

Town of Sylva



COMPREHENSIVE PEDESTRIAN PLAN

Adopted March 17, 2011

Prepared by:



THE Louis Berger Group, INC.

Table of Contents

Executive Summary.....	3
Meeting the Challenge.....	5
Recommended Projects.....	6
Recommended Programs & Policies.....	10
Action Steps for Implementation.....	10
Section 1. Background, Vision & Goals	15
Plan Process	17
Vision and Goals.....	17
Section 2. Existing Conditions	21
The Context of Sylva	21
Demographic Analysis.....	22
Existing Facilities Analysis	25
Pedestrian Crash Analysis	26
Community Concerns & Needs.....	30
Steering Committee Feedback.....	30
Public Meetings and Focus Group Feedback	31
Jackson County Transit.....	33
Section 3: Policy & Plan Review	34
Sylva Smart Growth Plan (2005):.....	34
Sylva Subdivision Regulations (2009):.....	34
Sylva Zoning Ordinance:.....	35
Sylva Street Plan.....	36
Jackson County Greenways Master Plan (2009).....	37
Jackson County Comprehensive Transportation Plan (2009):.....	38
Section 4: Project Recommendations.....	40
Short-Term Projects	41
Medium-Term Projects	44
Medium-Term Projects	44
Long-Term Projects	46

Section 5: Pursuing Partnerships & Programs 52

 Exploring Partnership Opportunities 53

 Program Recommendations 54

 Program Evaluation..... 59

Section 6: Implementation - Action & Funding 60

 Implementation 60

 Funding 62

Section 7: Design Standards & Guidelines 84

 The “Design Vehicle” for Pedestrian Facilities 85

 Legal Rights of Pedestrians 86

 Sidewalks..... 89

 Crossings 91

 Signage 95

 Porous Paving Materials and Stormwater Management Best Practices 99

 Curb Extensions (Bulb-Outs) and Curb Radii..... 109

 Roundabouts..... 109

 Medians and Refuge Islands 109

Road Diets 110

Pedestrian-Friendly Street Design 111

Summary 112

The Town of Sylva thanks the following participants who contributed their time and efforts to the Comprehensive Pedestrian Plan:

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- **Jeanette Evans** – SmartRoads Advocacy Group
- **Sarah Graham** – Commissioner
- **Don Kostelec** – Louis Berger Group / Transpo Group
- **Jeff Jamison** – Police department
- **Adrienne Isenhower** – Town of Sylva Administrator
- **Reuben Moore** – NCDOT Division 14
- **Chuck Norris** – Jackson County Transit
- **Michelle Peele** – Louis Berger Group
- **Dan Schaffer** – Town of Sylva
- **Ryan Sherby** – RPO Coordinator
- **Julie Sylvester** - Downtown Sylva Association
- **John Vine-Hodge** – NCDOT Division of Bicycle & Pedestrian Transportation

Executive Summary

The Town of Sylva has a rich history and is located in a setting that makes it conducive to attracting new residents and visitors from across the Southeast and the United States. Throughout its history, Sylva has taken care to accommodate pedestrians, with sidewalks located along many of its high volume streets, pedestrian connections from its residential areas to downtown, and a new pedestrian bridge connecting Poteet Park and the recreation center to downtown, the Pavilion and parking lot. Sylva's park facilities offer residents and visitors a place to walk for recreation and fitness, while the existing sidewalk network offers many opportunities to walk for transportation in order to access local destinations.

Sylva, like many communities across the state, recognizes the importance of a pedestrian-friendly community in attracting residents, businesses and visitors. The undertaking of the Sylva Comprehensive Pedestrian Plan reinforces this pathway for economic development while intending to improve the quality of life for all residents. In building upon Sylva's previous planning work, this Plan addresses unique challenges within and around Sylva by providing policies to guide connectivity of future development to major pedestrian activity centers, while developing innovative and cost-effective strategies for connectivity to and within already developed areas and the historic downtown.

The intent of the Sylva Comprehensive Pedestrian Plan is to provide guidance for making the Town of Sylva a more pedestrian-friendly community. Partially funded by a grant from the North Carolina Department of Transportation (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 Sylva;
- Identify in the Plan a list of projects, programs, and policies (and associated strategies to implement them) that Sylva and local partners can provide to improve the walking environment;
- Create better awareness of walking, both during and after the planning process, as a viable mode for both recreation and transportation that can serve as a reliable substitute for some trips currently being made by private auto; and
- Develop an understanding among elected officials, community leaders, citizens, business owners and educational institutions that walking can contribute to a healthier lifestyle, a stronger economic base for a community, and reduce carbon and other emissions that

are associated with motorized travel and impact air quality in the mountains.

The Town of Sylva Comprehensive Pedestrian Plan delineates levels of improvements into short-term, mid-term and long-term priorities and policies so it can be used as a guidebook for Public Works staff, planners, the Southwestern Commission, other government agencies, NCDOT and developers. Further, the planning effort uses extensive public outreach strategies to incorporate diverse viewpoints and build local support for programs, projects and policies recommended in the Plan.

In creating an even more walkable community, Sylva will continue to improve the livability, attractiveness and quality of life of the town. Connecting the downtown area to nearby schools, parks, commercial centers, churches, and community centers via sidewalks and greenways will create an effective pedestrian network accessible to all citizens and visitors. Beyond better and safer pedestrian access to destinations, a more “walkable” community can have positive economic, environmental and health benefits for residents.



The sidewalk along Gridstaff Cove Road abruptly ends at the entrance to the Jackson County Justice & Administration Center, creating a barrier for pedestrian access to the public building.

Source: The Louis Berger Group, Inc.

Oftentimes, the most effective pedestrian facility investment is the easiest to implement, whether it's a ribbon of asphalt connecting a sidewalk to a crosswalk at a commercial intersection, improved signal timing at a key intersection, or 50 feet of greenway or sidewalk to connect a neighborhood to an elementary school. For example, there was feedback through the Pedestrian Planning process and previous efforts that there is a desire to connect a sidewalk to the Jackson County Justice & Administration Center from Grindstaff Cove Road, which is a relatively short and inexpensive project. In other

instances, major investments coordinated within a long-term strategy and with numerous partners will be required to fulfill the goals of the Plan. This includes the addition or completion on sidewalks along the Skyland Drive and NC 107 corridors.

Other ideas identified through the Sylva Comprehensive Pedestrian Plan include connecting facilities to link the Town with Dillsboro, Webster and Cullowhee. The Plan has also incorporated the findings of the Jackson County Comprehensive Transportation Plan and the recently adopted Jackson County Greenways Project Comprehensive Master Plan.

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 for the Plan is:

“The Town of Sylva will create a more walkable environment by building momentum within the community through maximization of existing facilities and resources; changing public perceptions; defining community needs; and communicating ideas.”

Meeting the Challenge

Using this plan as a guide, the Town of Sylva will 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 Jackson County Recreation & Parks Department, the Jackson County Health Department, the North Carolina Department of Transportation, Southwestern Community College, Western Carolina University, Jackson County Transit, and the Southwestern Commission, 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 mountain community with nearby colleges and a tourism-based economy, Sylva has experienced significant growth in its commercial sectors as Jackson County has grown in population through the construction of many residential communities in nearby towns and unincorporated areas. The imbalance of increased commercial development in Sylva compared to modest residential growth can create several issues the town will need to address in

order to efficiently provide services to existing residents. Creating a more walkable community is one strategy to help stabilize the residential base and entice citizens to locate within the town instead of in nearby communities or unincorporated areas that are not accessible on foot.

Sylva should capitalize on its location and its attractions, including quaint residential neighborhoods, the new Pinnacle Park, historic downtown, the new library and access to institutions of higher learning, to reinforce its existing pedestrian infrastructure with new projects and improvements. With careful planning and coordination with areas stakeholders, deliberate steps and persistence, Sylva can enhance the walkability that already exists within its historic downtown core and extend these walkable features to nearby commercial sectors and residential neighborhoods.

Recommended Projects

Through a combination of input from the citizens of Sylva, the Pedestrian Plan Steering Committee, and the project consultant team, the following projects were identified in priority tiers for the Town of Sylva to pursue implementation over the next 20 years. Overall, more than \$4.5 million worth of project needs were identified. The projects are identified in tiers on the following pages and mapped in Figures 1 and 2 (greenway projects shown on these maps are part of the Jackson County Greenways Plan and are for illustration purposes only).

The pace of development along certain corridors, funding constraints, and grant opportunities will be a major driver of the ability of the Town of Sylva to deliver these projects within this timeframes identified in the Plan. Factors such as right-of-way constraints, major corridor investments and topography can notably influence the implementation of these projects. Some may experience setbacks through the implementation process and funding is rarely predictable when funding is reliant upon external funding sources. The Town of Sylva may pursue projects requirements to construct spot improvements or segments along these corridors either through partnerships or regulations on new development.

Short-term priority projects are intended to be a combination of the most important improvements for the community along with projects that are either already in the pipeline for construction or are likely to be constructed through annual operating budgets for the Town and NCDOT Division 14 over the next five to seven years.

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN

EXECUTIVE SUMMARY

Medium-term priority projects improvements are generally of secondary priority and do not have any major funding sources already identified. These projects are intended to be pursued and completed over the next seven to 15 years.

Projects identified for the Town of Sylva that are slotted into the Long-Term Priority category are mixture of projects seen as a high priority but have other influences that prohibit their short-term implementation, primarily major funding availability. It is anticipated that these projects will be construction 12 to 20 years from adoption of the Pedestrian Plan. (Note: Numbers in parentheses indicate project number in Figures ES-1 and ES-2. "C" refers to Corridors in ES-1; "I" refers to intersections in ES-2)

Short-Term Priority Projects	Description	Estimated Cost
<i>US Highway 23 Business, Savannah Dr. to Mark Watson Park (C-10)</i>	Add sidewalks	\$ 25,000
<i>Downtown Pedestrian Improvements: Main Street & Mill Street (C-9)</i>	Fill sidewalk gaps, enhance crosswalks, new connection to library via Keener	\$ 95,000
<i>Downtown Pedestrian Improvements: Landis & Mill Intersection (I-7)</i>	Signalize intersection for pedestrian access across Mill St.	\$ 47,000
<i>Grindstaff Cove Road, Bridge #363 (C-17)</i>	Delineation of pedestrian walkway on bridge to connect to existing sidewalks	\$ 12,000
<i>Jackson County Justice and Administration Building Driveway (C-8)</i>	Add sidewalks along entry road & intersection improvements	\$ 35,000
<i>Jackson Plaza Driveway (C-7)</i>	Add sidewalks along entry road & curb ramp improvements	\$ 25,000
<i>NC 107 & Wal-Mart entry Intersection (I-4)</i>	Crosswalk upgrades, moving stopbar to align properly with crosswalks	\$ 15,000
<i>NC 107 & US 23 Business Intersection (I-3)</i>	Construction expected 2011 to install crosswalks and countdown pedestrian signals, minor enhancements	\$ 35,000
Total Estimated Cost		\$ 289,000

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN
 EXECUTIVE SUMMARY

Medium-Term Priority Projects	Description	Estimated Cost
<i>US Highway 23 Business & Skyland Drive Intersection (I-1)</i>	Add crosswalks, install pedestrian signals, upgrade ramps	\$ 35,000
<i>Municipal Dr. / Central Dr., Grindstaff Cove to Chipper Curve (C-16)</i>	Construct sidewalks along south side or in combination with Central Drive connection	\$ 90,000
<i>Savannah Dr., Keener St. to Cowee St. (C-13)</i>	Replace broken sidewalks, improve stairway to Mark Watson Park	\$ 72,000
<i>Savannah Dr., US Highway 23 Business to Nicol Arms Rd. (C-12)</i>	Install new sidewalks to connect to US Hwy 23 Business	\$ 30,000+
<i>Skyland Dr, Chipper Curve Rd to US Highway 23 Business (C-5)</i>	Sidewalks along east side with potential for rural sections	\$ 400,000
	Total Estimated Cost	\$ 617,000

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN

EXECUTIVE SUMMARY

Long-Term Priority Projects	Description	Estimated Cost
<i>US Highway 23 Business, Poplar Dr. to Hospital Rd. (C-4)</i>	Sidewalks along west side and add crosswalks and curb ramps at signals	\$ 520,000
<i>Chipper Curve Rd., Raymond St. to Municipal Dr. (C-6)</i>	Greenway/sidepath, convert Raymond St. bridge to pedestrian-only.	\$ 450,000
<i>Cope Creek Rd, NC 107 to Slo-Gait Lane (C-2)</i>	Sidewalks/wide shoulder in rural cross-section	\$ 135,000
<i>Fairview Ave Sidepath/Multi-Use Trail (C-15)</i>	Construct new greenway along baseball fields from school driveway to NC 107	\$ 175,000
<i>Hospital Rd., US 23 Business to Skyland Dr. (C-11)</i>	Sidewalks, rural cross-section where possible due to terrain	\$ 650,000
<i>County Complex entry road on NC 116 & Loop Walking Trail (C-1)</i>	Add sidewalks along entry road & curb ramp improvements	\$ 100,000
<i>NC 107 Sidewalks from US 23 Business to NC 116 (C-3)</i>	Complete sidewalk system on north/east side of highway	\$ 1,250,000
<i>NC 107 & NC 116 Intersection (I-6)</i>	Crosswalk upgrades, new pedestrian signals and curb ramps in conjunction with NC 107 sidewalks	\$ 15,000
<i>NC 107 & Jones St. Intersection (I-5)</i>	Crosswalk upgrades, new pedestrian signals and curb ramps in conjunction with NC 107 sidewalks	\$ 15,000
<i>NC 107 & Cope Creek/Walter Ashe Intersection (I-2)</i>	Add pedestrian signals & curb ramps with NC 107 or Cope Creek sidewalks	\$ 15,000
<i>Skyland Dr., Hospital Rd. to Chipper Curve Rd. (C-14)</i>	Sidewalks along east side (depending on availability of right-of-way)	\$ 250,000
	Total Estimated Cost	\$ 3,575,000

Recommended Programs & Policies

In addition to project, there are several programmatic and policy-based initiatives that should be pursued to achieve a walkable community. These programs and policies are detailed in Sections 3 and 5. Major recommendations include:

- Implement a wayfinding system;
- Organize a Town/County advisory committee for pedestrian/bicycle issues and the mobility-impaired community;
- Pursue designation as a Senior-Friendly Community;
- Develop a Safe Routes to Schools program;
- Conduct a Pedestrian Safety Education campaign; and
- Update various design standards for pedestrian facilities.

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 pedestrian-friendly Sylva.



The Pedestrian Plan can include specific strategies for the enhancement of Sylva's Mill Street (aka "Backstreet").

Source: The Louis Berger Group, Inc.

1) Adopt this Plan. Adoption of this Plan on March 17, 2011 was the first step toward implementation for Sylva. The Plan should be forwarded to regional and state decision-makers, such as the Southwestern Commission, Jackson County Recreation & Parks, and NCDOT Division 14 office, for inclusion in a regional planning and development processes.

2) Form a Bicycle/Pedestrian & Greenways Advisory Committee. The pedestrian planning process has engaged many citizens in visioning and goal-setting for Sylva. Building on this momentum to keep citizens engaged in a permanent committee structure will allow continued citizen involvement in the Plan's implementation. This could be done in conjunction with the County's Greenways Advisory Committee.

3) Secure funding for the top priority projects. In order for Sylva 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 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. The Town of Sylva can also work to secure this funding through annual requests

to NCDOT Division 14 and through the Transportation Improvement Program (TIP) process with the Southwestern Commission.

4) Begin work on top priority projects. 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 local projects to improve intersections and fill gaps in existing sidewalks through annual operating improvements funds provided to Division 14. Sylva should also seek other state, national or private funding sources for continued, long-term success in implementing the Plan.

5) 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 Sylva Pedestrian Plan should be incorporated into the future Comprehensive Transportation Plan updates, long-range transportation plans and comprehensive planning efforts by the Town of Sylva and Jackson County. The findings of this plan can also be used to inform the wayfinding project for downtown Sylva, which received grant funding and will be completed in 2010 and 2011.

6) 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.

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN
EXECUTIVE SUMMARY

Figure ES-1: Project Recommendation – Corridors

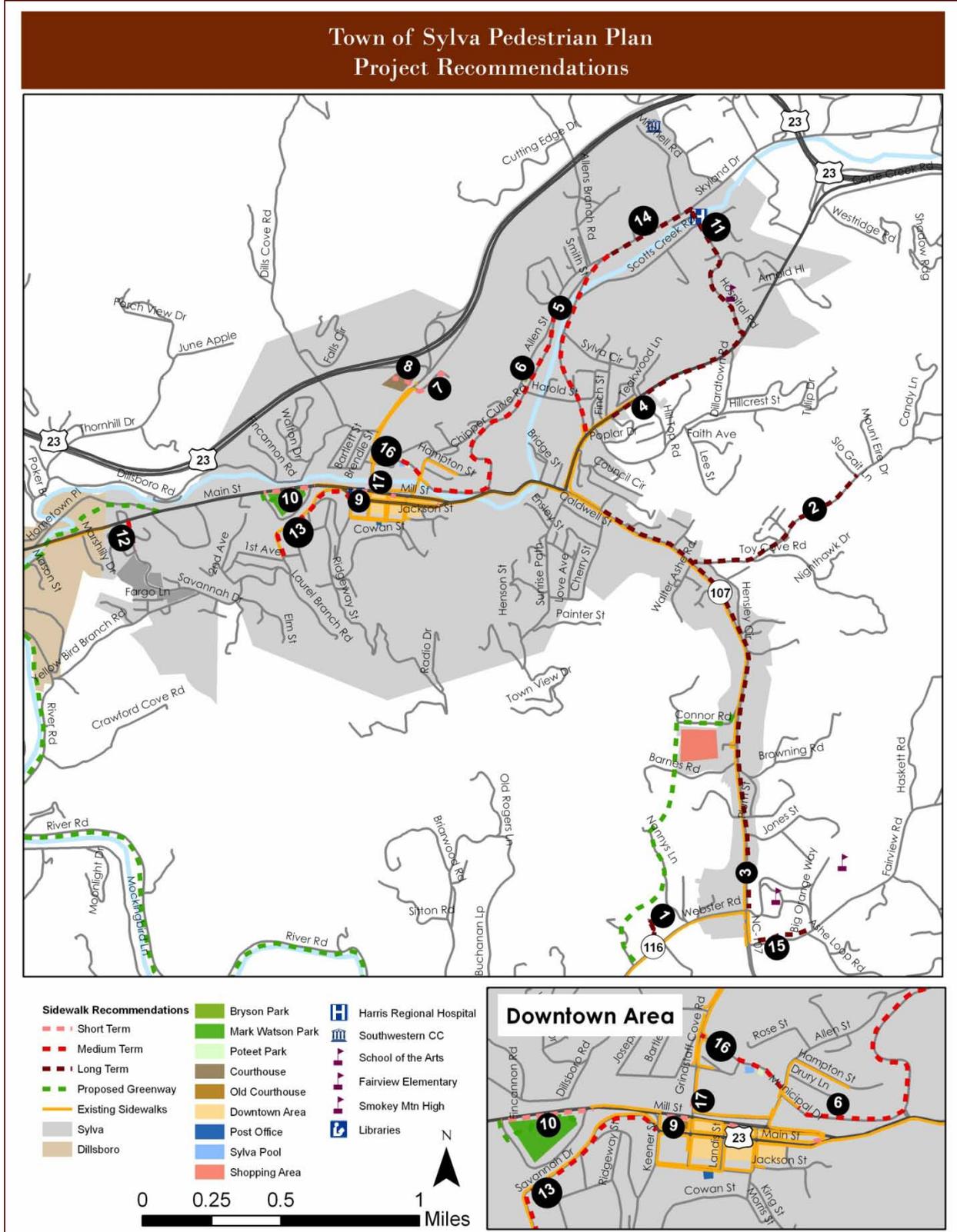
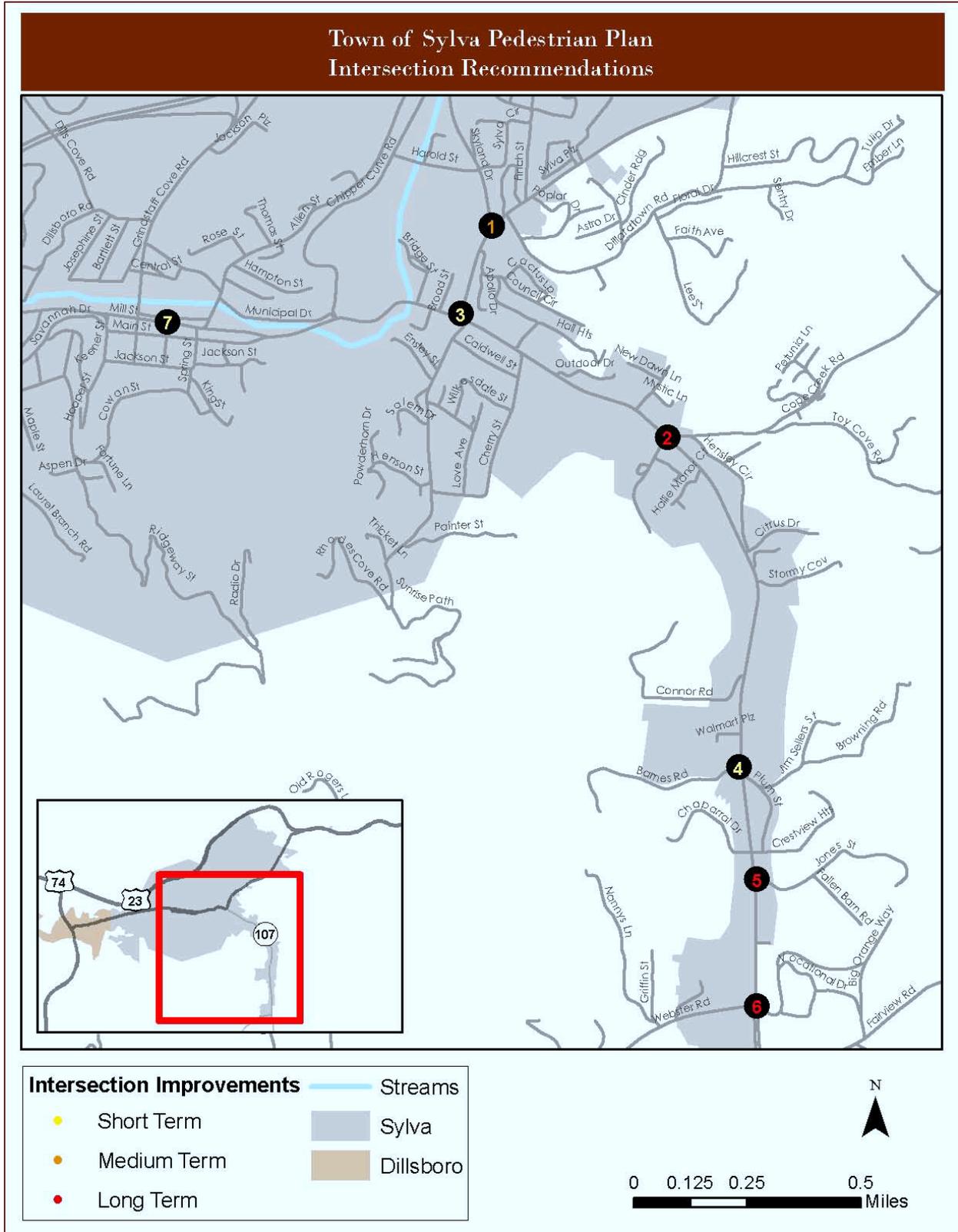


Figure ES-2: Project Recommendation – Intersections



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Section 1. Background, Vision & Goals

The Town of Sylva, North Carolina applied for and received a grant from the North Carolina Department of Transportation (NCDOT) in 2009 to fund a comprehensive pedestrian plan for the Town. NCDOT regularly funds pedestrian and bicycle planning efforts so communities in North Carolina can prepare for creating better pedestrian (and bicycling) environments for their citizens. Sylva's Pedestrian Plan application was coordinated through the Southwestern Commission and included input from Jackson County. Sylva 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.

Visioning is a technique whereby a community determines what it wants to become.

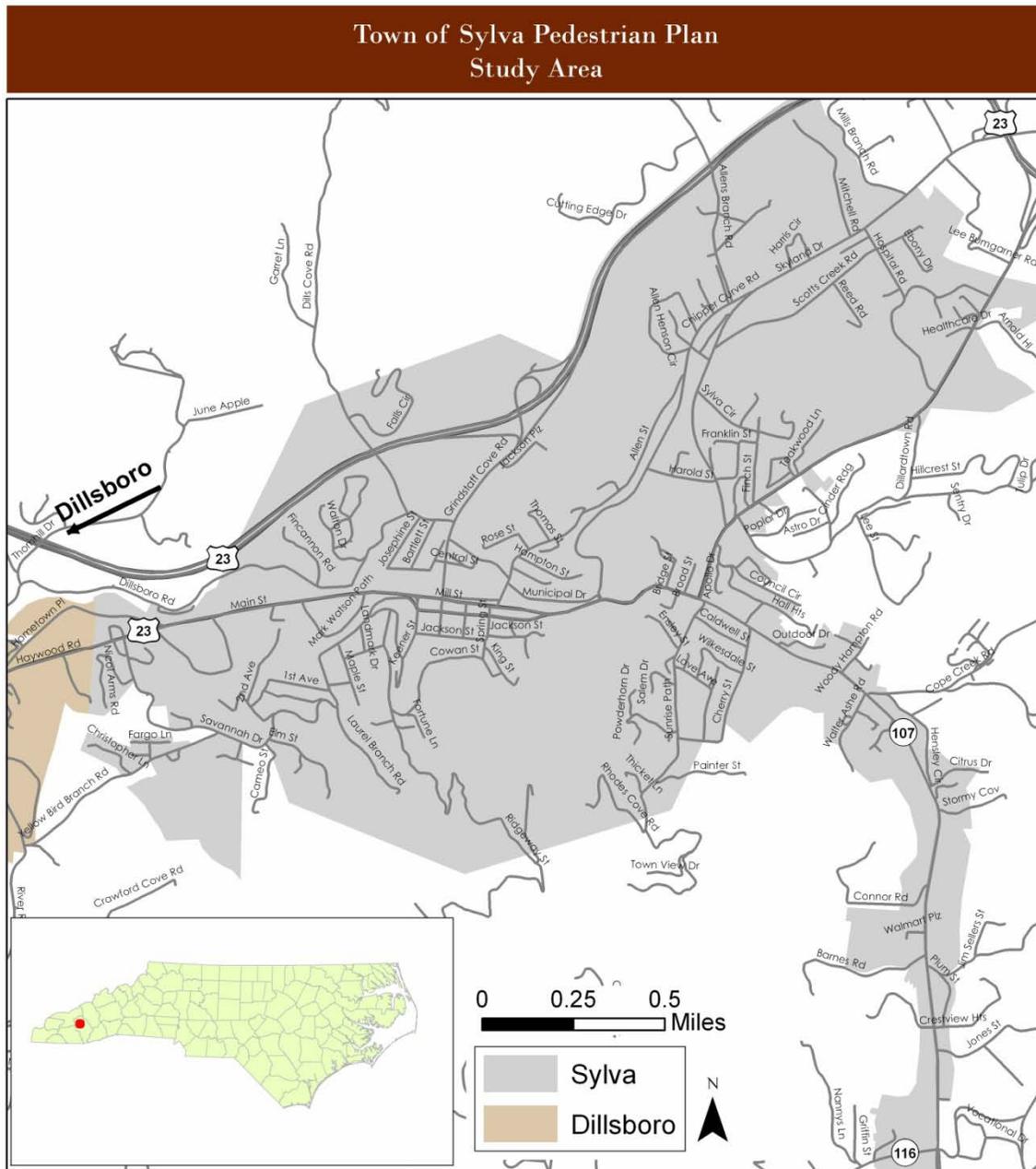
The purposes of the Sylva Comprehensive Pedestrian Plan are to:

- Promote a better understanding of the measures that can be taken to create more and safer walking trips in Sylva;
- Identify in the Plan a list of projects, programs, and policies (and associated strategies to implement them) that Sylva and local partners can provide to improve the walking environment; and
- Create a better awareness of walking, both during and after the planning process, as a viable mode for both recreation and transportation that can serve as a reliable substitute for some trips being made by private automobile; and
- Develop an understanding among elected officials, community leaders, citizens, business owners and educational institutions that walking can contribute to a healthier lifestyle; a stronger economic base for a community; and reduce carbon and other emissions that are associated with motorized travel and impact air quality in the mountains.

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. As Sylva begins to recognize and achieve the recommendations contained in the Plan, the result 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.

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN
SECTION 1: BACKGROUND, VISION & GOALS

Figure 1-1: Project Study Area



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

Plan Process

The Sylva Pedestrian Plan was begun in October 2009 and completed in the fall of 2010. To help the Town prepare its plan, Sylva contracted with a professional consulting firm and enlisted the help of area stakeholders who have a personal, professional or business interest in promoting walking as a safe means of recreation and transportation in the area. The consultant and steering committee assisted the Town by conducting public engagement exercises, including two public “Open House” workshops consisting of focus groups and an information session at the Greening Up the Mountains festival in downtown Sylva on April 24, 2010. Additionally, a community-wide survey was conducted as part of the planning process to gather feedback from residents on the vision for the future of Sylva’s pedestrian environment. In addition, the project consultant conducted a field inventory of existing pedestrian facilities in Sylva, which combined with public feedback and interviews with staff of Jackson County’s Recreation & Parks Department and NCDOT Division 14, 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 “working papers” reviewed in full by the Steering Committee. The final Plan was approved by the Board of Commissioners on March 17, 2011.

Vision and Goals

Visioning is a technique whereby a community determines what it wants to become ... in a *broad* context. Creating a vision draws from where the community is now (*existing conditions*) and where it wants to go (*future directions*). A shared community vision can provide clarity to a planning process, and having a vision generally makes it easier to implement action planning initiatives.

The first meeting of the Sylva Comprehensive Pedestrian Plan was conducted October 26, 2009, in part to capture the opinions of the Steering Committee about important guiding principles for the Plan, but also to establish a community vision to guide the project. The visioning exercise began with a context focus question:

- “How can Sylva develop a more walkable and bicycle-friendly community over the next 20 years?” *Things that will:*
 - Satisfy the needs of existing residents;
 - Reduce barriers to walking (and bicycling);
 - Provide access to important areas & attractions;
 - Make mobility possible for different age groups and abilities;

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN

SECTION 1: BACKGROUND, VISION & GOALS

- o Provide visitors with ways to get around town easily; and
- o Address previous efforts and plans.

Following a visualization scenario relating to the focus question, participants brainstormed vision components, organized these components by categorical relationships, named each categorical group, and lastly reflected about the results. The resultant Sylva Comprehensive Pedestrian Plan vision consists of the following five goals, with each goal having sub-components, or objectives, which 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.

Goal #1	Enhance the Existing Pedestrian Transportation System
Objectives	<ul style="list-style-type: none"> • Build better crosswalks and enhance features at mid-block crosswalks; • Add features to sidewalks such as benches, greenery, and bike racks; • Ensure universal accessibility; • Use more attractive and comfortable sidewalk materials; • Create a safer pedestrian environment in front of the High School and along NC 107; and • Install dog waste stations.

Goal #2	Improve Policies and Planning to Improve Conditions for Pedestrians
Objectives	<ul style="list-style-type: none"> • Consolidate and eliminate driveways along NC 107 and other commercial corridors to reduce the exposure to pedestrians; • Require construction of pedestrian and bicycle elements in all new construction; • Ensure that buildings abut the sidewalks in new developments; • Construct new sidewalks in existing residential areas; and • Develop central parking areas (i.e. park-and-ride lots) so people can park once and walk to their destinations.

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN

SECTION 1: BACKGROUND, VISION & GOALS

Goal #3	Create New Pedestrian Connections
Objectives	<ul style="list-style-type: none"> • Connect existing sidewalks by filling in the gaps; • Construct a path or greenway along Scotts Creek; • Improves buffers and shading on sidewalks; • Cooperate with Jackson County on greenway efforts; • Extend downtown walkability outwards to other residential and commercial areas; • Construction a greenway connection to Fisher/Pinnacle Park; and • Create sidewalk loops on major roads for both recreation and transportation.

Goal #4	Organize Awareness and Education Efforts to Promote Walking
Objectives	<ul style="list-style-type: none"> • Educate police, pedestrians and motorists on pedestrian laws; • Install signage for wayfinding, identifying walking trail names and distances; • Provide pedestrian and bicycle maps for visitors via the Internet, Chamber of Commerce and area businesses; • Implement walking programs throughout the school system; • Increase public acceptance of pedestrian safety issues; and • Enhance pedestrian interaction.

Goal #5	Identify Funding & Partnership Opportunities
Objectives	<ul style="list-style-type: none"> • Apply for grant provided by the Rural Center, NC Main Street Program, NCDOT and other agencies; • Conduct community fundraisers aimed at enhancing pedestrian facilities; and • Pursue a travel and tourism authority grant.

Goal #6	Identify and Fix the Easy Stuff First
Objectives	<ul style="list-style-type: none"> • Eliminate simple barriers such as small sidewalk gaps, lack of curb ramps, countdown pedestrian signals, and crosswalk connections; • Construct projects that already have “buy in” from various stakeholders; and • Prioritize projects that can be constructed in a short timeframe.

From these six broad Goals, a succinct vision for the Sylva pedestrian environment was then developed:

“The Town of Sylva will create a more walkable environment by building momentum within the community through maximization of existing facilities and resources; changing public perceptions; defining community needs; and communicating ideas.”

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 Sylva should be moving towards this Vision and revisiting it at regular intervals to measure progress and adjust to changing needs over time.

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 Sylva. 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:

- The Context of Sylva;
- Demographic Analysis;
- Existing Facilities Analysis;
- Pedestrian Crash Analysis; and
- Community Concerns and Needs.

The Context of Sylva

The Town of Sylva is situated in the heart of the Blue Ridge Mountains and is surrounded by steep ridges along the nearby Tuckasegee River. The town is known for its picturesque beauty, with the historic Jackson County Courthouse as its centerpiece, which was renovated in 2009 & 2010 to include a new library and public meeting place. Sylva continues to be a draw for tourists and artisans, as its location near Great Smoky Mountains National Park and proximity to Western Carolina University have created a local culture and identity that have led to one of the most vibrant Main Streets in North Carolina.

Transportation has played a major role in the history of Sylva and Jackson County, as the construction of the Western North Carolina Railroad through Sylva in the 1880s led to the eventual relocation of the county seat from Webster in the early 1900s. The construction of the Appalachian Development Highway System beginning in the mid-1900s led to increased access to the region from other metropolitan areas of the southeast, including Atlanta, Asheville, Charlotte and Greenville-Spartanburg.

Today, Sylva has a population of approximately 2,600, but the relatively small population base does not accurately reflect the central role that Sylva plays in the Jackson County economy and for its 37,000 residents. Many of the key economic drivers in the region lie outside of the Town limits, including the Qualla Boundary, Western Carolina University, Southwestern Community College, and

the adjacent Town of Dillsboro. The presence of these external influences has helped create an economic boon for the Town of Sylva but has also placed a disproportionate level of demand for commercial services on the Town and its residents.

The results of this demand have stressed the capacity of transportation corridors in the area, which has led recently to the publicly contentious debate over how to improve NC 107 and its intersection with the US Highway 23 Business route. The safe accommodation of pedestrians, bicyclists and transit riders has been a focal point of the local community and advocates who are eager to apply multi-modal solutions to help assist in the traffic congestion along this primary artery. In 2008, the Southwestern Commission helped organize a public workshop on the NC 107 corridor to help define the NCDOT project development process and inform stakeholders on potential context-sensitive solutions for the corridor.

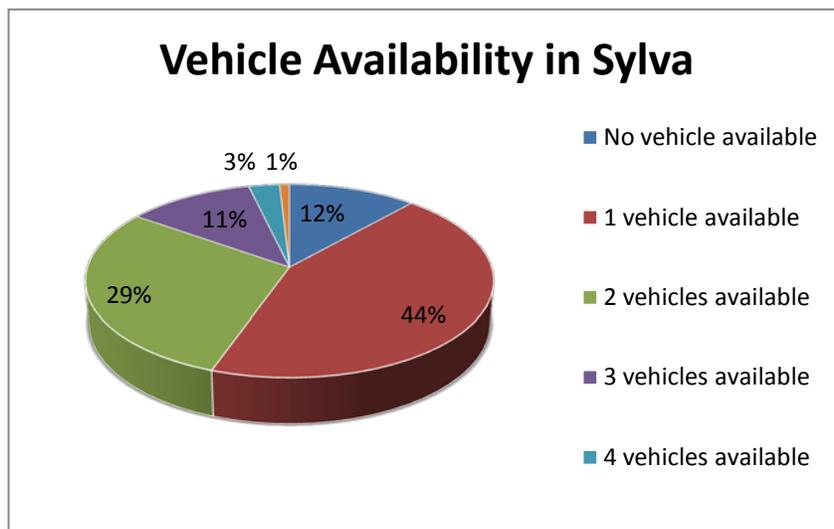
The Town has taken care to accommodate pedestrians, with sidewalks located along many of its high volume streets, pedestrian connections from its residential areas to downtown, and a new pedestrian bridge connecting the town's park and recreation center to downtown, the pavilion and parking lot. Sylva's park facilities offer residents and visitors a place to walk for recreation and fitness, while the existing sidewalk network offers many opportunities to walk for transportation in order to access local destinations. In creating an even more walkable community, Sylva will continue to improve the livability, attractiveness and quality of life of the town. Connecting the downtown area to nearby schools, parks, commercial centers, churches, and community centers via sidewalks and greenways will create an effective pedestrian network accessible to all citizens and visitors. Beyond better and safer pedestrian access to destinations, a more "walkable" community can have positive economic, environmental and health benefits for residents.

Demographic Analysis

It is important to examine a community's demographics during the development of 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. This section includes a summary of the demographic analysis for the Town of Sylva and explains the implications of the analysis for the recommendations made in the Sylva Comprehensive Pedestrian Plan. One shortcoming of this data is the timeframe in which the

plan was developed. In 2010, we are on the cusp of collecting new information from the Census. Unfortunately, this data will not be available for use in projects like the Sylva Comprehensive Pedestrian Plan. Therefore, data from the 2000 Census was used for purposes of this report and represents a snapshot of Sylva's characteristics a decade ago.

According to 2000 U.S. Census data, the Town of Sylva's population spread is almost evenly distributed among younger people aged 24 and below who make up 30.7 percent of the town's overall



population; people aged 25 to 55 make up 39 percent; and persons older than 55 make up 30.4 percent of the population. Despite the presence of Western Carolina University and Southwestern Community College, the figures for persons under 24 years of age is notably lower than proportions for the state of North Carolina (34.42 percent) and the United States (35.33 percent).

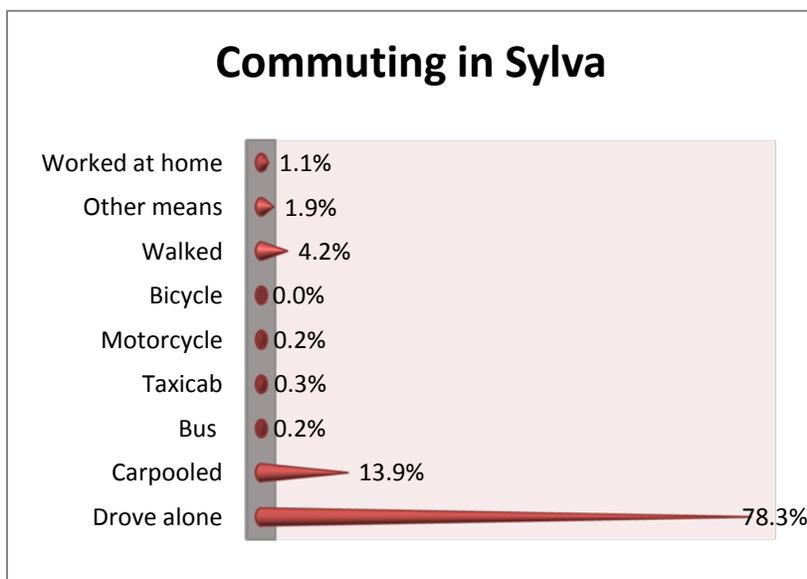
Sylva's population is 89.2 percent Caucasian with no other racial groups occupying a significant share of the population. The second largest group is African-Americans who account for 4.7 percent of the population, much lower than the 21.6 percent and 12.3 percent this population occupies at the state and national level.

Sylva has a Median Household Income (\$26,432) and Median Family Income (\$36,711) below state and national averages which are likely due to the rural nature of the area and lack of major employers, other than the nearby colleges, offering substantial employment and associated higher wages.

Sylva's household vehicle availability statistics reflect the nature of its rural mountain setting with more than 88.4 percent of the population having access to at least one or more vehicles. Of note, however, is the proportion of households with no vehicle availability (11.6 percent), which is notably higher than the 7.5 percent rate for North Carolina. Due to the geography of Sylva and its size, it is hard to glean from Census data where they might be clustering of residents who do not own a vehicle. Vehicle availability is

indicative of both income level and access to other mode of transportation. The relatively high proportion of households within Sylva without access to a vehicle suggests there may be opportunities for more citizens to access their destinations via public transportation, walking or a combination of both, given the appropriate institution of project and programs to provide these connections.

Travel modes to work figures indicate that these residents are likely finding a ride to get to their destinations via carpooling. More than 78 percent of commuters drive alone to work while almost 14 percent carpool. Only 4.2 percent of the population regularly walks to work. 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 Sylva has 82.3 percent of its residents commuting less than 30 minutes to work. The location of major employment generators within Sylva reflects these high numbers and also suggests that there are several commuters who may be able to find walking to work as a potential mode, particularly if they work at places such as the

Jackson County Justice and Administration Complex or Downtown Sylva.

Overall, Sylva's demographics suggest there are challenges associated with drawing persons to a walk-to-work mode given the nature of development in the area, as well as terrain and existing transportation options. Major employers such as Western Carolina University, the Jackson County Schools complex, the Hospital and Southwestern Community College are not very accessible due to their location on the eastern fringe of the Town of Sylva and distance between these points and residential areas.

Therefore, the Sylva Pedestrian Plan makes recommendations that focus on improving pedestrian facilities to encourage people to travel to work by foot when this destination is within a walkable distance, but strongly recommends options for persons to take recreational or non-work trips by foot by connecting key activity

centers to pedestrian facilities. In addition to the environmental and air quality benefits of increased walking and decreased automobile use, the effects of adopting these pedestrian improvements also have the potential to ease vehicle traffic congestion in downtown Sylva and help stretch limited resources related to accommodating vehicles within the downtown core.

Existing Facilities Analysis

According to the 2000 U.S. Census, only 4.2 percent of Sylva residents walk to work, which is likely attributable to the Town's historic development patterns which have led to major employers (schools, colleges, hospital, county facilities) being located on the fringe of the town and along corridors that have created a linear pattern to the Town's corporate limits. Additionally, these destinations are not connected via a complete or accommodating network of pedestrian facilities. Assessing why so many people walk in Sylva – 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.

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 Sylva's location. The Town of Sylva and NCDOT have worked cooperatively in the past 20 years to implement critical pedestrian connections along NC 107, US 23 Business and within the downtown area, including many crossing upgrades at intersections where sidewalks existing on either both or one side of the road.

It was noted through the planning process that NC 107 and US 23 Business constitute the most prominent barriers to pedestrian accessibility throughout the town due to the lack of sidewalks and width of the roadways. Skyland Drive is also a barrier due to the lack of pedestrian facilities in relation to the presence of residential areas and pedestrian generators along the route.

While Skyland Drive and NC 107 were recognized as high priorities through the pedestrian planning process, they are also the most difficult and challenging corridors within Sylva to fully achieve a pedestrian friendly environment. Limited right-of-way, railroad tracks, Scotts Creek, existing business and terrain all pose significant

challenges, thus necessitating long-term strategies aimed at acquiring improvements through re-development, filling critical gaps, and working on partnerships to acquire funding for full-scale corridor improvements.

Sylva has a number of pedestrian generators that are within walking distance of downtown and nearby residential neighborhoods. Many of these generators can be accessed via existing sidewalks or along streets with low traffic volumes. These include the historic Jackson County Courthouse, which is being redeveloped as a library and community center; Mark Watson Park, which is approximately 3 blocks west of downtown; Bryson Park along Allen Street and Chipper Curve Road; Poteet Park and the Sylva Municipal Pool near Town Hall; and churches located east and west of Grindstaff Cove Road.

Mill Street (aka "Backstreet") has experienced a rebirth in terms of commercial activity over the past decade as storefronts along Main Street remain occupied. New businesses along the Mill Street corridor include a brewery, coffee shops and other businesses that create a vibe consistent with the area that has historically served as a loading zone for businesses along Main Street. This increase in business activity, combined with the long-standing Cope's Newsstand and development of the new parking area, pavilion and bridge over Scotts Creek north of the railroad tracks, have increased pedestrian demand in this corridor. Filling the gaps in the sidewalk system along Mill Street, as well as upgrading both signalized and un-signalized intersections to accommodate pedestrians accessing the area from south of the railroad tracks and Main Street, are needed to continue to support and promote further economic development along Mill Street.

Finally, connections to major employment destinations and retail areas should be considered further in project selection and prioritization. The new Post Office and Jackson County Administration and Justice Center are within a reasonable walk of downtown Sylva and nearby residential areas, but there are gaps in the sidewalk system along Grindstaff Cove Road and a lack of pedestrian facilities along the driveways accessing these activity centers. As the community grows, the Town should focus on linking outlying commercial developments and residential areas to the downtown area via an expanded sidewalk and/or greenway network.

Pedestrian Crash Analysis

NCDOT maintains a database of accident locations and characteristics. Within this is a listing of reported pedestrian-related

accidents that have occurred within or near the Town of Sylva. 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 Sylva was queried for 1990 through 2008; 12 pedestrian crashes and three bicyclist crashes occurred over the course of this period. Given Sylva's walk rate of 4.2 percent for work commutes, this crash rate is fairly high.

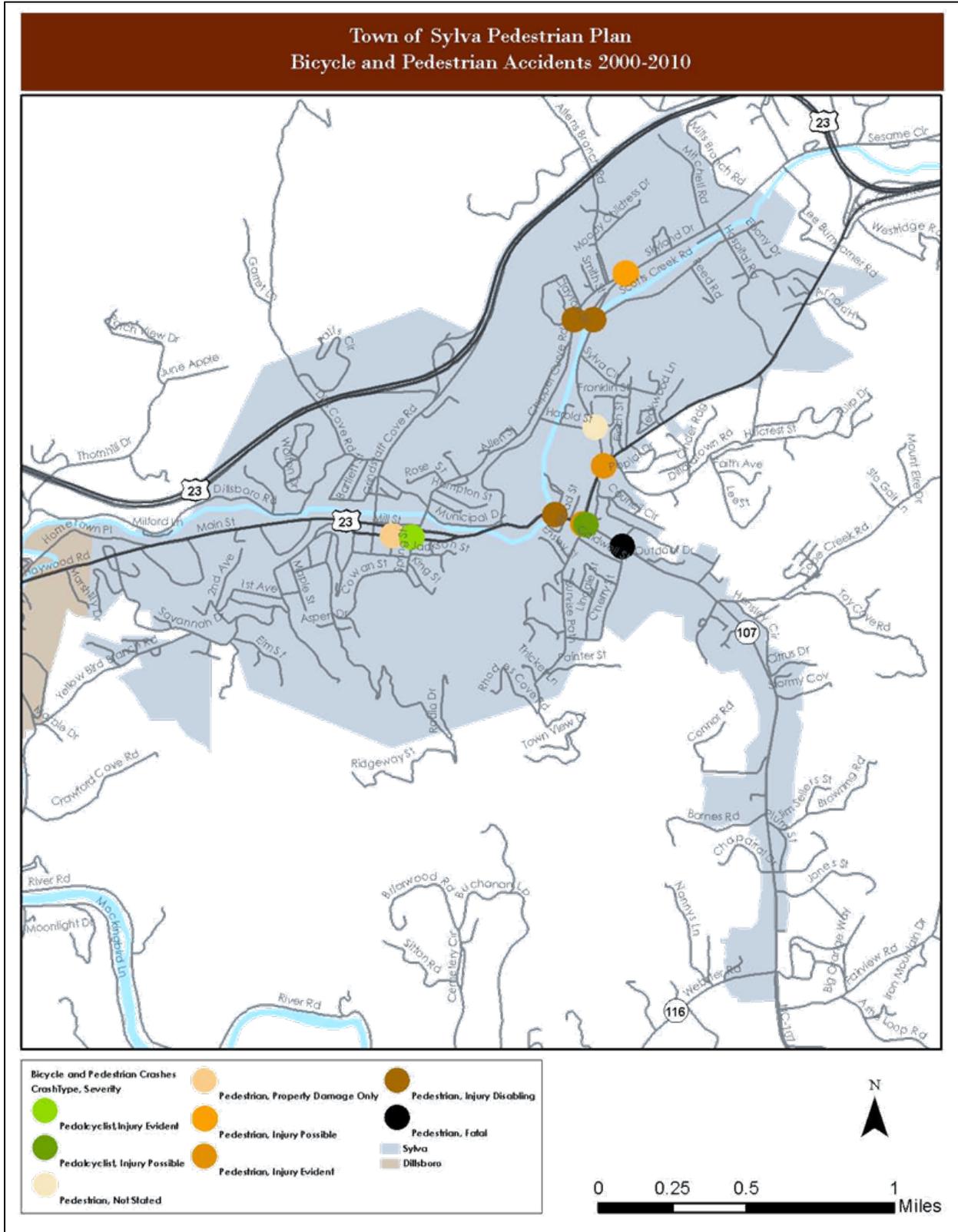
The NC 107 and Skyland Drive corridors stand out as the major thoroughfares where these crashes occurred; two crashes occurred Main Street in downtown Sylva. This data reinforces the notion that pedestrian amenities are needed along major thoroughfares to improve the safety of pedestrians. The two fatalities occurred along NC 107, where sidewalks exist along one side of the corridor but numerous driveways and lack of regular crossing opportunities hinder the pedestrian environment. Skyland Drive has numerous activity centers and pedestrian attractors, as well as residential properties, but has no pedestrian facilities.

These facts could indicate that one of Sylva's strongest needs is to work to complete sidewalk systems along its major corridors and make safety improvements at intersections, such as pedestrian signalization, crosswalk improvements, 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.

Table 2-1 provides a summary of crashes in Sylva from 1990 to 2008.

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN
SECTION 2: EXISTING CONDITIONS

Figure 2-1: Pedestrian & Bicycle Crash Locations (1990-2010)



TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN

SECTION 2: EXISTING CONDITIONS

Table 2-1: Location and Severity of Pedestrian & Bicyclist Crashes in Sylva

On Road	From Road	Toward Road	Crash Severity	Type
CHIPPER CURVE RD	ALLEN HENSON CIR	SMITH ST	A-Injury (Disabling)	Pedestrian
MAIN ST	BRIDGE ST	MUNICIPAL DR	A-Injury (Disabling)	Pedestrian
MAIN ST	LANDIS ST	SPRING ST	Property Damage Only	Pedestrian
NC 107	CHERRY ST	COPE CREEK RD	Fatal (Killed)	Pedestrian
NC 107	CHERRY ST		A-Injury (Disabling)	Pedestrian
NC 107	CHERRY ST	WOODY HAMPTON	Fatal (Killed)	Pedestrian
NC 107	US 23	CHERRY ST	B-Injury (Evident)	Pedestrian
NC 107	SUNRISE PARK		C-Injury (Possible)	Bicyclist
OLD DILLSBORO RD	SYLVAN HEIGHTS	DILLS COVE ROAD	B-Injury (Evident)	Bicyclist
SKYLAND DR	SCOTTS CREEK RD	RAYMOND ST	A-Injury (Disabling)	Pedestrian
SKYLAND DR	US 23	EAST SYLVA CIR	B-Injury (Evident)	Pedestrian
SKYLAND DR	HAROLD ST		Not Stated	Pedestrian
SKYLAND DR	CHIPPER CURVE		C-Injury (Possible)	Pedestrian
SPRING ST	W MAIN ST	LANDIS ST	B-Injury (Evident)	Bicyclist
US 23	DILLSBORO RD	FINCH ST	C-Injury (Possible)	Pedestrian

Community Concerns & Needs

Public input has played a critical role in the Town of Sylva Pedestrian Plan through the involvement of the Steering Committee, focus groups, surveys and input from the Greening Up the Mountain Festival. This input helps 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, County representatives, the Southwestern Commission, 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 Greening Up the Mountains 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.

Steering Committee Feedback

At the first two Steering Committee meetings on October 26, 2008 and February 9, 2010 (via involvement with others in focus groups), stakeholders were given the opportunity to provide input on walking conditions and concerns about walking in Sylva.

Specifically, Steering Committee members created an overall vision for the Pedestrian Plan (discussed in Section 1 of this document) 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.

The third Steering Committee meeting on May 25, 2010 focused on criteria the committee members felt important in ranking projects for future improvements. It was generally acknowledged that the needs were fairly straight forward and the committee proceeded to rank projects in the tiers contained in this Plan.

The final Steering Committee meeting was held August 3, 2010 to confirm the final project list and recommend adoption to the Town Commissioners following review and comments by NCDOT.

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 organized focus groups on February 9, 2010 to engage attendees in discussions on the Pedestrian Plan process and identify specific pedestrian improvements they would like to see in the community. This activity was conducted in lieu of a traditional Open House in order to encourage dialogue between interested citizens, the project consulting team and the project steering committee.



Focus group participants identified several potential pedestrian improvements and shared their results with the rest of the group.

Source: The Louis Berger Group, Inc.

Focus group discussions are a qualitative research tool that can help to explore, clarify, and validate planning concepts. Nine persons participated in the February 2010 focus groups. The purpose of the focus group was to explore pedestrian connections and relate the connections to design considerations. Participants worked in small groups of three persons.

Participants were able to speak with Town staff and planning consultants, and engage in a mapping exercise to identify projects for the Pedestrian Plan. Suggestions that arose during this focus group session were based on the unique perspectives, interests and needs of Sylva's citizens, public sector staff, business leaders, advocates, and elected officials. Feedback from participants has been included in the project, program and policy recommendations of the Plan.

Each focus group worked to identify activity centers within the town, identify major residential areas and employment centers in Sylva, 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 pedestrian activity centers in Sylva, where people shop, work, and go for leisure time activities. These were:

- Bryson Park;
- Dillsboro;
- Downtown;
- Hospital Area;
- Jackson County Justice Center & Administration Building;
- Mark Watson Park;
- Old Courthouse / New Library;

- Post office;
- Shopping areas along NC 107;
- Skyland Drive;
- Smoky Mountain High School; and
- Town recreation facilities & pool.

Focus group attendees identified “priority” routes for improvement, which included the downtown area, Skyland Drive, NC 107, and the athletic fields near Smoky Mountain High School. The NC 107 corridor south/east of US 23 business was also identified as an area of high concern for pedestrians, as sidewalks exist along only one side of the road.

In addition to particular routes and activity centers, focus group participants helped identify design goals for pedestrian facilities in Sylva. 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 downtown area; a loop walking route along US 23 business and Skyland Drive, connecting to the Hospital area; reducing driveway access points along NC 107; getting to Mark Watson Park; the need to provide for multi-modal uses yet minimize modal conflicts; balance maintenance and safety requirements; and pursue projects in ways that will overcome the Town’s terrain challenges.

The more specific design considerations that participants identified included: consider drainage issues and look for alternatives to curb and gutter; identify ways to strategically acquire right-of-way and easements for construction of pedestrian facilities; coordinate with NCDOT; decrease the number of driveways along commercial corridors to reduce exposure to pedestrians; and build sidewalks of an adequate width to correspond to usage, recognizing that one size fits all is not sufficient.

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.

- Lack of sufficient right-of-way;
- Funding limitations;
- Maintenance of existing sidewalks;
- Following state and national legislation;
- Good, thoughtful planning; and

- Diversity of project locations to serve all residents.

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

Jackson County Transit

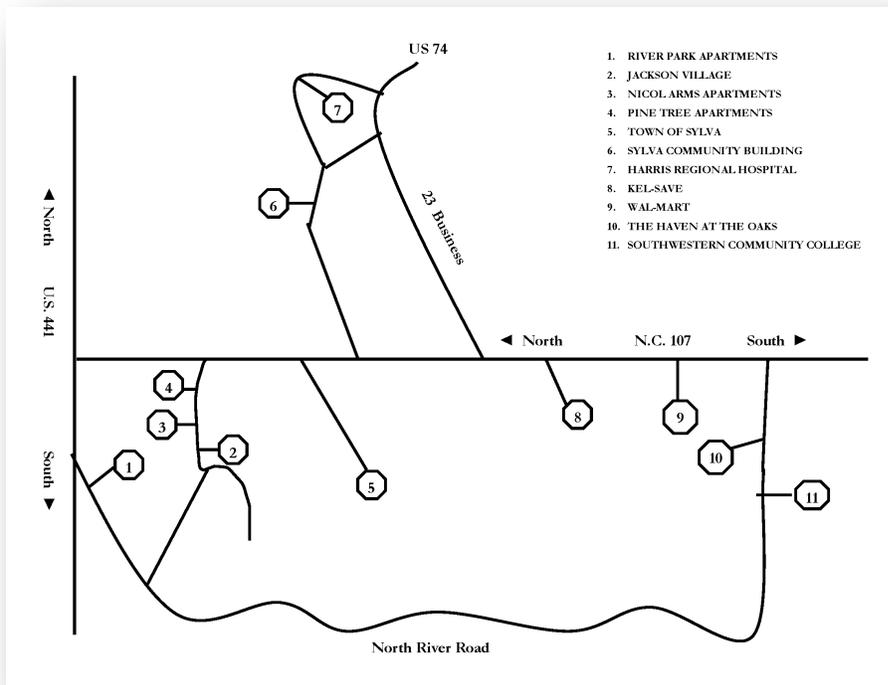
As the Sylva area has grown, so has the demand for more transportation services. Through the County, Jackson County Transit is organized as a fully coordinated, public transportation system and operates as a branch of the County Government.

Jackson County Transit provides transportation for human service agencies, the elderly, people with disabilities, and the general public and offers deviated fixed routes, paratransit service, and a demand response service between 7:00 a.m. and 5:00 p.m. Monday through Friday. Limited service is available to Asheville, Waynesville, Franklin and Bryson City.

Of most relevance to pedestrian planning in Sylva is the Jackson Trolley, which is a deviated fixed route serving the Sylva-Dillsboro-

Webster areas, operating Monday through Friday from 7:00 a.m. until 6:00 p.m. The service includes 11 fixed bus stops along the route, but will serve customers in on local streets in neighborhoods or at businesses along the main route. The route is shown at left. The Plan recommends bus shelters and paved pads at two locations — downtown and along NC 107.

Figure 2-1: Jackson County Transit's Jackson Trolley Route



Section 3: Policy & Plan Review

Sylva's relevant planning and policy documents were reviewed to identify their particular relevance to the current and future pedestrian system within the Town of Sylva. In reviewing these policies and plans, the pedestrian system related aspects can help identify gaps in the planning framework and help identify potential modifications to existing plans and policies or add to them. A summary of these plans is contained below.

Sylva Smart Growth Plan (2005):

The Town of Sylva's Smart Growth Plan is a short, 15-page document that begins to explore the commercial, residential, and environmental balance of the Town. There are 12 overarching goals for future sustainable development (residential, commercial, industrial), transportation inter-connectivity, and the assessment of existing infrastructure.

This plan identifies two corridors in particular that have the highest need for review based on their development patterns: the Highway 107 corridor and the US 23/74 Bypass and Business Corridor. The focus will be to enhance and encourage connectivity, bicycle and pedestrian treatments, access management, and safety. There are three action items listed at the end of the document that were set to be completed in 2010. An update on the below actions could be the starting point for the next Smart Growth Plan:

- Within five years, comprehensive plans for the primary (Highway 107) and secondary (US 23/74) areas should be complete;
- Zoning and appropriate land development standards shall be identified and developed prior to formal adoption of ETJ ordinance;
- Infrastructure assessments and projected expansion/improvement projects shall be identified.

Sylva Subdivision Regulations (2009):

The outcomes of these subdivision regulations are working towards achieving sustainable development. They are:

- Encourage economically sound and stable development in the town;
- Ensure the timely provision and coordination of required streets and highways, utilities and other facilities and services to new land developments;

- Ensure adequate provision of safe and convenient traffic access and circulation;
- Ensure provision of needed community open spaces in new land developments through the dedication or reservation of land for recreational, educational and other public purposes or the provision of funds in lieu of dedication;
- Ensure, in general, the wise and timely development of new areas, in harmony with the land development plan and other official plans of the town; and
- Ensure accurate public records of land ownership, to facilitate land ownership transfer, the effective conduct of public and private business and the protection of private property rights.

Road standards for subdivisions are addressed in Article 3 - Section 3.2. Some of the key regulations that emerge in this section include: subdivision roads shall be designed and built according to the standards in the North Carolina Department of Transportation's Subdivision Roads, Minimum Construction Standards; when feasible and desirable, access will be provided between subdivisions to aid egress and ingress and maximize traffic flow; when feasible or practical, collector roads or reverse frontage roads will be provided parallel to arterials or thoroughfares and; subdivision roads shall conform to the thoroughfare plan, comprehensive transportation plan, or any other plan related to transportation patterns.

Other elements that enhance community character and livability in the regulations include: appropriate lot sizes to maximize density; separation of lots from traffic arteries; land within the subdivision that is not being used for structures, vehicular or pedestrian traffic, or for other approved landscaping shall be provided with grass or other ground cover and; it is required that part of the subdivision site, which is not devoted to lots, associated roads, or utilities is to be set aside as usable open space.

Sylva Zoning Ordinance:

This ordinance describes the land use and development standards for the Town of Sylva, with the intent of preserving the social, economic, cultural, historic and aesthetic conditions of the town. Much of the ordinance focuses on the different district regulations (residential, business, government, industrial, etc). There is mention of sidewalks in Section 205.1, the B-2 and B-3 Business Districts. It states that sidewalks shall be constructed the full length of a parcel,

developed for, or changed to commercial use along public thoroughfares.

There is also mention in Section 206.1, the Professional Business District (PB). It states that sidewalks/walkways, complying with Federal and State Accessibility Standards, shall be provided for all new development and existing development converted to a permitted use. The Planned Unit Development Overlay in Article 1100 allows for Residential Planned Unit Developments and Mixed Use Planned Unit Developments, which is meant to promote higher building densities. In the residential units, pedestrian and bicycle path shall be designed to minimize conflicts between vehicle and pedestrian traffic. Sidewalks and pedestrian ways shall be designed and constructed in accordance with NCDOT Traditional Neighborhood Development Guidelines.

In the mixed use units, internal streets shall be designed and constructed using the NCDOT Traditional Neighborhood Development Guidelines and Subdivision Roads Minimum Construction Standards and shall contain: pedestrian zone area, travel lane area, center medians if any, and on-street parking.

Sylva Street Plan

The Town of Sylva Street Plan has not been adopted and consists mainly of a series of pictures and maps. The first part of the plan shows the preferred Sylva-Dillsboro Southern Loop, which was chosen based on a feasibility study and, at the time of this Plan, was awaiting the outcomes of other studies in the region.

The second part of the Plan looks at the current transportation system, mainly focused on Highway 107 and the US 23 Business Corridors. It was estimated that there are potentially 39,000 trips going through Sylva a day for reasons of business, recreation, industrial, etc. The main attractors in the town are the Wal-Mart, the hospital, the justice center, the downtown area, public schools, SCC, and WCU (which is closeby).

With many of the above-mentioned activities clustered on or around NC 107 and US 23 Business, there needs to be efficient ways to access these locations. Currently, there is not a lot of connectivity on the secondary roads, so this plan looks at ways to connect some of those streets, making it more efficient for people to travel to the activity centers.

Jackson County Greenways Master Plan (2009)

In 2009, the Jackson County Greenway Advisory Committee formed in order to take a holistic approach towards conservation, recreation, and sustainable development. The goals of the Greenway Committee were to accomplish the following tasks:

- 1) Identify pedestrian, cyclist and commuter needs through public input and participation;
- 2) Collect a comprehensive list of facilities in need of pedestrian and bicycle facilities;
- 3) Prioritize the needs of the county and determine feasibility and potential funding for projects;
- 4) Implement design and classification standards which can be used as resources for future county facilities;
- 5) Identify recommended policy changes and projects which would be beneficial to the needs of conservation, recreation and preservation; and
- 6) Maintain strong public support for current and future greenway projects and planning.

This document is a collaborative effort between the towns of Sylva, Dillsboro, and Webster as well as the Village of Forest Hills and the Cashiers Village Council. It focuses on finding ways to connect trails, on-road facilities, multi-use trails, and many other types of greenways in this geographic area. In addition, the planning process sought feedback and input on transportation needs, such as sidewalks and on-road bicycle lanes, which was coordinated with the Jackson County Transportation Task Force (JCTTF) for adoption into the bicycle and pedestrian component of their Comprehensive Transportation Plan.

Utilizing a robust public involvement process, the Plan details how the Greenways Committee and engaged citizens created an inventory of key locations for linkages, such as trailheads, parking areas, playgrounds, and other amenities. From there, they took an inventory of conservation, transportation, and recreation plans, which fed into a prioritization list of both on-road and off-road needs. Table 3-1 includes projects in or related to the Town of Sylva.

A key underlying goal of this process was to make every effort to accommodate, connect to, and maintain design standards throughout each jurisdiction, for each project. Coordination at all levels on project design, development status, construction and maintenance will help provide a comprehensive system through and between each community and municipality.

Some of the universal policy recommendations for the on-road projects consisted of bicycle-friendly facility design, such as rumble strips, storm drain grates, curb access, shoulder widths, and others. Other recommendations were slower speed limits, designation of bicycle/vehicle shared lanes, and other ways to encourage responsible ridership and vehicle management. It is recommended that each municipal and county board become familiar with these topics and encourage bicycle-friendly road design, planning and land use to the greatest extent possible. The North Carolina Department of Transportation Complete Streets Policy (http://www.bytrain.org/fra/general/ncdot_streets_policy.pdf) and the FHWA Guide to Bicycling and Walking for North Carolina should also be considered prior to planning or implementing any on-road projects.

Table 3-1: Sylva-specific Projects Identified in the Greenways Master Plan

Facility Description	Facility Type
<u>Greenways Master Plan Recommendations</u>	
Tuckasegee River from Webster to Rogers Road Area	Multi-Use Trail
Behind NC 107 strip, from Lowe's/County facilities area to downtown Sylva	Off-Road Paved Trail
Rails to/with Trails on RR bed from Sylva to Dillsboro and onto Whittier area	Multi-Use Trail
Mountain bike trails in Pinnacle Park	Mountain Bike
Rails to/with Trails section from Sylva to Balsam/Waynesville	Multi-Use Trail
Construct the Tuckasegee River Greenway between Sylva and Cullowhee	Multi-Use Trail
Sylva-Dillsboro greenway behind Burger Shack/Harold's, across Shuler rental to Monteith, up Scotts Creek	Off-Road Trail
Loop trail at County complex	Loop/Destination
Mica Mine history trail at Mineral Springs Drive	Off-Road Trail
Pinnacle Park connections to Parkway	Mtn. Biking/Hiking
Source: Jackson County Greenways Master Plan (2009)	

Jackson County Comprehensive Transportation Plan (2009):

This plan consists of various road projects throughout the county and the transportation issues they face. Each project details the problem statement, a project description, and supporting information (which includes items such as history of the project, land use functions, multi-modal considerations, linkages to other county plans, etc). The *multi-modal considerations* section recommends the potential sidewalk, bicycle lane, or greenway improvements for each project. Table 3-2 includes projects in or related to the Town of Sylva.

Table 3-1: Sylva-specific Projects Identified in the Comprehensive Transportation Plan

Facility Description	Facility Type
Comprehensive Transportation Plan Recommendations	
Harris Regional Hospital to Sylva on Old Asheville Highway	Sidewalk Multi-Use Trail/Sidewalk Sidewalk Sidewalk Sidewalk Crossing
Cope Creek from US 74 to US 23	
End of Justice Center sidewalk across to the new Post Office	
Completion of system along both sides of NC 107 from Fairview to downtown Sylva	
Completion of system along both sides of Main Street and US 23 Business in downtown	
Crosswalks with traffic lights or other pedestrian safety measures at US 23/ NC 107 intersection and along US 23 Business	Crossing
Source: Jackson County Comprehensive Transportation Plan (2009)	

Other relevant policies and design standards from state and national sources can be found at the following links:

- NCDOT Pedestrian Policy Guidelines:
<http://www.ncdot.gov/templates/download/external.html?pdf=http%3A//www.ncdot.gov/doh/preconstruct/altern//value/manuals/ppm/ppm28/ppm28-1.pdf>
- NCDOT Greenway Policy:
http://www.ncdot.gov/templates/download/external.html?pdf=http%3A//www.ncdot.gov/bikeped/download/bikeped_laws_Greenway_Admin_Action.pdf
- NCDOT Board of Transportation Resolution for Bicycling and Walking:
http://www.ncdot.org/transit/bicycle/laws/laws_resolution.html
- United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations (March 2010):
http://www.fhwa.dot.gov/environment/bikeped/policy_accom.htm
- FHWA Policy for Mainstreaming Nonmotorized Transportation (FHWA Guidance – Bicycling and Pedestrian Provision of Federal Transportation Legislation) -
<http://www.fhwa.dot.gov/environment/bikeped/bp-guid.htm>

Section 4: Project Recommendations

The project recommendations for the Sylva Pedestrian Plan were developed through a series of planning steps aimed at achieving a broad-based level of input from town officials, residents, business owners, other stakeholders and the North Carolina Department of Transportation.

These steps included:

- A review of the Town of Sylva's existing pedestrian facilities by the project consultants;
- Initial feedback from the Pedestrian Plan Steering Committee;
- Identification of projects from focus groups;
- Input from citizens through the Greening up the Mountains Festival and an online survey; and
- A detailed discussion with Town of Sylva, NCDOT, Southwestern Commission and Jackson County Recreation & Parks Department staff.

In May 2010, the Pedestrian Plan Steering Committee convened to review the candidate list of potential projects and recommend prioritization factors for evaluating each project. It was determined by the committee that the needs of the Town of Sylva were such that a broad-based prioritization method be discussed in order to slot projects into short-, medium-, and long-term priorities, recognizing that some medium- and long-term projects may be accomplished through redevelopment of properties and other opportunistic construction projects by the Town of Sylva or NCDOT. The short-term priorities were intended to reflect those most needed projects in relation to those that were also seen as having a strong possibility of being completed shortly after plan adoption. In contrast, the committee prioritized long-term projects as those that were seen as cost-prohibitive for current town budget and grant pursuits, or required more complex strategies to achieve implementation (e.g. significant right-of-way constraints along NC 107 and Skyland Drive) or required notable contribution from developers or other outside funding sources.

The cost estimates developed for the projects below are based on planning-level assumptions and unit costs (in 2009 dollars) provided by NCDOT, the Town of Sylva and other pedestrian plans in the state of North Carolina. Without devoting significant resources to conceptual design and project alternatives, it is difficult within a planning exercise to develop detailed cost estimates. Further, the nature of pedestrian improvements increases the potential variability in what will ultimately be the real costs of these projects.

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN

SECTION 5: PURSUING PARTNERSHIPS & PROGRAMS

The Town of Sylva and NCDOT can reduce their cost exposure within these projects through:

- Requirements levied on new development;
- Opportunistic right-of-way purchases and construction;
- Consideration of low impact design alternatives, including minimizing use of curb and gutter; and
- Acquisition of easements to reduce land purchase costs.

Short-Term Projects

Projects identified as short-term are intended to reflect both a high priority for the Town of Sylva and an opportunity to identify project partners and funding sources over the next seven to 10 years. Some projects are already being pursued with NCDOT through annual requests through the Division 14 Operations budget while others are being proactively planned for by the Town of Sylva and other area interests. Note: Parenthetical reference denotes project number in the Corridors map ("C") or Intersections map ("I"):

US Highway 23 Business, Savannah Dr. to Mark Watson Park (C-10)		Cost: \$25,000
	<u>Recommended Improvements</u>	<u>Influences</u>
	<ul style="list-style-type: none"> • Sidewalks along south side • Project is in progress through Town of Sylva • Construction expected in 2010 (to bid May 2010) • Sidewalk stops at park with proposed trail through park 	<ul style="list-style-type: none"> • Ball field • Library • Mark Watson Park
<i>Responsible Agencies: Town of Sylva, Jackson County grant, NCDOT</i>		Length: 1,000 ft.

Downtown Pedestrian Improvements: Main Street & Mill Street (C-9)		Cost: \$95,000
	<u>Recommended Improvements</u>	<u>Influences</u>
	<ul style="list-style-type: none"> • Fill sidewalk gaps & upgrade existing sidewalks <ul style="list-style-type: none"> - Mill St, Spring to Keener gap - Main St, short gap near Mill intersection (consider on-street striping for sidewalk) • Pedestrian access to courthouse via Keener from Main Street • New signal at Spring & Mill installed in 2010 • Install transit shelter and pad for Jackson County Transit in downtown area (Landis/Main preferred) • Fix problem sidewalks where cracking or heaving has occurred. 	<ul style="list-style-type: none"> • Downtown commercial area • New library • Poteet Park • Pool • Pavilion • Bridge Park • Public parking • Churches
<i>Responsible Agencies: Town of Sylva, NCDOT, Downtown Sylva Association</i>		Length: 2,000 ft.

Downtown Pedestrian Improvements: Landis & Mill Intersection (I-7)		Cost: \$45,000
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> • Landis & Mill crossing from parking lot with signal, including upgrades • New curb ramp on north side • Crosswalk from stairway to north side 	<u>Influences</u> <ul style="list-style-type: none"> • Downtown • Library • Poteet Park/Pool • Pavilion / Park • Public parking
		<u>Constraints</u> <ul style="list-style-type: none"> • Right-of-way • Railroad tracks
<i>Responsible Agencies: Town of Sylva, NCDOT, Downtown Sylva Association</i>		Length: N/A

Grindstaff Cove Road, Bridge #363 (C-17)		Cost: \$12,000
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> • Delineation of pedestrian walkway along excess width of the bridge to connect sidewalks. • Crosswalk addition at Mill Street • Railroad crossing upgrade for pedestrian access. 	<u>Influences</u> <ul style="list-style-type: none"> • Downtown Sylva • New library • Churches
		<u>Constraints</u> <ul style="list-style-type: none"> • None
<i>Responsible Agencies: NCDOT, Town of Sylva</i>		Length: N/A

Jackson County Justice and Administration Building Driveway (C-8)		Cost: \$35,000
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> • Sidewalk ends after about 100ft into office complex – there is curb and gutter • Grade an issue • Walking/sidewalk (picnic) area outside facility • Planned intersection improvement in Jackson County CTP • Crosswalk to Jackson Plaza • Signal or Roundabout in CTP 	<u>Influences</u> <ul style="list-style-type: none"> • County office buildings • Jackson Plaza • Nearby residential areas • Post Office
		<u>Constraints</u> <ul style="list-style-type: none"> • County land • Terrain
<i>Responsible Agencies: NCDOT, Jackson County, Town of Sylva</i>		Length: 1,000 ft.

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN

SECTION 5: PURSUING PARTNERSHIPS & PROGRAMS

Jackson Plaza Driveway (C-7)		Cost: \$25,000
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> • Sidewalks from Grindstaff Cove to parking lot of plaza • Pursue through re-development requirements • Crosswalk / pedestrian signal through intersection improvements identified in Jackson County CTP • Sylva was planning to take control of access road in exchange for improvements of sidewalks from developer 	<u>Influences</u> <ul style="list-style-type: none"> • Post Office • Bowling Alley • Potentially private development
	<p><i>Responsible Agencies: Developer, Town of Sylva</i></p>	<u>Constraints</u> <ul style="list-style-type: none"> • Private property • Terrain
		Length: 750 ft.

NC 107 and Wal-Mart Entry Intersection (I-4)		Cost: \$15,000
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> • Include crosswalk and pedestrian signals on Wal-Mart side to connect existing sidewalks • Include crosswalk on one leg of 107 to connect to adjacent entry road • Upgrade with future NC 107 sidewalks • Include sidewalk or pedestrian way from 107 to Wal-Mart entry (currently stops at entry road to shopping plaza) • Wal-Mart entry crosswalk needs to be re-designed to be in front of stop bar 	<u>Influences</u> <ul style="list-style-type: none"> • Wal-Mart • Future hotel • Restaurants
	<p><i>Responsible Agencies: NCDOT, Town of Sylva</i></p>	<u>Constraints</u> <ul style="list-style-type: none"> • Private property • Right-of-way • Terrain
		Length: N/A

NC 107 and US 23 Business Intersection (I-3)		Cost: \$35,000
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> • Funded project for signal upgrade to install countdown pedestrian signals on east leg to cross Sunrise Park leg • Small construction project by Division 14 • Construction expected by 2011 	<u>Influences</u> <ul style="list-style-type: none"> • Intersection of 2 Highways • Area businesses with parking access
	<p><i>Responsible Agencies: NCDOT, Town of Sylva</i></p>	<u>Constraints</u> <ul style="list-style-type: none"> • Right-of-way
		Length: N/A

Medium-Term Projects

Projects identified for mid-range improvements are generally considered of secondary priority to the town in terms of feasibility and practicality of completing without major funding sources already identified. These projects are intended to be pursued and completed over the next seven to 15 years. The pace of development along certain corridors, funding constraints, and grant opportunities will be a major driver of the ability of the Town of Sylva to deliver these projects within this timeframe.

US Highway 23 Business & Skyland Drive Intersection (I-1)		Cost: \$35,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Add crosswalks on south and west legs • Install countdown pedestrian signals • Upgrade of curb ramps to ADA standards • Refuge island on US 23 Business • Sylva may submit formal request to Division 14 for inclusion in annual list of upgrades. • Jackson County CTP calls for boulevard treatment on US 23 Business. 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Shopping area and restaurants • Movie theater <p><u>Constraints</u></p> <ul style="list-style-type: none"> • Right-of-way • Turning movements
	<p><i>Responsible Agencies: NCDOT, Town of Sylva</i></p>	<p>Length: N/A</p>

Municipal Dr. / Central Dr., Grindstaff Cove to Chipper Curve (C-16)		Cost: \$90,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Sidewalks along south side • Sidewalks existing along portion of street, including alongside Town Hall building • Retaining wall constructed with accommodation for future sidewalk 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Town Hall • Rec Building • Ending near downtown (Mill & Main Sts.) • Poteet Park <p><u>Constraints</u></p> <ul style="list-style-type: none"> • Right-of-way • Existing building • Terrain
	<p><i>Responsible Agencies: Town of Sylva, Developers</i></p>	<p>Length: 0.5 miles</p>

Savannah Dr., Keener St. to Cowee St. (C-13)		Cost: \$55,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Fix problem areas on existing sidewalks • Difficult terrain past Cowee St. to Elm St. • Improve stairway to Mark Watson Park 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Residential areas • Mark Watson Park • Area recreation • New library <p><u>Constraints</u></p> <ul style="list-style-type: none"> • Existing buildings • Right-of-way • Terrain
	<p><i>Responsible Agencies: Town of Sylva, Jackson County</i></p>	<p>Length: 0.4 miles</p>

Savannah Dr., US Highway 23 Business to Nicol Arms Rd. (C-12)		Cost: \$ 30,000 up to \$150,000
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> • Sidewalks • Land around Nicol Arms looks to be approved for development • Possible sidewalk extension to Winterhaven Dr. • Costs vary based on need for curb and gutter. 	<u>Influences</u> <ul style="list-style-type: none"> • Future development • Residential areas • Shopping center
	<u>Constraints</u> <ul style="list-style-type: none"> • Right-of-way 	Length: 1,300 ft.
Responsible Agencies: NCDOT, Town of Sylva		

Skyland Dr. from Chipper Curve Road to US 23 – Business (C-5)		Cost: \$400,000
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> • Sidewalks or separate pedestrian path • NCDOT interested in contiguous expansion to make a complete project • Potential for non-curbed sections with guardrail separation • Estimate based on project without need for curb and gutter. • Convert Raymond Street bridge to pedestrian/bike only. 	<u>Influences</u> <ul style="list-style-type: none"> • Business areas at both ends of Skyland Dr.
	<u>Constraints</u> <ul style="list-style-type: none"> • Existing building • Railroad tracks • Right-of-way 	Length: 0.7 miles
Responsible Agencies: NCDOT, Town of Sylva		

Long-Term Projects

Projects identified for the Town of Sylva that are slotted into the Long-Term Priority category are a mix of projects seen as a high priority but have other influences that prohibit their short-term implementation, primarily major funding availability. It is anticipated that these projects will be constructed 12 to 20 years from adoption of the Pedestrian Plan.

Right-of-way constraints, planned major corridor investments and topography may also influence the schedule and cost of these projects. Despite being identified as long-term, these projects should still be pursued by the Town of Sylva through requirements to construct spot improvements or segments along these corridors either through partnerships or regulations on new development. Collectively, such strategies can propel these projects into more short-term status if major changes were to occur along these corridors.

Future planning efforts, corridor-specific plans, comprehensive plans and updates to this and other non-motorized transportation plans, should consider these projects within the context of these future plans and determine their continued relevance to the Town of Sylva.

US Highway 23 Business from Downtown to Hospital Rd. (C-4)		Cost: \$520,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Sidewalks along both sides long-term. • West side as near-term strategy as east side is not currently within town limits • Jackson County CTP calls for boulevard treatment upgrade • Add crosswalks, curb ramps, and ped. Signals at signalized intersections • Install sidewalks on both sides of new bridges over Scotts Creek when replaced by NCDOT. • Re-align crosswalk at Jackson Paper • Replace existing problems areas where sidewalks are cracking or heaving. 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Shopping centers • Hospital • Medical parks <p><u>Constraints</u></p> <ul style="list-style-type: none"> • Right-of-way • Terrain • Existing utilities
<p>Responsible Agencies: NCDOT, Town of Sylva, Southwestern Commission, Developers</p>		<p>Length: 0.5 miles</p>

Chipper Curve Rd. from Raymond St. to Municipal Dr. (C-6)		Cost: \$450,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Greenway or sidepath • Consider only from Municipal to Raymond due to constraint issues • Convert Raymond Street to pedestrian only (possible ped-only crossing of railroad) • Coordinate with implementation of County's Greenway Master Plan 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Bryson Park • Connection to downtown • Truck traffic • Popular bicycle route <p><u>Constraints</u></p> <ul style="list-style-type: none"> • Existing structures • Right-of-way • Terrain
	<p><i>Responsible Agencies: Jackson County, Town of Sylva</i></p>	

Cope Creek Sidewalks from NC 107 – Slo Gait Lane (C-2)		Cost: \$135,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Sidewalk/wide shoulder could be put along west side of Cope Creek Rd. • New road section may preclude it in some sections • Requires agreement from County to maintain future sidewalks • Costs assume rural section 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Office Park • Residential (new development 1 mile north of NC 107) <p><u>Constraints</u></p> <ul style="list-style-type: none"> • Right-of-way • Terrain
	<p><i>Responsible Agencies: NCDOT, Jackson County, Developers</i></p>	

Fairview Ave. Sidepath/Multi-Use Trail (C-15)		Cost: \$175,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Grade difference between road and creek more conducive to greenway (on school side) near ball fields. • Pedestrian improvements at NC 107/Fairview intersection to include: crosswalks on two legs of intersection, curb ramps, ped signals, and potential relocation of utility/signal poles 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Ball fields • School • Shopping Center on far side of NC 107 • Future placement of Mill Creek Greenway
	<p><i>Responsible Agencies: Jackson County, NCDOT, Schools</i></p>	

Hospital Road from Business 23 to Skyland Dr. (C-11)		Cost: \$650,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Sidewalks, but curbing is only in some places • Terrain & horizontal curve issues • Right of Way Issues • Scotts Creek bridge is being replaced (sidewalks?) 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Hospital • Board of Education • DPH • County Building
	<p><i>Responsible Agencies: NCDOT, Town of Sylva, Developers</i></p>	

County Complex Entry Road on NC 116 & Loop Walking Trail (C-1) Cost: \$30,000



Recommended Improvements

- Complete the sidewalk connectivity in housing area and connect it to senior services building
- Add sidewalks from NC 116 up to residential and county building – curb and gutter is already in place
- Add crosswalk at bottom on complex, crossing NC 116 to access sidewalk and shopping center on other side
- Possible crosswalk at Lowe's/Ingle's driveways

Influences

- County Building
- Social Services
- Department on Aging
- Senior Housing Community
- Shopping Center Close by

Responsible Agencies: Jackson County, Town of Sylva, Town of Webster

Length: 1,000 ft.

NC 107 Sidewalks, From US 23 Business to NC 116 (C-3) Cost:\$1.25 million



Recommended Improvements

- Add sidewalks along the north side of NC 107
- Includes upgrade of curb ramps to meet ADA requirements
- Installation of crosswalks at signalized intersections
- Town of Sylva / NCDOT should pursue consolidation of driveways to reduce conflicts
- Costs assume major right-of-way acquisition if not acquired through redevelopment
- Bus stop shelter, pad and pedestrian connections along NC 107 and near Kel-Save Drugs / Radio Shack where there is an existing stop.

Influences

- NC 107 commercial corridor
- Smoky Mountain High School
- Limited right-of-way

Responsible Agencies: Town of Sylva, NCDOT, Developers

Length: 1.9 miles

NC 107& NC 116 Intersection (I-6) Cost: \$15,000



Recommended Improvements

- Consideration of flyover pedestrian bridge in Jackson County CTP (not considered in costs)
- Upgrade curb ramps for ADA compliance
- Install countdown pedestrian signals if adding sidewalks to north side of 107 (was in same SRTS application as Jones Street; NCDOT to consider separate project for countdown signals at NC 116)
- Install new crosswalk across high school driveway
- Sidewalks exist along 116

Influences

- Smoky Mountain High School
- Ingles/Lowes Shopping Center
- Fairview Elementary

Responsible Agencies: NCDOT, Town of Sylva

Length: N/A

TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN

SECTION 5: PURSUING PARTNERSHIPS & PROGRAMS

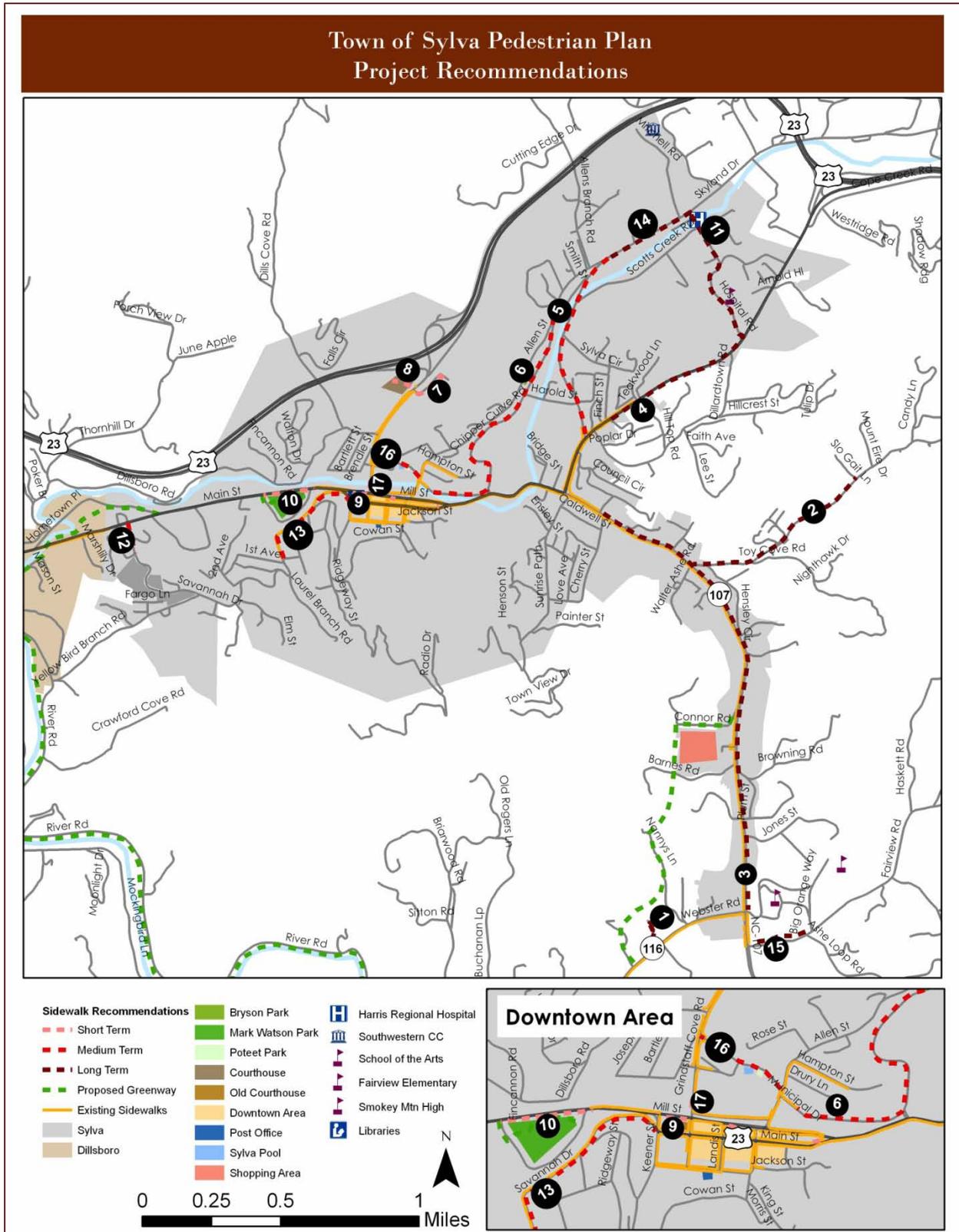
NC 107 & Jones Street Intersection (I-5)		Cost: \$15,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Consideration of flyover pedestrian bridge in Jackson County CTP (not considered in costs) • Modify sidewalks on south side of 107 for ADA compliance (cross slope driveway crossing) • North side of 107 – improve with sidewalks • Build sidewalks on Jones from 107 – connecting high school area with residential • Existing unfunded Safe Route to School request 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Back road to high school • Residential Area <p><u>Constraints</u></p> <ul style="list-style-type: none"> • Right-of-way • Utilities
	<p><i>Responsible Agencies: NCDOT, Town of Sylva</i></p>	

NC 107 & Cope Creek / Walter Ashe Intersection (I-2)		Cost: \$15,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • South side of NC107 – add ped. Signals and ADA compliant curb on southeast corner (pole there) • Crosswalk on one leg of 107 to connect to adjacent entry road • Install pedestrian signals crossing Walter Ashe Road 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Gap between signals on 107 with no crossing • Residential area <p><u>Constraints</u></p> <ul style="list-style-type: none"> • Right-of-way • Utilities
	<p><i>Responsible Agencies: NCDOT, Town of Sylva</i></p>	

Skyland Dr. from Hospital Rd. to Chipper Curve Road (C-14)		Cost: \$250,000
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> • Sidewalks <ul style="list-style-type: none"> - East side of road may be more suitable due to space between road and rail tracks - Bridge over Scotts Creek has adequate width • Rail along Skyland – potential for Rails to/with Trails (?) • NCDOT interested in contiguous expansion to make a complete project • Potential for non-curbed sections with guardrail separation • Costs assume no curb and gutter, limited right-of-way acquisition 	<p><u>Influences</u></p> <ul style="list-style-type: none"> • Business areas at both ends of Skyland Dr. • Rail right of way • Residential areas • County facilities • Popular bicycle route <p><u>Constraints</u></p> <ul style="list-style-type: none"> • Right-of-way • Utilities • Railroad
	<p><i>Responsible Agencies: NCDOT, Town of Sylva</i></p>	

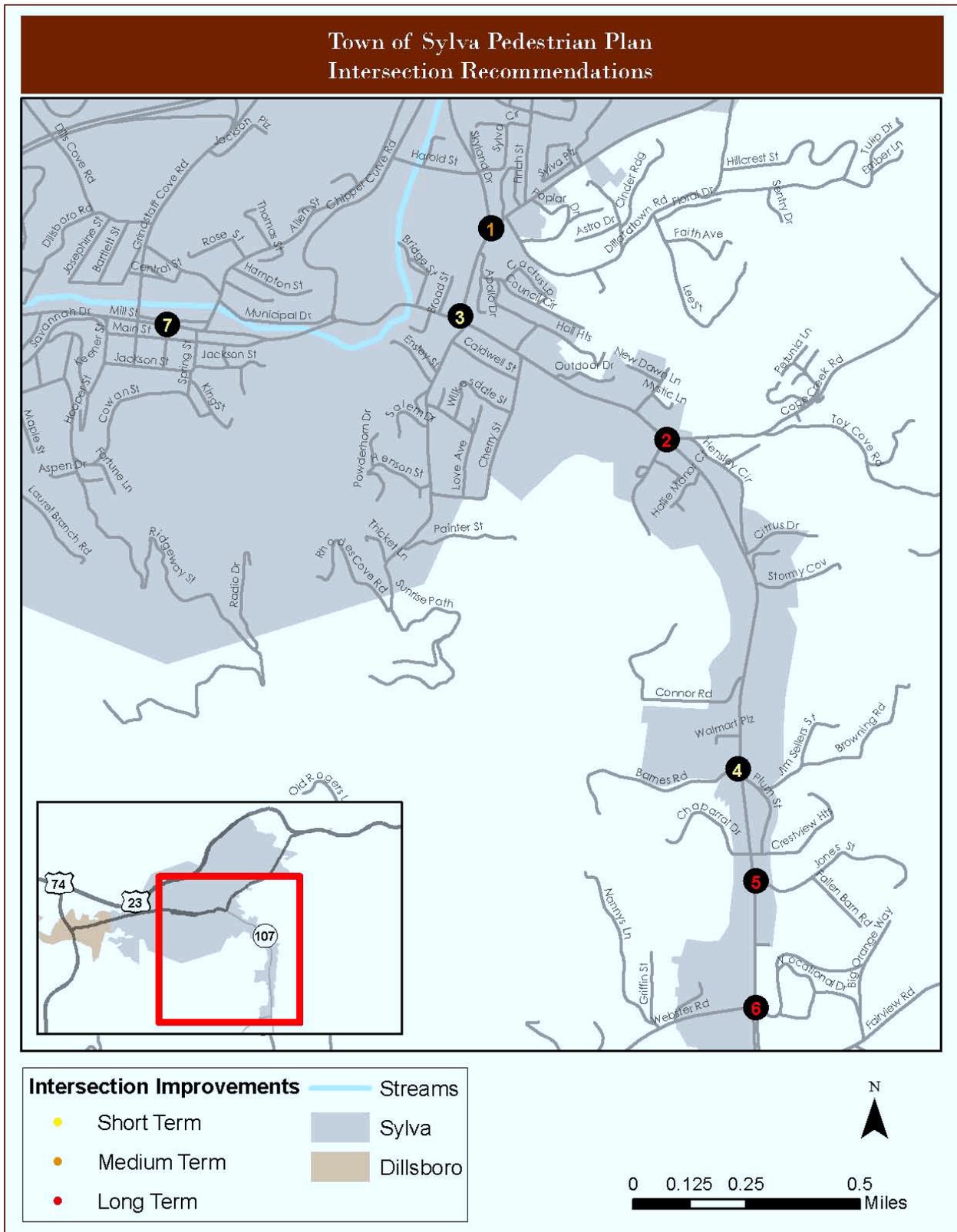
TOWN OF SYLVA COMPREHENSIVE PEDESTRIAN PLAN
SECTION 5: PURSUING PARTNERSHIPS & PROGRAMS

Figure 4-1: Project Recommendation – Corridors



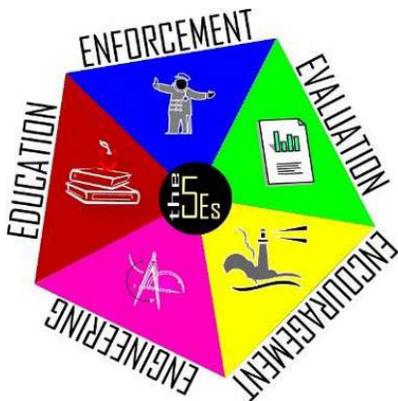
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SECTION 5: PURSUING PARTNERSHIPS & PROGRAMS

Figure 4-2: Project Recommendation - Intersections



Section 5: Pursuing Partnerships & Programs

The project recommendations contained in the Town of Sylva Comprehensive Pedestrian Plan are only one of a series of vital components that contribute to making a community more walkable. Throughout the steering committee meetings, focus groups and other public outreach efforts, there has been an underlying theme that also points the Town of Sylva toward several potential pedestrian-related programs that will help bolster the Town's pursuit of becoming a pedestrian-friendly community for residents and visitors.



There are a variety programs that should be explored to cultivate and support a pedestrian-friendly culture in Sylva. In the past, the Jackson County Health Department has promoted Active Living and walkability, but the planning process indicated these programs have not been active.

A pedestrian-friendly culture has several different characteristics, including:

- How motorists behave;
- How pedestrians behave;
- The attitude motorists and pedestrians have toward one another;
- The role of police and other law enforcement officials in enforcing pedestrian safety;
- How civic clubs, public interest groups and other organization contribute to the education of residents and visitors;
- The attitude of elected officials and other government representatives toward pedestrian initiatives; and
- How children are instructed and given examples on how to properly use sidewalks and greenways while on their feet or on their bicycle.

To address all of these elements, communities should pursue programs that are developed to fit within what is known as the "three E's" of pedestrian programming:

EDUCATION

ENCOURAGEMENT

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.

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.

This section contains several programs that have been identified throughout the state of North Carolina and the United States that correspond to what has been identified as pedestrian program-related needs for the Town of Sylva.

Exploring Partnership Opportunities

Strong partnerships between various local governments, organization and citizens groups are vital to achieving not only pedestrian programs but many of the projects identified for the Town of Sylva.

Education, encouragement and enforcement programs rely on these same partnerships, whether they are among departments within Town governments, nonprofit and civic organizations, the downtown association, business owners, developers, educational institutions and others. Several potential partners for the Town of Sylva to pursue during the course of the implementation of their pedestrian plan include:

- Bicycle shops & clubs;
- Business owners;
- Downtown Sylva Association;
- Jackson County Greenway Commission;
- Jackson County Health Department;
- Jackson County Recreation & Parks;
- Jackson County Schools ;
- Jackson County Sheriff’s Office;
- Jackson County Transit;
- Great Smoky Mountains & Jackson County Chamber of Commerce;

- Land Trust for the Little Tennessee;
- Parent Teacher Associations (PTAs);
- Kiwanis, Lions and Rotary Clubs;
- NC Department of Transportation, Division 14;
- Southwestern Community College;
- Southwestern Commission;
- Town of Dillsboro;
- Town of Sylva Police Department;
- Town of Sylva Public Works;
- Travel & Tourism Authority; and
- Western Carolina University.

Program Recommendations

Wayfinding Systems and Route Maps

The Town of Sylva has received a \$9,000 grant from Jackson County to develop a wayfinding system. It is the intent of the Town to organize a local committee to help identify locations for wayfinding systems.



Wayfinding systems can help eliminate visual clutter and direct motorists, pedestrians and bicyclists to their destination via the most appropriate route.

This effort is timely in that wayfinding has become a critical component for communities that rely on tourism as a major industry. These wayfinding systems provide visitors and residents with directional and distance information to major landmarks, parks and other local attractions. The enhancement of the Jackson County Courthouse for a new library, the new Town Pavilion on the south side of Scott's Creek, and the continued growth of downtown Sylva all create demand for a wayfinding system.

As the Town of Sylva pursues this system there are some key components that should be considered. Of utmost importance is striking a

balance between the wayfinding needs of motorists, pedestrians and bicyclists and whether or not a single set of signs can satisfy these needs. Motorists require larger signs with larger fonts to make wayfinding useful whereas pedestrian wayfinding signs should be at an appropriate height of 7 to 8 feet, with a font and orientation appropriate for pedestrian viewing.

The wayfinding system should also be complemented by corresponding route maps that can be made available at information kiosks, Town Hall and local businesses. The Town may offer sponsorships to local businesses to advertisement and

contribute to the cost of designing, printing and distributing the maps.

Construction of Priority Projects

The projects identified in the plan (Section 4) will require both programs and policies to be constructed. By pursuing construction through partnerships established by these programs and through strategies that can better align the Town for funding of these projects, the Town of Sylva can reduce the burden on the general fund of the Town.

Joint Town/County Pedestrian, Bicycle & Greenway Committee

Jackson County organized citizens from across the county to help develop their Greenways Master Plan. Several contributors to that group were also involved in the development of the Sylva Pedestrian Plan. It is recommended that the Town and County formalize this group and allow them to work toward joint efforts to enhance pedestrian facilities in the region. This committee should also include representatives from Dillsboro and Webster.

Members of the committee would provide input to the Town and County as to the course of implementation of the Greenway and Pedestrian Plans and a sounding board for elected officials to help guide 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. Town & County staff members should be appointed to liaison with the Committee and work to help coordinate bicycle and pedestrian planning and programming activities and implement recommendations of the Pedestrian & Greenway Plan.

Advisory Committee for Citizens with Mobility Impairments

Constructing and maintaining pedestrian facilities in a small town and mountain environment can be a challenging endeavor in order to provide for universal accessibility to residents and visitors. While there are several applicable federal laws guiding how project, programs and policies adhere to standards established through the Americans with Disabilities Act, the task of making programs compliant can be a daunting task. By organizing a local advisory group of citizens with mobility impairments, the Town of Sylva (perhaps jointly with the county and other towns nearby) can use this group as a sounding board to help inform local design practices and decision-making related to their needs.

The mobility-impaired are the most dependent users of the pedestrian transportation system, as they rely on sidewalks to access shopping, medical appointment and public transit. The growing needs of an aging population also require other special considerations.

With already-established efforts related to similar committees in the Town of Sylva and Jackson County, it is recommended that a joint committee be formed to help advise the implementation of the Pedestrian Plan, accommodations of mobility-impaired users of the system, Jackson County Transit, and other public facilities and services.

Create a Senior-Friendly Community

The growth in baby boomers entering retirement age has created new demands on transportation systems as retirees who originally envisioned a peaceful retirement in rural areas, mountainside homes and suburban communities are finding it difficult to find mobility options. The growth in urban dwellers at a retirement age in combination with the rural setting and nearby attractors for retirees has put Sylva in a favorable position to capitalize on this market by promoting itself as a senior-friendly community. Studies have also found that retirees enjoy being close to college towns and the types of services they provide.

The Town of Sylva should develop partnerships and marketing strategies with local tourism boards, real estate groups, the Town of Webster and Dillsboro, and Jackson County to promote the area as one that is friendly to seniors. The compact and relatively walkable nature of downtown Sylva provides a supportive environment for active seniors or those seeking that lifestyle.

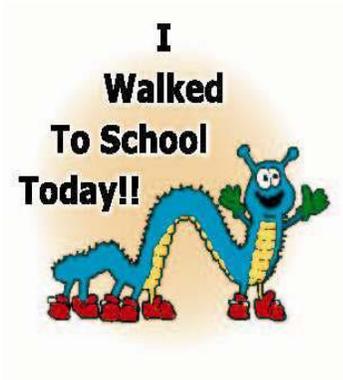
Safe Routes to School Program

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 and www.walktoschool.org.

The Town of Sylva and other interested agencies can contact the state Safe Routes to Schools Coordinator through the NCDOT Division of Transportation Mobility and Safety Traffic Management Unit (919-773-2800).

Pedestrian Safety Education Campaign

A pedestrian safety campaign can be a branded townwide effort involving multiple Town departments (e.g. Public Works, Police Department), Jackson County, 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 Town and/or County website for reference.

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 Sylva’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 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.

Traffic Enforcement

Many communities rely on a traffic enforcement unit of the local police or Sheriff's department to conduct periodic ticketing and speed 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 traffic pedestrian areas where drivers need to constantly be 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.

For North Carolina-specific laws, the NCDOT Division of Bicycle and Pedestrian Transportation provides the following resource:
<http://www.ncdot.gov/bikeped/lawspolicies/default.html>.

Pedestrian-related Transit Facilities

As noted in the existing conditions section, Jackson County Transit operates a fixed route bus service called the Jackson Trolley, which operates on one-hour headways and serves Dillsboro, Sylva and Webster. The Trolley service has 11 stops along the route and the stop in the downtown area and the one along NC 107 near the Kel-Save drug store and Radio Shack were specifically identified in the Pedestrian Plan for the addition of bus shelters and paved pads.

Beyond these identified improvements, Jackson County Transit and the Town of Sylva should explore partnership opportunities related to improving pedestrian facilities near these stops. Jackson County Transit has access to funding sources different from NCDOT and the Town of Sylva that may be able to contribute to the upgrading of sidewalks, curb ramps and paved landing areas adjacent to bus stops.

In 2009, the Federal Transit Administration began exploring a method that would allow certain transit funding programs to allow investment in pedestrian and bicycle facilities within designated catchment areas near transit stations or stops. These policies have not been finalized, but should be tracked by the Town of Sylva and Jackson County Transit to determine if there are opportunities in the future to pursue funding through FTA.

<http://edocket.access.gpo.gov/2009/pdf/E9-27240.pdf>

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 reevaluation of new needs. It is recommended that the Town of Sylva consider working with a citizen committee, such as the recommended joint Town/County Greenway/Pedestrian 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 accidents in and around Sylva;
- Participation in programs, such as those outlined above; and
- Maintaining a database of sidewalk, greenway & intersection improvements.

Section 6: Implementation - Action & Funding

A plan is only as good as the ability of the Town, its staff and elected officials, the community, and various stakeholders to implement that plan. While the recommendations, particularly for projects, contained in the Sylva Comprehensive Pedestrian Plan will have considerable costs, they are not insurmountable if the Town is able to devote resources to pursuing various funding and implementation strategies. This section summarizes key implementation aspects contained elsewhere in the plan and contains a detailed listed of potential state, local and federal funding sources to implement the Plan.

Implementation

The implementation steps below are intended to reflect key initiatives for the Town of Sylva to pursue; they do not fully encompass all recommendations contained in this plan. These implementation measures should serve as an annual benchmark to gauge the progress of the plan.

Pedestrian Facilities Design

Specific design considerations identified by participants in the planning process should be explored by the Town of Sylva to implement projects and reduce the cost exposure to the Town and taxpayers. Several design recommendations contained in Section 7 reflect these desires. These include:

- Consider drainage issues and look for alternatives to curb and gutter;
- Identify ways to strategically acquire right-of-way and easements for construction of pedestrian facilities;
- Coordinate with NCDOT to decrease the number of driveways along commercial corridors to reduce exposure to pedestrians; and
- Build sidewalks of an adequate width to correspond to usage, recognizing that one size fits all is not sufficient.

Pedestrian Facilities Maintenance

The Town of Sylva has pursued, where financially viable, the upgrade and replacement of sidewalks that have deteriorated due to age, weather, and day-to-day impacts of vehicles and trucks. The continued maintenance of existing sidewalks is just as important as adding new sidewalks. More importantly, preventive maintenance that also accounts for present-day ADA requirements should be a key influence on the location and type of maintenance conducted on pedestrian facilities. Several communities in the United States have rotating sidewalk replacement funds that focus on certain corridors or

neighborhoods on an annual basis to upgrade old sidewalks. Such a program, given appropriate funding, would be able to upgrade most of the existing sidewalks in the Town of Sylva in a matter of years.

Further, properties should be required to replace existing sidewalks on their frontage at the time of re-development or re-zoning to bring those pedestrian ways up to current standards. This is similar to the requirements of a building to be retrofitted to meet architectural standards for persons with disabilities; the public pedestrian realm should be treated in a similar manner.

Zoning Ordinance Update

The Town of Sylva should pursue an update to its zoning code and related ordinances to refine language and requirements to better reflect the needs of pedestrians within the community. This would include requiring sidewalk construction (or related contributions) on all streets where sidewalks are identified in this plan. It should also include, as noted above, requirements for replacement of existing sidewalks to conform to current standards. It should also reflect the needs identified in the Jackson County Comprehensive Transportation Plan and the County's Greenway Plan to be able to exact improvements or require, at minimum, setbacks or easements for future sidewalks or greenways.

Program & Partnership Support

While projects may take years to see through to implementation, many of the programs identified in Section 5 can be organized over the first 12 to 18 months after adoption of the plan. Specifically, the organization of advisory committees and implementation of pedestrian safety enforcement campaigns by the Police Department should be short-term initiatives. The formation of these committees can help the Town more strategically move forward with other project and program efforts.

Wayfinding System

Sylva has obtained a grant to help pursue implementation of a wayfinding system. A preliminary workshop was held in December 2010 to identify preliminary locations and sign content for the wayfinding system. Given the limited funding (approx. \$9,000), Sylva will likely have to pursue other grants or funding to implement the wayfinding system.



The intersection of Main and Walnut has space for a bus bench/shelter and will keep the bus stop out of the main travel lanes on Main Street.

Transit Facilities

The existing relationships between the Town of Sylva, Jackson County Transit, and NCDOT should continue to foster a high level of accessibility for transit riders. More specifically, a walk through downtown Sylva with JC Transit and NCDOT identified the northwest corner of the intersection of Walnut and Main as the preferred location for a downtown bus stop. This location appears to have adequate width and clear areas to install a bus bench and shelter and allow the bus to stop in the travel lane but not along a major thoroughfare.

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 pedestrian-friendly Sylva.

1) Adopt this Plan. Adoption of this Plan will be the first step to implementation for Sylva. Once adopted, the Plan should be forwarded to regional and state decision-makers, such as the Southwestern Commission, Jackson County Recreation & Parks, and NCDOT Division 14 office, for inclusion in a regional planning and development processes.

2) Form a Bicycle/Pedestrian & Greenways Advisory Committee. The pedestrian planning process has engaged many citizens in visioning and goal-setting for Sylva. Building on this momentum to keep citizens engaged in a permanent committee structure will allow continued citizen involvement in the Plan's implementation. This could be done in conjunction with the County's Greenways Advisory Committee.

3) Secure funding for the top priority projects. In order for Sylva 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 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. The Town of Sylva can also work to secure this funding through annual requests to NCDOT Division 14 and through the Transportation Improvement Program (TIP) process with the Southwestern Commission.

4) Begin work on top priority projects. 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 local projects to improve intersections and fill gaps in existing sidewalks through annual operating improvements funds provided to Division 14. Sylva should also seek other state, national or private funding sources for continued, long-term success in implementing the Plan.

5) 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 Sylva Pedestrian Plan should be incorporated into the future Comprehensive Transportation Plan updates, long-range transportation plans and comprehensive planning efforts by the Town of Sylva and Jackson County. The findings of this plan can also be used to inform the wayfinding project for downtown Sylva, which received grant funding and will be completed in 2010 and 2011.

6) 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.

Funding

It is important to identify both funding sources and potential partners for recommendations in order to maximize the funding opportunities available for the community. This section provides recommended partnerships and suggested funding sources that the Town should consider to assist with implementing the recommendations in this plan. Finally, this section provides a vision of the future for what Sylva should look like with the implementation of this Plan. This is a collection of grants, funding programs and municipal finance options.

For project recommendations, the Town already has several established funding sources and mechanisms, as well as strong partnerships with the North Carolina Department of Transportation. However, for program recommendations, the Town should consider more non-traditional partnerships and funding sources. The following paragraphs discuss these partnerships and funding sources.

Pedestrian-related physical improvement projects can often be the result of a variety of partnerships and coordinated efforts, with multiple funding sources. Generally, when one thinks of engineering construction projects, one usually thinks of the Town’s Public Works Department or the North Carolina Department of Transportation as potential partners and funding sources. However, there are other team members that could be considered when a pedestrian project is needed. For maintenance of greenways and sidewalks, the Town could partner with neighborhood and community groups, or establish trail volunteers. Near schools, the Town should work with the Jackson County School System and Recreations & Parks Department when constructing greenways, pedestrian crossings (mid-block or at intersections), and sidewalk access.

For pedestrian-related programs, often funding and partnerships must come from “outside the box” sources, and require the partnering of multiple organizations. For example, a Safe Routes to School Program will necessitate partnerships between, at the least, the School System, the Town, Parent-Teacher Associations, North Carolina Department of Transportation, the Police Department, and the Health Department. Although the Town can spear-head tasks such as town-specific educational materials, it should also consider coordinating with the Southwestern Commission, which may have materials that can be tailored to the Town’s needs.

Funding Options



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. The options detailed in this section are intended to be a menu that Sylva can evaluate for both public and political acceptance as the town pursues implementation of the plan.

A specific budget item is the most direct way to ensure that funding for pedestrian facilities is available, but often 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 section, 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 Sylva.

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.
- **Municipal Service District.** Municipalities have statutory authority to establish municipal service districts, to levy a property tax in the district additional to the town-wide 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.
- **Taxes.** Many communities have raised money through self-imposed increases in taxes and bonds. For example, Pinellas County residents in Florida voted to adopt a one-cent sales tax increase, which provided an additional \$5 million for the development of the overwhelmingly popular Pinellas Trail. Sales taxes have also been used in Allegheny County, Pennsylvania, and in Boulder, Colorado to fund open space projects. A gas tax is another method used by some municipalities to fund public improvements. A number of taxes provide direct or indirect funding for the operations of local governments. Some of them are:
 - **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.
 - **Property Tax.** Property taxes generally support a significant portion of a municipality's activities. However, the revenues from property taxes can also be used to pay debt service on

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

- **Excise Taxes.** Excise taxes are taxes on specific goods and services. These taxes require special legislation and the use of the funds generated through the tax are limited to specific uses. Examples include lodging, food, and beverage taxes that generate funds for promotion of tourism, and the gas tax that generates revenues for transportation related activities.
- **Occupancy Tax.** The NC General Assembly may grant 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.
- **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. While not carrying the long history of TIF actions as do other states like South Carolina, North Carolina can legally use this mechanism now.
- **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.

- **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. 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.
- **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.

- **General Obligation Bonds.** Cities, counties, and service districts generally are able to issue general obligation (G.O.) bonds that are secured by the full faith and credit of the entity. In this case, the local government issuing the bonds pledges to raise its property taxes, or use any other sources of revenue, to generate sufficient revenues to make the debt service payments on the bonds. A general obligation pledge is stronger than a revenue pledge, and thus may carry a lower interest rate than a revenue bond. Frequently, when local governments issue G.O. bonds for public enterprise improvements, the public enterprise will make the debt service payments on the G.O. bonds with revenues generated through the public entity's rates and charges. However, if those rate revenues are insufficient to make the debt payment, the local government is obligated to raise taxes or use other sources of revenue to make the payments. G.O. bonds distribute the costs of land acquisition and greenway development and make funds available for immediate purchases and projects. Voter approval is required.
- **Special Assessment Bonds.** Special assessment bonds are secured by a lien on the property that benefits by the improvements funded with the special assessment bond proceeds. Debt service payments on these bonds are funded through annual assessments to the property owners in the assessment area.
- **State Revolving Fund (SRF) Loans.** Initially funded with federal and state money, and continued by funds generated by repayment of earlier loans, State Revolving Funds (SRFs) provide low interest loans for local governments to fund water pollution control and water supply 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.

State Transportation Funding

Sylva 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. Most state-based sources are funded, in part, through Federal funding allocated to the state of North Carolina. For Federally-funded projects there are additional stipulations and regulations attached to such projects that drive-up the overall cost (when compared to locally-financed projects) and reduce the buying power of those funding sources by as much as 50% for pedestrian projects.

The North Carolina Department of Transportation (NCDOT) is the single largest source of funding available to Sylva 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 the State typically includes pedestrian facility construction only as part of a larger project. Some multi-use / greenway paths are funded as standalone projects. Overall, most pedestrian accommodations within the state are made as incidental improvements.

<http://www.ncdot.gov/performance/reform/>

- **In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT)** 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 historically had an annual budget of approximately six million dollars, although the level of this funding is subject to change depending on the deliberations of the NC Board of Transportation. 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.gov/bikeped/funding/>

■ **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:

- Bicycle and Pedestrian Facilities
- Bicycle and Pedestrian Safety
- Acquisition of Scenic Easements, Scenic or Historic Sites
- Scenic or Historic Highway Programs (including tourist or welcome centers)
- Landscaping and other Scenic Beautification
- Historic Preservation
- Rehabilitation of Historic Transportation Facilities
- Preservation of Abandoned Rail Corridors
- Control of Outdoor Advertising
- Archaeological Planning and Research
- Environmental Mitigation
- Transportation Museums

Funds are allocated based on an equity formula approved by the Board of Transportation. The formula is applied at the county level and aggregated to the regional level. Available fund amount varies. In previous Calls, the funds available ranged from \$10 million to \$22 million. The next call has not been scheduled. For more information, visit: www.ncdot.org/programs/Enhancement.

- **Spot Improvement Program** - The NCDOT Bicycle and Pedestrian Transportation Division currently budgets \$100,000/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.
- **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. 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/programs/Powell_Bill.
- **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 which have predominately been enforcement 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 2012 GHSP grant anytime until March 31, 2011, 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.

- **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 next allocation is pending reauthorization of the federal transportation act. 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, or contact the DBPT / NCDOT at (919) 329-8497.

- **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. Sylva 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.portal.hud.gov/portal/page/portal//HUD/program_offices/comm_planning

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.onencnaturally.org/pages/conservationtaxcredit.html.
- **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. In North Carolina, the program is administered by the Department of Environment and Natural Resources. For more information, visit: <http://ils.unc.edu/parkproject/lwcf/home1.html> or contact John Poole at (919) 715-2662 or by e-mail: John.Poole@ncdenr.gov.
- **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 January. For more information, visit: http://www.ncparks.gov/about/grants/trails_main.php.

- **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://www.ncparks.gov/about/trails_main.php. Applications are due during the month of January, however the current federal transportation program expires in 2010 and Congress has not reauthorized the six-year program.. For more information, call (919) 715-8699. Also see <http://www.fhwa.gov/environment/rectrails/>
- **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 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. 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 2010-2011 adopted state budget for North Carolina includes \$50 million for the Clean Water Management Trust Fund. 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/.

- **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. Grants range from \$1,000 to \$15,000. For more information, contact the NC Division of Forest Resources. For more information and a grant application, contact the NC Division of Forest Resources and/or visit http://www.dfr.state.nc.us/urban/urban_grant_overview.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 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 919-715-6101.

- **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. Local matching funds equal to 50 percent are required. For more information, see: [www.ncwater.org/Financial Assistance](http://www.ncwater.org/Financial_Assistance) or e-mail: Jeff.Bruton@ncdenr.org or call 919-715-0387.
- **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_grant_overview.htm.
- **Small 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, contact Gary.A.Dimmick@hud.gov or call him at (336) 547-4000 extension 2047 or visit www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin.
- **Physical Activity in the Built Environment Policy Initiative Grants Program.** Occasional grants appear on a non-recurring basis, such as this one sponsored by the NC Department of Public Health for a fifteen-month period beginning in Fiscal Year 2010-2011. These grants, based on availability of funds, will be awarded through a competitive application process to municipalities to develop policy initiatives that help shape state policy as it relates to physical activity and health. The Physical Activity and Nutrition (PAN) Branch in the North Carolina Division of Public Health will be responsible for the administration of these grant funds. Awards will be made to chartered municipalities of the State of North Carolina. Projects will be granted up to \$24,999. The final number of awards is based on

availability of funds. Funding for this Initiative comes from the American Recovery and Reinvestment Act (ARRA) award to North Carolina made by the Center for Disease Control and Prevention. For more information, visit www.eatsmartmovemorenc.com.

- **North Carolina Health and Wellness Trust Fund.** The NC Health and Wellness Trust Fund was created by the General Assembly as one of three entities to invest North Carolina's portion of the Tobacco Master Settlement Agreement. HWTF receives one-fourth of the state's tobacco settlement funds, which are paid in annual installments over a 25-year period. Fit Together, a partnership of the NC Health and Wellness Trust Fund (HWTF) and Blue Cross and Blue Shield of North Carolina (BCBSNC) 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.

Federal Funding Sources

Federal transportation dollars are used for a number of the funding programs listed in Section 6, 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. As noted previously, Federally-funded projects contains additional project development and construction requirements that result in longer timeframes for implementation and higher costs when compared to locally-funded projects. 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/>
- **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. For more information from the local USDA Service Center, visit: <http://www.rurdev.usda.gov/rbs/busp/rbeg.htm>.
- **Rivers, Trails and Conservation Assistance Program (RTCA).** The Rivers, Trails, and Conservation Assistance Program, also known as

the Rivers 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 improve access to and within federal lands. Congress designated \$83 million in fiscal year 2010 Public Lands Highways Discretionary funds for specific projects. Funding requests for future projects should be submitted by states as part of reauthorization of the federal transportation act. For information on how to apply, visit: <http://www.fhwa.dot.gov/discretionary/plhcurr3.cfm> or contact Anna Franzino at (202) 366-9488 or via e-mail: Anna.Franzino@dot.gov.

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. 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.

Very specific routes that make critical connections to place of business could 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 Sylva 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. Teenagers have complained about the lack of activities available to them in Sylva; making these outings fun can serve a dual purpose.
- **Private Foundations and Organizations.** Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are a few examples of private funding opportunities available in North Carolina.
- **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. 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/>.

- **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 The Trust for Public Land 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>.
- **Z. Smith Reynolds Foundation.** This Winston-Salem based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. The foundation has two grant cycles per year and generally does not fund land acquisition. However, the foundation may be able to support municipalities in other areas of greenways development. More information is available at www.zsf.org.
- **North Carolina Community Foundation.** The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for nonprofit organizations and institutions throughout the state. Based in Raleigh, North Carolina, the foundation also manages a number of community affiliates throughout North Carolina that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. In addition, the foundation manages various scholarship programs statewide. Web site: <http://nccommunityfoundation.org>.
- **National Trails Fund.** In 1998, the American Hiking Society created the National Trails Fund, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. Each year, 73 million people enjoy foot trails, yet many of our favorite trails need major repairs due to a \$200 million in badly needed maintenance. National Trails Fund grants give local organizations the resources

they need to secure access, volunteers, tools and materials to protect America's cherished public trails. 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. The National Trails Fund 2010 application has closed. For more information on future applications for the National Trails fund grants, contact Heather Sable via e-mail: HSable@americanhiking.org or visit the website : www.americanhiking.org/alliance/fund.html.

- **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 Sylva 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.rwjf.org/grants/>

Section 7: Design Standards & Guidelines



Over the past 60 years the design and construction of pedestrian facilities have often been implemented in a manner that has accommodated pedestrians as an afterthought to the needs of motorists. This is evident in Sylva as the downtown area and many surrounding residential neighborhoods were constructed with sidewalks or streets that promote slower vehicle speeds. Contrasting these pedestrian-friendly streets are corridors such as US 23 Business and NC 107 where sidewalks have been added in many areas as a retrofit and thus were not designed to provide the best setting for pedestrian traffic.

This section provides guidance for the Town of Sylva as they implement the Pedestrian Plan, build new projects, upgrade sidewalks and build new curb ramps. It is imperative that the Town of Sylva serve in a leadership role to promote good pedestrian design in the area as construction practices by private developers.

The construction of new pedestrian facilities and reconstruction of existing pedestrian facilities is conducted by the Town of Sylva, local businesses and contractors and the DOT. This section is divided into key design topics to help guide future design decisions. These include:

- The “Design Vehicle” for pedestrians;
- Legal rights of pedestrians;
- Pedestrian facilities and their design;
- Sidewalks;
- Crossings: signalized and unsignalized;
- Greenways;
- ADA requirements;
- Downtown standards;
- School standards;
- Sidewalk construction policy and maintenance; and
- Parking lots.

Currently, the Town has few standards for pedestrian facilities that are designed specifically for the Town of Sylva. The Town’s staff has a strong working knowledge of the existing conditions of the sidewalk system, areas of conflict, and the most critical aspects of building sidewalks to meet ADA standards. 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 Sylva’s sidewalks and a more connected system. The Town of Sylva should pursue updates to the design standards and policies to reflect these recommended changes.

The “Design Vehicle” for Pedestrian Facilities

Pedestrian advocates and planners have struggled for years to articulate the unique needs of pedestrians to engineers who are oftentimes designing streets where motorists are the top priority. To effectively make the case for the needs of pedestrians, one strategy is to align terminologies for pedestrian facilities so that they mirror what is considered when designing for motor vehicles.

One such concept is the idea of the “Pedestrian Design Vehicle”. Travel lane widths, curbs radii and other features of street design are driven by a series of geometric standards that are based on the design vehicle for that street. For a short residential street, the design vehicle may be a small delivery truck. In a dense urban area it might be a city bus. On wide, high-speed corridors, large trucks and other vehicles are oftentimes the design vehicle.

In consideration of the design vehicle for pedestrians it is equally as important to know the user types of the system. A downtown area has large volumes of pedestrians. They are walking side-by-side, pushing strollers or have to maneuver in a wheelchair or scooter. Pedestrian facilities in these areas should be wider than those on the previously-mentioned residential street where there is less diversity among users and lower volumes. Figure 6-1 highlights some of the unique considerations that go along with considering the design vehicle for pedestrian facilities.

Figure 6-1 Surface and Clearance widths for Pedestrians

<i>User Type</i>	<i>Surface Width (feet)</i>	<i>Clearance Required (feet)</i>
<i>Pedestrian using a walker</i>	3	4
<i>Tourist with wheeled luggage</i>	3	4
<i>Wheelchair user</i>	3	4
<i>Jogger</i>	3	5
<i>Parent walking with child in hand</i>	4	6
<i>Romantic couple walking arm-in-arm</i>	4	5
<i>Business colleagues walking side-by-side</i>	5	6
<i>Wheelchair user with assistance dog or pet</i>	5	7
<i>Two parents side-by-side with strollers</i>	6	7
<i>Wheelchair user on a date with somebody using a walker</i>	6	8

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.gov/bikeped/lawspolicies/default.html>.

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

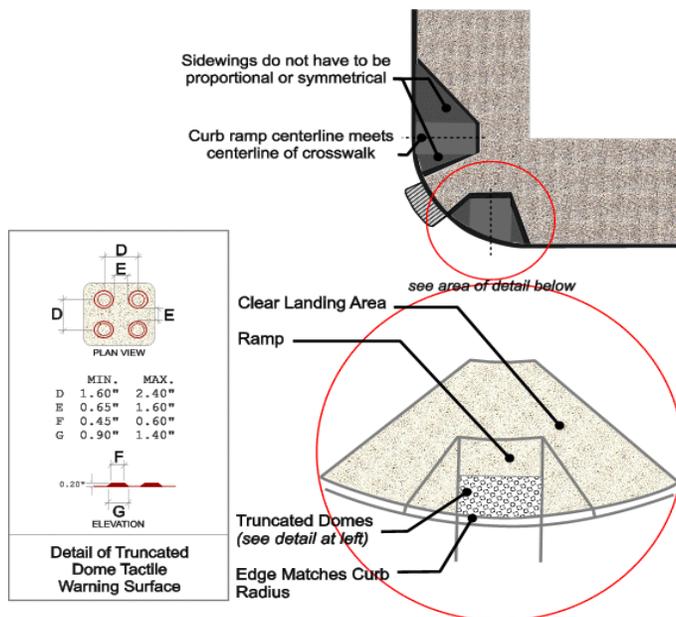
- Drivers must yield to pedestrians (or cyclists) crossing a driveway, alley exit, or parking garage exit on a sidewalk. (§20-173)
- Pedestrians crossing any roadway other than at a marked crosswalk must yield to vehicles.
- Vehicles must not only yield to a pedestrian crossing within a marked crosswalk but also within any unmarked crosswalk at an unsignalized intersection.
- 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 Sylva 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 ADA. Some of the major items related to pedestrian facilities that are addressed by ADAAG include curb ramps and cross-slopes.

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 6-2. The ADA Accessibility Guidelines for Buildings and Facilities (<http://www.access-board.gov/adaag/html/adaag.htm#A6.29.2>) 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.

Curb ramps are also required to have a 4-foot by 4-foot flat landing area at the top of the ramp to allow for pedestrians to orient themselves. In some cases, the 4x4 landing may be accommodated at the bottom throat of the ramp. *NOTE: This is a design requirement that is currently lacking within NCDOT's design standards for wheelchair ramps.*



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 6-2 also provides examples of the acceptable relationship between crosswalks and curb ramp location/widths.

Figure 6-2. Detail of an ADA-compliant Curb Ramp Design

More specifically, the North Carolina Department of Transportation (NCDOT) design standards for wheelchair ramps and sidewalk cross-slopes (Standards Drawings No. 848.01, 848.05, 848.06) do not adhere to existing ADA standards, best practices or federal design guidelines that promote universal accessibility for all pedestrians. Further, NCDOT has no standards drawings for greenway crossings of surface streets and corresponding curb/wheelchair ramps; pedestrian button height and placement; and non-traditional ADA-compliant curb ramps for constrained locations. As these design needs become more predominant in the town, or as developers construct new greenways, it will be imperative for the Town of Sylva to either encourage NCDOT to develop compliant standards or pursue development of their own standards to avoid grievances or lawsuits.

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 6-3 indicates the preferred (left), conditionally acceptable (middle), and unacceptable (right) design solutions for new driveways as they interface with sidewalks.

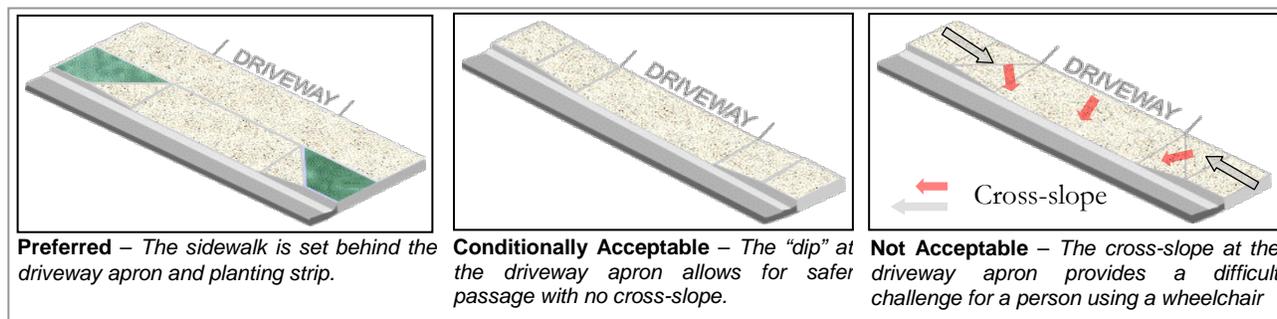


Figure 6-3. Examples of Designs for Minimizing Cross-Slope at Driveways

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

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 the Town of Sylva’s sidewalks and a more connected system.

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); and
- 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; and
- Greenway trails.

The Town currently does not have its own standards for pedestrian facilities, but relies on the NCDOT standards on streets. The following paragraphs provide national standards and best practices for pedestrian facilities by category.



Figure 6-4. Horizontal clearance “zones” for a sidewalk

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

Sidewalks

Standard sidewalk is usually at least five feet in width, made of concrete, and placed along roadways at least three feet behind the curbline with a landscape buffer (5’ minimum buffer is preferable). 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



Figure 6-5.
Countdown
pedestrian signals
indicate to
pedestrians
how
much
time
is
left
to
safely
cross
the
street
before
the
close
of
the
traffic
cycle.



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 6-4 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 Sylva, brick and other decorative materials have been 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

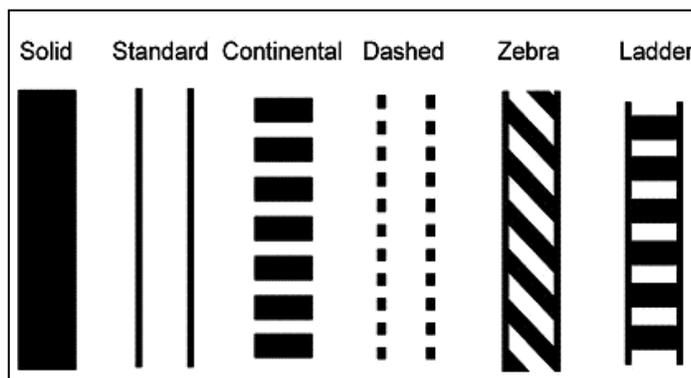


Figure 6-6. Typical styles for marked crosswalks

Source: Federal Highway Administration

pavers, can be considered for all pedestrian-ways, and in particular for greenways near streams, in order to reduce run-off from storm events. Bridges that include sidewalks should be designed and constructed with a minimum 5.5 ft. sidewalks to accommodate adequate width and shy distance for pedestrians.

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 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, in special circumstances, at mid-block locations. 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. NCDOT typically requires existing pedestrian facilities to connect to crosswalks.

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 six feet in width, with 10 feet or greater for downtown areas and locations of high pedestrian traffic. Advance stop bars should be placed 4 to 10 feet from the pedestrian crosswalk (with 6 to 15 feet 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 for motorists. These options reinforce pedestrian safety at high-conflict



Figure 6-7. 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.



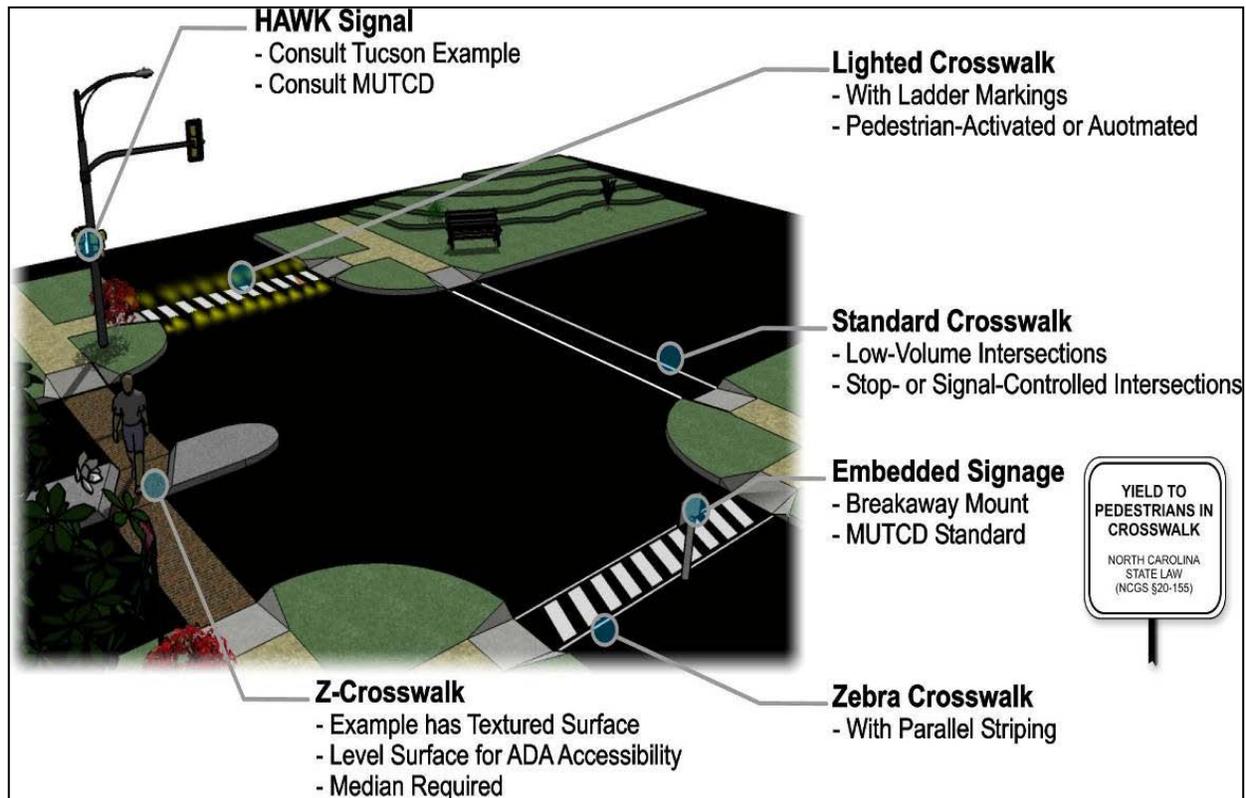


Figure 6-8. Various Pedestrian Crosswalks

A diagram of various crossing treatments Sylva might consider in order to improve pedestrian accessibility and safety at intersections.

intersection locations with significant crash history.

Mid-block crossings are typically unsignalized crossings, but can also utilize pedestrian-activated signalization. Crossings greater than 60 feet should provide a median or crossing, preferably combined with curb extensions and ADA-compliant ramps. 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 6-9 shows the decision matrix created by the City of Charlotte for determining when to construct a mid-block crossing and identifying appropriate treatments. Figure 6-10 shows the “solution space” identified by the City of

Charlotte for considering a mid-block crossing. Given the sensitive nature of mid-block crossings, every new mid-block crossing treatment will

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

Figure 6-9. Mid-Block Crossing Treatment Criteria

(source: Charlotte DOT, 2005)

Notes: * 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.ⁱ

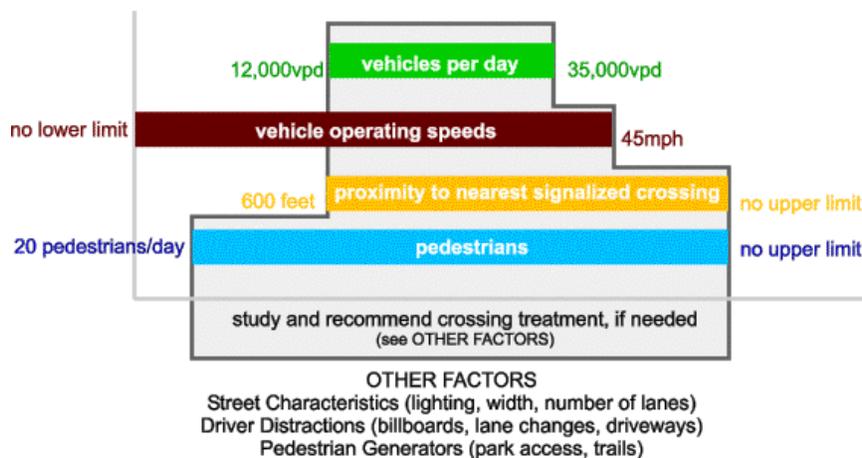


Figure 6-10. Applying Mid-Block Crossing Treatment

The City of Charlotte’s solution space for considering when to apply signalized mid-block pedestrian crossings

require a specific investigation by the 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 volumes of 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.

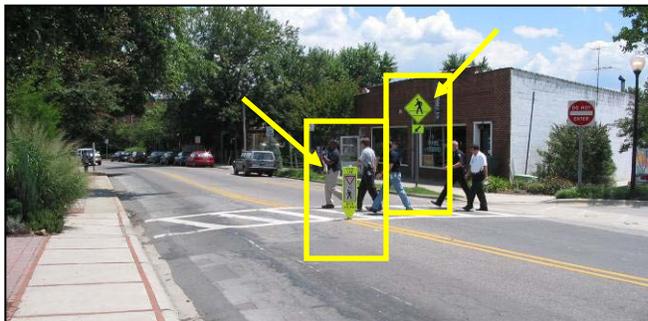
Another pedestrian crossing alternative is a Rapid Flashing Beacon, which used LED technology added to traditional crosswalk signage to heighten the visibility of pedestrians. According to FHWA, Rapid Flashing Beacons are a lower cost alternative to traffic signals and hybrid signals that are shown to increase driver yielding behavior at crosswalks significantly when supplementing standard pedestrian crossing warning signs and markings. These treatments are not standardized in North Carolina despite their documented benefits and would require state and federal approval before implementation.

The following link provides information on NCDOT's mid-block crossing policies:

http://www.ncdot.org/doh/PRECONSTRUCT/traffic/tepp/Topics/C-36/C-36_pr.pdf

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.

Figure 6-11. Mid-Block Crossing Signage

An example of two types of signs used to notify motorists of a pedestrian crossing.

Regulatory and warning signs can be used in a variety of places, including at crosswalks, at intersections, in-street, and near schools. National standards for sign placement and use can be found in the 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, MUTCD)*



Figure 6-12. 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.

The following are some recommended regulatory and warning



Figure 6-13. Sample Wayfinding Sign

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

signs which Sylva and surrounding communities should consider installing. Regulatory signage, 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, provide a 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, the Town of Sylva should consult the MUTCD.

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 seven feet or more for appropriate clearance but within legible distance of the reader. Associate hardcopy maps are often used to complement these signs. Figure 6-13 is an example of pedestrian wayfinding signage in Charlotte, NC’s central business district.

Additional information can be found at:
<http://mutcd.fhwa.dot.gov/hdm/2009/part2/part2b.htm>
<http://mutcd.fhwa.dot.gov/hdm/2009/part9/part9b.htm>

Greenways & Sidepaths

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 two 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 a 10 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, interpretive trail signs, map kiosks with distance and landmark information, and even emergency telephones if crime is considered a problem.

As noted previously, there are no standards drawings within NCDOT to guide the greenway crossing of a surface street. In general, the curb ramps, ramp throat and crosswalks should match the width (10 ft. minimum) and general directional alignment of the greenway.

Sidepaths, which are greenway trails that run parallel to streets, also present design challenges. Standard recommendations note that sidepaths should only be constructed along corridors with relatively few intersections and driveway. The speed at which bicyclists operate on these facilities poses the greatest safety concern since motorists do not typically look for bicycle traffic when crossing sidewalks.

In areas with mountainous terrain, like Sylva, however, sidepaths may be the only option to accommodate multi-use traffic when the prospects of having sidewalks or bike lanes on both sides of the street are cost prohibitive due to terrain and associated right-of-way constraints. As with greenway-specific crossings, there are no standard drawing developed by NCDOT to help direct how such projects are constructed.

The Federal Highway Administration’s publication “Designing Sidewalks and Trails for Access” includes a specific section on multi-use facilities and how to provide universal accessibility. Chapters 12 through 19 focus on trail and recreational facilities.

Most notably, this publication states:

“Shared-use paths attract a variety of user groups who often have conflicting needs. All pedestrians are affected by sudden changes in the environment and by other trail users, such as bicyclists, who travel at high speeds. However, the conflicts on shared-use paths are especially significant for people who cannot react quickly to hazards, such as some people with mobility impairments. To improve the shared-use path experience for all users, including people with disabilities, designers and planners should be aware of potential conflicts and employ innovative solutions whenever possible.”

The full document is at:

<http://www.fhwa.dot.gov/environment/sidewalk2/>

Additional guidance on greenway design and standards can be found at:

http://www.ncdot.gov/bikeped/projectdevelopment/construction_greenway/default.html.

An example greenway cross-section is provided in Figure 6-14.

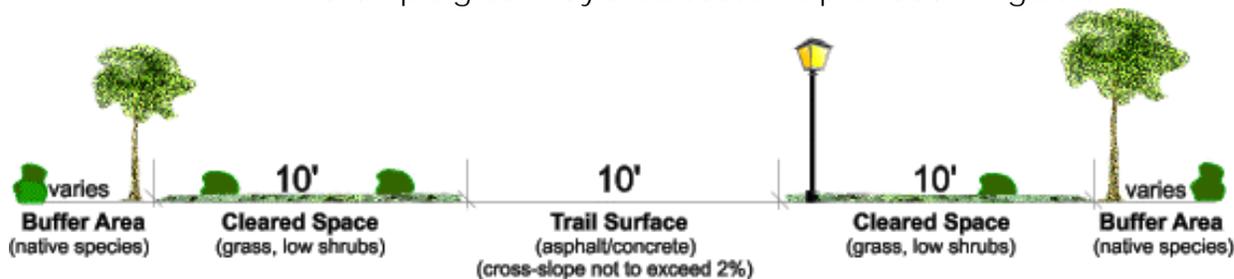


Figure 6-14. Example cross-section for a typical greenway



Figure 6-15. Typical Greenway Cross-Section with Bollard Treatments

Source: www.pedbikeimages.com

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 systemsⁱⁱ, 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 “rain gardens.” The Town of Sylva should consider all such options as appropriate and/or combinations thereof for future sidewalk, greenway and street construction projects.



Figure 6-16. Stormwater Retention

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



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.

Figure 6-17. DWQ Policy on Permeable Pavement Uses



Figure 6-18. Permeable Pavement Treatments

Source: NCSU Permeable Pavement Research Site.
<http://www.bae.ncsu.edu/info/permeable-pavement/index.html>

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.olympiawa.gov/city-utilities/storm-and-surface-water/science-and-innovations/science-and-innovations-porous-pavement.aspx>.

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 Sylva utilize these options for public projects (such as through the continued use of brick pavers downtown, as noted earlier) and incentivize their use in private developments.

Figure 6-18 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, 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.ⁱⁱⁱ



Figure 6-19. Downtown Sylva’s sidewalk system includes a combination of brick and concrete sidewalks, pedestrian-scale street lamps, countdown pedestrian signals, benches and trash cans, many street-level windows and crosswalks to enhance the visual aesthetic and pedestrian appeal of the area. Wayfinding signage is being explored as an additional pedestrian-friendly treatment. The Town should also consider upgrades and enhancements to existing curb ramps to meet ADA standards.

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, Sylva’s 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.
- **Provide wide sidewalk.** Currently, the sidewalk in the downtown area is approximately 8 to 10 feet wide, although in some locations it can span nearly 25 feet. 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 Poteet 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 intersections, as well as ADA-compliant curb ramps for wheelchair access.
- **Provide wayfinding signage to guide visitors.** Downtown Sylva offers many attractions for college students, out-of-town tourists and visitors who live outside of the downtown area. 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.

Schools

In addition to downtowns, 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 incredible 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.

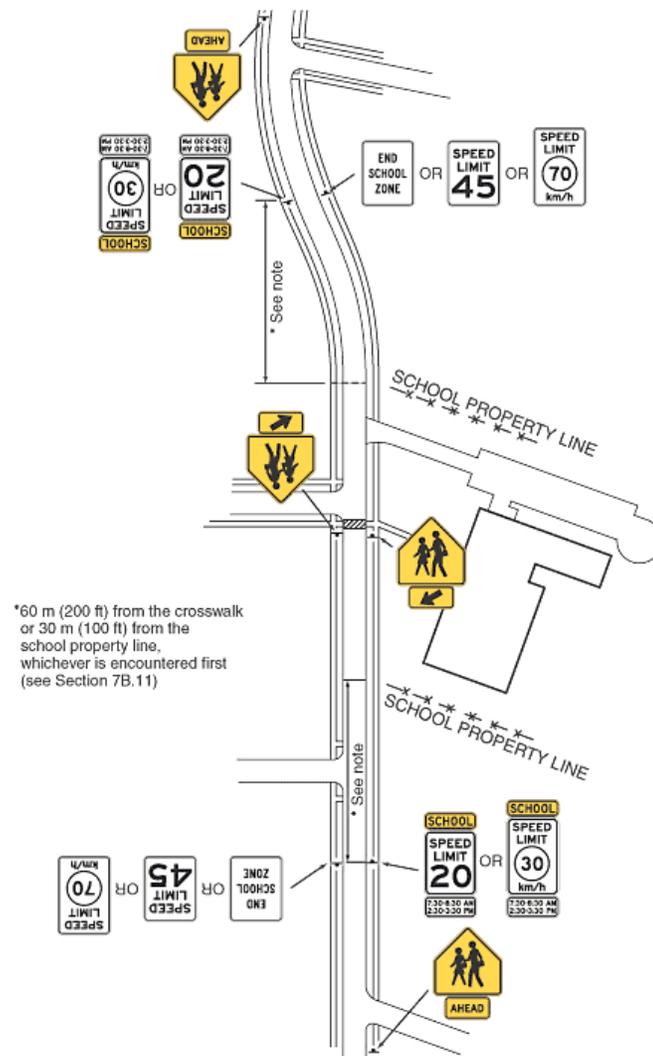


Figure 6-20. Sample School Area Signage.
Source: MUTCD.

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.

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)^{iv}, NCDOT's Planning and Designing Local Pedestrian Facilities^v, and the ADA (Americans with Disabilities Act)^{vi} 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 Sylva to ensure compliance with these rules by regular monitoring.

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

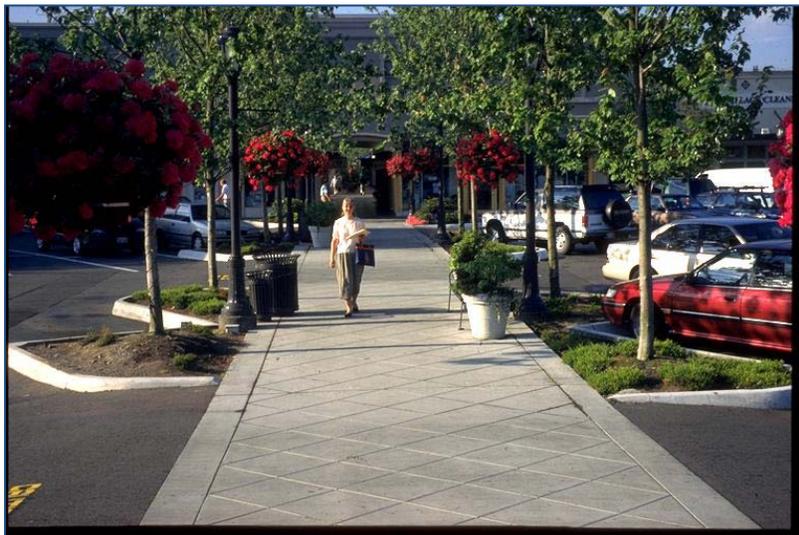


Figure 6-21. Good Parking Lot Design

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

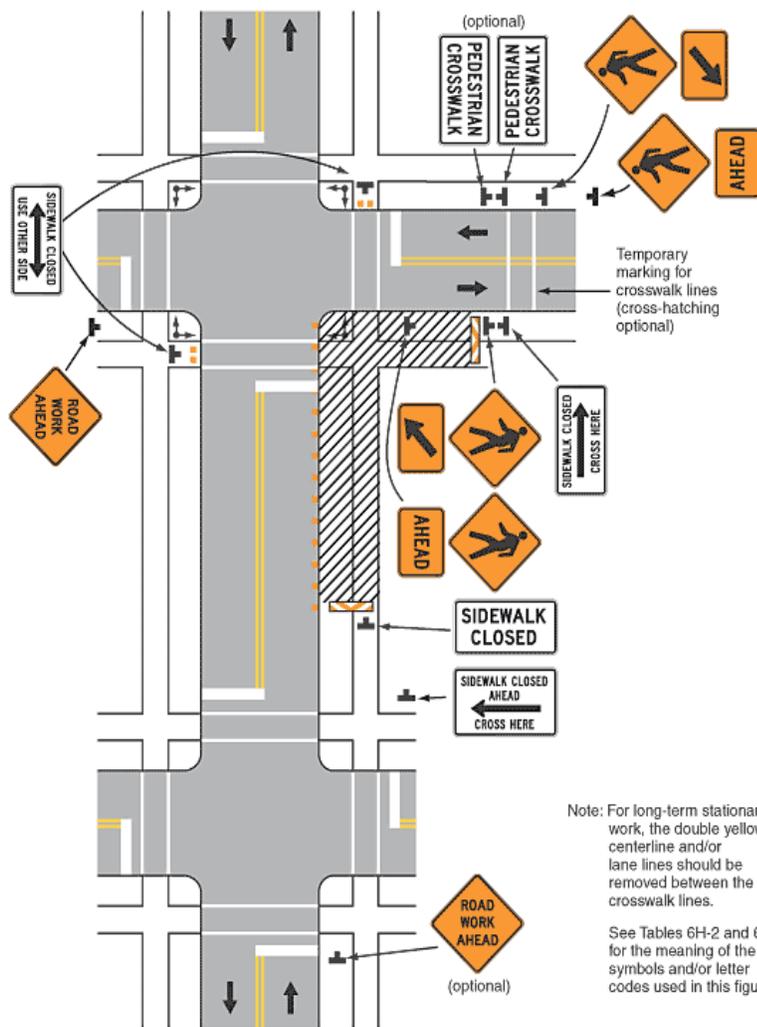
- A *ccessibility for Mobility Impaired Citizens*. At least one accessible route should be provided to transportation or transit facilities; accessible parking areas/spaces; public streets/sidewalks; and public parking areas to an accessible entrance of the building. This route(s) will comply with all 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

Figure 6-22. Sidewalk Closure Plan

Source: MUTCD, Figure 6H-29.



Typical Application 29

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.
- *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.

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



Figure 6-23. Pedestrian-Friendly Parking Lot Design

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 numbers 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 6-23 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:

- **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 customers 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.

- **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.
- **Maintain good sight lines** at major turning points inside the parking area.
- **Provide well-marked pedestrian access perpendicular to store fronts.** Whenever possible, provide perpendicular

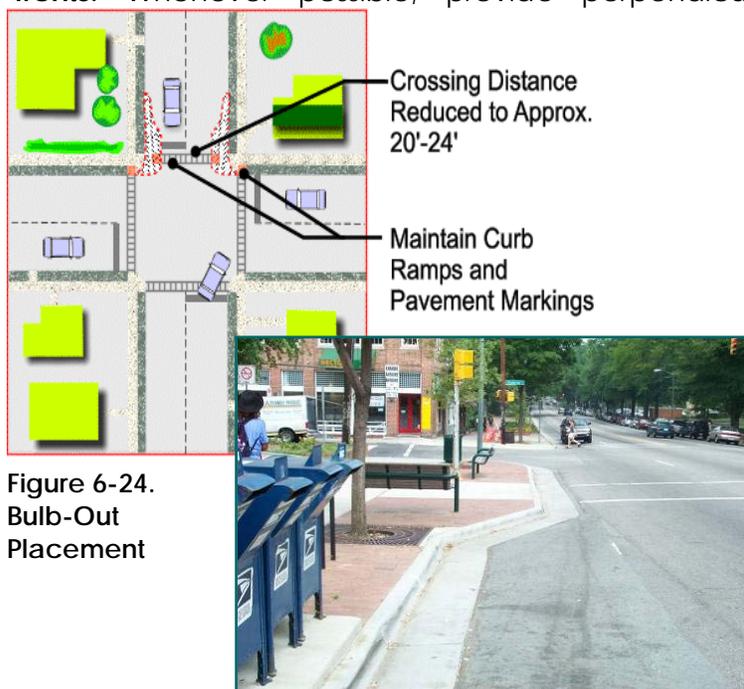


Figure 6-24.
Bulb-Out
Placement

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.

- **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.

- **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.

Sylva has seen an increase in the development of big box shopping centers with large parking lots along the NC 107 corridor. 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.

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.

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.

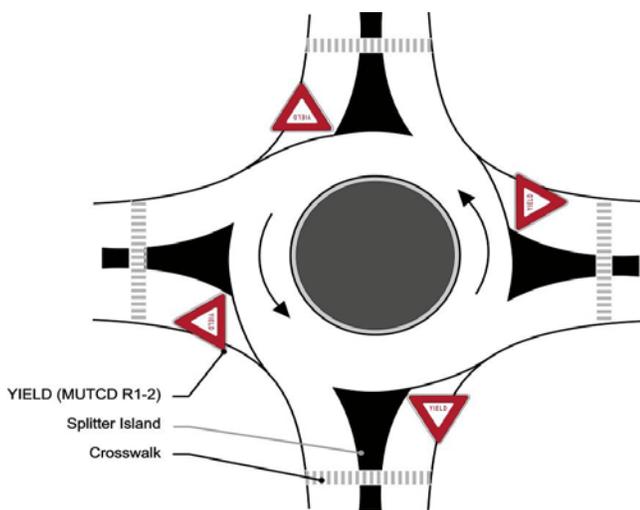


Figure 6-25. Roundabout Design Elements

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 has been considered on some intersections as part of the Jackson County Comprehensive Transportation Plan (CTP) including at the intersection of Grindstaff Cove Road and the entry points to Jackson Plaza and the Justice & Administration complex. Federal design guidance for roundabouts is available at

<http://www.tfhr.gov/safety/00068.htm> and should be consulted when necessary to ensure compliance with the Americans with

Disabilities Act (ADA). Figure 6-25 illustrates preferred placement of crosswalks and signage at a roundabout.

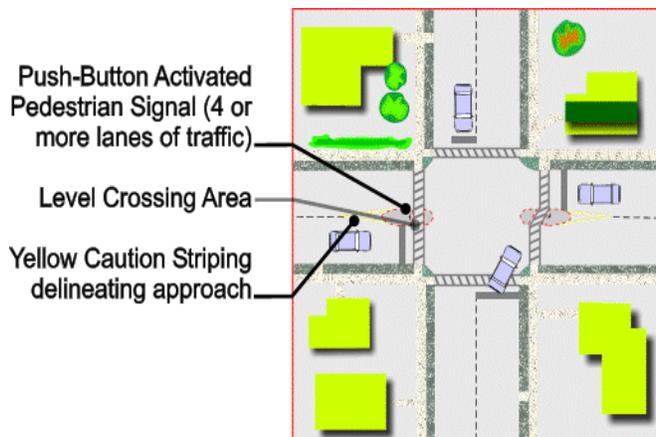


Figure 6-26. Median Refuge Islands

Medians and Refuge Islands

Figure 6-26 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 are generally preferred for both pedestrians and cyclists over a two-way, left-turn lane (TWLTL) roadway.

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

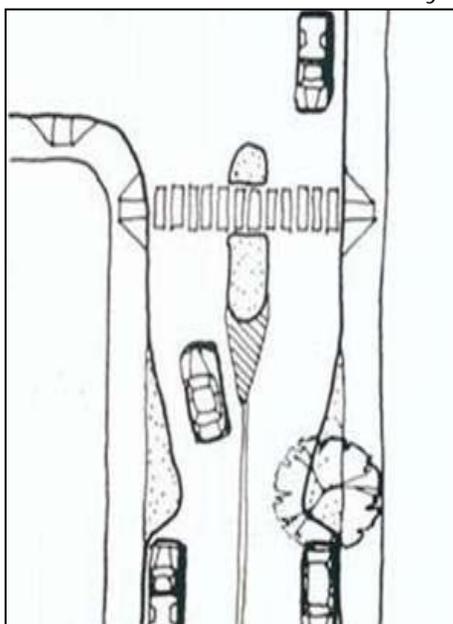


Figure 6-27. Example of a travel lane diet 4
 With the installation of a pedestrian refuge island and neckdowns.

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 12 foot travel lanes may be dieted and remain a four-lane roadway but with 10 foot travel lanes; the additional 4 foot 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.

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. NCDOT has developed a Complete Streets policy that may allow additional deviation to recognize varying street design requirements tailored to the specific environments that the street may pass through. The standards are scheduled to have specific guidelines developed in 2011.

(http://www.bytrain.org/fra/general/ncdot_streets_policy.pdf)

However, the basic elements of good design of urban (downtown) intersections are articulated in Figure 6-28 and as follows:

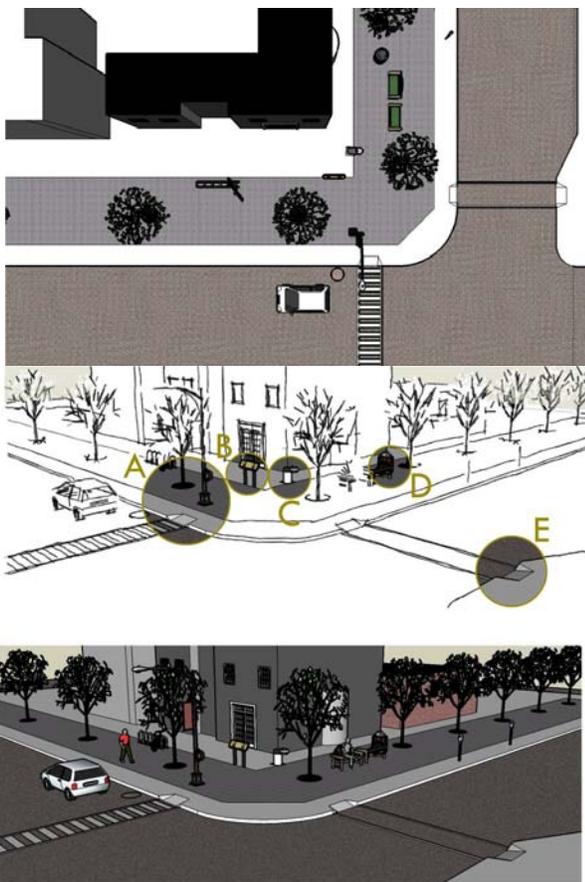


Figure 6-28. Intersection Elements Overhead (top) and Street Views

A. Provide positive clearance between parked vehicles and pedestrian points-of-entry;

B. Indicate with consistent and clear signage the location of the pedestrian, nearby attractions, and emergency service

information

C. and D. Amenities such as water fountains and benches should allow clearance for mobility impaired persons, per the ADAAG guidelines discussed earlier; and

- E. Curb ramps and bulb-outs help to provide a clear signal to drivers that the pedestrian space is dominant.

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, Sylva can work toward creating a built environment that will promote walking and continue to support and increase pedestrian traffic in the Town.

¹ James W. Glock, Letter Correspondence to Regina McElroy, Director, FHWA Office of Transportation Operations, January 11, 2006.

¹ 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

¹ 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>

¹ 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.

¹ Planning and Designing Local Pedestrian Facilities, North Carolina Department of Transportation Office of Bicycle and Pedestrian Transportation. February, 1997, Chapter 10.

¹ Americans with Disabilities Act, US Code 28 CFR Part 36: ADA Standards for Accessible Design. Page 496 (www.usdoj.gov/crt/ada/adastd94.pdf).

Appendix

Sample Cost Estimates

The cost estimates used for guiding the project costs for the Sylva Pedestrian Plan were provided by the NCDOT Division of Bicycle and Pedestrian Transportation and developed through previous planning efforts (http://www.ncdot.gov/bikeped/download/bikeped_planning_albemarle_AppendixE.pdf).

By their nature, these are “planning level” cost estimates and are not intended to reflect full implementation costs, as there are several aspects of sidewalk and greenway construction that can be influenced greatly by what is currently unknown in the realm of the built environment. Utility vaults, forgotten pipelines, existing buildings and decades of street repairs can greatly impact both the cost and speed of sidewalk design and construction.

Below are approximate unit costs for the types of pedestrian projects proposed in this plan, based on some example project costs that have been recently implemented, along with costs of other pedestrian projects. Project cost estimations in Appendix G are based on these figures, and do not necessarily include extra costs involved in the project such as advanced grading issues, land acquisition, land clearing, etc.

Sidewalks

- \$15 per foot for curb and gutter (plus 10% for design and administration)
- \$30 per square yard sidewalk (plus 10% for design and administration)
- 5' sidewalk –Mooresville, NC is spending \$119 - \$200 per linear foot (\$629,000 - \$1,056,000 per mile) for recent sidewalk projects. This figure includes all necessary costs design & administration, curb & gutter, various retrofitting costs, etc.

Shared-Use Paths

- Floodplain paths, such as creek or sewer paths may require more site preparation.
- Floodplain costs usually involve drainage issues (i.e., need for culverts and bridges, or geotextiles), permitting issues, and boardwalk. Mecklenburg County Park and Recreation’s greenways are typically constructed on creek corridors or sewer easements, and whose greenways therefore provide good cost examples for many of Sylva’s and Jackson County’s recommended shared-use paths.
- Rail Trails and sidepaths that have the advantage of being on a relatively cleared alignment with some existing grading and base work already complete can be constructed more economically.

Typical Costs Associated with Floodplain Shared - Use Paths on Waterways or Sewer Lines

- \$120 per linear asphalt foot (installation including grading, clearing, construction, and a subbase with 18" on either side of asphalt for shoulder stabilization) 633,600 per mile + 10% administration and design = approximately \$700,000 per mile = \$132 per linear foot

- 10' Concrete walkway: \$300,000 - \$500,000 per mile (with design and administration – add 10%)
- 10' wide prefabricated “Steadfast” type Pedestrian Bridge: \$1,200 per linear foot with design, engineering, installation and administration costs. An 8' wide clearance can reduce this cost.
- 10' paved asphalt path (with two-foot margins and associated improvements): \$100 - \$125 per foot (\$528,000 - \$660,000 per mile.) Add 10% for design and administration.
- Boardwalk: Historically \$200 / linear foot (\$1,056,000 / mile), lately has increased to \$225 - \$250 per linear foot. Unit prices on bids can see boardwalks come in anywhere from \$150 - 350/LF. Boardwalk is 8' clear.
- Converted Culverts and Underpasses: \$60,000 - \$100,000. Varies according to width, lighting needs, if stream restoration is involved, and other circumstances.
- Mecklenburg County Park and Recreation’s designers typically estimate \$120 per linear foot for construction of path (clearing, grading, subbase -- 14' wide, asphalt trail 10' wide).
- Mecklenburg County Park and Recreation routinely estimates \$1,000,000/mile for the design and construction of greenway paths in Mecklenburg County (10' wide asphalt trail). This cost takes into account various factors including need for culverts, drainage and flood studies.
- Mecklenburg County Parks and Recreation recently spent \$615,000 for 1.6 miles of a new portion of Mallard Creek Greenway. Other recent construction costs: 1.9 miles (Four Mile Creek Greenway) Design: \$241,102 Construction: \$1,663,255. Irwin Creek Greenway (1.0 miles) Design: \$107,000, Construction: \$428,088. These costs do not include any funds for contingency (typically around 5% for construction and 10-15% for FFE -- i.e., signage, benches, trashcans, bike racks, water fountains, etc.)
- Mecklenburg County Park and Recreation recently paid \$128,000 for an 80' span on Briar Creek (included concrete approaches) and \$142,000 for an 80' span on Little Sugar Creek (approaches and railing included in costs) both bridges are 10' clear. Cost includes design, engineering and installation.
- Mecklenburg County Park and Recreation recently paid \$60,000 for a simple bridge underpass conversion for a greenway under Remount Road along Irwin Creek, \$150,000 for an underpass conversion on Toby Creek with a major stream restoration project included in the cost, and \$170,000 for NCDOT to design and install a Con-Span under a pre-existing bridge to build a greenway path.

Costs Typical with Upland Multi-Use Paths on Rail Beds, Road Corridors, Gas, or Electric Lines

- Construction is less expensive in upland areas, especially where grading is already complete or where a sub-base is not needed.
- Rail Trail construction can be estimated at \$510,000 per mile, based on other North Carolina Rail Trail projects plus an additional 10% for design and administration. This plan uses \$106 per linear foot to calculate all costs estimations for paths built on roadway and other upland corridors.
- The American Tobacco Trail (a rail trail in the Raleigh-Durham area) cost \$330,000 per mile for construction costs in 2002. The City of Durham notes that they have seen a 10 – 11% increase in construction costs in later years, with a more

moderate climb earlier. This cost included hauling away ballast and ties (not rails), filling in areas of bad soil, upfitting 12" and 18" drain pipes to 24" and 36" to meet new code requirements, grading, and paving.

- 10' Crushed Rock walkway: \$80,000 - \$120,000 per mile (with design and administration – add 10%). These greenways have high maintenance costs.
- Mecklenburg County Park and Recreation's most recent construction cost for a stand alone asphalt parking lot (34 spaces) at Four Mile Creek/Johnston Rd was \$173,000. Parking lot: \$18 per square yard. (Parking lots for greenways can typically be shared with shopping areas, parks, or other public destinations and more typically are not needed at all because they are neighborhood access points.)

Intersections

- Crosswalk/Countdown signal: \$5,000 per intersection (this includes installation and an additional installed post). This cost can be up to \$15,000 per intersection if a retrofit is done with APS devices.
- Curb extensions: \$5,000 - \$25,000
- Simple neighborhood crosswalks with signs and markings: \$500 - \$1,500
- Enhanced crosswalk with special stencils, raised platforms, or special signage: \$5,000
- Raised crosswalks: \$2,000 – \$15,000
- Refuge island: \$10,000 – \$40,000
- In pavement illumination: \$25,000 – \$40,000 per crossing
- Pedestrian only traffic signal: \$40,000 - \$75,000
- Hawk signal: \$40,000
- Mid Block Flashing Crosswalk: \$20,000 for equipment and \$20,000 to install

Lane Marking

- Bicycle or vehicle lane striping (thermoplastic): \$15,000/mile with design and administration for both sides of the road.
 - \$1.20 per linear foot of thermoplastic for line striping
 - \$350.00 for each set of performed thermoplastic bike symbols with arrows

Lighting, Landscaping, and Signage

- Lighting: Varies widely depending on type of light and location. Lighting an underpass could be \$2,000 - \$5,000 for 3 to 4 lights. Mecklenburg County Park and Recreation recently paid approximately \$11,000 for the wiring and installation of 2 underpasses (8- 12 lights under each).
- Landscaping: Contractor installed foliage costs around \$400 - \$500 per tree and \$25 - \$50 per shrub.
- Marking a route with signs: \$2,000 per mile with design and administration
- Signs: \$250 – \$350 each

Streetscape Projects

- The City of Charlotte recently completed these streetscape projects:

- Tuckaseegee Rd. Streetscape including repaving for a road diet from 4 motor vehicle lanes to 2 motor vehicle lanes, 2 bicycle lanes, a turn lane, improved ADA curb cuts and crosswalks with safety islands.
 - Length = 1.3 Miles, Final Cost = \$2,500,000 (\$365 per linear foot)
 - East Blvd. Pedscape including repaving for a road diet from 4 motor vehicle lanes to 2 motor vehicle lanes, 2 bicycle lanes, a turn lane, improved ADA curb cuts and crosswalks with safety islands.
 - Length = ½ Mile, Final Cost = \$1,050,000 (\$398 per linear foot)
 - Morehead Avenue Streetscape including repaving for a road diet from 4 motor vehicle lanes to 2 motor vehicle lanes, a turn lane, paved shoulders, wide sidewalks, planting strips, pedestrian lighting, improved ADA intersections and crosswalks with safety islands.
 - Length = ½ Mile, Final Cost = \$3,000,000 (\$1,137 per linear foot)
 - For simplicity, the cost of \$425.00 per linear foot is used for estimating streetscape project costs outlined in this report. This cost estimates only the basic cost for sidewalk and crosswalk infrastructure and not any roadway repaving or conflicting utility or drainage costs. Every project is very different, and a complete study would be necessary before it would be possible to adequately estimate the complete cost for any streetscape project.
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