.20	\$ 77,700
POLICIES				
Description			Type	
Update Minimum Sidewalk & Greenway Trail Requirements			Planning Effort/Ordinance	
Develop Trail Design Standards, including Greenway Crossings			Policy/Ordinance	
Modify Curb Ramp Design Standards for ADA Compliance			Policy/Ordinance	
Establish Internal Policy & Ordinance Language for Local School Zone Improvements			Policy/Ordinance	
Formalize Policy for Countdown Pedestrian Signals			Internal Policy	
Establish Improved Parking Lot Design Standards for Pedestrian Access			Local Ordinance	
Conduct Parks & Open Space Plan, including Greenway Feasibility Study (where more detail necessary)			Planning Effort	
PROGRAMS				
Description		Type	Potential Partners	
Safe Routes to School Program		Education	Avery County Schools	
Bicycle & Pedestrian Program Website		Education	Lees McRae College	
Establish Weekly Walking Tours		Encouragement	Avery County Chamber of Commerce	

TOWN OF BANNER ELK PEDESTRIAN PLAN
SECTION 7: IMPLEMENTATION PLAN

Table 7-2. Mid-term Recommendations (6 - 10 years)

SIDEWALK PROJECTS				
Proposed Sidewalk Location	From	To	Length (Miles)	Est. Project Cost (one-side only)
NC194 (Banner Elk Hwy)	NC184	Town Limits	0.56	\$ 147,600
NC 184 N	Main St W (NC 194)	Town Limits	0.68	\$ 179,200
Orchard Ln	NC184	Existing sidewalk	0.5	\$ 132,200
Old Turnpike Rd E	NC194 E	NC194 E	0.54	\$ 143,050
POLICIES				
Description			Type	
Develop and Adopt Street Design Criteria			Planning Effort/Ordinance	
Establish Bicycle/Pedestrian & Trails Advisory Committee			Planning Effort	
Establish Sidewalk/Crosswalk/Greenway Maintenance Program			Internal Policy	
Conduct Complementary Bicycle Plan			Planning Effort	
Establish Sidewalk Petition Process			Internal Policy	
Incorporate Conditional Uses for Multi-Modal Developments into Local Zoning Ordinances			Local Ordinance	
PROGRAMS				
Description		Type	Potential Partners	
Pedestrian Safety Education Campaign		Education	Avery County Schools; Lees McRae College	
Establish Pedestrian Wayfinding & Route Maps		Encouragement	Avery County Chamber of Commerce	
Establish PACE Car Program		Enforcement	Banner Elk Police & Avery County Sheriff Department	

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Table 7-3. Long-term Recommendations (11+ years)

SIDEWALK PROJECTS				
Proposed Sidewalk Location	From	To	Length (Miles)	Est. Project Cost (one-side only)
NC184 S (sidepath)	Hickory Nut Gap	Orchard Ln	0.94	\$ 659,015
Hickory Nut Gap Road	NC 184 S	WildCat Lake	0.88	\$ 618,051
NC184 S	Orchard Ln	Glove Factory	0.51	\$ 134,750
Dobbins Rd	NC 184 N	City Limits	0.38	\$ 100,550
POLICIES				
Description			Type	
Establish Pedestrian-friendly Overlay Districts			Planning Effort/Ordinance	
PROGRAMS				
Description		Type	Potential Partners	
Traffic Enforcement		Enforcement	Banner Elk Police & Avery County Sheriff Department	

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

7.3.1 Other Physical Improvements

In addition to the proposed sidewalk improvements listed in the implementation schedules above, a number of other recommendations have been made throughout the Plan to produce beneficial changes in the pedestrian environment. These include construction of several new greenway trails, which will produce a valuable recreational and transportation asset to Banner Elk. The final greenway trail recommendations are shown in Table 7-4.

Table 7-4. Final Greenway Trail Recommendations (in alphabetical order)

Proposed Greenway Trail	From	To	Description	Length (Miles)	Length (Feet)	Estimated Cost (unpaved)	Estimated Cost (paved)
Hemlock Trail	Lees McRae College	Wildcat Lake	Re-establish Hemlock Trail and work with Lees McRae to provide routine maintenance and upkeep. Project requires agreement with college to implement.	1.06	5604	\$140,100	\$745,332
NC 184 Alternate Trail	NC 184 (Tynecastle Rd)	NC 194 (Main St E)	Construct parallel pedestrian path along NC184 Alternate if/when constructed or construct trail independent of roadway project to connect residents in eastern Banner Elk with destinations to the north and south.	1.01	5351	\$133,775	\$711,683
Sugar Mountain Connector Trail	Hickory Nut Gap Rd (SR1342)	Sugar Mountain	Determine ownership and re-establish this foot trail from WildCat Lake to the back side of Sugar Mountain.	1.23	6505	\$162,625	\$865,165
TOTALS				3.31	17,460	\$436,500	\$2,322,180

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Crossing improvements have been recommended in Section 5 of the Pedestrian Plan to enhance pedestrian safety at local intersections and key pedestrian crossings. The proposed crossing improvements, categorized into implementation phases (based on priority) are included in Table 7-5 below.

Table 7-5. Final Crossing Improvement Recommendations

Intersection Location	Recommended Treatment
E Main Street & Shawneehaw Heights Road	Install high-visibility crosswalks and pedestrian crossing signage; consider flashing beacon warning and/or overhead “Yield to Pedestrians” signage to help pedestrians access the Dollar General and other destinations from the proposed sidewalk on the south side of W Main Street (NC194 East).
W Main St & NC184 North	Consider pedestrian signalization of intersection with addition of high-visibility crosswalks and countdown pedestrian signals.
Mill Pond Rd & Hemlock Trail Crossing	Install high-visibility crosswalks along roadway for trail crossing; consider advanced “Ped Xing” pavement markings. Add stop signage and collapsible bollards on trail to warn pedestrians and cyclists of roadway crossing ahead.
Shawneehaw Ave & Central Way SW	Install textured, high-visibility crosswalks at this downtown intersection to match other downtown streetscaping and raise motorist awareness of high pedestrian use.
NC184 South & Orchard Lane	Upon school completion, provide high-visibility crosswalk and school crossing signage at minimum for safe pedestrian crossing from sidewalk on west side of NC184 South to Orchard Lane (site of new Banner Elk Elementary School).
NC184 South & Hickory Nut Gap Road	Provide high-visibility crosswalks and pedestrian countdown signal at signalized intersection, in order to improve safety for pedestrians crossing from east to west sidewalk on NC184 South and for access to nearby shopping.
Hickory Nut Gap Road at Sugar Mountain Connector Trail Crossing	Upon trail establishment, add high-visibility crosswalk on Hickory Nut Gap Rd and consider advanced “Ped Xing” pavement markings. Install stop signage and collapsible bollards on trail to warn pedestrians and cyclists of roadway crossing ahead.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Finally, beyond the construction of new sidewalks, greenways and intersection treatments, there are a number of actions and improvements to the physical environment that can greatly improve pedestrian conditions at a fairly low cost. Sidewalk maintenance, for instance, can increase accessibility along existing walkways, especially for wheelchair users, as well as decrease liability for the Town. Installing curb ramps at street corners greatly enhances accessibility for wheelchair users, visually-impaired residents and Banner Elk's growing senior community. The provision of landscaping, pedestrian scale lighting and street furniture can complement other pedestrian amenities and offer visual and practical respite for pedestrians. Benches, in particular, are a welcome addition to any well-trafficked pedestrian corridor and provide "rest stops" for walkers and runners. Finally, the improvement of local intersections with crosswalk and pedestrian signal installations can drastically help improve safety on many walking routes, and crosswalks can be maintained annually to correct fading. Below are some additional ideas for "non-construction" projects:

- Create a regular maintenance schedule for existing sidewalks and crosswalks.
- Provide crosswalks and pedestrian countdown signals at all signalized intersections throughout Banner Elk, as a routine pedestrian accommodation.
- Consider the use of in-street and overhead "Yield to Pedestrians" signage at problem intersections, as well as countdown pedestrian signals at all new and existing signalized intersections.
- Connect existing parks, trails and cultural landmarks with gateway treatments, information kiosks, and wayfinding signage to provide better pedestrian access and recognition. Such treatments should be thematic in appearance and help with visual recognition of trails and destinations "off the beaten path." For instance, the wayfinding signage could designate a loop trail consisting of downtown sidewalks connecting to proposed trails along NC 184 / Hickory Nut Gap Road and the re-established Hemlock Trail.
- Provide pedestrian-scale lighting, street trees and landscaping along proposed greenway trails and sidewalks. Consider other pedestrian amenities (such as benches, water fountains and trash cans) for long

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

or high-use corridors as funding allows. Ensure all street furniture purchases are coordinated and meet the town standard for color, texture, material, etc.

- Formalize a town-wide 35mph speed limit (unless otherwise signed) and post related regulatory signs at major gateway entrances into the Town.
- Build upon the work of Banner Elk's artist community by developing a public arts fund, whereby 1% of all Town construction program funds derived from bond revenue are dedicated to public arts projects. These projects could be spread into the pedestrian focus areas and other locations outside of downtown to create aesthetic appeal through murals, sculpture, and functional art (benches, bike racks, manhole covers, etc) for pedestrians throughout the Town.
- Consider the use of in-street "Yield to Pedestrians" signage at problem intersections.

7.4 Partnership Opportunities

Many of the education, encouragement and enforcement programs will be carried out by partnerships between Town departments, local nonprofit and civic organizations, business owners, developers and others. Creating strong partners in the town-wide effort to improve pedestrian safety and increase walkability will help spread the word and awareness of the importance of walking in the community, as well as lead to programs that can withstand the test of time. Potential partners for implementation of the Banner Elk Pedestrian Plan include:

- Avery County Chamber of Commerce
- Avery County Health Department
- Local Neighborhoods Groups
- Avery County School System
- Local Parent Teacher Associations (PTAs)
- Town of Banner Elk Police Department
- Avery County Sheriff's Department
- Banner Elk Tourism Development Authority
- Local Kiwanis, Lions and Rotary Clubs
- Lees McRae College

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

- Grandfather Home for Children
- High Country Council of Governments
- Local Business Owners

7.5 Program Evaluation

Evaluation is a useful tool for measuring local progress after the adoption of a Plan. Following up on program activities to verify successes and make changes as needed, and tracking key indicators such as crash statistics, can help provide a focus for future implementation and re-evaluate new needs. It is recommended that the Town of Banner Elk consider working with a citizen committee, such as the Recreation Committee or a new Bicycle/Pedestrian/Trails Committee to help implement the Plan, track successes, re-evaluate needs and help to conduct future Plan updates. Key indicators that Town staff, citizens and committee members might track include:

- Number of students walking/biking to school
- Records of pedestrian crashes in Banner Elk
- Participation in programs, such as the Pace Car Program or Safe Routes for Seniors Program
- Database of sidewalk, greenway & intersection improvements

7.6 Funding

Pedestrian facilities are constructed – and therefore funded – through a number of avenues. Funding can be divided into four categories: local, state, federal, and private funding. The following paragraphs describe some of the more prominent sources in each category. Banner Elk should tap into all of these sources, and search for others as well, in order to take advantage of the funds available.

7.6.1 Local Funding

Currently, Banner Elk does not have an annual budget line item specifically for pedestrian improvements. In the future, Banner Elk may

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

wish to consider creating a specific annual budget item to set aside funds for improving pedestrian facilities, especially “spot improvements” to the local sidewalk network. A specific budget item is the most direct way to ensure that funding for pedestrian facilities is available, but sometimes a town’s budget may be too limited to finance this work. Pedestrian facilities can also be built through “incidental” projects, by ensuring that such features are constructed with any new projects or improvements, such as parks and recreation facilities, libraries, schools, and new roads. In addition, future private development should be reviewed for adequate pedestrian access and connections. As discussed in the policy recommendations of *Section 6: Programs and Policy Recommendations*, this may mean the Town should require developers to install sidewalk with new construction. The Town should also consider teaming with other organizations that may have their own projects in Banner Elk, such as the Banner Elk-Erwin Trail Committee, the Mid-Carolina Council of Government (RPO) and the North Carolina Department of Transportation.

Municipalities also often plan for the funding of pedestrian facilities or improvements through development of Capital Improvement Programs (CIP). Typical capital funding mechanisms include the following: capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each of these categories is described below.

- **Capital Reserve Fund.** Municipalities have statutory authority to create capital reserve funds for any capital purpose, including pedestrian facilities. The reserve fund must be created through ordinance or resolution that states the purpose of the fund, the duration of the fund, the approximate amount of the fund, and the source of revenue for the fund. Sources of revenue can include general fund allocations, fund balance allocations, grants and donations for the specified use.
- **Capital Project Ordinances.** Municipalities can pass Capital Project Ordinances that are project specific. The ordinance identifies and makes appropriations for the project.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

- **Municipal Service District.** Municipalities have statutory authority to establish municipal service districts, to levy a property tax in the district additional to the townwide property tax, and to use the proceeds to provide services in the district. Downtown revitalization projects are one of the eligible uses of service districts.

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

- **Installment Purchase Financing.** As an alternative to debt financing of capital improvements, communities can execute installment/ lease purchase contracts for improvements. This type of financing is typically used for relatively small projects that the seller or a financial institution is willing to finance or when up-front funds are unavailable. In a lease purchase contract the community leases the property or improvement from the seller or financial institution. The lease is paid in installments that include principal, interest, and associated costs. Upon completion of the lease period, the community owns the property or improvement. While lease purchase contracts are similar to a bond, this arrangement allows the community to acquire the property or improvement without issuing debt. These instruments, however, are more costly than issuing debt.

- **Taxes.** Many communities have raised money through self-imposed increases in taxes and bonds. For example, Pinellas County residents in

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Florida voted to adopt a one-cent sales tax increase, which provided an additional \$5 million for the development of the overwhelmingly popular Pinellas Trail. Sales taxes have also been used in Allegheny County, Pennsylvania, and in Boulder, Colorado to fund open space projects. A gas tax is another method used by some municipalities to fund public improvements. A number of taxes provide direct or indirect funding for the operations of local governments. Some of them are:

- o *Sales Tax.* In North Carolina, the State has authorized a sales tax at the state and county levels. Local governments that choose to exercise the local option sales tax (all counties currently do), use the tax revenues to provide funding for a wide variety of projects and activities. Any increase in the sales tax, even if applying to a single county, must gain approval of the state legislature.
- o *Property Tax.* Property taxes generally support a significant portion of a municipality's activities. However, the revenues from property taxes can also be used to pay debt service on general obligation bonds issued to finance greenway system acquisitions. Because of limits imposed on tax rates, use of property taxes to fund greenways could limit the municipality's ability to raise funds for other activities. Property taxes can provide a steady stream of financing while broadly distributing the tax burden. In other parts of the country, this mechanism has been popular with voters as long as the increase is restricted to parks and open space. Note, other public agencies compete vigorously for these funds, and taxpayers are generally concerned about high property tax rates.
- o *Excise Taxes.* Excise taxes are taxes on specific goods and services. These taxes require special legislation and the use of the funds generated through the tax are limited to specific uses. Examples include lodging, food, and beverage taxes that generate funds for promotion of tourism, and the gas tax that generates revenues for transportation related activities.
- o *Occupancy Tax.* The NC General Assembly may grant towns the authority to levy occupancy tax on hotel and motel rooms. The act granting the taxing authority limits the use of the proceeds, usually for tourism-promotion purposes.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

- **Fees.** Three fee options that have been used by local governments to assist in funding pedestrian and bicycle facilities are listed here:
 - *Stormwater Utility Fees.* Greenway sections may be purchased with stormwater fees, if the property in question is used to mitigate floodwater or filter pollutants. Stormwater charges are typically based on an estimate of the amount of impervious surface on a user's property. Impervious surfaces (such as rooftops and paved areas) increase both the amount and rate of stormwater runoff compared to natural conditions. Such surfaces cause runoff that directly or indirectly discharges into public storm drainage facilities and creates a need for stormwater management services. Thus, users with more impervious surface are charged more for stormwater service than users with less impervious surface. The rates, fees, and charges collected for stormwater management services may not exceed the costs incurred to provide these services. The costs that may be recovered through the stormwater rates, fees, and charges includes any costs necessary to assure that all aspects of stormwater quality and quantity are managed in accordance with federal and state laws, regulations, and rules.
 - *Streetscape Utility Fees.* Streetscape Utility Fees could help support streetscape maintenance of the area between the curb and the property line through a flat monthly fee per residential dwelling unit. Discounts would be available for senior and disabled citizens. Non-residential customers would be charged a per foot fee based on the length of frontage on streetscape improvements. This amount could be capped for non-residential customers with extremely large amounts of street frontage. The revenues raised from Streetscape Utility fees would be limited by ordinance to maintenance (or construction and maintenance) activities in support of the streetscape.
 - *Impact Fees.* Developers can be required to provide greenway impact fees through local enabling legislation. Impact fees, which are also known as capital contributions, facilities fees, or system development charges, are typically collected from developers or property owners at the time of building permit issuance to pay for capital improvements that provide capacity to serve new growth.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

The intent of these fees is to avoid burdening existing customers with the costs of providing capacity to serve new growth (“growth pays its own way”). Greenway impact fees are designed to reflect the costs incurred to provide sufficient capacity in the system to meet the additional needs of a growing community. These charges are set in a fee schedule applied uniformly to all new development. Communities that institute impact fees must develop a sound financial model that enables policy makers to justify fee levels for different user groups, and to ensure that revenues generated meet (but do not exceed) the needs of development. Factors used to determine an appropriate impact fee amount can include: lot size, number of occupants, and types of subdivision improvements. If Holly Springs is interested in pursuing open space impact fees, it will require enabling legislation to authorize the collection of the fees.

- **Exactions.** Exactions are similar to impact fees in that they both provide facilities to growing communities. The difference is that through exactions it can be established that it is the responsibility of the developer to build the greenway or pedestrian facility that crosses through the property, or adjacent to the property being developed.
- **Payment In-Lieu Fees.** As an alternative to requiring developers to dedicate on-site sidewalk or greenway sections that would serve their development, some communities provide a choice of paying a front-end charge for off-site protection of pieces of the larger system. Payment is generally a condition of development approval and recovers the cost of the off-site land acquisition or the development’s proportionate share of the cost of a regional facility serving a larger area. Some communities prefer payment in-lieu fees. This alternative allows community staff to purchase land worthy of protection rather than accept marginal land that meets the quantitative requirements of a developer dedication but falls a bit short of qualitative interests.
- **Bonds and Loans.** Bonds have been a very popular way for communities across the country to finance their pedestrian and greenway projects. A number of bond options are listed below.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Contracting with a private consultant to assist with this program may be advisable. Since bonds rely on the support of the voting population, an education and awareness program should be implemented prior to any vote. Billings, Montana used the issuance of a bond in the amount of \$599,000 to provide the matching funds for several of their TEA-21 enhancement dollars. Austin, Texas has also used bond issues to fund a portion of their bicycle and trail system.

- o *Revenue Bonds.* Revenue bonds are bonds that are secured by a pledge of the revenues from a certain local government activity. The entity issuing bonds, pledges to generate sufficient revenue annually to cover the program's operating costs, plus meet the annual debt service requirements (principal and interest payment). Revenue bonds are not constrained by the debt ceilings of general obligation bonds, but they are generally more expensive than general obligation bonds.
- o *General Obligation Bonds.* Cities, counties, and service districts generally are able to issue general obligation (G.O.) bonds that are secured by the full faith and credit of the entity. In this case, the local government issuing the bonds pledges to raise its property taxes, or use any other sources of revenue, to generate sufficient revenues to make the debt service payments on the bonds. A general obligation pledge is stronger than a revenue pledge, and thus may carry a lower interest rate than a revenue bond. Frequently, when local governments issue G.O. bonds for public enterprise improvements, the public enterprise will make the debt service payments on the G.O. bonds with revenues generated through the public entity's rates and charges. However, if those rate revenues are insufficient to make the debt payment, the local government is obligated to raise taxes or use other sources of revenue to make the payments. G.O. bonds distribute the costs of land acquisition and greenway development and make funds available for immediate purchases and projects. Voter approval is required.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

- o *Special Assessment Bonds.* Special assessment bonds are secured by a lien on the property that benefits by the improvements funded with the special assessment bond proceeds. Debt service payments on these bonds are funded through annual assessments to the property owners in the assessment area.
- o *State Revolving Fund (SRF) Loans.* Initially funded with federal and state money, and continued by funds generated by repayment of earlier loans, State Revolving Funds (SRFs) provide low interest loans for local governments to fund water pollution control and water supply projects including many watershed management activities. These loans typically require a revenue pledge, like a revenue bond, but carry a below market interest rate and limited term for debt repayment (20 years).
- **Facility Maintenance Districts.** Facility Maintenance Districts (FMDs) can be created to pay for the costs of on-going maintenance of public facilities and landscaping within the areas of the 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 of off road trail improvements. The municipality can initiate public outreach efforts to merchants, the 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 municipality can manage maintenance responsibilities either through its own staff or through private contractors.

7.6.2 State Transportation Funding

Banner Elk should also consider reaching out to state and national funding sources for assistance in constructing pedestrian facilities. State and national funding are a combined category because many of the state entities administer national funds.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

The North Carolina Department of Transportation (NCDOT) is the single largest source of funding available to Banner Elk for pedestrian facilities, with the following potential funding sources:

- **State Transportation Improvement Program (STIP)** – This program is the overall funding source for study, design, and construction of major transportation projects, including pedestrian facilities, in the state. Frequently, projects funded by the STIP are also partly funded by other sources, including matching funds from local municipalities. Pedestrian facilities are eligible for funding from this program as independent projects separate from a roadway construction, widening, or some other sort of roadway work, but one of the most cost-effective and efficient ways to gain funding for pedestrian facility construction is to incorporate them as incidental to a larger project. Overall, most pedestrian accommodations within the state are made as incidental improvements.

In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT, or “Division”) manages the Transportation Improvement Program (TIP) selection process for independent bicycle and pedestrian projects. Projects programmed into the TIP as “independent projects” are those which are not related to a scheduled highway project. “Incidental projects” – those related to a scheduled highway project – are bicycle and pedestrian accommodations, such as sidewalks, included as incidental features of highway projects. In addition, pedestrian-safe railings are a standard feature of all highway construction. Most bicycle and pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of National Highway System funds and State Highway Trust Funds.

The Division has an annual budget of \$6 million. Eighty percent of these funds are from STP-Enhancement funds¹, while the State Highway Trust Fund provides the remaining 20 percent of the funding. Each year, the DBPT regularly sets aside a total of \$200,000 of TIP funding for NCDOT to fund projects such as training workshops, pedestrian safety

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

and research projects, and other pedestrian needs statewide. Those interested in learning about training workshops, research and other opportunities should contact the DBPT for information.

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

http://www.ncdot.org/transit/bicycle/funding/funding_TIP.html.

- **Transportation Enhancement Program** - The Enhancement Unit administers a portion of the enhancement funding set-aside through the Call for Projects process. In North Carolina the Enhancement Program is a federally funded cost reimbursement program with a focus upon improving the transportation experience in and through local North Carolina communities either culturally, aesthetically or environmentally. The program seeks to encourage diverse modes of travel, increase benefits to communities and to encourage citizen involvement. This is accomplished through the following twelve qualifying activities:
 1. Bicycle and Pedestrian Facilities
 2. Bicycle and Pedestrian Safety
 3. Acquisition of Scenic Easements, Scenic or Historic Sites
 4. Scenic or Historic Highway Programs (including tourist or welcome centers)
 5. Landscaping and other Scenic Beautification
 6. Historic Preservation
 7. Rehabilitation of Historic Transportation Facilities
 8. Preservation of Abandoned Rail Corridors
 9. Control of Outdoor Advertising
 10. Archaeological Planning and Research
 11. Environmental Mitigation
 12. Transportation Museums

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Funds are allocated based on an equity formula approved by the Board of Transportation. The formula is applied at the county level and aggregated to the regional level. Available fund amount varies. In previous Calls, the funds available ranged from \$10 million to \$22 million. The Call process takes place on even numbered years or as specified by the Secretary of Transportation. The Next Call is anticipated to take place in 2009. For more information, visit: www.ncdot.org/financial/fiscal/Enhancement.

- **Spot Improvement Program** - The NCDOT Bicycle and Pedestrian Transportation Division budgets \$500,000/year for “spot” safety improvements throughout the State. These improvements include items such as signing, grate replacement, bike rack installations, hazard remediation at skewed railroad crossings, and other small-scale improvements. The Spot Improvement Program is used only for bicycle and pedestrian projects; however, it should not be viewed as a priority source for funding identified projects. It is typically used for small-scale and special-situation projects that are not of a significantly large enough scale to merit being a TIP project. Taking these requirements into consideration, proposals for projects should be submitted directly to the Bicycle & Pedestrian Transportation Division.
- **Small Urban Funds** – Small Urban Funds are available for small improvement projects in urban areas. Each NCDOT Highway Division has \$2 million of small urban funds available annually. Although not commonly used for bicycle facilities, local requests for small bicycle projects can be directed to the NCDOT Highway Division office for funding through this source. A written request should be submitted to the Division Engineer providing technical information such as location, improvements being requested, timing, etc. for thorough review.
- **Hazard Elimination Program** – This program focuses on projects intended for locations that should have a documented history of previous crashes. Bicycle and pedestrian projects are eligible for this program, although the funds are not usually used for this purpose. This program is administered through the NCDOT Division of Highways.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Similar to the Small Urban Funds, it is a significantly limited funding source.

- **Powell Bill Funds** – Annually, State street-aid (Powell Bill) allocations are made to incorporated municipalities which establish their eligibility and qualify as provided by statute. This program is a state grant to municipalities for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities or for planning, construction, and maintenance of bikeways or sidewalks along public streets and highways. Funding for this program is collected from fuel taxes. Amount of funds are based on population and mileage of town-maintained streets. For more information, visit www.ncdot.org/financial/fiscal/ExtAuditBranch/Powell_Bill/powellbill.html.
- **Governor's Highway Safety Program (GHSP)** – The mission of the GHSP is to promote highway safety awareness and reduce the number of traffic crashes in the state of North Carolina through the planning and execution of safety programs. GHSP funding is provided through an annual program, upon approval of specific project requests. Amounts of GHSP funds vary from year to year, according to the specific amounts requested. Communities may apply for a GHSP grant to be used as seed money to start a program to enhance highway safety. Once a grant is awarded, funding is provided on a reimbursement basis. Evidence of reductions in crashes, injuries, and fatalities is required. For information on applying for GHSP funding, visit: www.ncdot.org/programs/ghsp/.
- **Sidewalk Program** – Each year, a total of \$1.4 million in STP-Enhancement funding is set aside for sidewalk construction, maintenance and repair. Each of the 14 highway divisions across the state receives \$100,000 annually for this purpose. Funding decisions are made by the district engineer. Prospective applicants are encouraged to contact their district engineer for information on how to apply for funding.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

- **Safe Routes to School Program** –The NCDOT Safe Routes to School Program is a federally funded program that was initiated by the passing of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which establishes a national SRTS program to distribute funding and institutional support to implement SRTS programs in states and communities across the country. SRTS programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The Division of Bicycle and Pedestrian Transportation at NCDOT is charged with disseminating SRTS funding. The State of North Carolina has been allocated \$15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. An example of a non-infrastructure project is an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is construction of sidewalks around a school. Infrastructure improvements under this program must be made within 2 miles of an elementary or middle school. The state requires the completion of a competitive application to apply for funding. For more information, visit www.ncdot.org/programs/safeRoutes or contact the DBPT / NCDOT at (919) 807-0774.
- **Community Development Block Grants (CDBG)** – CDBG funding is intended to help communities provide housing, create suitable living environments, and expand economic opportunities primarily in low- and medium-income areas. Banner Elk could use these grant funds for recreation facilities and planning. It should be noted that CDBG Funds are highly competitive and the requirements are extensive. For more information, please see: www.hud.gov/offices/cpd/communitydevelopment/programs.

7.6.3 Other State Funding Sources

Several other North Carolina-sponsored opportunities for acquiring planning, design, and / or construction monies are available through state-level institutions that are not associated with the Department of Transportation. These opportunities are described briefly below.

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

- **Land and Water Conservation Fund (LWCF).** The Land and Water Conservation Fund (LWCF) program is a reimbursable, 50/50 matching grants program to states for conservation and recreation purposes, and through the states to local governments to address "close to home" outdoor recreation needs. LWCF grants can be used by communities to build a trail within one park site, if the local government has fee-simple title to the park site. Grants for a maximum of \$250,000 in LWCF assistance are awarded yearly to county governments, incorporated municipalities, public authorities and federally recognized Indian tribes. The local match may be provided with in-kind services or cash. The program's funding comes primarily from offshore oil and gas drilling receipts, with an authorized expenditure of \$900 million each year. However, Congress generally appropriates only a small fraction of this amount. The allotted money for the year 2007 is \$632,846. The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the US Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Environment and Natural Resources. Since 1965, the LWCF program

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

has built a permanent park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than \$63 million in matching grants to protect land and support more than 800 state and local park projects. More than 37,000 acres have been acquired with LWCF assistance to establish a park legacy in our state. For more information, visit:

<http://ils.unc.edu/parkproject/lwcf/home1.html>.

- **NC Adopt-A-Trail Grant Program.** This program, operated by the Trails Section of the NC Division of State Parks, offers annual grants to local governments to build, renovate, maintain, sign and map and create brochures for pedestrian trails. Grants are generally capped at about \$5,000 per project and do not require a match. A total of \$108,000 in Adopt-A-Trail money is awarded annually to government agencies. Applications are due during the month of February. For more information, visit: <http://ils.unc.edu/parkproject/trails/grant.html>.
- **Recreational Trails Program.** The Recreational Trails Program (RTP) is a grant program funded by Congress with money from the federal gas taxes paid on fuel used by off-highway vehicles. This program's intent is to meet the trail and trail-related recreational needs identified by the Statewide Comprehensive Outdoor Recreation Plan. Grant applicants must be able contribute 20% of the project cost with cash or in-kind contributions. The program is managed by the State Trails Program, which is a section of the N.C. Division of Parks and Recreation. The grant application is available and instruction handbook is available through the State Trails Program website at <http://ils.unc.edu/parkproject/trails/home.html>. Applications are due during the month of February. For more information, call (919) 715-8699.
- **North Carolina Parks and Recreation Trust Fund (PARTF).** The fund was established in 1994 by the North Carolina General Assembly and is administered by the Parks and Recreation Authority. Through this program, several million dollars each year are available to local governments to fund the acquisition, development and renovation of recreational areas. PARTF funds are allocated through the North

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Carolina Trails Program to help fund beach accesses, state trail systems, and local trail construction efforts. Applicable projects require a 50/50 match from the local government. Grants for a maximum of \$500,000 are awarded yearly to county governments or incorporated municipalities. The fund is fueled by money from the state's portion of the real estate deed transfer tax for property sold in North Carolina. For this last, the City of Wilson would need to apply for the grant (although joint applications – for example, with the Wilson County Public School System – are permissible, one agency must serve as the lead sponsor), which is a one-to-one match on local funds. Only about 30% of the PARTF program goes to fund local trail programs, and the selection process is therefore highly competitive. Selection is based on numerous factors including geographic equity, population size, and scoring criteria that notably incorporate the following: presence of planning documents that support the project; public outreach that shows support; site suitability; size/impact of project; and commitment to operating and maintaining the project upon completion. As with most grant programs, the sponsor should be prepared to adhere closely to the rules governing the grant program, including the preparation of detailed expenditure reports and requests for reimbursement (www.ncparks.gov/About/grants/partf_main.php). For information on how to apply, visit: www.partf.net/learn.html.

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

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

- **Natural Heritage Trust Fund.** This trust fund, managed by the NC Natural Heritage Program, has contributed millions of dollars to support the conservation of North Carolina's most significant natural areas and cultural heritage sites. The NHTF is used to acquire and protect land that has significant habitat value. Some large wetland areas may also qualify, depending on their biological integrity and characteristics. Only certain state agencies are eligible to apply for this fund, including the Department of Environment and Natural Resources, the Wildlife Resources Commission, the Department of Cultural Resources and the Department of Agriculture and Consumer Services. As such, municipalities must work with State level partners to access this fund. Additional information is available from the NC Natural Heritage Program. For more information and grant application information, visit www.ncnhtf.org/.
- **North Carolina Conservation Tax Credit Program.** North Carolina has a unique incentive program to assist land-owners to protect the environment and the quality of life. A credit is allowed against individual and corporate income taxes when real property is donated for conservation purposes. Interests in property that promote specific public benefits may be donated to a qualified recipient. Such conservation donations qualify for a substantial tax credit. For more information, visit: www.enr.state.nc.us/conservationtaxcredit/.
- **Urban and Community Forestry Assistance Program.** This program offers small grants that can be used to plant urban trees, establish a community arboretum, or other programs that promote tree canopy in urban areas. The program operates as a cooperative partnership between the NC Division of Forest Resources and the USDA Forest Service, Southern Region. To qualify for this program, a community must pledge to develop a street-tree inventory, a municipal tree ordinance, a tree commission, and an urban forestry-management plan. All of these can be funded through the program. For more information, contact the NC Division of Forest Resources. For more information and a grant application, contact the NC Division of Forest

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Resources and/or visit

http://www.dfr.state.nc.us/urban/urban_grantprogram.htm.

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

- **Conservation Reserve Enhancement Program (CREP).** This program is a joint effort of the North Carolina Division of Soil and Water Conservation, the NC Clean Water Management Trust Fund, the Ecosystem Enhancement Program (EEP), and the Farm Service Agency - United States Department of Agriculture (USDA) to address water quality problems of the Neuse, Tar-Pamlico and Chowan river basins as well as the Jordan Lake watershed area. CREP is a voluntary program that seeks to protect land along watercourses that is currently in agricultural production. The objectives of the program include: installing 100,000 acres of forested riparian buffers, grassed filter strips and wetlands; reducing the impacts of sediment and nutrients within the targeted area; and providing substantial ecological benefits for many wildlife species that are declining in part as a result of habitat loss. Program funding will combine the Federal Conservation Reserve Program (CRP) funding with State funding from the Clean Water Management Trust Fund, Agriculture Cost Share Program, and North Carolina Wetlands Restoration Program. The program is managed by the NC Division of Soil and Water Conservation. For more information, visit www.enr.state.nc.us/dswc/pages/crep.html.

- **Agriculture Cost Share Program.** Established in 1984, this program assists farmers with the cost of installing best management practices (BMPs) that benefit water quality. The program covers as much as 75 percent of the costs to implement BMPs. The NC Division of Soil and

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Water Conservation within the NC Department of Environment and Natural Resources administers this program through local Soil and Water Conservation Districts (SWCD). For more information, visit www.enr.state.nc.us/DSWC/pages/agcostshareprogram.html or call 919-733-2302.

- **Water Resources Development Grant Program.** The NC Division of Water Resources offers cost-sharing grants to local governments on projects related to water resources. Of the seven project application categories available, the category which relates to the establishment of greenways is "Land Acquisition and Facility Development for Water-Based Recreation Projects." Applicants may apply for funding for a greenway as long as the greenway is in close proximity to a water body. For more information, see: www.ncwater.org/Financial_Assistance or call 919-733-4064.
- **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. For more information, refer to the following website: http://www.dfr.state.nc.us/urban/urban_ideas.htm.
- **Small Cities Community Development Block Grants.** State level funds are allocated through the NC Department of Commerce, Division of Community Assistance to be used to promote economic development and to serve low-income and moderate-income neighborhoods. Greenways that are part of a community's economic development plans may qualify for assistance under this program. Recreational areas that serve to improve the quality of life in lower income areas may also qualify. Approximately \$50 million is available statewide to fund a variety of projects. For more information, visit www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin or call 919-733-2853.
- **North Carolina Health and Wellness Trust Fund.** The NC Health and Wellness Trust Fund was created by the General Assembly as one of 3 entities to invest North Carolina's portion of the Tobacco Master

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

Settlement Agreement. HWTF receives one-fourth of the state's tobacco settlement funds, which are paid in annual installments over a 25-year period. Fit Together, a partnership of the NC Health and Wellness Trust Fund (HWTF) and Blue Cross and Blue Shield of North Carolina (BCBSNC) established the Fit Community designation and grant program to recognize and rewards North Carolina communities' efforts to support physical activity and healthy eating initiatives, as well as tobacco-free school environments. Fit Community is one component of the jointly sponsored Fit Together initiative, a statewide prevention campaign designed to raise awareness about obesity and to equip individuals, families and communities with the tools they need to address this important issue. All North Carolina municipalities and counties are eligible to apply for a Fit Community designation, which will be awarded to those that have excelled in supporting physical activity, healthy eating and tobacco use prevention in communities, schools, and workplaces.

Designations are valid for two years, and designated communities may have the opportunity to reapply for subsequent two-year extensions. The benefits of being a Fit Community include heightened statewide attention that can help bolster local community development and/or economic investment initiatives (highway signage and a plaque for the Mayor's or County Commission Chair's office will be provided), as well as the use of the Fit Community designation logo for promotional and communication purposes.

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

7.6.4 Federal Funding Sources

Federal transportation dollars are used for a number of the funding programs listed in Section 7.6.3, however other non-transportation programs are available through the federal government to fund pedestrian facilities, many of which are geared toward parks and recreation, natural resource conservation and environmental stewardship. These funding options are as follows:

- **Wetlands Reserve Program.** This federal funding source is a voluntary program offering technical and financial assistance to landowners who want to restore and protect wetland areas for water quality and wildlife habitat. The US Department of Agriculture's Natural Resource Conservation Service (USDA-NRCS) administers the program and provides direct payments to private landowners who agree to place sensitive wetlands under permanent easements. This program can be used to fund the protection of open space and greenways within riparian corridors. For more information, visit <http://www.nrcs.usda.gov/PROGRAMS/wrp/>.
- **The Community Development Block Grant (HUD-CDBG).** The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic development, and improvements to community facilities and services, especially in low and moderate income areas. Several communities have used HUD funds to develop greenways, including the Boulding Branch Greenway in High Point, North Carolina. Grants from this program range from \$50,000 to \$200,000 and are either made to municipalities or non-profits. There is no formal application process. For more information, visit: www.hud.gov/offices/cpd/communitydevelopment/programs/.
- **USDA Rural Business Enterprise Grants.** Public and private nonprofit groups in communities with populations under 50,000 are eligible to apply for grant assistance to help their local small business environment. \$1 million is available for North Carolina on an annual basis and may be used for sidewalk and other community facilities.

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

For more information from the local USDA Service Center, visit:

<http://www.rurdev.usda.gov/rbs/buspr/rbeg.htm>.

- **Rivers, Trails and Conservation Assistance Program (RTCA).** The Rivers, Trails, and Conservation Assistance Program, also known as the Rivers and Trails Program or RTCA, is the community assistance arm of the National Park Service. RTCA staff provides technical assistance to community groups and local, State, and federal government agencies so they can conserve rivers, preserve open space, and develop trails and greenways. The RTCA program implements the natural resource conservation and outdoor recreation mission of the National Park Service in communities across America. Although the program does not provide funding for projects, it does provide valuable on-the-ground technical assistance, from strategic consultation and partnership development to serving as liaison with other government agencies. Communities must apply for assistance. For more information, visit: www.nps.gov/ncrc/programs/rtca or call Chris Abbett, Program Leader, at 404-562-3175 ext. 522.

- **Public Lands Highways Discretionary Fund.** The Federal Highway Administration administers discretionary funding for projects that will reduce congestion and improve air quality. The FHWA issues a call for projects to disseminate this funding. The FHWA estimates that the PLHD funding for the 2007 call will be \$85 million. In the past, Congress has earmarked a portion of the total available funding for projects. For information on how to apply, visit: <http://www.fhwa.dot.gov/discretionary/>.

7.6.5 Private Funding and Partnerships

Another method of funding pedestrian systems and greenway trails is to partner with public agencies, private companies and/or not-for-profit organizations. Contrary to NCDOT and federal funding, most private funding sources offer limited grants. In addition, public-private partnerships engender a spirit of cooperation, civic pride and community participation. The key to the involvement of private partners is to make a compelling argument for their participation. Major employers and developers should be identified and provided with a "Benefits of Walking"

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

handout for themselves and their employees. Very specific routes that make critical connections to place of business would be targeted for private partners' monetary support following a successful master planning effort. Potential partners include major employers which are located along or accessible to pedestrian facilities such as multi-use paths or greenways. Name recognition for corporate partnerships could be accomplished through trailhead signage or interpretive signage along greenway systems. Utilities often make good partners and many trails now share corridors with them. Money raised from providing an easement to utilities can help defray the costs of maintenance. It is important to have a lawyer review the legal agreement and verify ownership of the subsurface, surface or air rights in order to enter into an agreement.

The following paragraph provides a description of some private funding sources that Banner Elk might consider.

- **Local Trail Sponsors.** A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.
- **Volunteer Work.** It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community work days. Volunteers can also be used for fund-raising, maintenance, and programming needs.
- **Private Foundations and Organizations.** Many communities have solicited greenway funding assistance from private foundations and

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

other conservation-minded benefactors. Below are a few examples of private funding opportunities available in North Carolina.

- o *Land for Tomorrow Campaign.* Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals and community groups committed to securing support from the public and General Assembly for protecting land, water and historic places. The campaign is asking the North Carolina General Assembly to support issuance of a bond for \$200 million a year for five years to preserve and protect its special land and water resources. Land for Tomorrow will enable North Carolina to reach a goal of ensuring that working farms and forests; sanctuaries for wildlife; land bordering streams, parks and greenways; land that helps strengthen communities and promotes job growth; historic downtowns and neighborhoods; and more, will be there to enhance the quality of life for generations to come. For more information, visit <http://www.landfortomorrow.org/>.
- o *The Trust for Public Land.* Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and well being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities. Since 1972, TPL has worked with willing landowners, community groups, and national, state, and local agencies to complete more than 3,000 land conservation projects in 46 states, protecting more than 2 million acres. Since 1994, TPL has helped states and communities craft and pass over 330 ballot measures, generating almost \$25 billion in new conservation-related funding. TPL's legal and real estate specialists work with landowners, government agencies, and community groups for the creation of urban parks and greenways, open space dedication, and land conservation. For more information, visit <http://www.tpl.org/>.
- o *Z. Smith Reynolds Foundation.* This Winston-Salem based Foundation has been assisting the environmental projects of local

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

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

- o *North Carolina Community Foundation.* The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for nonprofit organizations and institutions throughout the state. Based in Raleigh, North Carolina, the foundation also manages a number of community affiliates throughout North Carolina that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. In addition, the foundation manages various scholarship programs statewide. Web site: <http://nccommunityfoundation.org>.
- o *National Trails Fund.* In 1998, the American Hiking Society created the National Trails Fund, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. Each year, 73 million people enjoy foot trails, yet many of our favorite trails need major repairs due to a \$200 million in badly needed maintenance. National Trails Fund grants give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. For 2005, American Hiking distributed over \$40,000 in grants thanks to the generous support of Cascade Designs and L.L. Bean, the program's Charter Sponsors. To date, American Hiking has granted more than \$240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from \$500 to \$10,000 per project. The American Hiking Society will consider project types such as acquisition of trails and trail corridors, building and maintaining and constituency building around specific trail

projects including volunteer recruitment and support. For more information on the National Trails fund, consult: www.americanhiking.org/alliance/fund.html.

7.6.6 Recognition Programs

Similar to funding sources, recognition programs can be administered through both public and private entities. Although recognition programs may not include funding, through highlighting recipient achievements, they provide free marketing to make a city more attractive to visitors, businesses, and future residents.

- **Robert Wood Johnson Foundation Active Living By Design Awards** - Active Living by Design is a national program of the Robert Wood Johnson Foundation and is administered by the UNC School of Public Health. The program establishes innovative approaches to increase physical activity through community design, public policies and communications strategies. Active Living by Design is funding 25 community partnerships across the country to demonstrate how changing community design will impact physical activity. Although funding is currently not available for additional communities, the Town of Banner Elk should continue to monitor Active Living by Design as a potential funding source should the Town chose to make a commitment to healthy living. For more information, please see: <http://www.activelivingbydesign.org/>.

7.7 Conclusion

Using this plan as a guide, the Town of Banner Elk should be able to create a better, safer network of sidewalks, greenway trails and crossings for pedestrians. The Town's next steps should begin to immediately address the short-term priority program, policy, and project recommendations. At the same time, the Town should also start to lay the groundwork for the longer term recommendations by developing relationships with potential partners such as the Avery County Chamber of Commerce, Lees McRae College and the Banner Elk Tourism Development Authority, and by starting to budget for future projects. Most importantly, the Town should

TOWN OF BANNER ELK PEDESTRIAN PLAN

SECTION 7: IMPLEMENTATION PLAN

continue its efforts to raise awareness about the importance of making a community more walkable in order to continue to cultivate support for more pedestrian improvements and programs. Residents, visitors, and local leaders should be familiar with the economic, health, and environmental benefits of a community in which there is less dependence on automobiles and more reliance on foot travel as not only a form of recreation, but also as a form of transportation.

As a small town anticipating future growth and development, Banner Elk is in an ideal situation to develop an even more walkable community. The Town should capitalize on its location and its attractions, such as the current trail network and beautiful mountain landscape, to reinforce its existing pedestrian infrastructure with new projects and improvements. With careful planning, deliberate steps and persistence, Banner Elk can become a more pedestrian-friendly community.

Resources and Citations

ⁱ After various administrative adjustments for programs within the Surface Transportation Program, or "STP", there is a 10% set-aside for Transportation Enhancements. The 10% set-aside is allocated within NCDOT to internal programs such as the Bicycle/Pedestrian Division, the Rail Division, the Roadside Environmental Unit, and others. The Enhancement Unit administers a portion of the set-aside through the Call for Projects process.

TOWN OF BANNER ELK PEDESTRIAN PLAN

APPENDIX A: DEMOGRAPHIC ANALYSIS

Appendix A. Demographic Analysis

The following tables display U.S. Census demographic data for the year 2000 that is pertinent to the Town of Banner Elk's Pedestrian Plan. All data was collected from the U.S. Census website, except where noted.

Population

	Town of Banner Elk	North Carolina	United States
1990 Census Population	933	6,628,637	248,709,873
2000 Census Population	811	8,049,313	281,421,906
Percent Change 1990 to 2000	-13%	21%	13%
2007 Census Population Estimate	909	9,061,032	301,621,157

Age

	Town of Banner Elk	North Carolina	United States
Total Population	811	8,049,313	281,421,906
<i>Percent of Population:</i>			
14 and under	9.4	20.54	21.41
15 - 19	25.4	6.71	7.18
20 - 24	23.8	7.17	6.74
25 - 34	9.4	15.07	14.18
35 - 44	7.4	15.99	16.04
45 - 54	7.9	13.48	13.39
55 - 64	7.0	8.99	8.63
65 - 74	6.0	6.63	6.54
75 and up	3.7	5.41	5.9

TOWN OF BANNER ELK PEDESTRIAN PLAN

APPENDIX A: DEMOGRAPHIC ANALYSIS

Race

	Town of Banner Elk	North Carolina	United States
Total Population	811	8,049,313	281,421,906
<i>Percent of Population</i>			
White Alone	90.3	72.1	75.1
Black Alone	3.9	21.6	12.3
American Indian	0.6	1.2	0.9
Asian	1.2	1.4	3.6
Native Hawaiian and Other Pacific Islander	.2		
Two or More Races	2.5	1.3	2.4
Other	1.2	2.4	5.6

Educational Attainment

	Town of Banner Elk	North Carolina	United States
Population 25 years and over	310	5,282,994	182,211,639
<i>Percent of Population</i>			
Less than 9th grade	3.5	7.83	7.55
9th to 12th grade, no diploma	5.8	14.03	12.05
High school graduate (includes equivalency)	18.1	28.45	28.63
Some college, no degree	16.8	20.45	21.05
Associate degree	9.4	6.78	6.32
Bachelor's degree or higher	46.5	15.3	15.54

TOWN OF BANNER ELK PEDESTRIAN PLAN

APPENDIX A: DEMOGRAPHIC ANALYSIS

Income and Poverty (in 1999)

	Town of Banner Elk	North Carolina	United States
Median Household Income	\$33,750	\$39,184	\$41,994
Median Family Income	\$41,964	\$46,335	\$50,046

Total Population	811	8,049,313	281,421,906
<i>Percent of Population</i>			
Below Poverty Line	18.7	11.9	12
Percent of Children Under Age (5/6) Below Poverty Line	22.2	12.8	9.7
Percent of People Over Age 65 Below Poverty Line	17	31.5	33.6

Household Vehicle Availability

	Town of Banner Elk	North Carolina	United States
<i>Percent of Housing Units</i>			
None	3.4	7.5	10.3
1	35.8	32.3	34.2
2	40.7	39.9	38.4
3 or more	20.1	20.3	17.1

TOWN OF BANNER ELK PEDESTRIAN PLAN

APPENDIX A: DEMOGRAPHIC ANALYSIS

Work Commute Mode

	Town of Banner Elk	North Carolina	United States
Total Workers 16 years and over	309	3,837,773	128,279,228
<i>Percent of Workers 16 years and over</i>			
Car, truck, or van	78.0	93.4	87.9
Drove alone	73.5	79.4	75.7
Carpooled	4.5	14	12.2
- In 2-person carpool	4.5	10.4	9.4
- In 3-person carpool	0	2.1	1.7
- In 4-person carpool	0	0.8	0.6
- In 5- or 6-person carpool	0	0.4	0.3
- In 7-or-more-person carpool	0	0.2	0.2
Public transportation	0	0.9	4.7
Bus or trolley bus	0	0.7	2.5
Taxicab	0	0.1	0.2
Motorcycle	0	0.1	0.1
Bicycle	0	0.2	0.4
Walked	19.4	1.9	2.9
Other means	0	0.8	0.7

TOWN OF BANNER ELK PEDESTRIAN PLAN

APPENDIX A: DEMOGRAPHIC ANALYSIS

Work Commute Travel Time

	Town of Banner Elk	North Carolina	United States
Workers who did not work at home	301	3,734,822	124,095,005
<i>Percentage of workers travel time</i>			
Less than 10 minutes	50.5	13.5	14.4
10 to 14 minutes	11.3	16.2	15
15 to 19 minutes	7.6	18	15.8
20 to 24 minutes	7.0	15.9	14.5
25 to 29 minutes	7.0	6	5.8
30 to 34 minutes	5.3	13.3	13.2
35 to 44 minutes	2.0	5.2	5.9
45 to 59 minutes	4.3	6.3	7.4
60 to 89 minutes	2.0	3.5	5.2
90 or more minutes	3.0	2.3	2.8
Mean travel time to work (minutes)			
	18.5	24	25.5

TOWN OF BANNER ELK PEDESTRIAN PLAN

APPENDIX A: DEMOGRAPHIC ANALYSIS

Occupation Type

	Town of Banner Elk	North Carolina	United States
Employed civilian population 16 years and over	321	3,824,741	129,721,512
<i>Percentage of workers</i>			
Management, professional, and related occupations	39.9	31.2	33.6
Service occupations	19.0	13.5	14.9
Sales and office occupations	28.7	24.8	26.7
Farming, fishing and forestry occupations	0.0	0.8	0.7
Construction, extraction, and maintenance occupations	7.5	11	9.4
Production, transportation, and moving occupations	5.0	18.7	14.6

TOWN OF BANNER ELK PEDESTRIAN PLAN

APPENDIX B: PUBLIC INVOLVEMENT MATERIALS

Appendix B: Public Involvement Materials

The materials below were used to collect public feedback and inform meeting participants of the goals and recommendations of the Banner Elk Pedestrian Plan.



Town of Banner Elk Pedestrian Survey

Thank you for participating in the Town of Banner Elk Pedestrian Survey! Banner Elk is currently preparing a Comprehensive Pedestrian Plan, and these survey results will be used to help understand the needs of Banner Elk's residents, its visitors and students. Your responses will also be used to identify important locations for new sidewalk or intersection improvements.

For more information on the Pedestrian Plan, contact John Mejaski at (828) 898-5398 or jmejaski@townofbannerelk.org.

Please note that your participation in this survey is completely voluntary. Please feel free to leave blank any questions you feel uncomfortable answering. When you are finished, you may mail this survey to the address on the back, or deliver it to Town Hall. Thank you for your time!

General Information

ZIP Code: _____

Sex: M F

Age:

- Under 20 40-49 70-79
 20-29 50-59 80 and over
 30-39 60-69

On a scale of 1 to 5, where 5 is very frequently and 1 is never, how often do you walk to:

Work	1 2 3 4 5
A school	1 2 3 4 5
Church	1 2 3 4 5
The grocery store	1 2 3 4 5
The library	1 2 3 4 5
A park or recreation center	1 2 3 4 5
A restaurant	1 2 3 4 5
Shopping	1 2 3 4 5
The post office	1 2 3 4 5
Entertainment or cultural event	1 2 3 4 5
A friend's house or to visit family	1 2 3 4 5
Other: _____	1 2 3 4 5

In of days a week, where 0 is never and 7 is seven days a week, how often do you walk...

For exercise or recreation	0 1 2 3 4 5 6 7
For transportation (to go to work, school, shopping, etc.)	0 1 2 3 4 5 6 7
To walk the dog	0 1 2 3 4 5 6 7
Other: _____	0 1 2 3 4 5 6 7

On a scale of 1 to 5, where 5 is very comfortable and 1 is very uncomfortable, how comfortable do you feel walking...

In your neighborhood?	1 2 3 4 5
In downtown Banner Elk?	1 2 3 4 5
In the area near your work?	1 2 3 4 5
Crossing the street at intersections?	1 2 3 4 5
To/from/in a local park?	1 2 3 4 5

Which locations would you like to walk to more if conditions were different?

- Work School
 The grocery store The library
 Church Shopping
 The post office Park or Recreation Ctr
 Entertainment or cultural event
 A friend's house or to visit family
 Other: _____

On a scale of 1 to 5, where 5 is highly likely and 1 is highly unlikely, how likely are you to choose NOT to walk somewhere because...

- There isn't continuous sidewalk to that destination. 1 2 3 4 5
 Traffic makes it unsafe and unpleasant (speeding cars, cars don't yield when you need to cross the street, it is smelly and noisy, etc.). 1 2 3 4 5
 It is too far. 1 2 3 4 5
 I have a health condition. 1 2 3 4 5
 The neighborhood is dangerous. 1 2 3 4 5
 I have a lot to carry (ie: kids, equipment, groceries) and need my car to haul all of the stuff. 1 2 3 4 5
 I have to run many errands in many different locations and it would take too long to walk. 1 2 3 4 5
 The weather is bad (too hot, too cold, too wet, etc.) 1 2 3 4 5
 I don't like walking. 1 2 3 4 5
 Other: _____ 1 2 3 4 5

Please tell us the roads where you would like to see sidewalks or greenways / paved trails:

Road Name	Starting Point	Ending Point
(example) Meadowlark Rd.	Vann Ln.	Fairground Rd.

Please tell us the roads or greenways where there is sidewalk that needs repair or is obstructed:

Road Name, Start, End	Problem
(example) Vance St. between Ellis Ave. and King St.	Cracked pavement from tree roots. Dangerous for wheelchairs & strollers.

Please tell us about any intersections where you would like to see improvements for pedestrians. Improvements could include adding a crosswalk, new pedestrian signals, pedestrian warning signs, curb ramps, or audible pedestrian signals.

Intersecting Roads	Problem	Improvement
(example) Cumberland St and Washington Ave.	Have to wait a long time to cross the street.	Please provide a pedestrian signal.

Please provide us with any additional comments you may have:

Additional Optional Information:

Name: _____

Address: _____

Email: _____

Yes, I'd like to receive email updates on the Plan.

Thank you for taking the Town of Banner Elk Pedestrian Survey! You can return this survey to Town Hall when you pay your utility bill, or mail it to the following address:

Banner Elk Pedestrian Plan Survey
 C/O Don Kostelec
 The Louis Berger Group, Inc.
 600 Vista Lake Drive, #208
 Candler, NC 28715
 dkostelec@louisberger.com



Why a Pedestrian Plan?

The Town of Banner Elk, like many communities across the state, recognizes the importance of a bicycle- and pedestrian-friendly community in attracting residents, visitors and businesses. Beyond better and safer pedestrian access to destinations, a more walkable community can have economic, environmental, and health benefits for residents.

Preliminary Project Ideas

- Develop a signed walking route and accompanying map for visitors and residents to use in navigating the Town by foot. Pedestrian safety information could be included, as well as information on local cultural sites, landmarks and businesses. The map might be available for distribution at Town Hall, local retail venues, restaurants, on the internet and through the Avery county Chamber of Commerce.
- Identify key sidewalk and greenway linkages as part of the Plan to target for construction using City or NCDOT funding, or other mechanisms.
- Create better connections to existing parks and schools and between downtown and local residential areas.
- Provide crosswalks and walk signals at all signalized intersections throughout Banner Elk, as a routine pedestrian accommodation.
- Consider developing a pedestrian focus area south of downtown to target connectivity to/from and within the new residential and commercial development taking place at this location.

How do I provide input?

There are several avenues – a survey is available in both paper copy and online. Paper copies can be picked up at the Woolly Worm Festival Booth or at Banner Elk Town Hall. The web version can be accessed online at: <http://www.keysurvey.com/survey/221745/1fcs/>.

Local Contact:

John Mejaski
 Banner Elk Town Manager
 (828) 898-5398
jmejaski@townofbannerelk.org

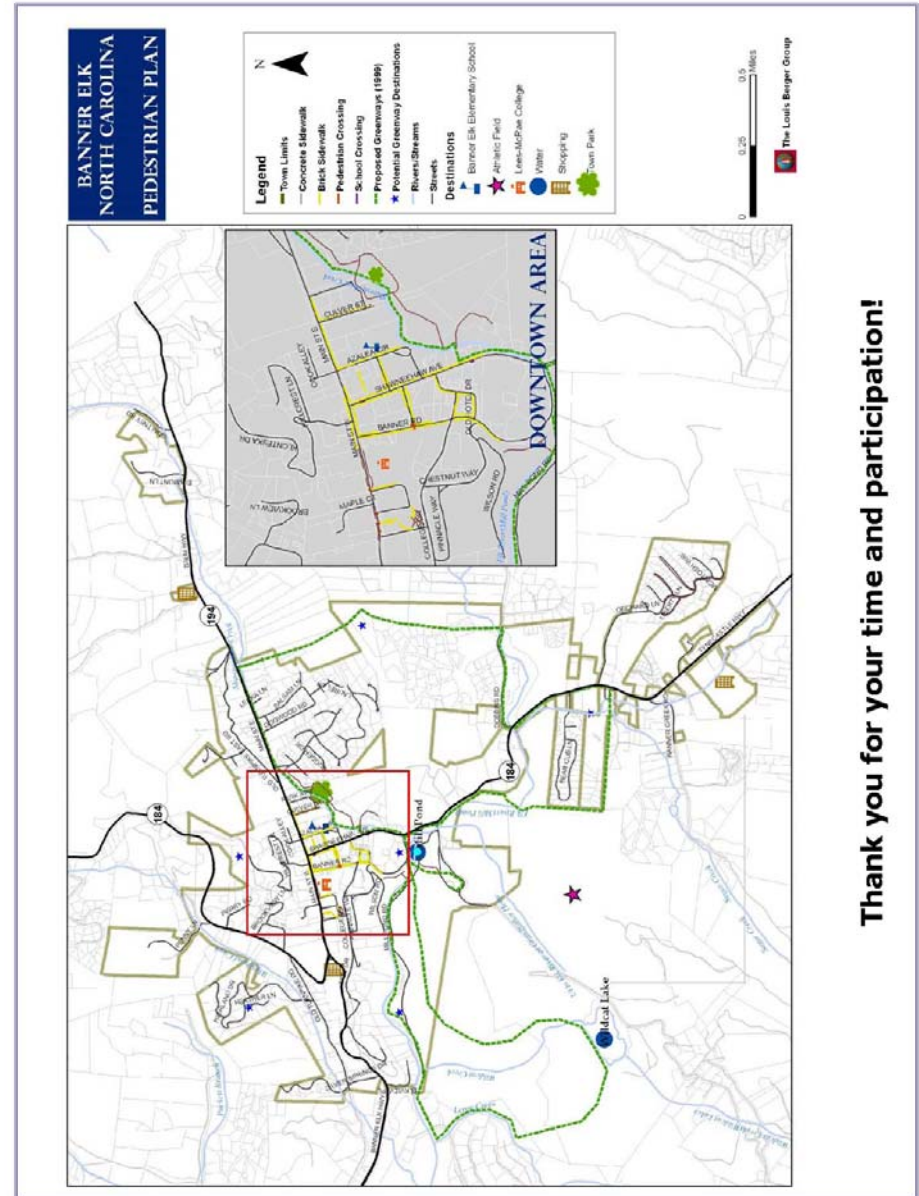
There will also be an Open House event in March/April 2009, details: TBA. Please stay tuned for more information on this event and continued progress on the Town's first Pedestrian Plan.

What is in the Pedestrian Plan?

The Pedestrian Plan will contain recommendations for projects, programs, and policies which will help make Banner Elk a more pedestrian-friendly community. Some preliminary project ideas include greenway connections along the NC 184 corridor between the Central Business District and new development south of downtown. The Plan will need your input and that of your neighbors to make additional recommendations that serve everyone.

When will the Plan be finished?

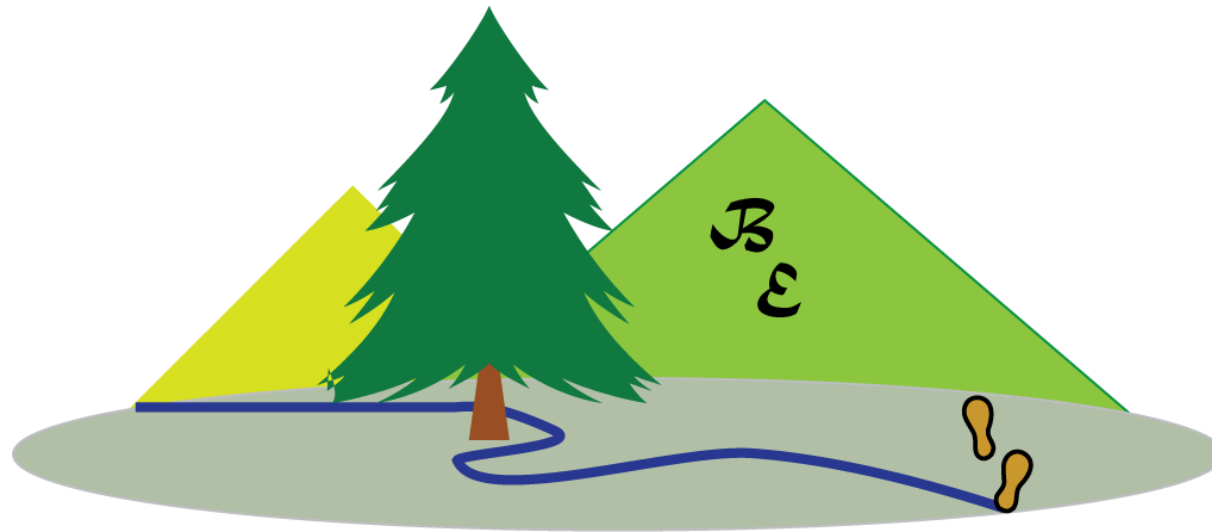
The Pedestrian Plan is estimated to be complete by July 2009. Public participation is critical to a successful Pedestrian Plan; therefore, the Town will provide several opportunities for citizen comment during the process, including a series of public meetings and an online survey.



Thank you for your time and participation!

Making Connections

Focus Group Discussions



Technical Assistance Provided By
Dr. Garry V. Cooper, FAICP
for
The Louis Berger Group, Inc.

Table of Contents

List of Figures2
Overview.....3
Participants3
Process3
Results5
Conclusions.....8

List of Figures

- Figure 1. Focus Group Participants
- Figure 2. Illustrative Process
Design Examples
- Figure 3. Activity Centers

Overview

Focus group discussions are a qualitative research tool that can help to explore, clarify, and validate planning concepts. Although the setting for focus groups may consist of either interviews or interactive workshops, the key to successful focus group outcomes is a process design that allows participants to talk – with each other – in a manner that reveals both insights and consensus.

The Louis Berger Group, Inc. included three focus group conversations as part of the comprehensive pedestrian plan process for the Town of Banner Elk, NC. The purpose of this report is to provide information about the focus group workshops held on 22 Jan 09. Specific report sections include information about the participants, process, results, and conclusions.

Participants

Eighteen persons participated in the discussion groups (Figure 1). The selection of participants for each focus group was by stakeholder interest: students/young adults, town/college staff and town residents, business community, and elected/appointed town officials.

Process

The purpose of each focus group was to explore pedestrian connections and relate the connections to design considerations. Participants worked in small groups of 2-3 persons. The process design consisted of eight steps: 1–identification of activity centers within the town; 2–locating the activity centers on a base map; 3-identifying (on the base map) the approximate location of where each participant lives and works; 4-identifying (on the

base map) existing residential areas within the town; 5-identifying pedestrian movement patterns that connect activity centers (to include residential areas); 6-identifying opportunities for better pedestrian connectivity between activity centers (i.e., either *improved* pedestrian movement or the creation of *new* pedestrian pathways), 7-presentations of the results (by each small group); 7-interpretation (by plenary group) of the presentation results (to include preparation of a consolidated listing of connections, identifying the meaning of these connections in terms of design considerations, and identifying both concerns and other suggestions that might impact plan development); and 8-prioritization of the interpretive results. Figure 2 has some illustrative process design examples.

Figure 1. Focus Group Participants

Participant	Position/Affiliation
• Deka Tate	Town of Banner Elk (Elected Official)
• Penny VonCanon	Town of Banner Elk (Appointed Official)
• Maria Boseman	Town of Banner Elk (Staff)
• Cheryl Buchanan	Town of Banner Elk (Staff)
• John Mejaski	Town of Banner Elk (Staff)
• Victor Almeyda	Student/Young Adult
• Adam Breese	Student/Young Adult
• Sean Condron	Student/Young Adult

- Brandon Gleason Student/Young Adult
- Rodney Hamby Student/Young Adult
- Tara Jobe Student/Young Adult
- Chris Lyerly Student/Young Adult
- Christian White Student/Young Adult
- Jay Treadway Lees-McRae College
- Scott McKinney Lees-McRae College
- Charles VonCanon, Resident
Jr.
- Ted Silver Resident
- John Heinlein Business Owner



Figure 2. Illustrative Process Design Examples



Results

Representatives from The Louis Berger Group, Inc. took detailed notes during each focus group workshop. Therefore, this report will include only a summary of the results. The summary will, however, provide information about activity centers, making connections, design considerations, and concerns/suggestions relating to plan development.

Activity Centers

Participants identified 15 *activity centers* that relate to pedestrian connections ... these are places where people shop, work, and go for leisure time activities. Figure 3 is a listing of the significant pedestrian-related activity centers in Banner Elk.

Figure 3. Activity Centers

- Avery Arts Council
- Banner Museum House
- Dam
- Lees-McRae athletic fields
- Lees-McRae College (the general campus and the library, student recreation complex, and theater facilities)
- Mill Pond
- Old elementary school
- Post office
- Shopping area on NC 194 north
- Shopping/dining/lodging area on NC 184 east
- Town center shopping area
- Town hall and town park
- Viewshed points
- Wildcat Lake

- Winery

Making Connections

The map exercise identified several movement connections. When combined, these connections can become the basic elements of the plan. The movement connection focal points are: the town center area (to include the town hall, town park, park, post office, shopping/dining establishments, and the old elementary school); Mill Pond, Wildcat Lake, the college athletic fields, the NC 184 east area; the college main campus; and the NC 194 north area (to include a loop created using NC 194 and Old Turnpike Road).

There are also both local and regional potential *spurs* extending from the movement connection focal points. Local spurs are the Beech Mountain turn-off area, the small housing areas in town that are west of NC 194, and the area from Apple Orchard connecting to the new school site and extending west behind the old hospital. In addition, a potential regional spur extends from Wildcat Lake to the Sugar Mountain area.

Lastly, Hemlock Trail has special significance. Although this trail is only a path segment, this segment provides important linkages to the college (to include the athletic fields), Grandfather Home, Wildcat Lake, and the town center area.

Design Considerations

Design considerations are the links between plan elements that can nurture user experiences and enhance appreciation of the various plan elements.

Some of these design considerations are general, and some are more specific.

Participants identified several *general* design considerations: remember that all points must lead to the town center area; it's ok to separate the in-town versus out-of-town appearance; there is a need to provide for multi-modal uses ... yet minimize modal conflicts; balance maintenance and safety requirements; provide for only minimal lighting; design for efficient and green operation/maintenance; and design in ways that will later help the town to market the system as a community asset.

The more *specific* design considerations that participants identified included: incorporate a way-finder system (consisting of signage, markings, and kiosks); provide for amenities (e.g., benches, water fountains, engagement activities such as exercise points, etc.); maximize use of natural and green materials/styles ... but be consistent, and make materials match; include linkages to parking areas; improve street crossings; identify opportunities that might integrate the walking experience with cultural activities in proximity to the walking paths; make the town center area distinctive; and the dam is an opportunity where one can integrate a micro-hydro project with the walking system.

Concerns/Suggestions

Participants identified several concerns/suggestions. Some of their comments are in the nature of *reality checks* to plan-making, and others are *issue-related*. Below is a list of the various concerns/suggestions.

- Construction/trail-clearing procedures
- Environmental impacts, to include protecting wildlife

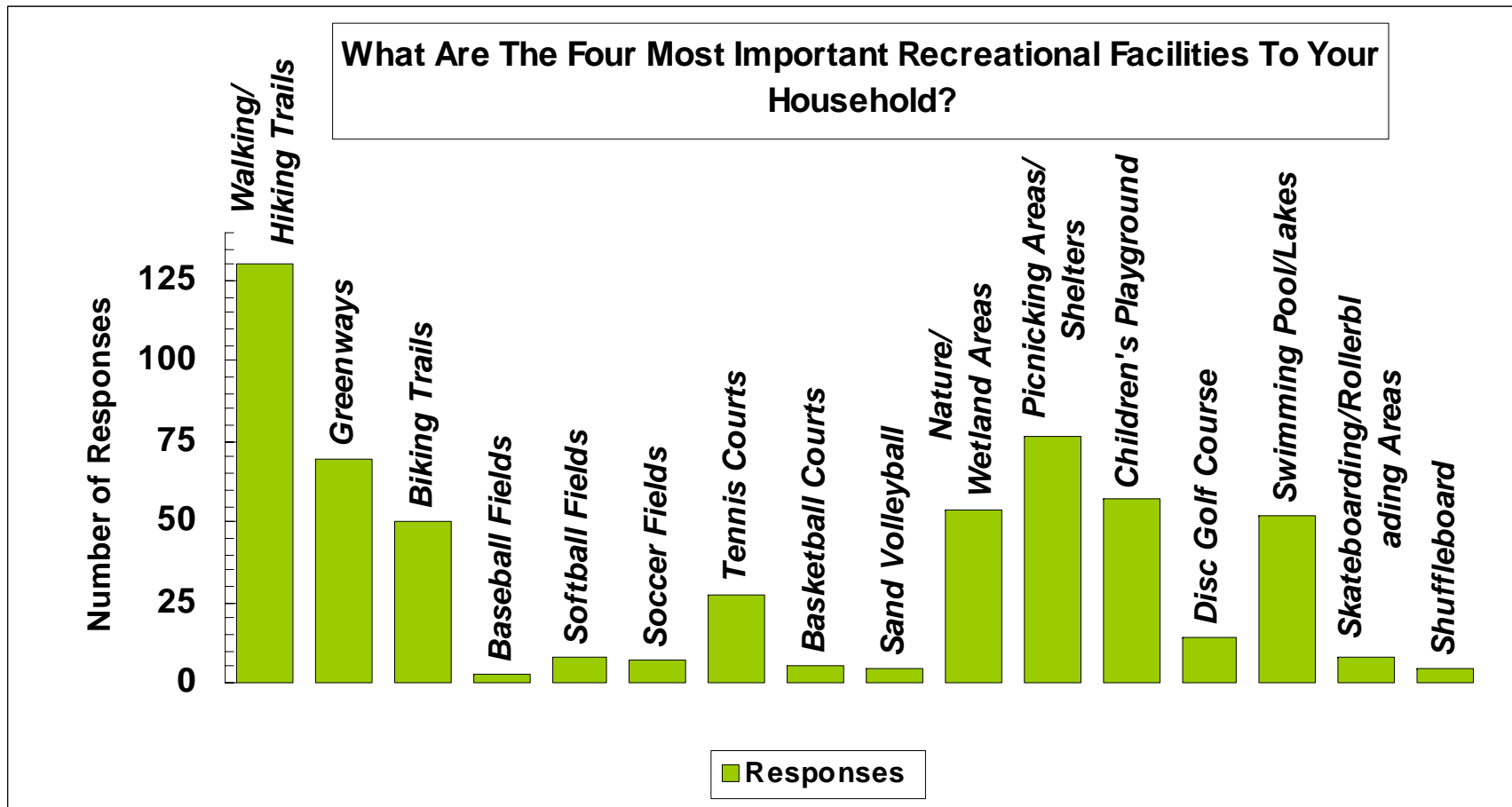
- Establishment of an *after the plan* advisory committee
- Post-construction maintenance ... trash control and also how the town will obtain maintenance funding
- Providing ease of access for police/fire personnel and equipment
- Right-of-way acquisitions
- Safety
- Town-college relationships
- Transparency of the college (i.e., as part of the larger system)
- User conflicts in general (e.g., mode conflicts, illegal activities such as camping, dogs, etc.)

Conclusions

When one looks at the combined activities and results of the focus groups, three conclusions stand out. First, some of the focus groups were small in size, and this resulted in diminished opportunities or synergies relating to group interactions. Second, there was a great deal of consistency between the results that each focus group produced. Third, the synthesis of results (i.e., from the three focus groups) clearly provides The Louis Berger Group, Inc. with a *closer look* at how those who live and work in Banner Elk would like to see the comprehensive pedestrian plan develop.

Appendix C: Survey Results

In 2008, the Town of Banner Elk conducted a detailed survey of area residents to determine services on which the Town should focus local resources as they develop their budget and capital improvement plans. The results of this survey are included below and show an overwhelming interest in pedestrian and bicycle facilities.



TOWN OF BANNER ELK PEDESTRIAN PLAN

APPENDIX D: ITEMIZED COST FIGURES

Appendix D: Itemized Cost Figures

The following itemized cost figures were used to estimate project costs for all recommendations of the Banner Elk Pedestrian Plan.

Crossing Improvements	
Standard marked crosswalk (with two transverse lines)	\$100 per leg
High-visibility crosswalk (continental style)	\$300 per leg
Patterned concrete crosswalk	\$20,000 per leg
Curb Extension to tighten curb radii at intersections	\$5,000 to \$25,000 per corner
New traffic signal with countdown pedestrian signals	\$ 100,000 per intersection
Countdown pedestrian signal and crosswalk additions to existing signalized intersection	\$4,000 to \$6,400 per intersection
Audible pedestrian crossing cues added to existing pedestrian signal	\$2,400 per intersection (\$500 - \$800 per countdown signal)
"No Right on Red" signage	\$30 to \$150 per sign plus installation at \$150 per sign
Regulatory and Warning signage (e.g. Stop, Yield, or Pedestrian Crossing signs)	\$ 50 to \$150 per sign plus installation at \$150 per sign
In-Street Yield to Pedestrians Sign	\$250 per sign plus installation
Advanced "Ped Xing" warning and related pavement markings (e.g. advanced stop bar or yield marking)	\$600 each
Curb ramps with detectable warning strips	\$1,200 per ramp; \$300 per truncated dome panel
Median refuge island (low cost is monolithic concrete island without landscaping)	\$4,000 to \$30,000
Pre-cast concrete or rubber flangeway filler for railroad crossings	\$1,600 per pad (8ft x 8ft)
Pedestrian underpass or overpass (cost depends on site characteristics)	\$750,000 to \$4 million
Flashing beacon signal	\$3,300 each

TOWN OF BANNER ELK PEDESTRIAN PLAN

APPENDIX D: ITEMIZED COST FIGURES

Sidewalk Installation	
Sidewalk only (existing curb & gutter or shoulder section)	\$ 50 per linear foot
Concrete curb & gutter only	\$ 25 per linear foot
Pedestrian-level street lights (10 to 15 ft in height)	\$2,200 each
Tree Grates (4ft by 4ft)	\$1,200 each

Greenway Trail Construction	
10ft paved shared-use trail (construction only)	\$700,000 per mile
10ft unpaved crushed stone shared-use trail (construction only)	\$100,000 per mile
Trail markers (not including installation)	\$50 each
Information kiosks (not including installation)	\$1,200 each
Water fountain (assumes water is already available)	\$2,000 each
Bollards (not including installation)	\$600 each
Bench (not including installation)	\$800 to \$1,000 each
Trash Cans (not including installation)	\$800 to \$1,500 each

Sources:

Pedestrian and Bicycle Information Center (www.walkinginfo.org)

NCDOT Division of Pedestrian and Bicycle Transportation

NCDOT Project Services Division, 2007 Bid Averages

(<http://ncdot.gov/doh/preconstruct/ps/contracts/estimating2.html>)