

## **Stakeholder Committee Members**

Debby Annas	Caldwell County Public Library
Pat Benfield	Cardiac Rehab Director
Ritch Bolick	Chief of Police - Granite Falls
Helen Chaney, AICP	Administrator - NCDOT Bicycle and Pedestrian Division
Jerry Church	Town Manager Granite Falls
Tim Cooke	Recreation Director - Granite Falls
Floretta Dula	Shuford Recreation Nutrition Site Lunch
Dan Greene	Pastor – Christian Fellowship Chapel
Tammy Hagerty	Granite Travel
Terrie Johnson	Education
Dean Ledbetter	NCDOT – Division 11 Traffic Engineer
Amy Lowman	Granite Falls Middle School
Mike Mackie	Mackie Furniture and Town Council
John Marshall	Planning Director - WPCOG
Jeff Prince	Manager – Bank of Granite
Annette Swanson	Granite Falls Planning Board
Bethany Wild	Transportation Planner - WPCOG
Greg Wilson, CZO	Town Planner – Granite Falls

## **Mayor and Town Council**

Mayor:	Barry C. Hayes
Mayor Pro Tem:	Dr. Caryl B. Burns
Councilman:	Donald Kirkpatrick
Councilmember:	Frank Mackie
Councilmember:	Michael Mackie
Councilmember:	Max McRary
Councilmember:	Tracy Townsend

## **Project Management Team**

Staff Project Managers:	Greg Wilson, CZO; <i>Granite Falls Town Planner</i> Jerry Church; <i>Granite Falls Town Manager</i>
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NCDOT Liaison:	Helen Chaney, AICP; <i>NCDOT Division of Bicycle and Pedestrian Transportation</i>

## **Acknowledgements**

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## Executive Summary

Located in the southern portion of Caldwell County, North Carolina, Granite Falls is nestled in the foothills of the beautiful Blue Ridge Mountains. The Town is located just north of the City of Hickory along US Highway 321 and is a short drive from the Historic town of Blowing Rock and Grandfather Mountain.

The Granite Falls Pedestrian Plan highlights the existing pedestrian network in Granite Falls, NC and looks at recommendations for the future. This information will guide policy, planning, and design for pedestrian movement throughout Granite Falls. The Granite Falls Pedestrian Plan is funded by a grant from the North Carolina Department of Transportation's Division of Bicycle and Pedestrian Transportation (NCDOT DBPT) and the Town of Granite Falls. More than just a project list, the Plan is a tool to create a more pedestrian-friendly atmosphere through recommended programs, policies, projects, and plans. The Plan also provides a description of priorities, partnerships, cost estimates, and funding sources to help the town implement its recommendations. The Plan is in accordance with North Carolina Department of Transportation's Recommended Template for Developing Pedestrian Plans.



In order to provide full and adequate services to all the residents of Granite Falls, The Comprehensive Pedestrian Plan must address all of the needs of the people it serves, residents and visitors alike. To this end, the Towns' 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 accepting walking as a mode of transportation. Granite Falls' estimated population was 4,999 in 2009. Nearly half of the population is working individuals and 90 percent of this population report using a car as their main mode of transportation; less than one percent uses transportation mode other than a motorized vehicle. Creating a more walkable and safe environment for the community could increase the number of commuting pedestrians.

Information gathered for this report comes from the residents that live there as well as the Town management, business owners and local officials. A stakeholder committee was formed to help guide the Plan through its development process, a nearly year-long effort. The Stakeholder Committee met five times during the course of the planning process, and provided input on the goals for the plan, projects, and programs. In addition to a stakeholder committee, the Plan's public involvement process also included two Open Houses and a survey distributed in paper format and online. By utilizing an active steering committee made up of diverse Town interests, public focus group meetings, a comprehensive survey, and NCDOT and Federal Pedestrian

Guidance, the Goals, Objectives, and Vision for the Pedestrian Plan of Granite Falls were created. This report discusses the process for identifying pedestrian needs, prioritizing the selected projects, and ensuring that future policies will set the stage for good design practices.

The vision statement developed by the project team for the Plan is:

***“Developing a more walkable and safe community over the next 5-10-20 years – one that promotes user-friendly connectivity throughout the town, targets a sense of pride in the downtown area and neighborhoods, and helps to integrate economic growth with healthy living – will require that the town meet the needs of present and future residents, businesses, visitors, and all age groups ... through an integrated network of walkways.”***

The Steering Committee agreed upon the following six foundational components of the Pedestrian Plan:

- ☞ Promoting a walkable downtown;
- ☞ Setting standards and regulating development;
- ☞ Involving everyone;
- ☞ Going green;
- ☞ Creating connectivity; and
- ☞ Encouraging healthy living.

The Plan examines existing plans for the Town as well as policies set by local, state and federal agencies that directly or indirectly affect walking in Granite Falls. Local plans examined included *The Granite Falls Horizons: Land Development Plan*, zoning ordinances, subdivision regulations, and the *2035 Greater Hickory Urban Area Long Range Transportation Plan*. Policies and guidelines established by the North Carolina Department of Transportation and the Federal Highway Administration were also reviewed. Specific policy recommendations gathered from existing Plans for the area that can be adopted by the local government are included in Section 3. Plans, programs and policies are just as important as physical infrastructure in creating a pedestrian-friendly town because they create and encourage an atmosphere accepting of walking as a mode of transportation and recreation.

The Plan's recommendations range from short-term (1 – 7 years in the future) to long-term (up to 20 years in the future) actions, and cover a range of costs. A summary of the recommendations for pedestrian paths are provided in the following tables. Intersections in the Town were also examined to determine if further actions were needed to create safe crossings. Six intersections were identified in the Plan as needing improvements. Those intersections and the recommendations are listed in Table ES- 4. As part of an implementation program, the Plan also provides general cost estimates for each project, and potential partners that the Town could pursue working with to begin its projects and programs.

**Short-Term Projects**

Projects identified as short-term are intended to reflect both a high priority for the Town of Granite Falls and an opportunity to identify project partners and funding sources over the next five to seven years. Some projects are already being pursued with NCDOT through annual requests through the Division Operations budget while others are being proactively planned for by the Town of Granite Falls and other area interests.

The project recommendations included in these tables are intended to reflect a planning-level analysis of these projects with regards to design, influences and cost estimates. Constructing new projects in the built environment has many challenges that can greatly influence the ultimate project design, budget and implementation schedule. These factors can also influence which side of the street projects are constructed. All costs are intended to reflect constructing sidewalks on one-side of the street, unless otherwise noted. (Note: Numbers and letters in parentheses reflect identification symbol on the project map. Numbers = corridors; Letters = intersections.)

**Sidewalk Projects**

<b>Chestnut St, Sterling St to Falls Ave (18)</b>		<b>Cost: \$36,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along west side to connect Falls Avenue to Sterling Park.</li> <li>New curb ramps at Falls Avenue and along route for ADA compliance.</li> <li>Consider connections to walking facilities in Park with Sterling St, Main to Woodlane project</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Sterling Park</li> <li>Downtown</li> <li>Shopping</li> <li>Terrain</li> </ul>
<b>Responsible Agencies: Town of Granite Falls</b>		<b>Length: 700 ft.</b>

<b>Lakeside Ave, Town Public Facilities Building to Lakeside Park (10)</b>		<b>Cost: \$221,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along west side, transitioning to east side near tennis courts.</li> <li>Town has funding through Safe Routes to Schools program</li> <li>Construction expected in 2011</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Lakeside Park</li> <li>Post Office</li> <li>Recreation</li> <li>Constrained rights-of-way</li> <li>Terrain</li> </ul>
<b>Responsible Agencies: Town of Granite Falls, NCDOT</b>		<b>Length: 4,400 ft.</b>

<b>Madison Ave., Main St (US 321-A) to Midway St (14)</b>		<b>Cost: \$20,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along west side</li> <li>• Creates connection to/from downtown in combination with Midway, Madison to Lakeside Project.</li> <li>• Intersection improvements at Main Street included in separate intersection project.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Post Office</li> <li>• Railroad tracks</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 400 ft.</b></p>

<b>Midway St, Madison Ave to Lakeside Ave (13)</b>		<b>Cost: \$40,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north side.</li> <li>• Crosswalks across Lakeside Ave.</li> <li>• Connects to existing sidewalks on Lakeside Ave.</li> <li>• Creates connection to/from downtown in combination with Madison Ave, Main St to Midway St project.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Post Office</li> <li>• Lakeside Park</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls</b></p>	<p><b>Length: 800 ft.</b></p>

<b>South Main Street (US 321-A), Short St to Forest Ave (19)</b>		<b>Cost: \$10,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• New sidewalks to fill gaps in this section along east side.</li> <li>• Curb ramps at commercial driveways and street intersections</li> <li>• Re-configure continuous driveway access to single or multi-point access for pedestrian safety.</li> <li>• Creates connection with mid-term project on Forest Ave., Crestview St. to S. Main St.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Existing development</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 100 ft.</b></p>

<b>Sterling St, S. Main St (US 321-A) to Woodlane Street (20)</b>		<b>Cost: \$55,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• New sidewalks along north side.</li> <li>• Connect to Sterling Park</li> <li>• Creates continuous sidewalk system with other projects noted in Pedestrian Plan</li> <li>• New curb ramps at Crestview and other connecting streets</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Sterling Park</li> <li>• Residential neighborhoods</li> <li>• Downtown</li> <li>• Shopping</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 900 ft.</b></p>

**Intersection Projects**

<b>Dudley Ave &amp; Archer St (A)</b>		<b>Cost: \$10,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Re-establish crosswalk (paved over) with high visibility crosswalks</li> <li>• Connect sidewalk along west side to crosswalk</li> <li>• School crossing signage</li> <li>• Advanced "Ped Xing" pavement markings</li> <li>• Construct ADA-compliant curb ramps</li> <li>• Enforce sidewalk clearance on nearby residential properties</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Elementary school</li> <li>• Residential neighborhoods</li> <li>• Street / intersection geometry</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 75 ft.</b></p>

<b>Dudley Ave &amp; Park Square to N. Main Street (US 321-A) (B)</b>		<b>Cost: \$10,000-\$25,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Upgrades to improve issues of sight distance.</li> <li>• High visibility crosswalks and advance signage (consider flashing beacons)</li> <li>• Re-configure sidewalks through streetscape improvements at downtown.</li> <li>• Continue crosswalks to connect to square across N. Main Street.</li> <li>• Consider restricting truck traffic on Dudley to install raised crosswalk at N. Main Street.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Existing buildings</li> <li>• Town square</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: Varies</b></p>

<b>Fall Ave &amp; Park Square (C)</b>		<b>Cost: \$10,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Reconfigure crosswalk due to sight distance issues</li> <li>• Install high visibility crosswalk</li> <li>• Construct curb bulbouts from north side to meet travel lanes</li> <li>• Re-construct curb ramps for ADA compliance</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Park Square</li> <li>• Town Hall</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 60 ft.</b></p>

<b>N. Main St (US 321-A) &amp; Highland Ave (D)</b>		<b>Cost: \$20,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Construct sidewalk connection from school, from railroad tracks to N. Main St.</li> <li>• High visibility crosswalks &amp; pedestrian crossing signage on N. Main St., east leg</li> <li>• ADA-compliant curb ramps on all four corners of intersection.</li> <li>• Pedestrian countdown signals.</li> <li>• Pedestrian way should continue across railroad tracks</li> <li>• Consider crossing gates (not included in cost estimate)</li> <li>• Bulbouts in middle school parking lanes for pedestrian crossing of parking access</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Middle school</li> <li>• Residential neighborhoods</li> <li>• Downtown</li> <li>• Railroad tracks</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT, Caldwell County Schools</b></p>	<p><b>Length: 100 ft.</b></p>

<b>S. Main St (US 321-A) &amp; Falls Ave / Madison Ave at Park Square (E)</b>		<b>Cost: \$10,000-\$35,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Install high-visibility crosswalks and pedestrian crossing signage</li> <li>• Install countdown pedestrian signals</li> <li>• North leg is priority for crossing of Main St. due to other recommended projects</li> <li>• Construct ADA-compliant curb ramps</li> <li>• Pedestrian way should continue across railroad tracks</li> <li>• Consider crossing gates (not included in cost estimate)</li> <li>• Bulbouts in parking lane on north leg on Park Square side</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Town Hall</li> <li>• Park Square</li> <li>• Railroad tracks</li> <li>•</li> <li>•</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 175 – 220 ft.</b></p>

**N. Main St (US 321-A) & Park Ave (F)** **Cost: \$10,000-\$35,000**



Recommended Improvements

- Install high-visibility crosswalks and pedestrian crossing signage
- Install flashing beacon
- West leg is priority for crossing of Main St. due to school sidewalk connection
- Construct ADA-compliant curb ramps
- Pedestrian way should continue across railroad tracks
- Consider crossing gates (not included in cost estimate)
- Bulbouts in parking lane of school

Influences

- Middle School
- Downtown
- Residential neighborhoods
- Railroad tracks

**Responsible Agencies: Town of Granite Falls, NCDOT, Caldwell County Schools** **Length: 100 ft.**

**Pinewood Rd & Highland Ave (G)** **Cost: \$30,000**



Recommended Improvements

- Crossing from southeast corner to northwest corner is the priority movement to connect existing sidewalks.
- Construction new ADA-compliant curb ramps on SE, SW and NW corners
- Sidewalk connection on SW corner
- Install high visibility crosswalks & countdown signals
- Align stop bar with crossing
- Reduce turning radius on SE corner
- Remove utility poles from pedestrian way

Influences

- Recreation center
- Residential neighborhoods
- Walking trails
- Elementary School

**Responsible Agencies: Town of Granite Falls, NCDOT** **Length: 125 ft.**

**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 Granite Falls to deliver these projects within this timeframe. Once the Plan is adopted, strategizing should begin on the best way to pursue these projects.

<b>Central Ave, S. Main St (US 321-A) / Duke St to Midway St (16)</b>		<b>Cost: \$16,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Construct sidewalks along west side of road</li> <li>Connects to future Midway Street projects to provide connection to Lakeside Ave.</li> <li>West side provides fewest conflicts with Duke St intersection.</li> <li>NCDOT has discussed several options for Duke St / S. Main St re-configuration</li> <li>Pedestrian way should continue across railroad tracks</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Downtown</li> <li>Railroad tracks</li> <li>Residential neighborhoods</li> </ul>
<b>Responsible Agencies: Town of Granite Falls, NCDOT</b>		<b>Length: 300 ft.</b>

<b>Elgin St, Park Ave to Lakeside Ave (12)</b>		<b>Cost: \$35,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>New sidewalks along north or south side to connect Lakeside to Park</li> <li>Install ADA-compliant curb ramps at intersections.</li> <li>Crosswalks on Park Ave.</li> <li>Continuation of Midway Street sidewalks to create sidewalk connectivity parallel to Main Streets</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Middle School</li> <li>Ballfields</li> <li>Lakeside Ave</li> <li>Residential neighborhoods</li> </ul>
<b>Responsible Agencies: Town of Granite Falls</b>		<b>Length: 700 ft.</b>

<b>Forest Ave, Crestview St to S. Main St (US 321-A) (21)</b>		<b>Cost: \$57,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north / west side</li> <li>• Creates connection to/from neighborhoods in combination with projects on Woodlane and Chestnut.</li> <li>• Install ADA-compliant curb ramps at intersections</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Residential neighborhoods</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 1,100 ft.</b></p>

<b>Midway St, Madison Ave to Central Ave (15)</b>		<b>Cost: \$24,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north side</li> <li>• Creates connection to/from downtown and Lakeside Ave in combination with Midway, Madison to Lakeside and Madison Ave, Main St to Midway St projects.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Post Office</li> <li>• Lakeside Park</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls</b></p>	<p><b>Length: 500 ft.</b></p>

<b>North Main Street (US 321-A), N. Summit Ave to Pinewood Road (3)</b>		<b>Cost: \$183,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north side of N. Main Street</li> <li>• Extension of sidewalk system along north side that connects to downtown.</li> <li>• Install crosswalks and ADA-compliant curb ramps at Summit, Crescent and Pinewood.</li> <li>• New crossings at Dry Ponds Road, with crosswalks.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Post Office</li> <li>• Lakeside Park</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 3,700 ft.</b></p>

<b>Pinewood Rd, Bert Huffman Rd to Recreation Center (11)</b>		<b>Cost: \$57,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north side to connect to existing sidewalks near Recreation Center driveway</li> <li>• Provides for walking route from residential neighborhoods west of recreation to recreation center.</li> <li>• First phase of sidewalk connections along Pinewood and Bert Huffman.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Recreation Center</li> <li>• High School</li> </ul>
	<p><b>Responsible Agencies: NCDOT, Town of Granite Falls</b></p>	<p><b>Length: 1,100 ft.</b></p>

<b>West Highland Ave / Woods Dr, Middle School Rd to Park Ave (8)</b>		<b>Cost: \$63,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along south side of West Highland from School to Woods.</li> <li>• Sidewalks along east or west side of Woods Drive from West Highland Ave to Park Ave.</li> <li>• Connects residential neighborhoods to school.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Middle School</li> <li>• Ballfields</li> <li>• Residential neighborhoods</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls</b></p>	<p><b>Length: 1,300 ft.</b></p>

<b>Woods Dr / Laurel St, Park Ave to Lakeside Ave (9)</b>		<b>Cost: \$100,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along east or west side of Woods Drive</li> <li>• Sidewalks along north side of Laurel (primarily town property).</li> <li>• Connects residential neighborhoods to school in conjunction with West Highland / Wood project.</li> <li>• Crosswalks at Lakeside Avenue and Park Avenue</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Middle School</li> <li>• Ballfields</li> <li>• Residential neighborhoods</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls</b></p>	<p><b>Length: 2,000 ft.</b></p>

**Long-Term Projects**

Projects identified for the Town of Granite Falls that are slotted into the Long-Term Priority category are a mix of projects seen as a 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 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 streets. 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 Granite Falls.

<b>Bert Huffman Rd, Pinewood Rd to South Caldwell High School (1)</b>		<b>Cost: \$220,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along east side of Bert Huffman Road (primarily within Granite Falls town limits and ETJ).</li> <li>Project may be constructed in phases, starting at Pinewood and working north toward the High School.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>High School</li> <li>Residential neighborhoods</li> <li>Recreation Center</li> </ul>
<b>Responsible Agencies: Town of Granite Falls, Caldwell County, NCDOT, S. Caldwell HS</b>		<b>Length: 4,000 ft.</b>

<b>Dry Ponds Rd / Turner Rd, N. Main St (US 321-A) to Sunset St (4)</b>		<b>Cost: \$175,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along one side of street to connect to Sunset St sidewalks identified in other long-term projects</li> <li>Crosswalks at major intersections.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Middle School</li> <li>Ballfields</li> <li>Residential neighborhoods</li> <li>Apartments</li> </ul>
<b>Responsible Agencies: NCDOT, Town of Granite Falls</b>		<b>Length: 3,500 ft.</b>

<b>Duke St, Cline Dr to Hickory St (17)</b>		<b>Cost: \$380,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along both sides of Duke Street to connect with existing sidewalks north of Cline Drive.</li> <li>Crosswalks at major intersections.</li> <li>Sidewalks may be considered on one side due to financial limitations (cost estimate is for both sides).</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Residential neighborhoods</li> <li>Churches</li> </ul>
<b>Responsible Agencies: Town of Granite Falls, NCDOT</b>		<b>Length: 3,800 ft.</b>

<b>Granite Falls Greenway, Dam St to Pine St via Sewer Easements (25)</b>		<b>Cost: \$650,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Construct new multi-use greenway path, connecting neighborhoods of east Granite Falls to the dam and falls.</li> <li>Includes utilization of dam crossing for pathway connection to Meandering Way.</li> <li>Estimates assume using existing Dam Street as part of pathway.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>The Falls and Dam</li> <li>Granada Farms development</li> <li>Potential for future park / destination</li> <li>Residential neighborhoods</li> </ul>
<b>Responsible Agencies: Town of Granite Falls</b>		<b>Length: 4,600 ft.</b>

<b>North Main Street (US 321-A), Park Ave to Sherrill Dr (5)</b>		<b>Cost: \$375,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along south side of North Main Street or south side of railroad tracks.</li> <li>Intersection upgrades at Sherrill, Dry Ponds, Summit, and Highland (additional streets if south of tracks).</li> <li>Potential Rails with Trails.</li> <li>May split into different projects starting at Park Ave and working toward Sherrill Dr.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Middle School</li> <li>Railroad tracks</li> <li>Residential neighborhoods</li> <li>Businesses</li> </ul>
<b>Responsible Agencies: Town of Granite Falls, NCDOT</b>		<b>Length: 7,500 ft.</b>

<b>North Main Street / S. Main St (US 321-A), Lakeside Ave to Duke St (22)</b>		<b>Cost: \$81,000</b>
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> <li>• Sidewalks along south side of North / South Main Streets or south side of railroad tracks.</li> <li>• Intersection upgrades at Madison, Lakeside and Duke.</li> <li>• Potential Rails with Trails</li> </ul>	<u>Influences</u> <ul style="list-style-type: none"> <li>• Middle School</li> <li>• Railroad tracks</li> <li>• Residential neighborhoods</li> <li>• Downtown</li> </ul>
	<b>Responsible Agencies: Town of Granite Falls, NCDOT</b>	<b>Length: 1,500 ft.</b>

<b>North Summit Ave, N. Main St (US 321-A) to Water St (7)</b>		<b>Cost: \$35,000</b>
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> <li>• Sidewalks along north or south side of North Summit Avenue.</li> <li>• Walk to school route for Middle School, connecting to existing sidewalks along North Main St.</li> </ul>	<u>Influences</u> <ul style="list-style-type: none"> <li>• Middle School</li> <li>• Residential neighborhoods</li> <li>• Businesses</li> </ul>
	<b>Responsible Agencies: Town of Granite Falls</b>	<b>Length: 700 ft.</b>

<b>Pinewood Rd, N. Main St (US 321-A) to Bert Huffman Road (2)</b>		<b>Cost: \$135,000</b>
	<u>Recommended Improvements</u> <ul style="list-style-type: none"> <li>• Sidewalks along one side of Pinewood based on feasibility and development potential.</li> <li>• Intersection upgrades at N. Main Street, Clover Church Road and potentially Bert Huffman.</li> <li>• May be split into different projects starting at Bert Huffman or N. Main Street.</li> <li>• Consider open curbing or sidewalk set back of drainage ditches to lower costs.</li> </ul>	<u>Influences</u> <ul style="list-style-type: none"> <li>• High School</li> <li>• Residential neighborhoods</li> <li>• Recreation Center</li> </ul>
	<b>Responsible Agencies: Town of Granite Falls, NCDOT</b>	<b>Length: 2,700 ft.</b>

<b>Sunset St, Highland to Turner &amp; Colonial Ave, N. Main St to Sunset St. (6)</b>		<b>Cost: \$235,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along north side of Sunset (consider south side if there are feasibility issues).</li> <li>Sidewalks along east or west side of Colonial Ave.</li> <li>Middle school walk routes.</li> <li>Projects create walking loop in combination with others in Plan.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Middle School</li> <li>Residential neighborhoods</li> <li>Camelot Manor Nursing Facility</li> </ul>
<b>Responsible Agencies: NCDOT, Town of Granite Falls</b>		<b>Length: 4,700 ft.</b>

<b>Woodlane St, Simmons Ave to US 321 (23)</b>		<b>Cost: \$48,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along south side to connect to existing sidewalks west of Simmons Ave.</li> <li>Intersection improvements (crosswalks, curb ramps) at Timberbrook Lane</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Residential neighborhoods</li> <li>Businesses</li> <li>Restaurants</li> <li>Sterling Park</li> </ul>
<b>Responsible Agencies: Town of Granite Falls</b>		<b>Length: 750 ft.</b>

<b>Woodlane St, Sterling Ave to Forest Ave (24)</b>		<b>Cost: \$48,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along south side to connect to existing sidewalks east of Forest Ave.</li> <li>Connects to higher priority sidewalk project identified for Sterling Ave.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Residential neighborhoods</li> <li>Sterling Park</li> <li>Businesses</li> <li>Restaurants</li> </ul>
<b>Responsible Agencies: Town of Granite Falls</b>		<b>Length: 850 ft.</b>

Special Project

**US 321 & Falls Ave Interchange – Proposed Superstreet**



**Above:** Current crossing of US 321 along Falls Avenue.



**Above:** Pedestrian crossing of superstreet on NC 54.

**Below:** View of crosswalks to reach media of NC 54 in Chapel Hill.



**Responsible Agencies:** Town of Granite Falls, NCDOT

The North Carolina Department of Transportation is studying the conversion of US 321 to a “superstreet” which addresses turning movements at major and minor intersections by requiring U-turns at locations offset from the major intersections. These improvements are intended to reduce congestion at signalized intersections.

Part of this proposal is the conversion of the existing grade-separated interchange at US 321 and Falls Avenue to an at-grade superstreet crossing.

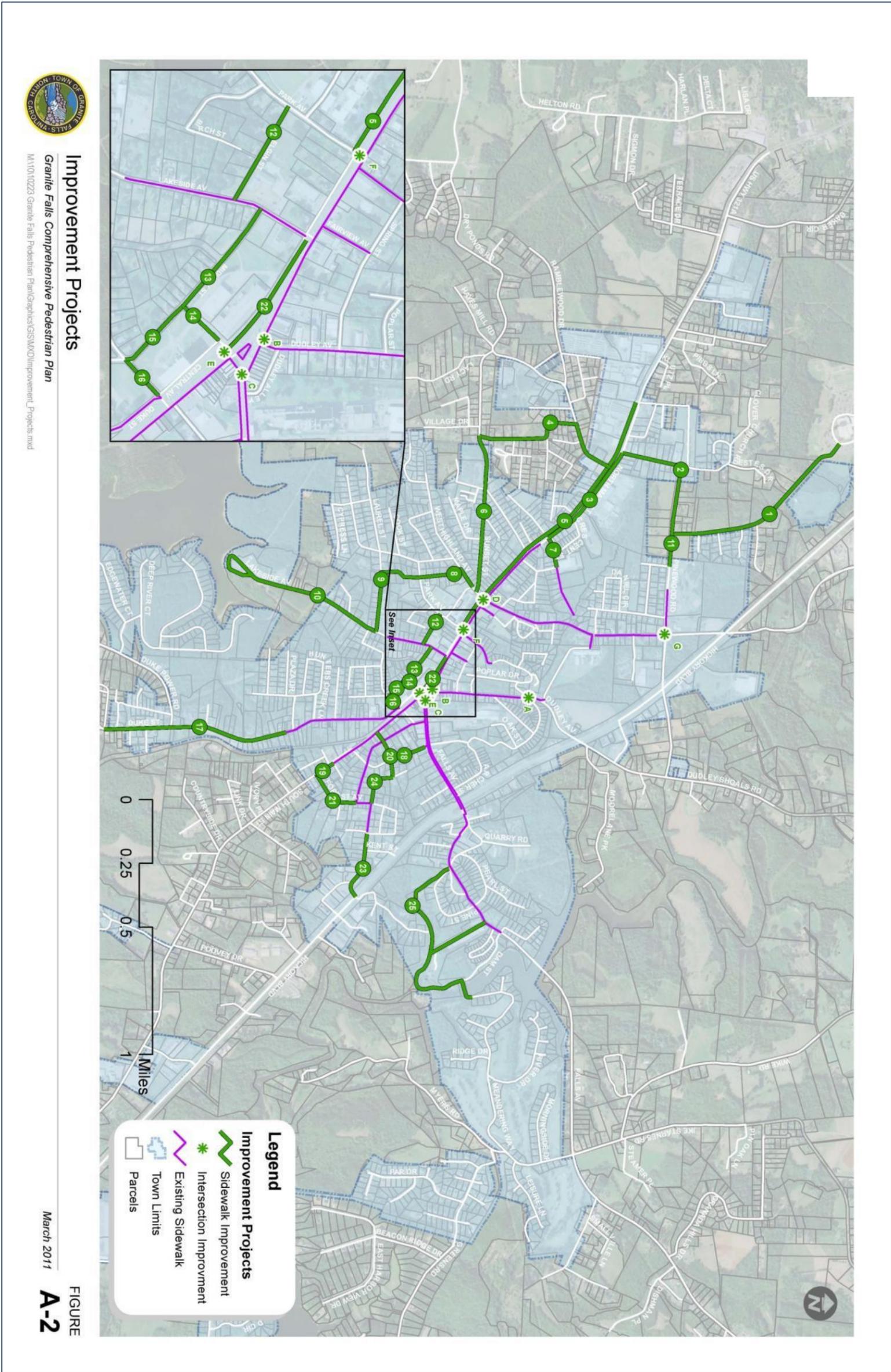
Currently, this is the only pedestrian connection between neighborhoods east and west of US 321. Pedestrian are relatively unimpeded along the current configuration due to a lack of traffic signals and low volumes on intersecting streets and ingress/egress ramps.

This project merits special consideration in the Granite Falls Pedestrian Plan as the conversion of the interchange to a superstreet intersection will have notable impacts to pedestrian level of service and travel times.

Currently, a pedestrian can cross the width of US 321 on the overpass in 30 to 40 seconds. Based on in-the-field analysis of a pedestrian superstreet crossing on NC 54 in Chapel Hill, NC, this crossing time could increase up to 260 seconds (4 minutes, 20 seconds). This has the possibility for major impacts to walkability and accessibility to persons living east of US 321, including the affordable housing units along Quarry Road.

A detailed analysis of the impacts of these proposed improvements is included in the Implementation chapter of the Plan.

Figure ES – 1 Project Recommendations



With careful planning, deliberate steps, and persistence, Granite Falls can become a more pedestrian-friendly community. 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 mentioning them to potential partners, applying for grants, and starting to budget for projects in the future.

More importantly, the Town should continue its efforts to raise awareness about the importance of making a community more walkable in order to continue to grow 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 autos and more reliance on foot travel as not only a form of recreation, but also as a form of transportation.

## Section 1. Goals & Objectives

### 1.1 Introduction

The intent of the Granite Falls Comprehensive Pedestrian Plan is to provide guidance for making the Town of Granite Falls a more pedestrian-friendly community. Funded through a NCDOT grant and the Town of Granite Falls, the Pedestrian Plan serves several purposes, including:

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

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

The following chapters of the Plan provide recommendations for projects, programs, and policies to improve the pedestrian conditions in Granite Falls. The Plan also provides design guidelines that are tailored to the specific needs of Granite Falls. Finally, the Plan presents a list of priorities and a recommended schedule, as well as cost estimates and potential funding sources, to assist with implementation of the Plan's recommendations.

### 1.2 Plan Process

The Granite Falls Pedestrian Plan was begun in March 2010 and was completed in June 2011. During that time, the Town hired a consultant (The Louis Berger Group) to assist with plan preparation and public involvement. The Town conducted a public involvement process which included establishing a stakeholder committee, a focus group session comprised of local citizens, business owners, school officials and pedestrian advocates and two public meetings. A survey was also distributed to the town in paper format and was available on-line. In addition to the public involvement, a town-wide inventory was conducted of existing pedestrian facilities.

Prior to the initiation of the public involvement process, the consulting team met with individuals from the Town staff and Town management for a pre-planning meeting.

The purpose of this meeting was to:

- Review the stakeholder group and identify participants for the visioning exercise and three focus groups;
- Develop an agenda and focus question for the visioning workshop;
- Confirm potential activity centers for focus group workshops;
- Discuss process and outcomes for three focus group workshops; and

- Coordinate date/time/place/logistics for visioning process and focus group workshops.

As a group, they also discussed the anticipated outcomes of the entire process, which were to:

- Create a shared community vision that emphasizes walking;
- Provide infrastructure that makes people feel safe;
- Create natural and built environments that are actually utilized by residents;
- Enhance or create sidewalk connectivity to schools, water features, recreation areas, and the downtown;
- Enhance the downtown so that it attracts pedestrians and stimulates economic growth for businesses.

They also felt that in order for the public involvement to be successful participants should feel as though they were a part of the process (i.e., develop ownership in the process and acknowledge that the town values their opinions and needs), they had to feel confident that something would happen (i.e., a plan that will lead to action), they had to work collaboratively, and the Town Management had to demonstrate that they are trying to proactively plan for the future.

A review of the existing conditions in the Town, local plans and policies as well as feedback from the steering committee and local citizens led to the identification of project and program needs in the community. A draft of the Plan was presented for public comment at the March 2011 Open House and the final Plan was approved by the Town Council on June 6, 2011.

### 1.3 Vision & Goals

Visioning is a technique whereby a community determines what – in a broad context – it wants to become. 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 consulting team began the comprehensive pedestrian plan process by asking community members to envision what a walkable Granite Falls looks like. The purpose of this section is to provide information about the visioning workshop held in March 2010, the participants, the process, the results, and the next steps.

Eighteen persons participated in the visioning workshop, the composition of this work group included representatives from several stakeholder groups and formed the Steering Committee:

- |                   |   |
|-------------------|---|
| ■ Debby Annas     | Caldwell County Public Library          |
| ■ Pat Benfield    | Cardiac Rehab Director                  |
| ■ Ritch Bolick    | Chief of Police - Granite Falls         |
| ■ Helen Chaney    | NCDOT – Bicycle and Pedestrian Division |
| ■ Jerry Church    | Town Manager - Granite Falls            |
| ■ Tim Cooke       | Recreation Director - Granite Falls     |
| ■ Floretta Dula   | Shuford Recreation Nutrition Site Lunch |
| ■ Dan Greene      | Pastor – Christian Fellowship Chapel    |
| ■ Tammy Hagerty   | Granite Travel                          |
| ■ Terrie Johnson  | Education                               |
| ■ Dean Ledbetter  | NCDOT – Division 11 Traffic Engineer    |
| ■ Amy Lowman      | Granite Falls Middle School             |
| ■ Mike Mackie     | Mackie Furniture and Town Council       |
| ■ John Marshall   | Planning Director - WPCOG               |
| ■ Jeff Prince     | Manager – Bank of Granite               |
| ■ Annette Swanson | Granite Falls Planning Board            |
| ■ Bethany Wild    | Transportation Planner - WPCOG          |
| ■ Greg Wilson     | Town Planner – Granite Falls            |

The visioning exercise began by presenting participants with the following question: How can Granite Falls, over the next 5-10-20 years, develop for all age groups as a more walkable and safe community, that promotes user-friendly connectivity throughout the town, targets a sense of pride in the downtown area and neighborhoods, and helps to integrate economic growth with healthy living? Participants then brainstormed their ideas, and with the help of a facilitator, organized their ideas by categorical relationships, named each categorical group, and discussed the results.

The resultant Granite Falls vision for the pedestrian plan consists of six component parts:

- **Promoting a walkable downtown**
- **Setting standards and regulating development**
- **Involving everyone**
- **Going green**
- **Creating connectivity**
- **Encouraging healthy living**

In addition, each of the six over-arching goals had sub-components that relate to policy and program initiatives that can guide plan development and community decision-making over the next 5, 10, and even 20 years. Below is a summary of the results of how stakeholders thought Granite Falls could try to realize their vision.

- Promoting a walkable downtown
  - ☞ Beautify and nicely landscape downtown pedestrian paths
  - ☞ Build a new park (with picnic and play facilities) downtown
  - ☞ Have more festivals and events downtown
  - ☞ Make the downtown area vibrant and appealing to pedestrians
  - ☞ Market the downtown area as a pedestrian-friendly area
  - ☞ Promote open-air events
  - ☞ Promote the benefits of developing a pedestrian network
  - ☞ Recruit downtown eating establishments to be active players
  - ☞ Request that business owners offer incentives to walking customers
- Setting standards and regulating development
  - ☞ Begin with high use areas
  - ☞ Improve parking at Sterling Street Park
  - ☞ Improve school crosswalks
  - ☞ Incorporate town history as a design element
  - ☞ Provide good lighting (i.e., to make walkers feel safe)
  - ☞ Require developers/builders to construct sidewalks (or pay a fee) as part of subdivision and code approval
  - ☞ Update equipment in existing parks
  - ☞ Utilize and improve landmarks to make both the town and special areas visually inviting
- Involving everyone
  - ☞ Develop town council support
  - ☞ Encourage community involvement ... especially school kids and retirees
  - ☞ Find and utilize project champions

- œ Piggyback pedestrian initiatives with existing programs (e.g., Main Street program)
  - œ Provide walking programs for all age groups
  - œ Seek multiple funding sources (to include special sales tax)
  - œ Work together (e.g., businesses and medical practices might partner to develop wellness programs)
- Going green
    - œ Develop a greenway
    - œ Integrate green areas throughout the pedestrian system
    - œ Maintain a small carbon footprint
    - œ Mix materials
    - œ Provide places for rest, trash, and recycling
    - œ Utilize nature-friendly designs that are environmentally attractive
- Creating connectivity
    - œ Connect all schools with the sidewalk system
    - œ Extend sidewalks to Lakeside Park (to include from the middle school)
    - œ Identify missing segments, prioritize, and bridge the pedestrian system gaps
    - œ Expand pedestrian infrastructure to out-lying areas (e.g., Granada Farms)
    - œ Develop the Old Mill Pond as a pedestrian-accessible recreation area
- Encouraging healthy living
    - œ Integrate technology in ways that will support healthy life styles
    - œ Promote a walkability mindset through educational initiatives ... making walking an attractive alternative transportation option
    - œ Use recreation center programs to gauge health consciousness

From these six categories, a vision of the Granite Falls Pedestrian Plan can be created:

***‘Developing a more walkable and safe community over the next 5-10-20 years – one that promotes user-friendly connectivity throughout the town, targets a sense of pride in the downtown area and neighborhoods, and helps to integrate economic growth with healthy living – will require that the town meet the needs of present and future residents, businesses, visitors, and all age groups ... through an integrated network of walkways.’***

This is the vision for how the City will be viewed in the future. As the Plan proceeds, implementation strategies will be added to define how this important Vision will be carried out in months and years ahead.

## Section 2. Existing Conditions

### 2.1 Introduction

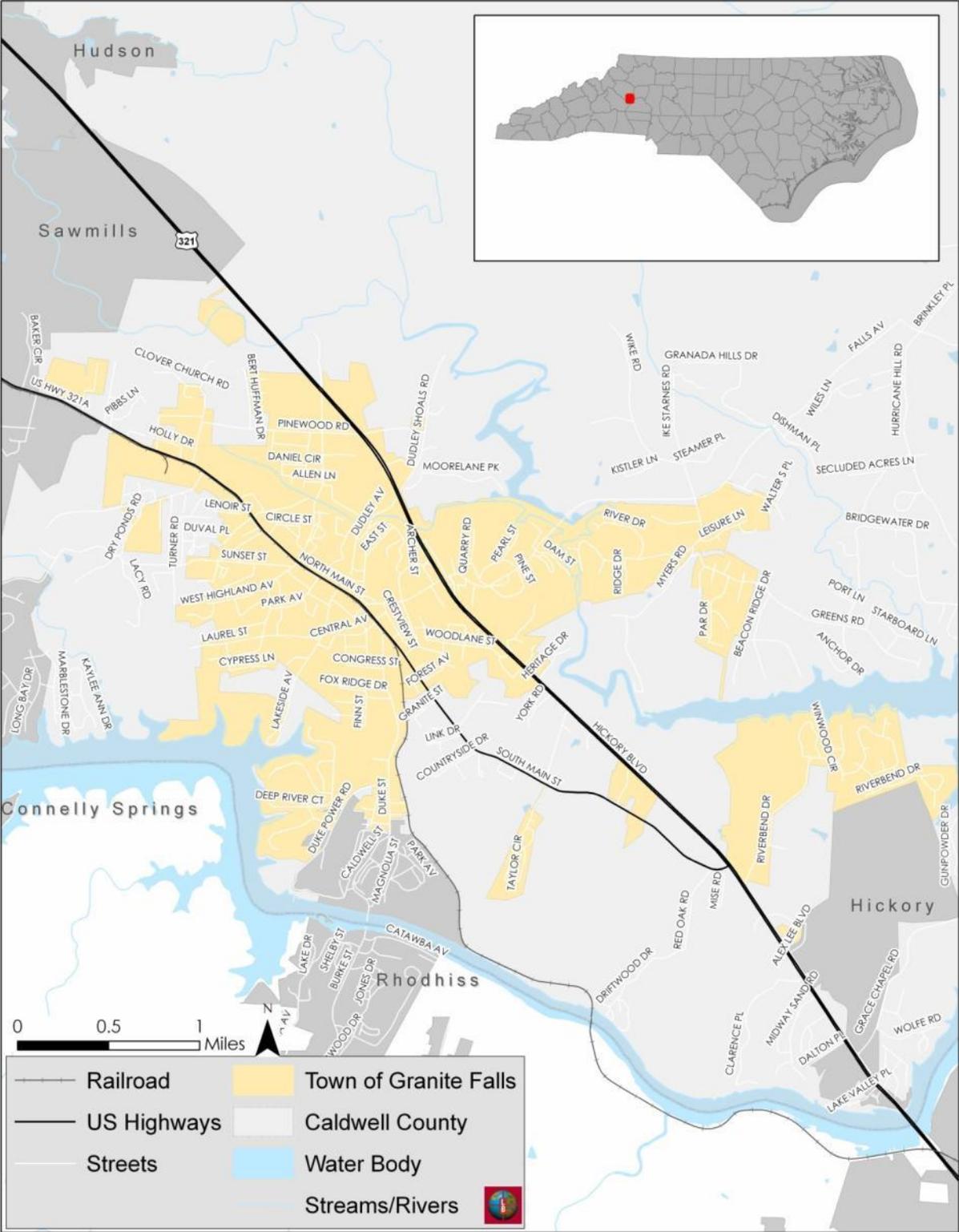
Located in the southern portion of Caldwell County, North Carolina, Granite Falls is nestled in the foothills of the beautiful Appalachian Mountains. The Town is located just north of the City of Hickory along US 321 Highway and a short drive north to the Historic town of Blowing Rock and Grandfather Mountain. Downtown Granite Falls located along Falls Avenue, Madison Avenue and Main Street is populated with popular destinations such as Huffy's Ice Cream, Granite Drug Store, Town Hall, restaurants and shopping venues.

In order to create a better understanding of the community of Granite Falls and the needs of its pedestrians, research was conducted on its origins and how it's evolved over the years. The first phase of research was oriented towards ascertaining the evolution of Granite Falls and its pedestrian network. The second phase of work was oriented towards understanding current issues through (1) demographic data and (2) a general survey used to gather specific information from residents about their walking habits.

**This section of the Plan provides:**

- A demographic analysis of the Town's population
- A discussion of community concerns
- A summary of existing pedestrian facilities and major pedestrian destinations in the Town.

Figure 2-1. Granite Falls Location



## 2.2 History of Development

The Town of Granite Falls was likely settled around 1752 and grew up alongside Gunpowder Creek. The Town started to develop in 1792 with the construction of the iron works mill along the Creek. Within the first few years of its development, roads were in need of improvement for traveling workers and a community was starting to form under the leadership of Andrew Baird. Baird was the largest land owner at the time and soon amassed 25,000 acres, all of which is now included within the corporate boundaries of Granite Falls. Different industries came and went from Granite Falls but it continued to be a bustling community and by 1884, the first rail train came through Granite Falls. Once the train reached the Town, the center of activity moved away from the water and centered around the rail line, moving homes and retail into the same area.



Pictures shows an early photo of the falls, where industry began in Granite Falls



Picture shows a more recent photo of the falls. Although the Town grew up around the falls, today they are not easily accessible.

In 1899, a robust community had formed with homes and businesses clustered in a central location, so the Town of Granite Falls was incorporated. One of the original ordinances for the Town included a five dollar fine for obstructing a sidewalk. At that time, sidewalks were just extensions of the dirt roads and it wasn't until 1917 that there are actual records of sidewalk construction. The original sidewalks were built of planks and existed only in the central business district. However by 1924, the Town was issuing bonds (\$20,000 in 1924 and \$40,000 in 1925) for sidewalk and street improvements. With the construction of sidewalks came problems similar to those of today. Modern towns and cities have rules prohibiting bicycles on sidewalks, since the space is solely reserved for pedestrians. However, back in the early 1900's, the Town had to prohibit the use of

roller-skates and cars on public sidewalks. There were also conflicts back then between pedestrians in the downtown and people driving there, so the Town had to ordain its first "stop sign" to force traffic, entering the downtown area from Dudley Shoals Road, to come to a complete stop before crossing the sidewalk. The first official stop light was installed in 1935.

As the sidewalk and street networks in Granite Falls were slowly developing and the downtown was growing, the State highway Department began using concrete to construct Highway 321-A, which runs through downtown Granite Falls today. In 1961, the Town established a Planning and Zoning Board as the desire to construct new structures continued to grow and needed to be regulated. And then in 1994, a Town Steering Committee was established to, above all things, create a sense of community in Granite Falls.

Today, the downtown of Granite Falls looks much like it did in the 1940's. There were wide sidewalks in front of businesses to accompany the larger numbers of people living in the area. However, as Granite Falls grew outwards, sidewalk development did not keep pace with household growth and many highly traveled areas of Town are lacking the infrastructure necessary to keep pedestrians mobile and safe.

### **2.3 Demographic Analysis**

In order to provide full and adequate services to all the residents of Granite Falls, Granite Falls Comprehensive Pedestrian Plan must address all of the needs of the people it serves, residents and visitors alike. To this end, the Town's 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 accepting walking as a mode of transportation. The following paragraphs provide a summary of the demographic analysis for the Town of Granite Falls and explain the implications of the analysis for the recommendations made in the Pedestrian Plan. The complete demographic analysis will be found in the Appendix A of the final report.

The U.S. Census reported in 2000 that the Town's population was 4,612 (estimated to be 4,999 in 2009), a 41 percent increase from the 1990 Census (3,252 persons). The 2000 Census reports that the Town is divided racially with 92 percent of the population reported as White Caucasian and the remaining 8 percent represented by minorities including African American, American Indian, and other races. Age-distribution patterns in Granite Falls reflect a similar pattern compared to state and national averages. Persons living in the Town 18 years or older represents 75 percent of the population and persons 65 and older represents 15 percent of the population, compared to state and national population of 74 percent of the population is 18 years or old and 12.4 percent are 65 or older.

Table 2-2. Percent Change of Population by Age, 1990-2000.

Age	2000 Population	Percent	1990 Population	Percent	% Change
0-4	321	7%	207	6%	55%
5-19	910	20%	625	19%	46%
20-44	1737	38%	1149	35%	51%
45-64	954	21%	646	20%	48%
65-84	561	12%	531	16%	6%
85+	129	3%	95	3%	36%
Total	4612	100%	3253	100%	42%

The analysis indicated that eight percent of the population in Granite Falls is below poverty level, slightly lower than the County at 10 percent and the State at 12 percent. The town's household non-vehicle availability statistics are close to the state and national numbers though Granite Falls has a slightly larger percentage of households with no car availability with 3 percent of housing units served by no vehicles. Caldwell County and North Carolina both are reported having 2 percent of their populations without motor vehicles. The Census also reports that 48 percent of the population is in the workforce and the majority of this population commutes between 20 and 24 minutes. The high percentage of residents in the Town with car availability could be why they are traveling to larger surrounding communities for work.

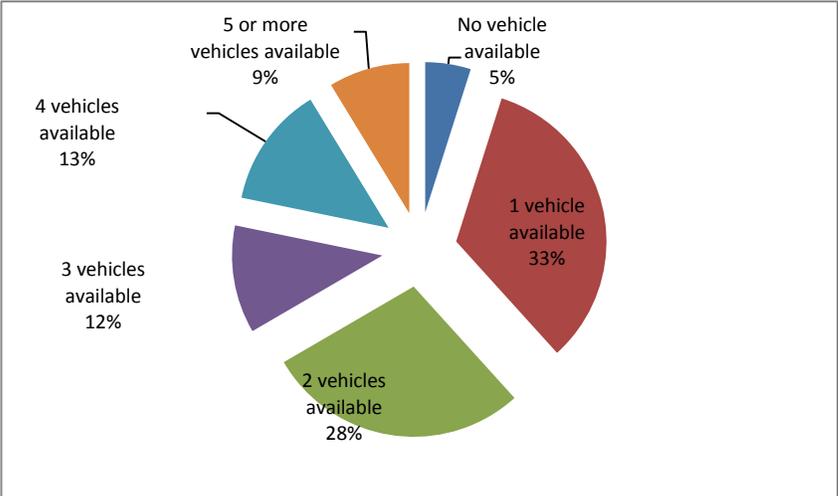


Figure 2-3. Vehicle availability in Granite Falls.

Out of the 2,223 working individuals in the Town, 99 percent use a car as their main mode of transportation and less than one percent uses an alternative mode to transportation, though 14 percent of the residents live within 14 minutes of the workplace.

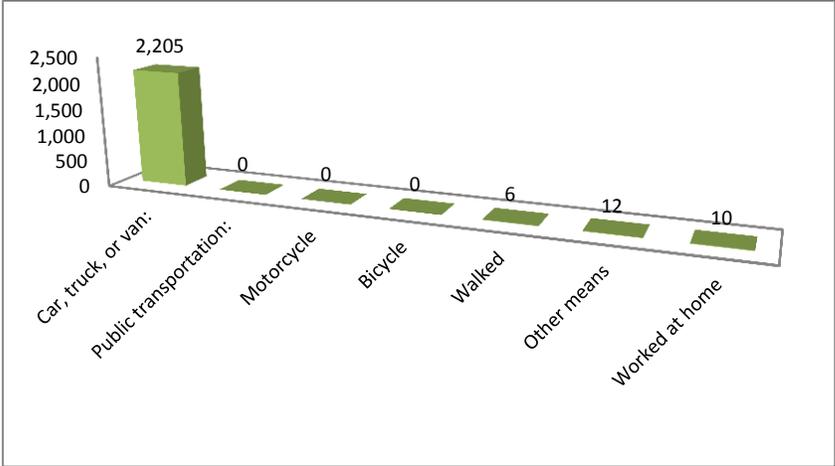
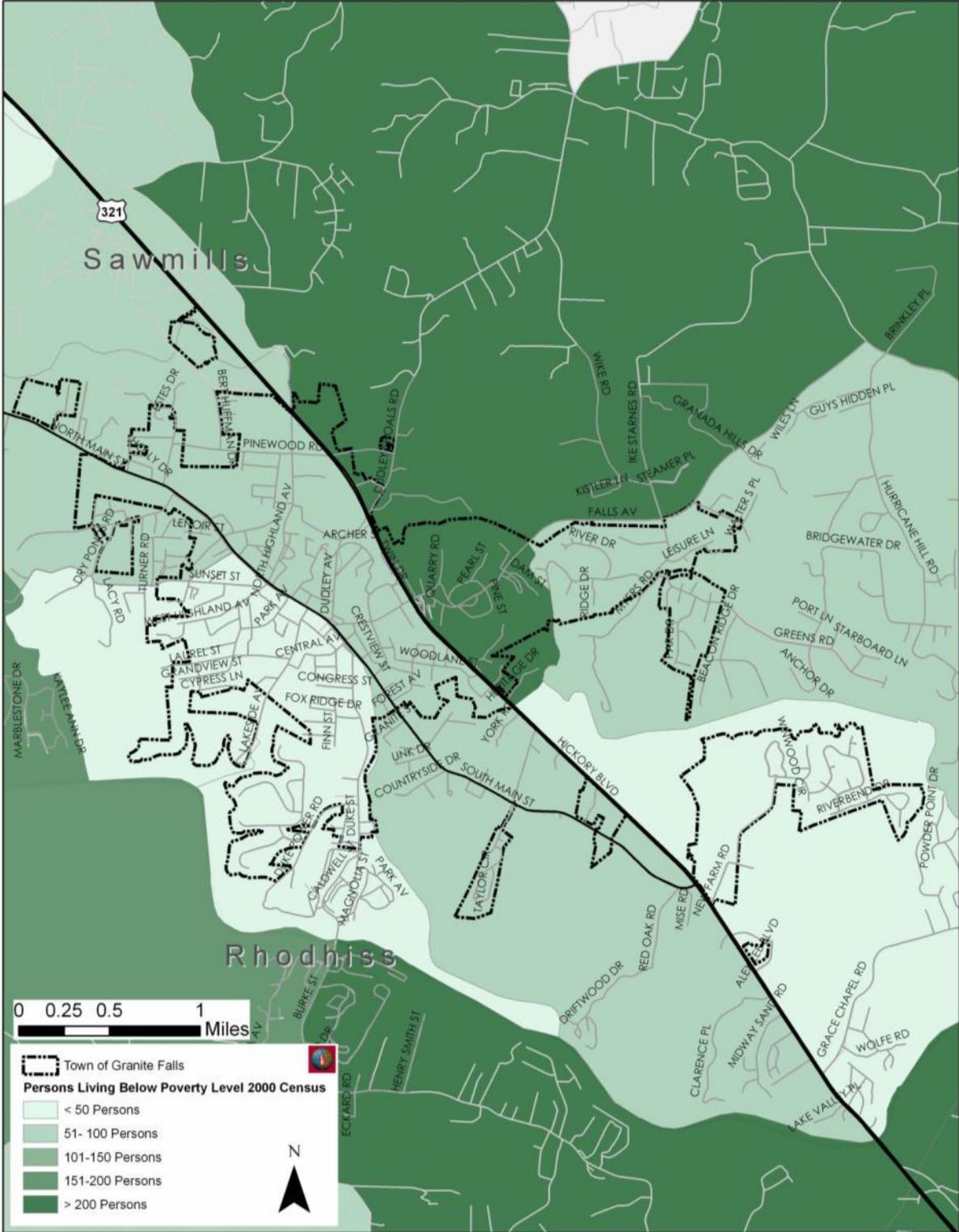


Figure 2-4. Transportation modes for commuters.

Creating a more walkable and safe environment for the community could increase the number of commuting pedestrians. In addition to the environmental and air quality benefits of increased walking and decreased automobile use, the effects of adopting these pedestrian improvements will ease vehicle traffic congestion and improve the overall health and wellness of the residents of Granite Falls.

Figure 2-5. Persons in Poverty



## 2.4 Inventory of Existing Conditions

As part of the recommendation process, an existing conditions analysis was conducted to assess the current pedestrian network and community needs in Granite Falls. 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.

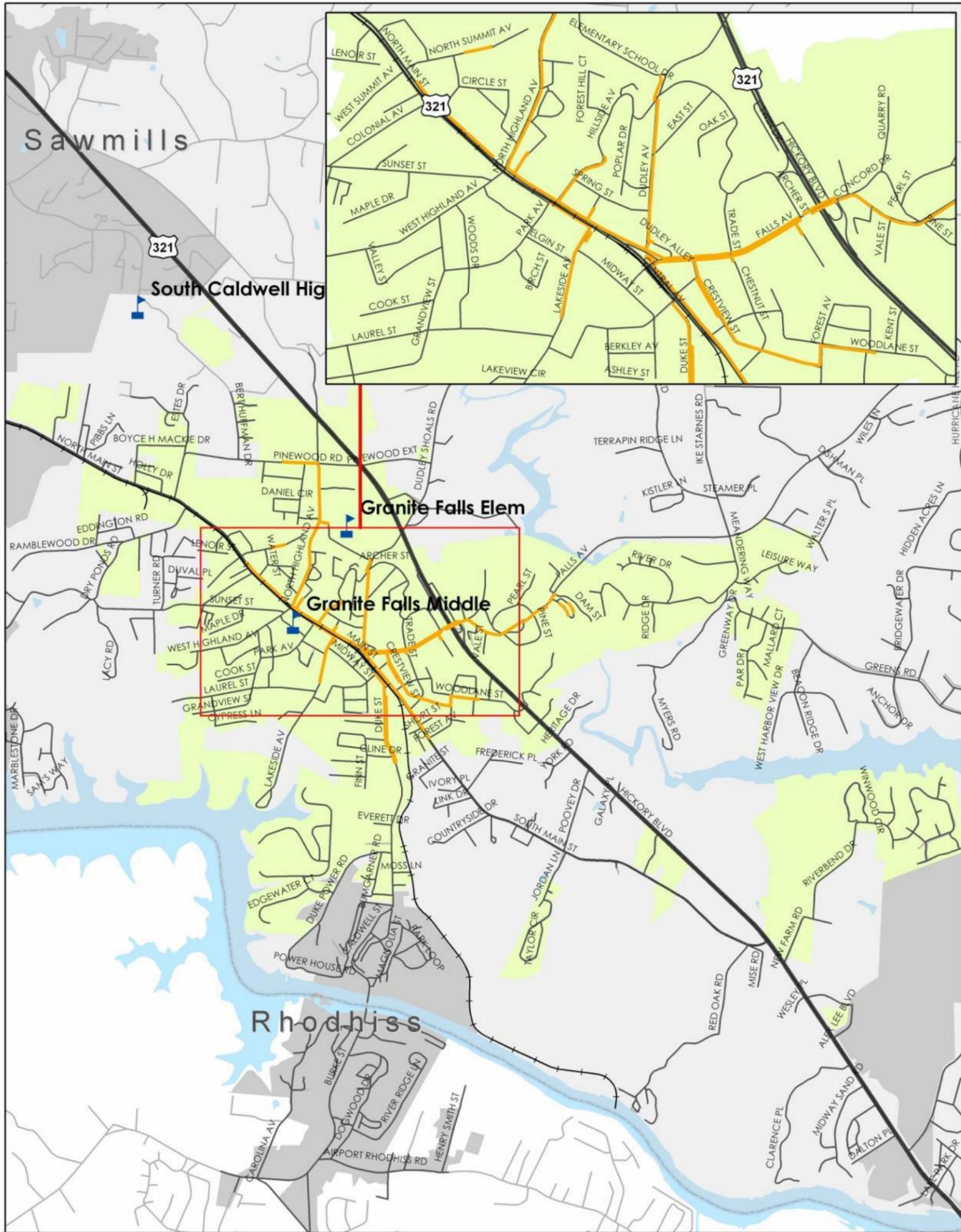
Part of the answer as to why many people walk in Granite Falls – and why more people don't walk – can be found in the level of accommodation for pedestrians. While downtown Granite Falls has adequate pedestrian amenities, the outlying areas of the Town have fewer amenities. It is tempting to limit the observations of pedestrian accommodations to sidewalks or pathways alone, but intersection design, the location of shops, businesses and homes, and the policy environment in the City, County, and State are all important considerations as well.

Research concludes that Granite Falls has 43 miles of streets and only 6.1 miles of sidewalks. Most sidewalks are located in the central part of the Town. The downtown area of Granite Falls has many areas of continuous sidewalks, with only a few small areas of missing sections that could be filled in to complete a pedestrian connection through the downtown business district. Figure 2-6 identifies the existing pedestrian facilities in the Town. Main Street (US Highway 321-A) runs through the center of the Town and is used as a major thoroughfare for common travel. The Average Daily Traffic (ADT) for Main Street is reported by NCDOT in 2009 was 8,500 vehicles near the downtown area and 6,900 vehicles just south of the Sawmills/Granite Falls Town boundary limits. Falls Avenue was reported of having between 5,600 and 6,600 vehicles per day. Other main roads in Town such as N. Highland Avenue and Pinewood Road were reported as having 2,800 and 5,900 vehicles respectively.



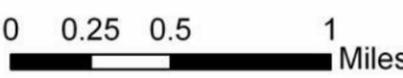
Existing Sidewalk in Downtown Granite Falls.

Figure 2-6. Existing Facilities in Granite Falls.



Granite Falls Pedestrian Plan  
Existing Facilities

-  Schools
-  Railroad
-  Existing Sidewalks
-  US Highways
-  Town of Granite Falls
-  Caldwell County




An inventory of the existing crosswalks in Granite Falls identified that the Town is equipped with six crosswalks with high levels of pedestrian activity. The intersections of Commerce Street and S. Main Street, Dudley Avenue and Falls Avenue, N. Highland Avenue and Falls Avenue and Madison Avenue all have typical standard crosswalks. Two school zone warning devices are located in the Town near the intersections of Orchard Street and N. Highland Avenue and Pinewood Plaza Drive and N. Highland Avenue.



Photo the intersection at Dudley Avenue and Park Square.

A few of the intersections in downtown have crosswalks for a safe path for pedestrian to cross, but due to poor site visibility, a few of these intersections are treacherous. Dudley Avenue and Park Square is an example of an intersection in the downtown area that has existing crosswalks, but due to the close proximity of the buildings near the intersection, cars must stop over the crosswalk in order to monitor oncoming traffic. This leaves pedestrians out of the driver's site causing unsafe crossing conditions. Different measures other than the typical pedestrian signals and crosswalks are needed here to improve pedestrian facilities. The intersection of Commerce Street, Central Avenue, Duke Street and Main Street is another treacherous intersection for the Town. Not only does a pedestrian have to cross two to three street intersections, there are no crosswalks or pedestrian signals. An additional barrier at this intersection is the rail road running along Main Street and Duke Street. Pedestrian improvements are needed at this intersection incorporating techniques for the roadway as well as the rail road. Additional intersections in the Town that lack appropriate pedestrian facilities are N. Main Street and Park Avenue, Pinewood Avenue and Highland Avenue, N. Main Street and Lakeside Avenue and Dudley Avenue and Archer Street. Recommendations for these intersections are further discussed in Section 5.



Picture of the intersection in front of Granite Falls Middle School. The two lanes closest to the stairs is the designated carpool lane. The rail road runs between the carpool lane and Main Street.

Many of Granite Falls major roadways, connecting residents with important commercial, recreational and institutional sites, lack sidewalks and make walking for transportation unappealing, unpleasant or possibly unsafe in some areas. Additionally, many key areas such as major intersections and railroad crossings will need pedestrian improvements for safer and more comfortable traverse. Figure 2-6 includes an inventory of Granite Falls' existing sidewalks and illustrates important pedestrian destinations such as schools, parks, shopping and major employers.

In addition to parks, local schools are major pedestrian generators, and top priority should be given to creating connections between Granite Falls residential areas and schools. Three schools are located in or near Granite Falls, Granite Falls Elementary, Granite Falls Middle and South Caldwell High. Currently there are sidewalks servicing Granite Falls Elementary and Middle Schools but not South Caldwell High. Although there are sidewalks present at the two, existing infrastructure is not present on all the roads surrounding the schools or in the nearby neighborhoods where attendees may live. An active railroad is located in front of Granite Falls Middle School along Main Street. On average three trains a day run through the Town. During after school release, children who live north of the school must cross two to three lanes of carpool traffic, cross the railroad line and then cross Main Street to reach the opposite side of the road toward North Highland and Hillside Avenues. Currently crossing guards and police oversee the students traveling from the school area across Main Street. The railroad crossing in this area will need improvements to better serve the residents and students.

Lakeside Park is located in the southern portion of Granite Falls and currently does not have any sidewalks leading from nearby neighborhoods to the Park. Recent funding from 'Safe Routes to School' (discussed in detail in section 6) was received on behalf of the town to complete the sidewalk connection along Lakeside Park. All easements have been recorded and secured and construction will begin soon. Other recreational facilities such as the Granite Falls Recreation Center on Pinewood Road have sidewalks from the Center headed east to Highland Ave and south towards Main Street.



## 2.5 Pedestrian Crash Analysis

Table 2-7 shows the pedestrian crash data for the Town of Granite Falls for the years 2000-2010. Figure 2-9 identifies the locations of the crashes. During this time there were seven crashes reported. A review of the locations finds that, all the reported crashes occurred in intersections while pedestrians are attempting to cross. The intersections where the crashes were reported are:

- Water Street and Circle Street
- Chestnut Street and Crestview Street
- US 321 and Pinewood Road
- Hickory Boulevard and Pinewood Road
- Duke Street and Duke Power Road
- US 321 and Falls Avenue

Table 2-7 Crash by Type, 2000-2010

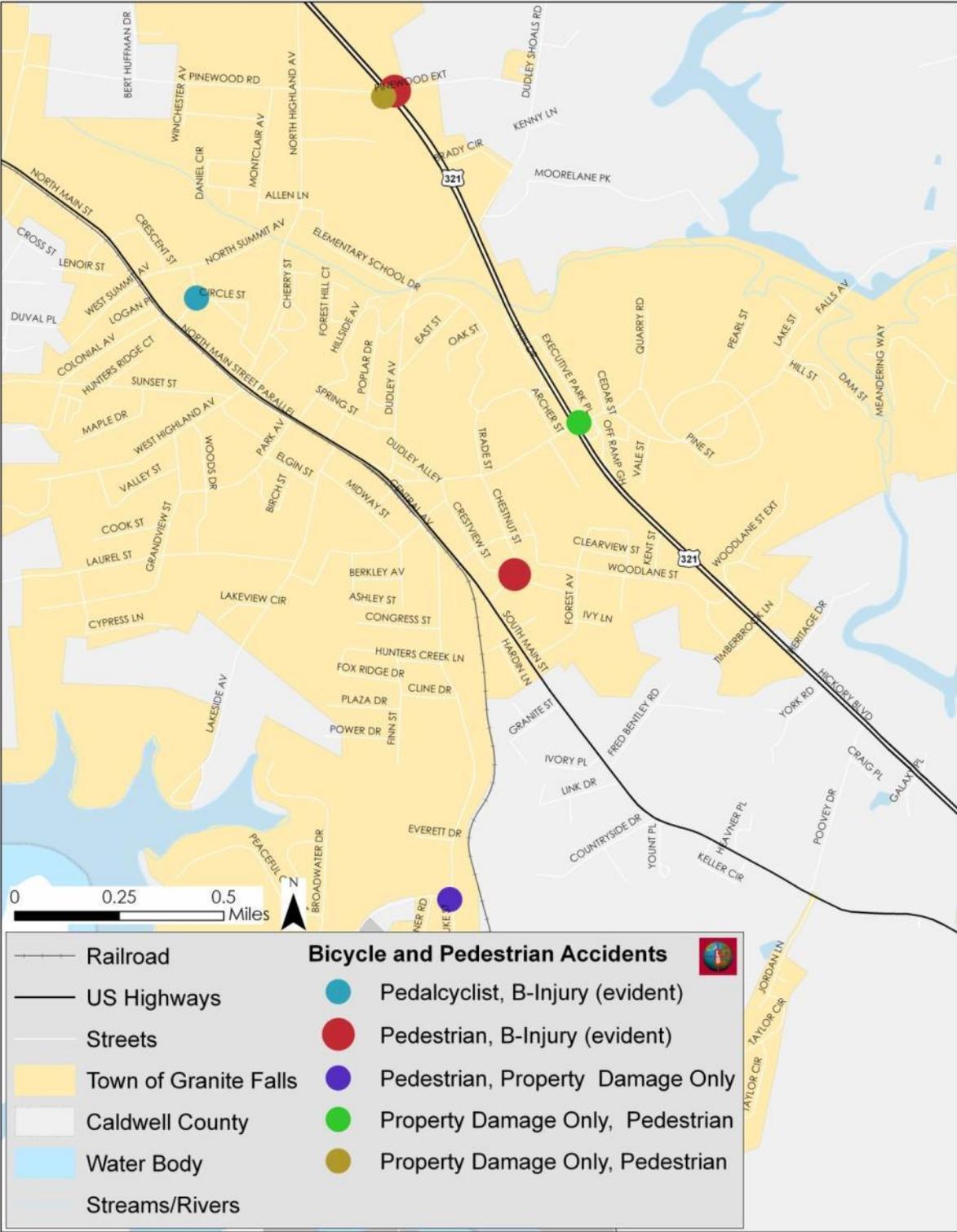
Type of Crash	Injury Type	Total Accidents
Pedestrian	Type B Injury (Evident)	3
Pedestrian	Fatal	1
Pedestrian	Property Damage Only	2
Cyclist	Type B Injury (Evident)	1

Table 2-8 compares the Town of Granite Falls with other similar size municipalities in North Carolina: Fuquay-Varina, Holly Springs and Wallace for the years 2000-2008.

Table 2-8 Comparison of Granite Falls crashes to Peer North Carolina Communities, 2000-2008.

Area	2000 Census Population	Number of Crashes
<b>Granite Falls</b>	4,612	6
Fuquay-Varina	8,058	26
Holly Springs	9,822	13
Wallace	3,565	13

Figure 2-9. Location of Pedestrian and Bicycle Accidents.



## 2.6 Community Concerns and Needs

Public input has played a critical role in the Town of Granite Falls Pedestrian Plan, helping to guide the development of the project list, identify program and policy recommendations, and assist with prioritization. The process to gather public input has included multiple elements, incorporated into the Pedestrian Plan throughout the planning process. At the project onset, a Steering Committee was created to serve a guiding role for the Plan. Members of the Steering Committee included Town staff, citizens and local business representatives. A public outreach effort was developed in parallel with the regular Steering Committee meetings, which included a Town -wide survey initiated on June 8, 2010 and three focus groups.

### 2.6.1 Focus Groups

In addition to the steering committee, a series of focus groups meetings were conducted during the planning process. Twenty-seven persons participated in the discussion groups. The selection of participants for each focus group was by stakeholder interest: banks, business community, churches, civic organizations, community neighborhoods, developers/realtors, education, elected/appointed town officials, health care, historic organizations, major employers, public and non-profit facilities, and special-status landowners. The focus groups were held in March 2010.



Photo of Focus Groups Participants

The purpose of each focus group was to explore pedestrian connections and relate the connections to design considerations and concerns/suggestions. Participants worked in small groups of 3-4 persons to develop the below information:

1. Identify activity centers within the town;
2. Using a base map: locate the activity centers, existing residential areas within the town, the approximate location of where each participant lives and works, pedestrian movement patterns that connect activity centers and residential areas, and opportunities for better pedestrian connectivity between activity centers and residential areas (i.e., either improved pedestrian movement or the creation of new pedestrian pathways);
3. Presentations of the results (by each small work group);
4. Interpretation (by plenary work group) of the presentation results (to include preparation of a consolidated listing of potential projects, identifying the meaning of these connections in terms of design considerations, and identifying both concerns and suggestions that might impact plan development); and
5. Prioritization of the interpretive results.

Prior to the focus group workshops, a steering committee identified 15 activity centers that relate to pedestrian connections. These can be places where people shop, work, eat, pray, or go for leisure time activities. Figure 2-10 identifies the activity centers identified by the steering committee.



After identifying the important activity centers, the participants utilized maps to conceptualize how pedestrians would move between these spaces. These movement connections became building blocks to facilitate identification of potential projects that the consulting team will use to develop elements of the comprehensive pedestrian plan.

Table 2-10 provides a listing of potential projects from all three focus group workshops. The listing of potential projects is in descending order from highest priority to lowest priority.

Table 2-10 Potential Projects Identified by Focus Group Participants

Focus Group 1	Focus Group 2	Focus Group 3
Improve/add crosswalks (Duke St, middle school, elementary school, and recreation center)	Improve safety at crosswalks (especially Philadelphia Lutheran Church, Pinewood/Highland Ave, Highland Ave/Main St, Main St/Park Ave, Dudley Ave/Falls Ave at the Police Dept., Dudley Ave at elementary school, and Duke St/Commerce Ave/Main St)	Improve walkability in the downtown area (i.e., connecting from one street to another)
Improve safety in downtown area (especially around square)	Improve access to dam/falls	Improve safety to/from schools
Extend sidewalks to park (i.e., Lakeside Ave)	Extend sidewalk to high school	Add guardrail and sidewalks on Pinewood to Civic Club Dr
Connect: schools-recreation center-downtown	Improve sidewalks to schools and recreation center	Connect to Lakeside Park
Improve the old in ways that it will blend with the new	Improve access to Sterling Park	Add crosswalk at Pinewood/Highland to recreation center
Provide better pedestrian-oriented signage	Improve safety at Falls Ave/Archer St and Falls Ave/US 321 exit ramp	Address safety issue at intersection of Concord Church/Cedar St
Enhance walkability within neighborhoods	Require sidewalks in new development, and construct sidewalks where walking paths presently exist	Improve way-finding system
Create loop: N Main-Pinewood-high school	Emphasize connectivity within a one mile radius of the downtown area	Improve access to mill pond
Improve transition from N Highland to Pinewood	Improve pedestrian access to shopping centers and medical facilities	Add crosswalk at Falls Ave/Lakeside/Park Ave
Extend sidewalks on Falls Ave to Old Mill Pond	Improve safety at crosswalks.	Better connect Duke St/Broadwater to Lakeside

Design considerations are elements that can nurture user experiences and enhance the appreciation for pedestrian movement. These design considerations start with the identification of pedestrian focal points and spurs (i.e., branches), and then expand to include the different ways to enhance and implement them. Table 2-11 provides a listing of design considerations – from each focus group – in descending order from highest priority to lowest priority.

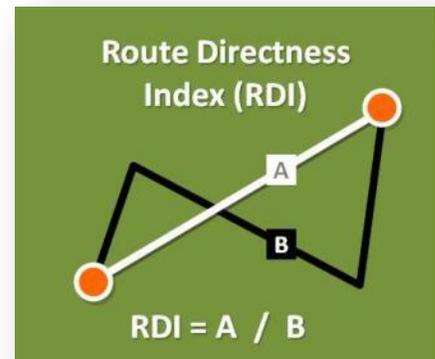
Table 2-11. Design Considerations

Focus Group 1	Focus Group 2	Focus Group 3
Focal points: schools, churches, post office, and downtown	Focal points: dam/falls, Sterling Park, Lakeside Park, schools, recreation center, shopping areas, medical facilities, and downtown	Focal points: Lakeside Park, downtown, Duke St/S Main St intersection, US 321/Falls Ave intersection, Highland Ave/N Main St intersection, Pinewood/Highland intersection, and recreation center
Spurs: neighborhoods, Duke St, extension to high school, Lakeside Park	Spurs: transportation museum, banks, post office, and Huffy's	Spurs: churches, restaurants, Huffy's
Include lighting for safety	Include way-finding signage	Include enhanced visibility at crosswalks
Use nice landscaping	Integrate landscaping with sidewalks	Include pedestrian countdown signals
Provide for generous width	Make the downtown area visually distinctive	Provide for safety buffers
Include trash receptacles	Use nice lighting to provide for safety	Nice signage
Use variety of materials	Make town gateways inviting ... combine with intersection improvements	Aesthetics (i.e., appearance) in general
Include benches	Use traffic calming (where appropriate)	Conserve natural areas
Include way-finding signage	Make the integration of parks and sidewalks inviting	Need integrated green space and buffers
Include pedestrian signals	Use attractive materials	Include rest spots (i.e., benches)
Include water fountain and public restroom facility	Provide places to sit and relax	Lighting
Make all designs user-friendly	Create a sense of connectivity	Include public restroom facilities
Consider using speed bumps	Provide for buffers	Use variety of colors and patterns

## 2.6.2 Walkability Analysis

An analysis related to the impacts of walkability in Granite Falls was conducted once recommended projects were identified by the steering committee, Town Staff, and consultant team. This analysis evaluated existing conditions in Granite Falls as it relates to the presence of sidewalks and intersection enhancements that promote pedestrian usage which were then compared that to the short-, medium-, and long-term improvements to gauge the positive impacts on pedestrian system connectivity throughout the Town.

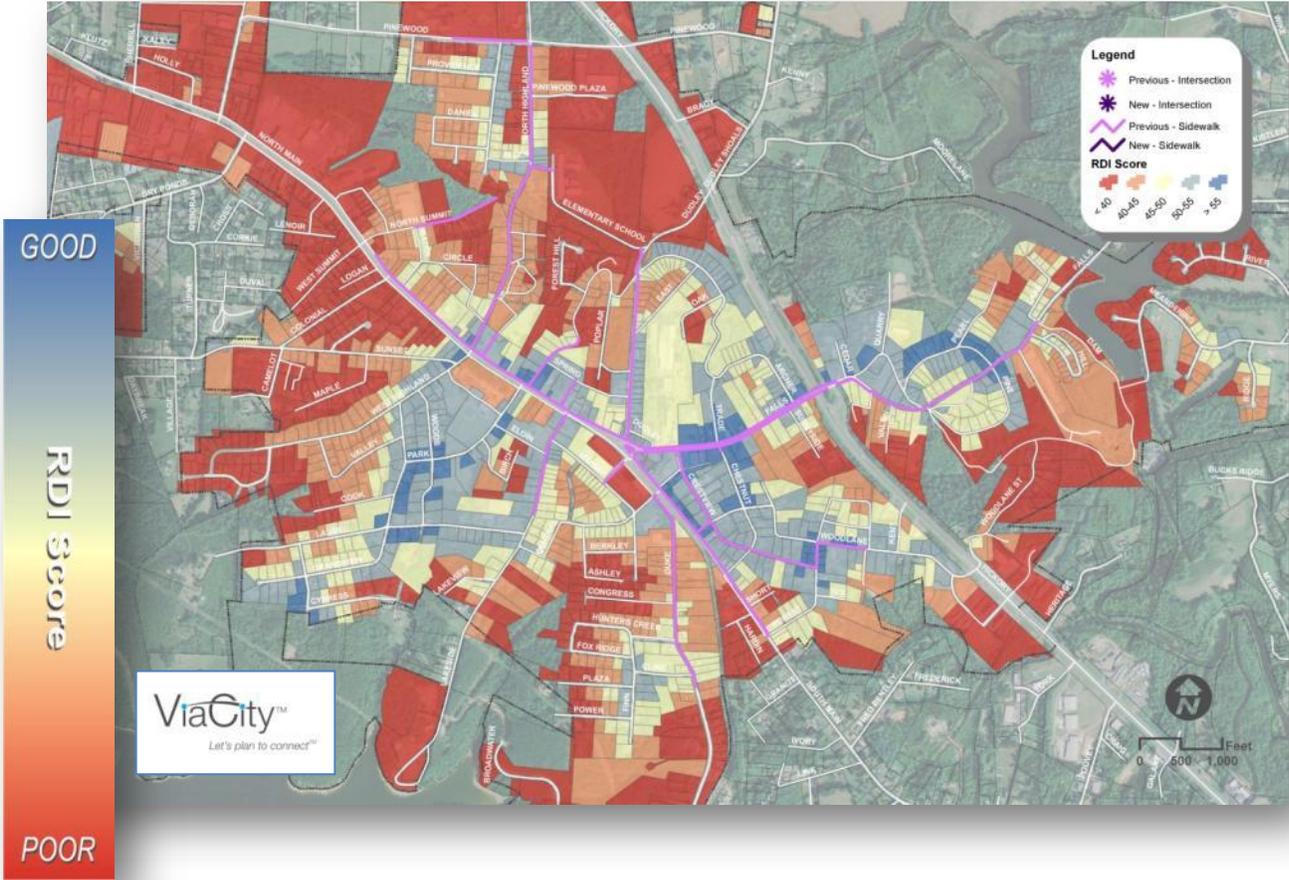
Using ViaCity—a GIS-based tool that measures pedestrian system connectivity and quality—a connectivity metric called “Route Directness Index” was calculated for each property within Granite Falls. The baseline analysis utilized the existing sidewalks and crosswalks as a determinant in evaluating the walkability of the Town’s streets. Route Directness Index (RDI) is calculated for each parcel in Granite Falls using a ratio of the direct point-to-point distance between two parcels (“crowflight”; shown as “A” in the image at right) divided by the actual route distance (shown as “B”) between those parcels. This analysis was done for every parcel within Granite Falls and an average RDI was calculated for each parcel based on all parcels within a ¼-mile radius of that parcel. RDI scores above 55 are considered very walkable while scores at or below 40 indicate barriers to walkability either through indirect walking distances or impedances such as lack of sidewalks, difficulty crossing major streets, or major obstructions.



For street segments that did not contain sidewalks and have high vehicular exposure to pedestrians, a parcel would receive a lower average RDI score if that route was a primary connector to other parcels within the ¼-mile radius. Some residential streets with few obstructions and limited exposure to vehicles for pedestrians would not be penalized to the same degree in terms of their walkability.

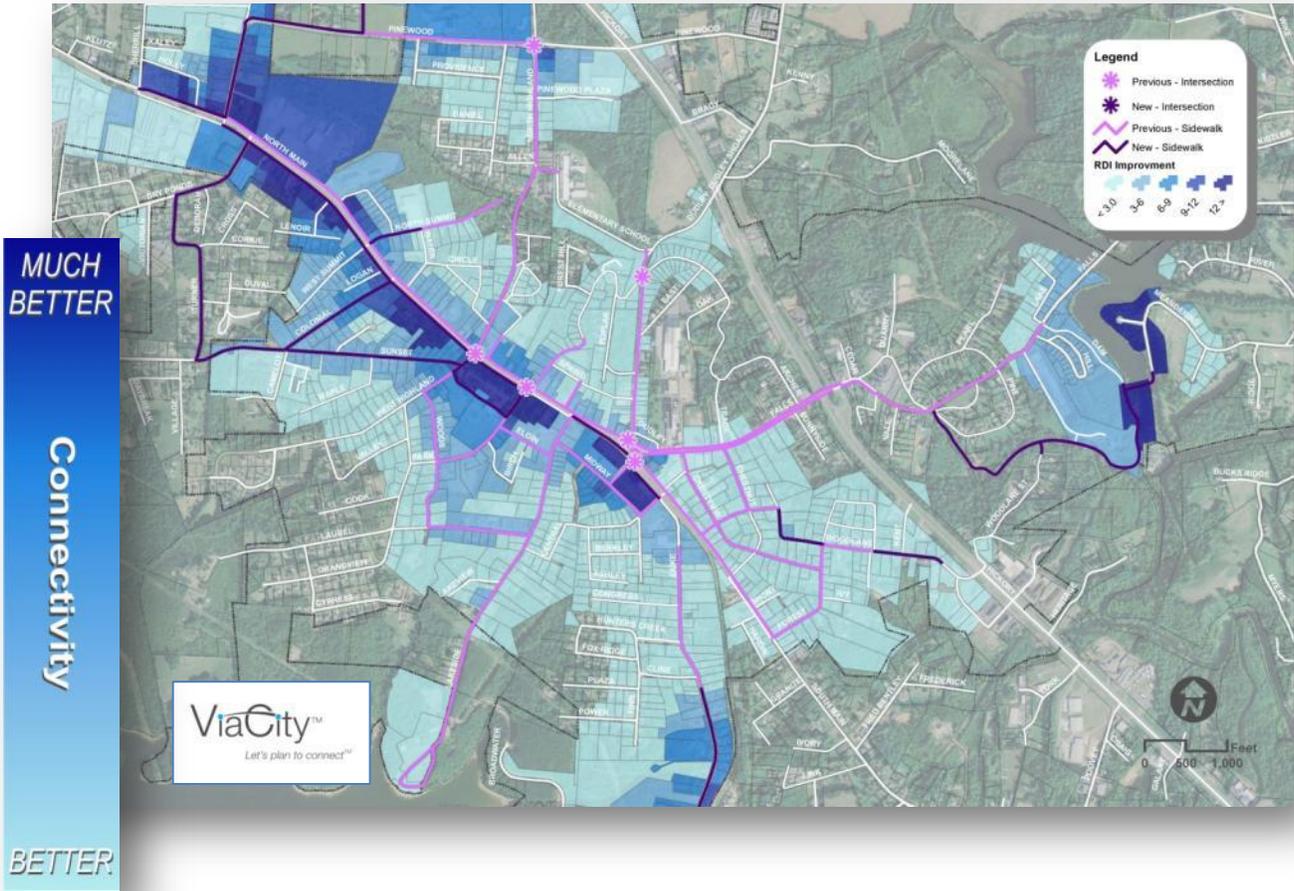
**Baseline Walkability Analysis.** The figure below shows the RDI averages calculated for each parcel within Granite Falls based on the existing pedestrian network and average of walkability between parcels within ¼-mile of each parcel. In general, properties near the downtown area, southeast of downtown and near the Middle School have conditions suitable to walking. Properties shown in shades of blue indicate those with high average RDI scores, whereas properties shown in red indicate those with low RDI scores. The average RDI score for Granite Falls is 43.5—or low-to-medium overall walkability. There are 1,092 properties with RDI scores greater than 45.

Figure 2-12. Baseline Walkability Analysis



**Project Impacts to Walkability.** The figure below shows the change in RDI score as a function of the improvement in the average RDI calculation for properties resulting from implementation of the sidewalks, greenways and intersection improvements identified in the Granite Falls Pedestrian Plan. Properties shown in the darkest shades of blue for the most positively impacted (a change in RDI score of more than 12 points for the darkest shade), while those shown in light blue were impacted, but by less than 3 points. In a buildout scenario of these projects, the number of parcels with a RDI score of greater than 45 increases to 1,343—a change of more than 25%.

Figure 2-13. Walkability Analysis & Impacts of Pedestrian Plan Projects

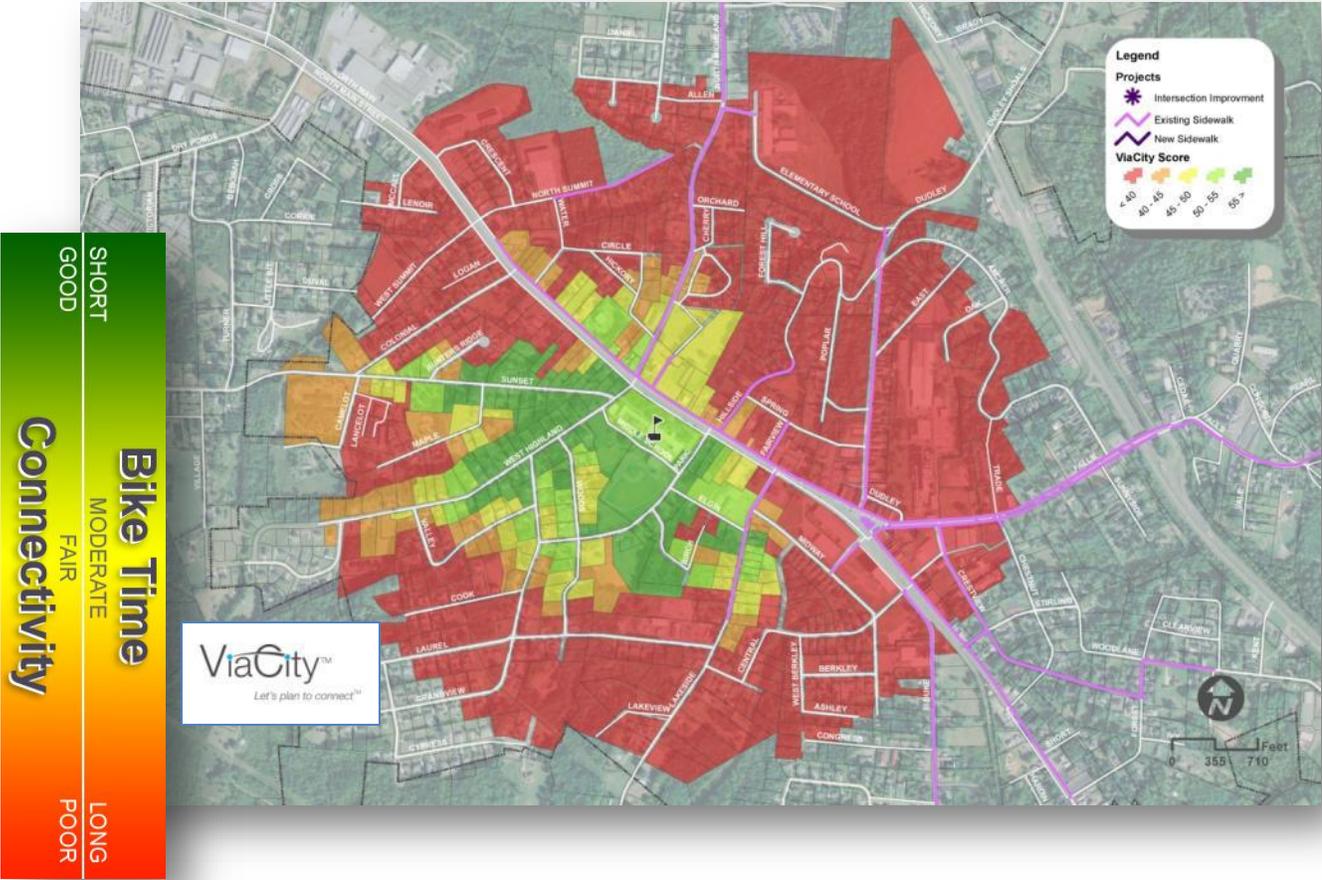


**Walkability & Granite Falls Middle School.** Another measure of walkability utilized in evaluating the impacts of the proposed projects is a detailed analysis on improvements to walking conditions for students and parents accessing Granite Falls Middle School. Representatives of the consultant team, NCDOT and the Town of Granite Falls observed release time on a winter afternoon at Granite Falls Middle School. While there were many children walking from the school, many were either joining their parents who had picked them up in the school driveway or crossing US 321-A to meet their parents parked across the street. Few were observed walking to their home or other destination.



Using ViaCity, a more refined ViaCity Score is calculated by using a composite of the RDI score and walk time from all properties within ½-mile of Granite Falls Middle School. Scores below 40 are not considered walkable (shown in red). There are 846 properties within ½-mile of the Middle School and they have an average ViaCity score of 36.1. The individual parcel scores are represented in color below, with red indicating the lowest scores and green the highest.

Figure 2-14. Walkability Analysis for Granite Falls Middle School - Baseline

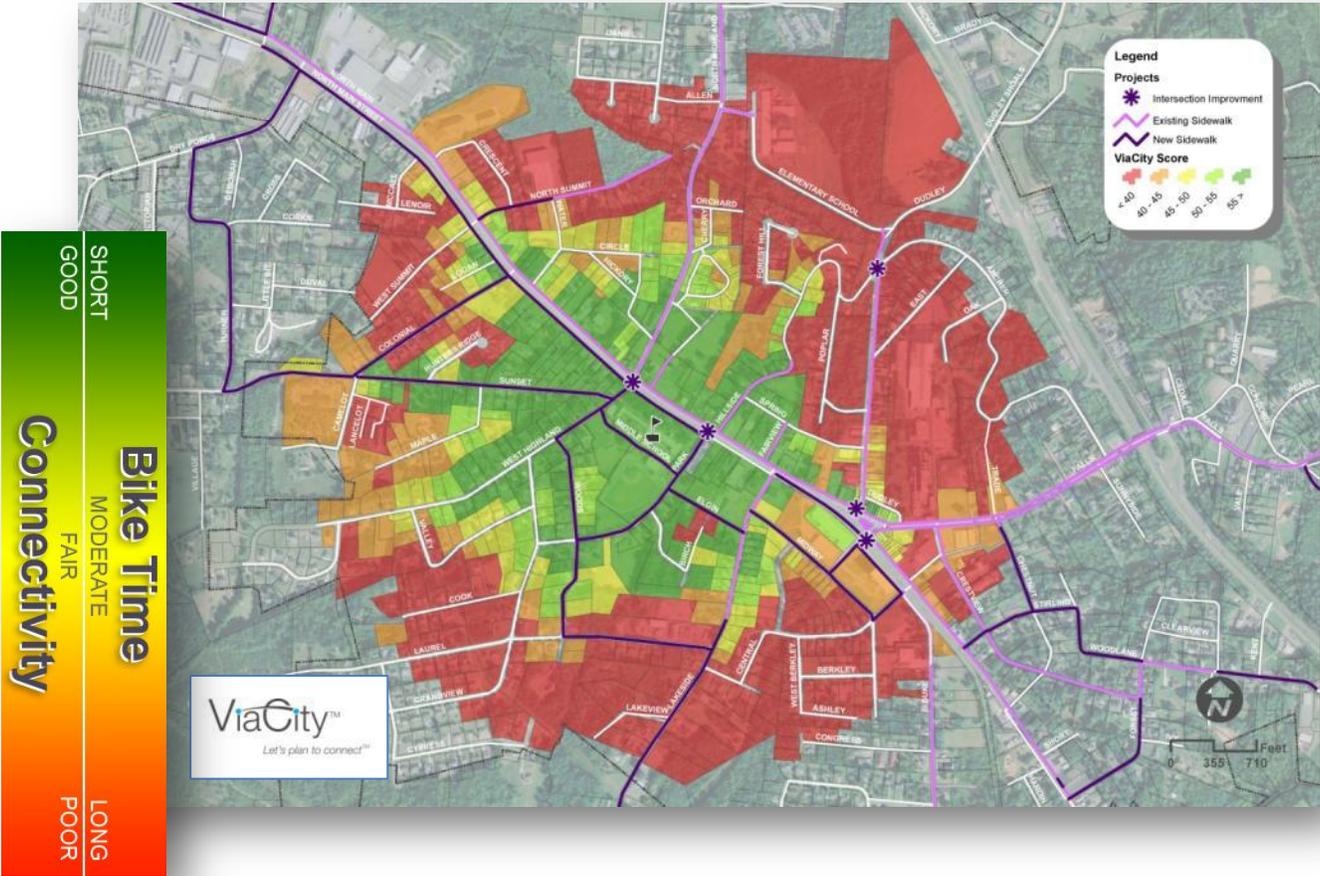


**Impacts of the Pedestrian Plan on Middle School Walkability.** When analyzing the impacts of the proposed list of projects, including intersection improvements, the average ViaCity score for all properties within ½-mile of the Middle School increases from 36.1 to 44.3—a 23% increase. More specifically, 519 of the 846 parcels—or 61.3%--experienced a ViaCity Score increase of more than 5 points. The specific range of improvements is as follows:

- 327 (38.7%) properties increased 0 to 5 points;
- 305 (36.1%) properties increased 5 to 10 points;
- 125 (14.8%) properties increased 10 to 15 points; and
- 89 (10.5%) properties increased by more than 15 points.

The figure below shows the change in comparison to the baseline analysis. In addition to the increases in ViaCity Score, there was almost a doubling of the geographic area considered within a walkable route and distance of Granite Falls Middle School when compared to existing conditions.

Figure 2-15. Walkability Analysis for Granite Falls Middle School – Pedestrian Plan



### 2.6.3 Survey Results

The Granite Falls Pedestrian Plan survey was conducted from June 2010 through September 2010, both online and through a paper version. The survey was designated to gather input from citizens of the Town about their pedestrian habits and preferences, and the condition and needs of the pedestrian system in the Town. The survey received a total of ninety-six (96) responses.

The Pedestrian Plan survey was distributed in digital format through the Town of Granite Falls website as well as information regarding the survey was announced on the Town's Twitter Site.

Town staff distributed hardcopies of the survey to local neighborhood groups and at Town Hall.

The majority of survey participants indicated that they walk most frequently for recreation (97%). However, survey responses strongly indicate that a fear of traffic contributes to the decision not to walk more (52%), combined with a lack of continuous sidewalks to their destination (76%). Based on survey responses, a large number of Granite Falls residents are currently walking to visit family and friends living nearby (69%), with walking trips to the downtown area ranking second in favorite pedestrian destinations (35%). Many survey respondents indicated that they would like to walk more for utilitarian purposes, such as to dine at a local restaurant, go shopping, visit the Recreation Center, attend church or visit the downtown area.

When asked about the level of comfort or security residents feel when walking in Granite Falls, a large majority indicated that they felt most comfortable in their own neighborhoods (99%). Many respondents also felt comfortable in their own neighborhoods (98%), but fewer felt comfortable in the area around their workplace (70%).

Seventy-five percent (75%) of respondents feel comfortable at street crossings, indicating that some local intersections may need to be enhanced for better pedestrian access or safety. In addition to information on these valuable indicators,

**Granite Falls Pedestrian Plan Survey**

Thank you for participating in the Town of Granite Falls Pedestrian Survey! The Town is currently preparing a Comprehensive Pedestrian Plan, and these survey results will be used by staff to help understand the needs of residents and visitors. Your responses will also be used to identify important locations for new sidewalks, greenway trails, or intersection improvements.

For more information about the Pedestrian Plan, contact Greg Wilson at (828) 394-3131 or by email at [gwilson@charter.net](mailto:gwilson@charter.net).

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

**General Information**

ZIP Code: \_\_\_\_\_

Sex: M F

Age:

Under 20  40-49  70-79

20-29  50-59  80 and over

30-39  60-69

On a scale of 1 to 9, where 1 is never and 9 is very frequently, how often do you walk to:

	Never	Often
Work	1 2 3 4 5 6 7 8 9	
A school	1 2 3 4 5 6 7 8 9	
Church	1 2 3 4 5 6 7 8 9	
The grocery store	1 2 3 4 5 6 7 8 9	
The library	1 2 3 4 5 6 7 8 9	
A park or recreation center	1 2 3 4 5 6 7 8 9	
A restaurant	1 2 3 4 5 6 7 8 9	
Shopping	1 2 3 4 5 6 7 8 9	
The post office	1 2 3 4 5 6 7 8 9	
Downtown	1 2 3 4 5 6 7 8 9	
A friend's house or to visit family	1 2 3 4 5 6 7 8 9	
Just for exercise	1 2 3 4 5 6 7 8 9	
Other: _____	1 2 3 4 5 6 7 8 9	

On a scale of 1 to 9, where 1 is never and 9 is multiple times, seven days a week, how often do you walk...

	Never	Very Often
For exercise or recreation	1 2 3 4 5 6 7 8 9	
To go somewhere (work, school, shopping, visiting, etc.)	1 2 3 4 5 6 7 8 9	
To walk the dog	1 2 3 4 5 6 7 8 9	
To light-see	1 2 3 4 5 6 7 8 9	
Other: _____	1 2 3 4 5 6 7 8 9	

On a scale of 1 to 9, where 1 is very uncomfortable and 9 is very comfortable, how comfortable do you feel walking...

	Very Comfortable	Not At All
In your neighborhood	1 2 3 4 5 6 7 8 9	
In downtown Granite Falls	1 2 3 4 5 6 7 8 9	
In the area near your work	1 2 3 4 5 6 7 8 9	
Along local bridges	1 2 3 4 5 6 7 8 9	
At street crossings or railroad tracks	1 2 3 4 5 6 7 8 9	

On a scale of 1 to 9, where 1 is not at all and 9 is very much, how much would you like to walk to...

	Not At All	Very Much
Work	1 2 3 4 5 6 7 8 9	
School	1 2 3 4 5 6 7 8 9	
Church	1 2 3 4 5 6 7 8 9	
The grocery store	1 2 3 4 5 6 7 8 9	
The library	1 2 3 4 5 6 7 8 9	
A park or recreation center	1 2 3 4 5 6 7 8 9	
Shopping	1 2 3 4 5 6 7 8 9	
The post office	1 2 3 4 5 6 7 8 9	
A movie or similar entertainment	1 2 3 4 5 6 7 8 9	
A friend's house or to visit family	1 2 3 4 5 6 7 8 9	
Downtown	1 2 3 4 5 6 7 8 9	
Just for exercise	1 2 3 4 5 6 7 8 9	
Other: _____	1 2 3 4 5 6 7 8 9	

On a scale of 1 to 9, where 1 is not likely and 9 is very likely, how likely are you NOT to walk somewhere because...

	Not Likely	Very Likely
There isn't continuous sidewalk to that destination.	1 2 3 4 5 6 7 8 9	
Traffic makes it unsafe and unpleasant (speeding cars, cars don't yield when you need to cross the street, it is smelly and noisy, etc.).	1 2 3 4 5 6 7 8 9	
It is too far.	1 2 3 4 5 6 7 8 9	
I have a health condition.	1 2 3 4 5 6 7 8 9	
The neighborhood is dangerous.	1 2 3 4 5 6 7 8 9	
I have a lot to carry (i.e., kids, equipment, groceries) and need my car to haul all of the stuff.	1 2 3 4 5 6 7 8 9	
I have to run many errands in many different locations and it would take too long to walk.	1 2 3 4 5 6 7 8 9	
The weather is bad (too hot, too cold, too wet, etc.).	1 2 3 4 5 6 7 8 9	
I don't like walking.	1 2 3 4 5 6 7 8 9	
Other: _____	1 2 3 4 5 6 7 8 9	

Given that funds are limited, in which of the following would you prefer that Granite Falls invest?

- Sidewalks along existing roads
- Greenways along natural areas (i.e. in local park.)
- Wayfinding Signage
- Improvements to intersections
- Railroad crossing

survey respondents also recommended specific sidewalk and intersection improvements, which have been incorporated into the project recommendation section of the Plan. When asked if the respondents would prefer to see funds spent on sidewalks along major roads or on greenway projects, 39% responded to sidewalks and 30% responded for greenways. Thirteen percent (13%) responded that they would like to see funds spent on intersection improvements as it relates to pedestrian safety. A full report of the survey results are reported in Appendix B of the Plan.

## Section 3. Existing Plans and Policies

### 3.1 Introduction

The term “pedestrian friendly” is about more than just providing sidewalks – it’s about creating an environment that can offer safety, accessibility, aesthetics, sustainable design standards, and destination points. This section provides an

assessment of the plans and policies that affect pedestrian movement throughout the Town of Granite Falls. It also describes the opportunities and challenges under current plans and regulations for implementing a full pedestrian network. The following is an assessment of the various policies, plans and regulations that directly or indirectly affect walking in Granite Falls.

This section describes the plans and policies that were in place in the Granite Falls system prior to the completion of this Pedestrian Plan and provides recommendations for future changes.

### 3.2 Existing Plans Analysis

The following paragraphs provide analysis for improvements to other previous plans and documents prepared for the Town which contained pedestrian related elements as well as recommendation for improvements to current Plans and documents.

#### **The Granite Falls Horizons: Land Development Plan**

The *Granite Falls Horizons: Land Development Plan* was adopted in February of 1999 and was designed to be a “general, long-range policy and implementation guide for decisions concerning overall growth of the town in coming years.” The Plan is broken into four sections, Demographics, Land Use, Transportation, and Public Services, and each section covers specific recommendations for future improvements, and the timelines for accomplishing them. The two most pertinent sections for future pedestrian planning are Land Use and Transportation.

The Land Use section looks at the current as well as the future land uses within the Town limits and the extraterritorial jurisdiction (ETJ). One map depicts the current land use (current being 1999), which shows the area limits as mostly agricultural, with clusters of residential and commercial along the main corridors. The future land use map, which is meant to guide development, zoning, placement, and policies, is largely residential property, with commercial and industrial uses clustered along the major corridors.

Some of the policies that were listed as important in 1999 are still quite practical today and could be used as the foundation for an updated Land Use Plan or incorporated into the Zoning Ordinance.

**Policy 3.** *Maintain the Town's reputation of having an excellent quality of life and being a great place to work, live, and raise a family.*

- Quality of life can be defined in many ways, but being able to safely walk to schools, restaurants, sports fields, neighboring houses, and other activities greatly influences a person's choice on where to live.

**Policy 5.** *Establish development standards that will improve the quality of commercial development and expand the commercial offerings available to residents.*

- By making sure that commercial development standards include uniform design codes, proper landscaping, larger sidewalks, minimum distances between stores, and limited entry/exit (driveway) points, it will promote an environment of walkability.

**Policy 6.** *Encourage development at appropriate major intersections and discourage "strip" development patterns and multiple driveways.*

- A major issue faced by areas that grew upwards and outwards too quickly is that the typical strip development is ever-present. The major issues with these is that the stores are generally set a distance back from the street, the businesses themselves are not clustered close enough together to promote walking, and the number of driveways or "access points" to get into these developments breaks up the sidewalks, forcing people to drive or walk un-safely. Implementing the commercial development standards mentioned above will help alleviate some of these issues.

**Policy 7.** *The Town should work with downtown merchants to improve the variety of commercial offerings and aesthetic appearance of downtown shops.*

- The downtown core should be a place where people can pick up necessities (or splurge on a new item), visit with a friend over a meal, or potentially experience something cultural. Creating an atmosphere where it only takes 5 steps to walk from one business door to another, offering larger sidewalks for outdoor seating or public benches, updating the look and feel of business facades, and designing streets for slower speeds will encourage walking naturally.

**Policy 12.** *Allow multi-family housing with commercial projects in the Highway Business district as mixed-use development.*

- Placing commercial and residential interests in the same area is an easy way to encourage non-vehicular mobility as long as there are sidewalks connecting the two.

Some of the strategies mentioned in the Plan for implementing the above land use policies are critical to successful development and should be re-examined to see if they were accomplished and how they can be built upon.

**Strategy 4.** *Continue to amend the zoning ordinance as needed.*

**Strategy 6.** *Examine the possibility of re-invigorating a Downtown Merchants Association. The Granite Falls Merchant Association is active within the community and just recently completed its 2<sup>nd</sup> Annual Festival on Main in the downtown area September 18<sup>th</sup>. The festival featured local vendors with handmade items, ceramics, wood and tin workers, etc. along with wineries and food vendors. The festival was very successful and well attended.*

**Strategy 7.** *Develop creative ways to encourage travelers on US Highway 321 to visit the Central Business District of Granite Falls.*

**Strategy 10.** *Develop a Town Sidewalk Plan and Bicycle Plan to encourage greater pedestrian and bicycle use and include it in the Town's Subdivision Regulation Ordinance.*

Although the Transportation section was completed in the late 90's, the need for sidewalks, safety, and inter-connectivity was evident then. Back in 1998, the Town operated a "Walk Your Town Sidewalk" program to encourage more people to walk. The need for a Pedestrian and Bicycle Plan was also expressed at the time the Plan was written.

Some of the policies suggested for the transportation section, are still very applicable and should be re-examined if they have not already been implemented.

**Policy 5.** *Zoning and subdivision regulations shall be consistent with the land principles contained in this Plan, most importantly as they pertain to the avoidance of strip development patterns and driveway access on major thoroughfares.*

- Including and defining not just street design, but sidewalk and pedestrian facility design in zoning and subdivision regulations would emphasize their importance.

**Policy 6.** *Granite Falls should participate in the development of the US 321 Corridor Plan.*

- A US Highway 321 Overlay District was created in March 2005, at the direction of the US Highway 321 Planning Committee. The document looks to provide a framework for the corridor and establish development standards, ensuring that it grows in a meaningful way. Re-visiting this document to see if and how uniform land use regulations, access management, aesthetics, and right-of-way encroachment have been implemented could be a good starting point for moving forward.

**Policy 8.** *The Town should develop a Pedestrian and Bicycle Plan. Adoption of the Plan would enable the Town to access state and federal fund for pedestrian and bicycle improvements.*

- This Pedestrian Plan will provide a framework for connectivity within Granite Falls, ensuring that people have options when traveling to destination points.

**Policy 9.** *The Town Planning Staff and Planning Board shall explore methods for encouraging sidewalks and bikeways as part of new planned and mixed-use developments.*

- Working with developers to find the right incentives for building mixed-used development with sidewalks could be the first step for encouraging walkability. There are many incentives, but some include: offering tax breaks, expediting review for mixed used development, density bonuses, providing exemptions from certain developer fees, and reduced parking requirements.

Again, the strategies mentioned in the Plan for implementing the transportation policies are critical for creating “complete streets” and should be re-examined to see if they were accomplished and how they can be built upon.

**Strategy 1.** *Amend current Zoning and/or Subdivision regulations to address: access management techniques along major and minor thoroughfares; mixed use development; and shared access and connected interior parking.*

**Strategy 3.** *Inventory sidewalks and establish priorities for new sidewalks, which will form the basis for a Bicycle and Pedestrian Plan.*

**Strategy 4.** *Develop a Landscaping Plan that focuses on gateways into Town. The Plan should focus on landscaping and sign regulations.*

**Strategy 6.** *Request a Transportation Systems Management Study from the NCDOT that will address needed traffic safety improvements, i.e. traffic signals, speed limit signs, intersection re-design, and road widening.*

Table 3-1 identifies the recommendations for additions and changes to the *Granite Falls Horizons: Land Development Plan*.

Table 3-1. Recommendations to the Granite Falls Horizons: Land Development Plan

<b>Horizons: Land Development Plan</b>	
Update Plan	A land use plan looks at the future development of an area. The last plan for Granite Falls was adopted in 1999. There are many transportation and land use policies and strategies that can be built upon and updated that reflect a more accurate vision for the region. Working through each policy to see how much has been accomplished over the past 10 years will help set benchmarks for future growth.

### **Zoning Ordinances**

Granite Falls adopted and now modifies its ordinances under the regulatory powers granted by the State of North Carolina. The zoning ordinance, enforced by the Zoning Administrator, guides development and identifies the appropriate uses for land throughout the Town. Granite Falls currently has 14 zoning districts, which define how various parcels of land can be used (i.e. commercial, residential, industrial). The *Granite Falls Zoning Map* uses different colors to show the various districts. Figure 3-2 identifies the current zoning in the Town. As they are written, some of the districts have the potential to support pedestrian activity, but would require additional guidelines for requiring the appropriate pedestrian infrastructure.

- The RSF-15 Residential Single-Family District or single-family dwelling units makes up most of the Town of Granite Falls. This type of district promotes neighborhood living and can also provide schools, small day cares, parks, playgrounds, community centers, churches and golf courses. If the street system within and between these neighborhood is highly connected and there are sidewalks, then it becomes more likely that people will walk to their neighbors houses as well as to the destinations that are allowed within this type of district. It is particularly important to have this level of connectivity and access when there are schools within the district. The same level of connectivity and pedestrian infrastructure should also be sought in R-8 Residential Medium-High Density, R-8A Residential High Density District, R-20 Residential Low Density District, and the R-20A Residential Medium Density District.
- The O-I Office & Institutional District allows for office and institutional uses, but states that they must be uniform in scale to adjacent buildings. Consistency of building sizes in business areas creates an aesthetically appealing look, making it more attractive to shoppers. Also, a seamless transition between commercial and residential building gives home-owners a sense of neighborhood living, even in a more commercial area. Because this district can accommodate a mix of office and residential, people could potentially live near their jobs and other amenities, easily walking to them if sidewalks are in place.
- The N-B Neighborhood Business District allows for the development of smaller-scale or "neighborhood" stores, which are placed within or adjacent to residential neighborhoods. The intent is for residents to be able to easily access or walk to these businesses, many of which could provide for everyday needs.
- The C-B Central Business District is characteristic of any downtown area, which permits office, small business, institutional, and residential uses. Unlike other districts, there is no front yard setback required, meaning that buildings can be closer to the street, providing for easy access into and out of businesses, by pedestrians. One of the conditional uses in this area is the allowance of residential and commercial within the same building. Currently, that residential space is limited to the property or business owner and their respective families. Opening this type of residential space to anyone would potentially encourage more economic activity in the downtown area.
- The H-B Highway Business District is the typical development you can see when pulling off a highway or major arterial. One of the main issues within these districts is they encourage strip development because there is no minimum mean lot

width. The roads that run in front of these developments generally have sidewalks, but they are usually highly segmented because of multiple driveways and they are not wide enough to handle pedestrians, safely. The US 321 Highway Overlay District that is referenced in the Horizons Land Use Plan looks at ways to manage access along a major corridor and could provide insight into how to develop these districts with pedestrian movement in mind.

Section 612, Traditional Neighborhood Design District, details the different types of uses for a new property or division of a property. The Neighborhood Residential District is meant to encourage residential development in compact neighborhoods and promote street connectivity wherever possible. The section on street design is meant to be used as a guideline for non-state maintained roads and states that:

*“A hierarchical street network should have a rich variety of types, including bicycle, pedestrian, and transit routes. All streets should connect to help create a comprehensive network of public areas to allow free movement of automobiles, bicyclists and pedestrians. In order for this street network to be safe for motorists and pedestrians, all design elements must consistently be applied to calm automobile traffic.”*

In order to achieve this, cul-de-sacs are allowed only in places where topography doesn't permit connectivity, streets are to be designed at pedestrian scale, block lengths are shortened, and traffic calming measures are suggested.

However, the street specifications for these districts are lenient. It states in section 612.6.3 (Street Specifications) that the Town Planning Board **may** require one or more of the following specifications for street design to be integrated into the proposed development before preliminary plat approval. One of the listed specifications states that: street trees and sidewalks shall be required on both sides of streets with exception of rural roads, lanes, alleys, and the undeveloped edge of neighborhood parkways or designated open space. Planting area for street trees should be a minimum of 5' in width and shall be planted at a spacing not to exceed 40 feet on center. Sidewalks shall be a minimum of 5" in width.

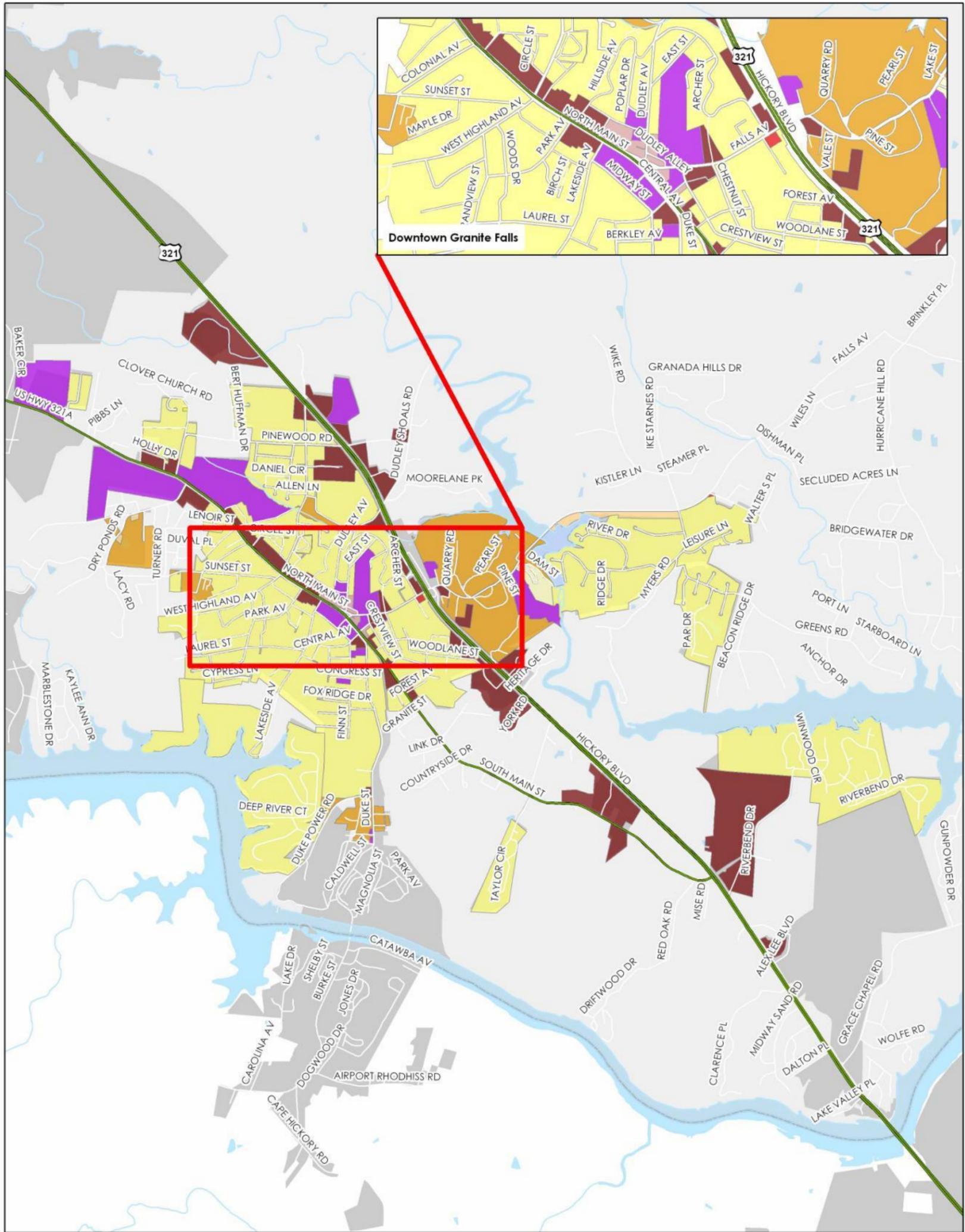
Article 9, Development Standards, looks specifically at parking lots, landscaping, access, and sidewalks for new developments or expansions to existing developments.

- The purpose of Section 901, Off-Street Parking, is to set design standards that “minimize breaks in the pedestrian environment along the public street and create a safe and comfortable passage for pedestrians along the street as well as within the parking area.” Good design standards for parking lots minimize pedestrian-vehicle interaction as much as possible.
- Section 907 discusses access, or the curb cuts and driveways used to enter a development. The language limits the number of access points into a development, which allows for sidewalk continuity and less vehicle/pedestrian interactions.

- Section 908.2 states that street trees must be planted on both sides of public roads. Trees offer an aesthetic appeal that invites pedestrians and also provides a buffer between the road and the sidewalk.
- Section 910, Sidewalks, states that sidewalks must be 4' wide and connect with current sidewalks in Town, where they exist, on at least one side of the street. It is also noted that sidewalks shall meet applicable Americans with Disabilities Act standards or North Carolina Building Code standards, whichever applies.
- Section 911, Buffer Strip and Screening, provides for the compatibility between dissimilar uses, and mentions having a screen between residential and other uses, but could be expanded to include screens and landscaping between roads and sidewalks.

Section 1428 of Article 14, *Signs Permitted in All Districts*, does reference the installation of pedestrian signage by government agencies. This section could be expanded to reference pedestrian sign standards in the 2009 Manual on Uniform Traffic Control Devices (MUTCD) that are applicable to the needs of Granite Falls.

Figure 3-2. Granite Falls Zoning



## Granite Falls Pedestrian Plan Zoning

US Highways	<b>Zoning</b>	Residential Low Density
Streams/Rivers	Central Business District	Residential Medium Density
Streets	Highway Business District	Residential High Density
Caldwell County	General Manufacturing District	Traditional Neighborhood District
hydro24k_poly	Neighborhood Business District	WATER
	Residential Single Family	

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June 2010

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Table 3-3 identifies the recommendations for additions and changes to the local zoning ordinances to incorporate and promote walkability.

Table 3-3. Zoning Ordinance Recommendations

<b>Zoning Ordinance</b>	
<b>Minimum Sidewalk Requirements</b>	Traditional Neighborhood Design Districts calls for a minimum of 5 feet sidewalks which is compliant with local, state, and national standards (including ADA requirements). However, the development standards for new properties and existing structures that require additional parking spaces is 4 feet. This should be changed to 5 feet, to meet the same requirements. When improving sidewalks in the Central Business District, the requirements for width should be a minimum of 8 to 10 feet to accommodate larger numbers of people, beautification elements (benches, tree boxes), and outdoor dining.
<b>Expand the definitions and criteria for certain Development Standards</b>	One of the strategies from the Horizons Plan was to amend current zoning and subdivision regulations to address access management techniques, mixed use development, and shared access to interior parking. Although short definitions and some criteria exist, the Town's zoning ordinances should be enhanced to address pedestrian access and safety in parking lots, neighborhoods, and along major thoroughfares.
<b>Enforcement</b>	Although sidewalks are required as part of the Development Standards, there are areas of new development throughout Granite Falls that are lacking sidewalks or lacking connectivity. Utilizing stronger language in the Zoning Ordinance in order to regulate sidewalk development and connectivity will ensure that people can get around their neighborhoods and to businesses easily.

<b>Zoning Ordinance</b>	
<b>School Zone Improvements</b>	<p>Consider developing an ordinance that requires sidewalk along all roads within a quarter-mile of a school (a typical “no transport zone” or walk zone) and that all signalized intersections within a quarter-mile of a school should have high-visibility crosswalks and countdown pedestrian signals. If the school is accessed from a mid-block location, then a signalized mid-block crossing should be provided for safe pedestrian access.</p>
<b>Traffic Impact Assessments</b>	<p>Language on Traffic Impact Assessments could be useful and tailored to specifically address pedestrian traffic flow and intersection design that safely accommodates pedestrians. Include off-site provisions for sidewalk connections and pedestrian signals/crosswalks within a quarter-mile of proposed major subdivisions, offices, recreational centers, and other important pedestrian generators or attractors.</p>
<b>Buffer Strips and Screening</b>	<p>Although buffers are mentioned, it is in the context of creating buffers between buildings or between different uses. Adding a few sentences to the Section on Buffer Strips and Screening under Development Standards, on mandatory buffers (green spaces) between the road and the sidewalk will create a safer and more comfortable pedestrian environment.</p>
<b>Central Business Mixed Use</b>	<p>According to the Granite Falls Pedestrian Survey, residents feel most comfortable walking to downtown and in downtown. This is because an older, but decently connected sidewalk system exists around and in the downtown. Continuing to allow a mix of residential and business in the central business district as a conditional use will make it even more accessible to residents.</p>
<b>Parking Lot Design</b>	<p>The section on parking lots in the Development Standards section of the zoning ordinance should be enhanced to address pedestrian access and safety in parking lot design. Walkways should be required through a parking lot to a business for nonresidential development, in order to provide better access from a public street, through the development to the business entrance in the case of “big box” developments.</p>

<b>Zoning Ordinance</b>	
<b>Signage</b>	There is limited language in the Ordinance on pedestrian signage requirements. Section 1428 of Article 14 could be expanded to reference applicable pedestrian sign standards from the 2009 Manual on Uniform Traffic Control Devices (MUTCD).

**Subdivision Ordinance**

The Town of Granite Fall's subdivision regulations are intended to "establish procedures and standards for the development and subdivision of real estate and regulating the subdivision of land." As they pertain to pedestrian movement, the procedures:

- Provide space for safe and sanitary dwelling accommodations within the Town and Planning Area;
- Provide for suitable neighborhoods with adequate streets and utilities and appropriate building sites; and
- Provide for economical and sufficient streets with adequate width and with proper alignment and grade for the coordination of utilities, streets, and highways within proposed subdivisions with existing or planned streets and highways and other public facilities

*Section 52.01* notes that these subdivision regulations are meant to set minimum requirements for development, but encourages developers to exceed these requirements. This section could be expanded to include a minimum sidewalk width and a preferred sidewalk width.

*Section 62* defines terms used in the ordinance, including street classifications, which are: arterials, major collectors, local streets, cul-de-sacs, marginal access streets, and alleys. These definitions could potentially be expanded to include a set of sidewalk requirements for each type of street.

*Section 71.01 and 72.06*, both require that certain elements of the subdivision (minor or general) are shown in a sketch plan before moving forward. Although the proposed streets must be included, this could be expanded to add in the proposed sidewalk alignments, walkways, or greenways.

*Section 73.05* lists the items that are required to be shown on a plat for a general subdivision (not minor). It does specify that proposed pedestrian locations, widths, and purposes be shown on the plat. However it does state that, "any proposed" pedestrian locations be called out. This language could be strengthened by stating, "required" pedestrian locations must be specified on the plat.

*Article VIII* discusses the permanent reference points and improvements and *Section 80.03* specifically states that streets need to be designed accordingly or 10' wide minimum walkways provided in order to provide convenient access to adjacent

playgrounds, schools, parks, and other public places. Referencing specific street or walkways design would enhance this section.

*Article IX* addresses minimum standards of design, to include section 91, which specifically looks at street design. This section discusses right of way widths, pavement widths for roads, pavement thickness, street grades, curves, tangents, and intersections. This section could be improved by adding in the design standards for sidewalks, walkways, or greenways.

Although general recommendations are provided throughout, the Subdivision Ordinance could potentially benefit from:

- A new section or an appendix, detailing pedestrian treatments (sidewalks, crosswalks, greenways, walkways) and specific design elements that need to be included in sketch plans for minor subdivisions and plats for general subdivisions. Although street requirements for subdivisions are expected to meet the current Minimum Construction Standards of the NCDOT, elaborating on the specific requirements could be beneficial.
- State that sketch plans and plats need to specifically address all pedestrian treatments and their design elements

Table 3-4 identifies the recommendations for additions and changes to the local subdivision ordinances to incorporate and promote walkability.

Table 3-4. Subdivision Ordinance Recommendations

<b>Subdivision Ordinance</b>	
<b>Street Design Manual</b>	Modify the Code of Ordinances to reference specific street design criteria, including maximum curb radii in the housing development and pedestrian activity centers; street cross-sections that include mandatory five-foot-wide sidewalk or public greenway access on the full perimeter of each adjacent public street; and suggest driveway spacing criteria on all streets to be adhered to in the subdivision and design of new developments. Design criteria should also address curb ramps and driveway design to ensure accessibility for the physically disabled, as outlined in the Americans with Disabilities Act (ADA). Design criteria could also address best practices for stormwater control, such as allowable uses of permeable pavement. This manual should include policy elements from the NC DOT Complete Streets Policy.
<b>Street Classifications</b>	Expand this section to include sidewalk requirements for each different street classification
<b>Plat Requirements</b>	Each section should specifically require sidewalk alignments and other pedestrian walkways to be identified.

### **2035 Greater Hickory Urban Area Long Range Transportation Plan**

The Greater Hickory Metropolitan Planning Organization (MPO) provides transportation planning for numerous cities and towns within its urbanized area, including the Town of Granite Falls. One of the federal requirements of a MPO is to provide a long-range transportation plan, which provides a 20-year vision for the management, operations, and infrastructure in a region. Most plans look at different elements of transportation and include realistic projects to meet various needs. The *2035 Greater Hickory Urban Area Long Range transportation Plan* (LRTP) was adopted in April of 2010 and includes sections on highways, public transportation, pedestrian and bicycle, freight, and safety and security.

Although the Plan represents the interests of 23 municipalities, four county governments, and transit operators, the overarching principles, particularly in the Bicycle and Pedestrian section, are applicable to all municipalities interested in non-vehicular mobility.

The objectives of the Pedestrian and Bicycle element of the Plan, related to pedestrian movement are:

- Provide a pedestrian and bicycle system that is a safe alternative means of transportation, allows greater access to public transit, supports recreational opportunities and includes off-road trails.
- Develop a transportation system that integrates pedestrian and bicycle modes of transportation with motor vehicle transportation and encourages the use of walking and bicycling as alternative modes.
- Provide a pedestrian and bicycle system that is connected inter-regionally, for example the Carolina Thread Trail

This section of the Plan is full of municipal and county-wide maps, depicting the pedestrian, bicycle, and greenway networks. The two maps relevant to Granite Falls are Map 6-11, *The Caldwell County Bike, Pedestrian and Greenway Network* and Map 6-13, *The Granite Falls Bicycle Pedestrian and Greenway Network*. Although some bicycle, pedestrian, and greenway infrastructure exists, the general take-away for the Region is that there is a lack of connectivity within cities and towns as well as between cities and towns. In terms of sidewalks, they are either lacking completely, are not continuous, or do not offer a safe environment for walkers. The document also lists all of the various Plans throughout the region, which address pedestrian movement in some way. A few municipalities have specific Sidewalk or Pedestrian Plans that have been updated recently and could serve as a good reference point for future connectivity within and to Granite Falls.

A resource within Caldwell County that is mentioned in the Plan and could be utilized by Granite Falls is the non-profit group Caldwell Pathways. They are dedicated to the planning and development of multi-use trails throughout the County and have had several successes in implementing various pedestrian projects since their inception in 2001.

The specific policy recommendations that were developed for the Pedestrian Element of the LRTP and can be adopted as local policies include the following.

- Promote, through public education, the environmental, health and economic benefits of walking and bicycling as practical modes of transportation.
- Develop a regional bicycle and pedestrian system that establishes links between activity centers, public transit, schools, parks and other major destinations.
- Recommend that when new roads are proposed or when existing roads are being widened, design plans include the land on each side of the road be of sufficient width to safely accommodate bicycle and pedestrian facilities.
- Encourage the delineation of safe pedestrian ways and bike routes, emphasizing separation from vehicular areas.
- Recommend the installation of signage when bicycle routes or pedestrian ways are integrated with roads, so that bicyclists, pedestrians and motorists will be made aware of each other.

Another interesting element of this Plan that can impact the pedestrian movement within Granite Falls is the transportation projects listed in the Highway section. One project in particular, which should be monitored, is Transportation Improvement Project (TIP) U-2543. This particular project will widen the section of Main Street through Granite Falls from a two-lane to a three-lane facility with a left-turn lane between Falls River (SR 1107) and Hardwood Drive. It will be important to maintain or increase sidewalk connectivity on Main Street, implement crosswalks in key locations, potentially implement higher design standards for sidewalks than those required by the state, retain ADA accessibility throughout construction and maintain it throughout the downtown afterwards.

Table 3-5 identifies the recommendations for additions and changes to other policies and programs that would incorporate and promote walkability.

Table 3-5. Other Policy and Program Recommendations

<b>Other Policy and Planning Recommendations</b>	
<b>US Highway 321 and 321A</b>	Staying updated and involved on transportation projects and developments along these two corridors could be critical to both the economy and connectivity in Granite Falls. Ensuring that any new developments along either road, retains sidewalk connectivity and incorporates access management techniques will be critical. Also making sure that any widening project (TIP project U-2543 in particular) does not detract from the character of the downtown.

<b>Other Policy and Planning Recommendations</b>	
<b>Streetscape Plan</b>	Streetscape Plans add continuity and identity to public spaces, particularly central business districts. They often include sidewalk elements, such as brick sidewalks, landscaped seating or curb extensions areas and pedestrian-scale lighting. All of these elements work towards a safer, traffic calmed pedestrian environment.
<b>Sidewalk Ordinance</b>	Write a specific Sidewalk Ordinance and include in the Code of Ordinances to address local laws pertaining to sidewalks as well as specific definitions for widths, maintenance fees, sidewalk funds, wheelchair ramps, etc. There are many good examples of sidewalk ordinances in other NC towns and cities.
<b>School Zone Improvements</b>	Create a policy that requires “safe zones” around schools (i.e. school zones) in which speeds are reduced by 10 mph within a quarter-mile of the school and signs are posted warning of school and student presence. This would also require regular enforcement by the Police Department.
<b>Countdown Pedestrian Signals</b>	Formalize a town-wide policy of installing “countdown” pedestrian signal heads and crosswalks with the installation of all new signalized intersections. Provide pedestrian signals even in locations without sidewalk on one or both sides of an intersection.
<b>Natural Resources</b>	The area where the former Shuford Mills property sits hides the creek and the falls from public enjoyment. Identifying ways to give the public access to this area could provide huge recreational and economic benefits for the Town.
<b>Railroad Crossings</b>	Working with railroad companies, which typically have ownership of their rights- of-way and closely guard the frequency and width of crossings of any sort (“encroachments”), can be time consuming. A couple of ways to overcome this include: Treatments can be thought of in the below three categories and are more detailed in Section 4.10. Crossings adjacent to an existing or planned roadway; Crossings independent of an existing or planned roadway (e.g., greenways); and Education and Enforcement techniques discussed in Section 6.

<b>Other Policy and Planning Recommendations</b>	
<b>Sidewalk Incentives and Funding Programs</b>	Create an annual budget item to set aside funds for improving pedestrian facilities, especially “spot improvements” to the local sidewalk network. 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.
<b>Collaboration</b>	Appoint a Pedestrian and Trails Committee to help engage the public in the implementation of the Pedestrian Plan, as well as to help complete future planning efforts.

## Section 4. Design Standards and Guidelines

### 4.1 Introduction

This section is intended as a general reference for sidewalk and pedestrian facilities as well as a guide for various “Best Practices” that apply to special pedestrian situations. This section also provides guidance for special pedestrian situations such as parking lots and construction zones. 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 Granite Falls’ sidewalks and a more connected system.

This section serves to provide a useful one-stop location for all of the Granite Falls’ pedestrian related design guidelines and standards.

### 4.2 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.

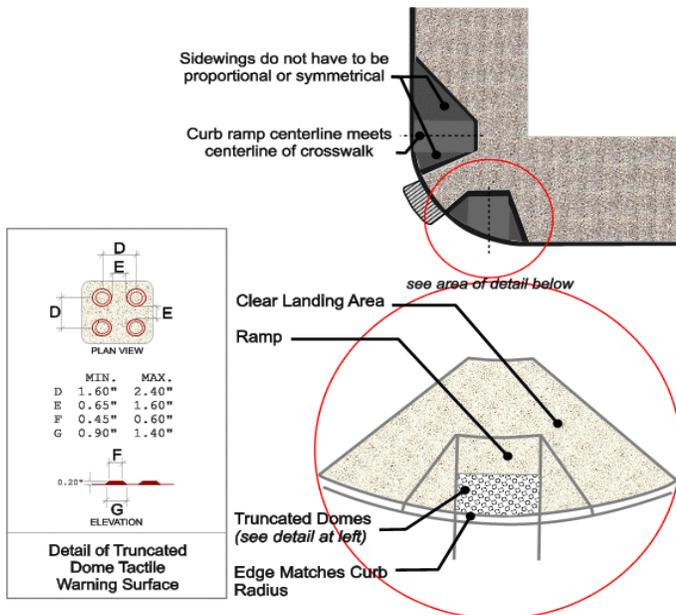
More information can also be found in the NC Bike/Pedestrian Laws Guidebook, available at the NCDOT's Division of Bicycle and Pedestrian Transportation webpage: <http://www.ncdot.gov/bikeped/lawspolicies/default.html>.

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.
- 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 Granite Falls 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



**Figure 4-1 Detail of an ADA-compliant Curb Ramp Design**

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

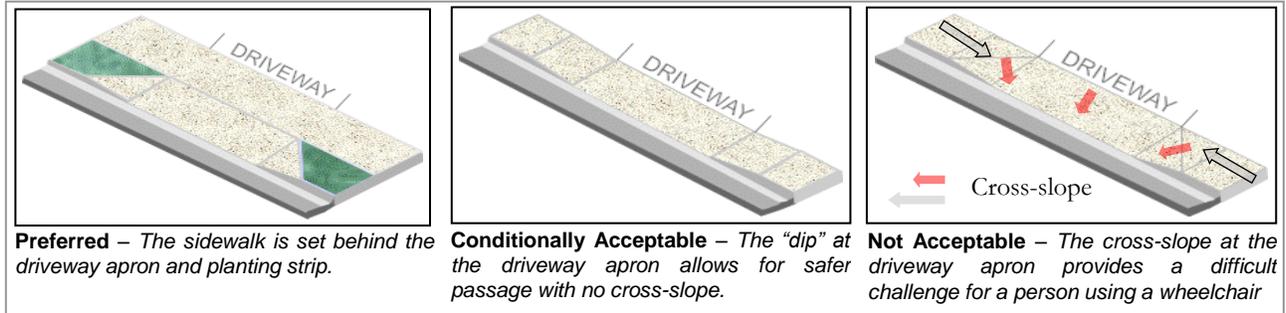
Curb ramps are also required to have a 4-foot by 4-foot flat landing area at the top of the ramp to allow for pedestrians to orient themselves. In some cases, the 4x4 landing may be accommodated at the bottom throat of the ramp. *NOTE: This is a design requirement that is currently lacking within NCDOT's design standards for wheelchair ramps, 2006 Roadway Standards Drawings 848.05 and 848.06.*

**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 crosswalk and curb ramp location/widths.

### Cross-Slopes

Cross-slopes, or a slope along the travelway surface which is perpendicular to the direction of travel, can often make it very difficult for wheelchair travel. In addition, it can also make for treacherous walking conditions for individuals with problems with their balance and coordination. Cross-sloping most frequently occurs in conditions in which a driveway meets a sidewalk, but can also occur in other situations. In order to minimize the risk of a dangerous and difficult travel condition for some, cross-slope is regulated by ADAAG such that cross-slopes should not exceed two percent, and preferably not exceed 1.5 percent where possible. Figure 8 indicates the preferred

(left), conditionally acceptable (middle), and unacceptable (right) design solutions for new driveways as they interface with sidewalks.



**Figure 4-2. 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](http://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 Granite Falls' sidewalks and a more connected system.

### 4.3 Design Guidance

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, some of which do not meet standards for ADA compliance. The following paragraphs provide national standards and best practices for pedestrian facilities by category.

## 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 (5' minimum 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 overhang of parked vehicles from off-street or angled on-street parking areas; and (3) additional buffer from traffic when a planting strip cannot be installed.

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

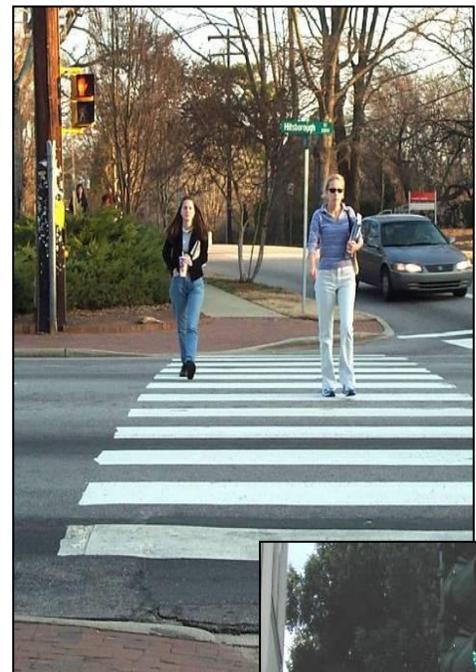
- Eliminating both high and low contact points with tree branches, mast-arm signs, overhanging edges of amenities or furniture, and
- Providing clear space between walls on one side of the walkway and amenities, parking overhang, or plantings on the curb side of the walkway (see Figure 4-4 which diagrams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

In general, standard sidewalks should be concrete, which is more durable than asphalt. A more flexible material, such as rubberized paving, can also be



**Figure 4-3. Horizontal clearance “zones” for a sidewalk**

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

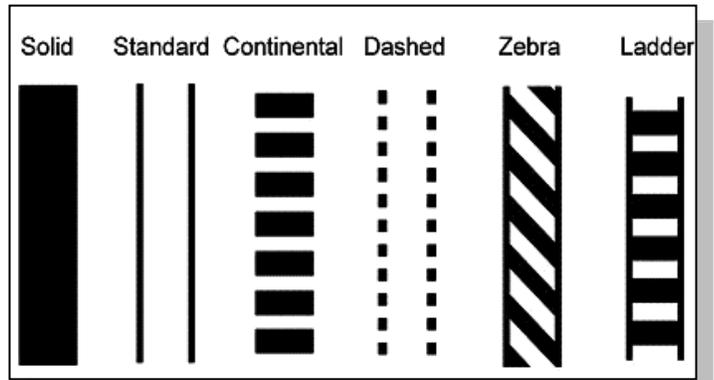


**Figure 4-4.**

Countdown pedestrian signals



considered in situations in which there is the potential for tree roots to crack and lift the concrete. Using these types of materials can reduce the risk of a tripping hazard, and also lower maintenance costs. More permeable materials, such as porous pavers, can be considered for all pedestrian-ways, and in particular for greenways near streams, in order to reduce run-off from storm events.



**Figure 4-5.** Typical styles for marked crosswalks  
Source: Federal Highway Administration

## 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.



**Figure 4-6.** 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.



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

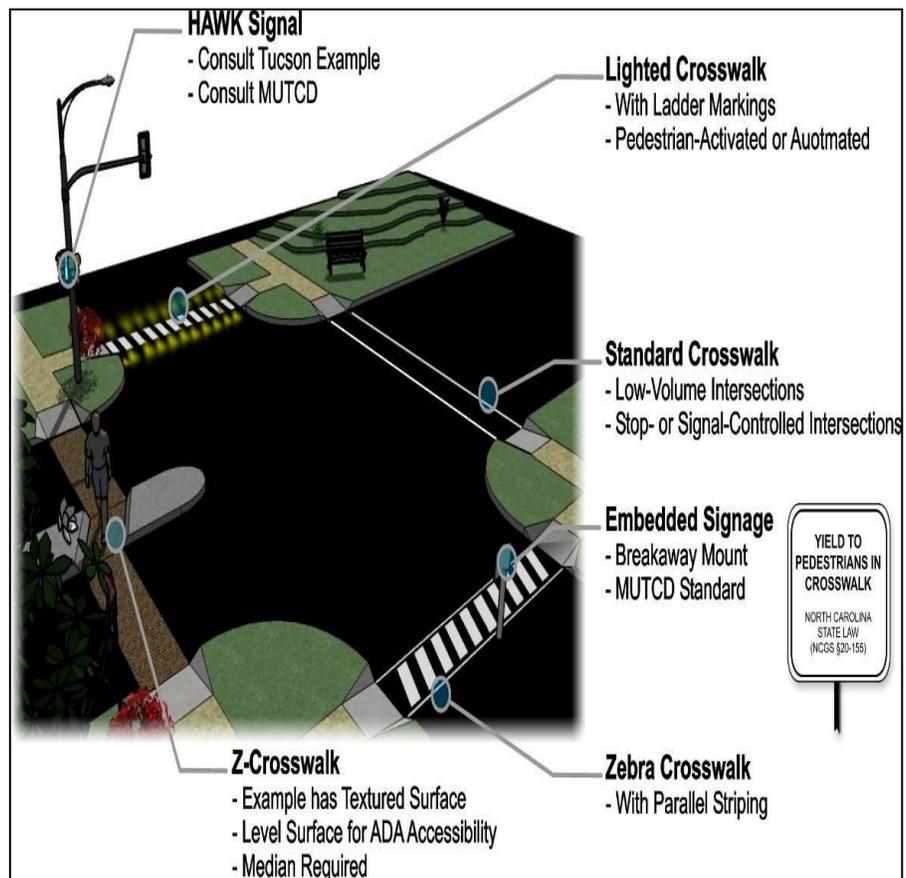
All signalized intersections should be outfitted with countdown pedestrian signals and crosswalks, per NCDOT and MUTCD standards. MUTCD recommends that signals are operated

on a 4ft/second pedestrian travel speed. In some cases, the built environment or user context may require audible pedestrian signals or special treatments like a High Intensity Activated Crosswalk (HAWK) Signal. Marked crosswalks (at signalized and unsignalized locations) should not be less than 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 intersection locations with significant crash history.

Mid-block crossings are typically unsignalized crossings, but can also utilize pedestrian-activated signalization. There is still no national consensus for when a crossing should be

created mid-block, and when the mid-block crossing should be signalized. The City of Charlotte Department of Transportation has created a set of guidelines for assessing mid-block crossings, based in part on the work of FHWA and Charles Zegeer of the Pedestrian and Bicycle Information Center. In addition to numbers of pedestrians, vehicle speed, and vehicle volume on the roadway, there are a variety of other considerations which must be accounted for when determining whether to construct a mid-block crossing. These considerations include: lighting conditions, sight



**Figure 4-7.** Various Pedestrian Crosswalks  
A diagram of various crossing treatments Granite Falls might consider in order to improve pedestrian accessibility and safety at intersections.

distance, numbers of lanes, and roadway width. Figure 4-7 shows the “solution space” identified by the City of Charlotte for considering a mid-block crossing. Table 4-8 shows the decision matrix created by the City of Charlotte for determining when to construct a mid-block crossing and identifying appropriate treatments. Given the sensitive nature of mid-block crossings, every new mid-block crossing treatment will require a specific investigation by the City/Town and NCDOT (on State-maintained streets) prior to initiating design and construction. Nevertheless, mid-block treatments can be useful in improving safety in areas with fairly high 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.

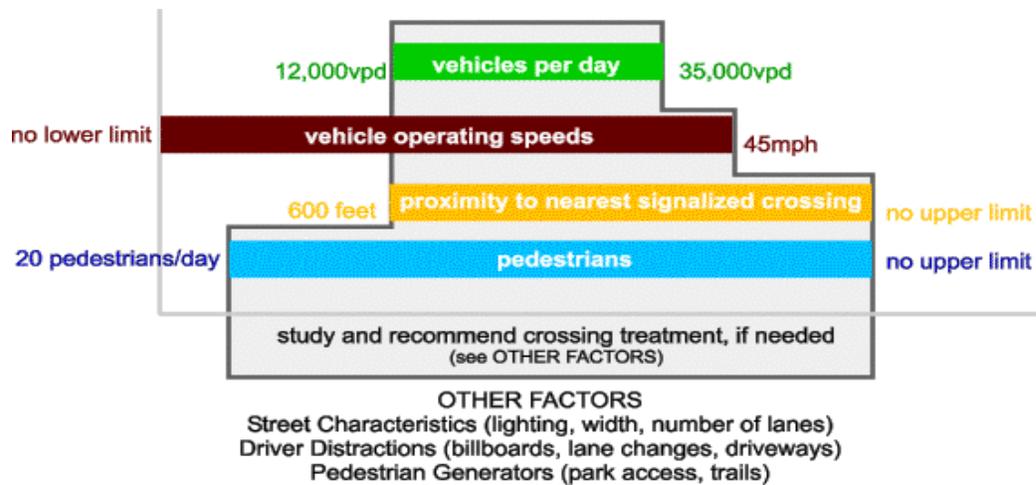
**Table 4-8.** Mid-Block Crossing Treatment Criteria

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

(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.



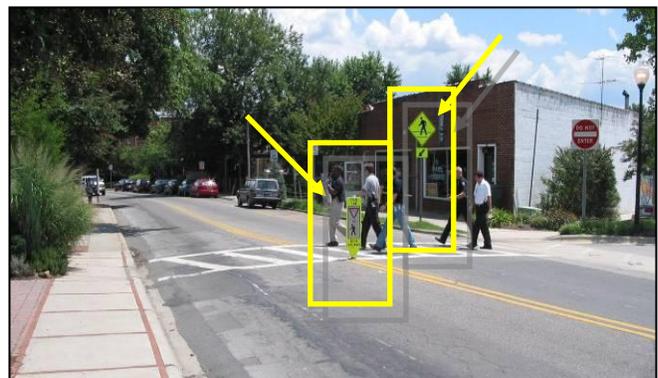
**Figure 4-9.** Applying Mid-Block Crossing Treatment  
*The City of Charlotte's solution space for considering when to apply signalized mid-block pedestrian crossings*

## Signage

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

Regulatory and warning signs can be used in a variety of places, including at crosswalks, at intersections, in-street, and near schools. 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 4-10. Mid-Block Crossing Signage**  
*An example of two types of signs used to notify motorists of a pedestrian crossing.*

The following are some recommended regulatory and warning signs which Granite Falls 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 Granite Falls 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 4-11 is an example of pedestrian wayfinding signage in Charlotte, NC’s central business district.



**Figure 4-11. Sample Wayfinding Sign**  
 Example of a wayfinding sign in Charlotte, North Carolina’s central business district.



**Figure 4-12. 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.

#### 4.4 Porous Pavement and Stormwater Management 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 systems, 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 Granite Falls should consider all such options as appropriate and/or combinations thereof for future sidewalk, greenway and street construction projects.



**Figure 4-13. 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*



<b>Major Design Elements Required by DWQ Policy.</b> These are based on available research, and represent what DWQ considers necessary to achieve the stated removal efficiencies.	
1	Completed permeable pavement installation must have a slope less than 0.5%.
2	Soils must have infiltration capacity of at least 0.52 in/hr permeability.
3	Only 2 acre-feet of soil per acre disturbed can be graded for the permeable pavement footprint.
4	The top 3-ft of soil must have no finer texture than Loamy Very Fine Sand as determined by a soil analysis.

**Table 4-14. DWQ Policy on Permeable Pavement Uses**

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

Figure 4-15 illustrates a combination use of porous concrete sidewalks with vegetated swales along a neighborhood street in the new urbanist High Point development in west Seattle, WA. Communities across the country (especially those in the Northwest with high annual rainfall) are turning to porous concrete and asphalt, as well as block pavers and other permeable pavement options, to reduce impervious surfaces and stormwater runoff issues associated with parking lots, sidewalks and greenway trails. These trials are proving permeable pavement treatments to be quite successful and cost-effective. Olympia, 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



**Figure 4-15. Permeable Pavement Treatments**  
Source: NCSU Permeable Pavement Research Site.  
<http://www.bae.ncsu.edu/info/permeable-pavement/index.html>

porosity of the paving material. 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 Granite Falls 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.

#### **4.5 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, Granite Falls' 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. 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. 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.

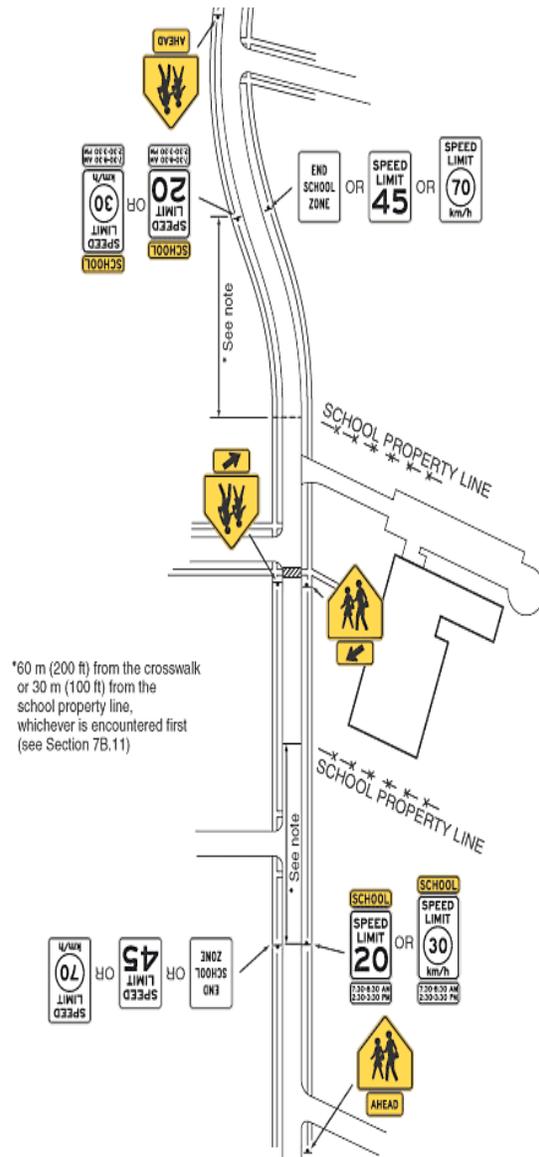
- Provide wayfinding signage to guide visitors. Pedestrian wayfinding signage provides directional cues and helps visitors navigate the area effectively. Such signage can take the form of kiosks with maps and information, historical markers, theme-based pedestrian signage or other forms.

#### 4.6 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.

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.



**Figure 4-16.** Sample School Area Signage.  
Source: MUTCD.

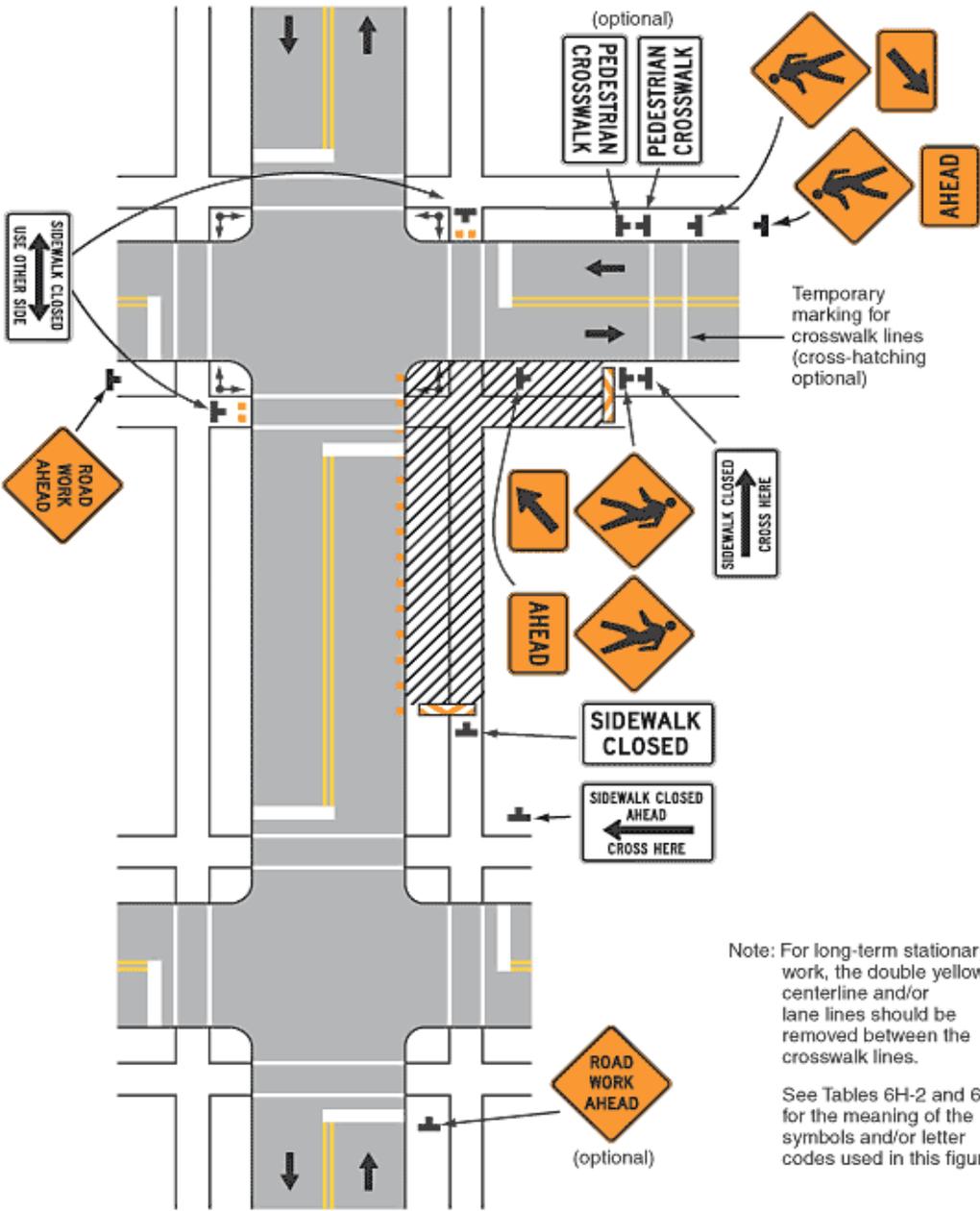
## 4.7 Construction Zones

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), NCDOT's Planning and Designing Local Pedestrian Facilities, and the ADA (Americans with Disabilities Act) 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 Granite Falls to ensure compliance with these rules by regular monitoring. The following should be considered whenever a sidewalk or trail will be closed temporarily:

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

These are outlined in Section 6: Temporary Traffic Controls of the MUTCD (<http://mutcd.fhwa.dot.gov/pdfs/2009/part6.pdf>)

**Figure 4-17.** Sidewalk Closure Plan  
 Source: MUTCD, Figure 6H-29.



**Typical Application 29**

## 4.8 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 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 4-18 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:



Figure 4-18. Pedestrian-Friendly Parking Lot Design

- 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 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.

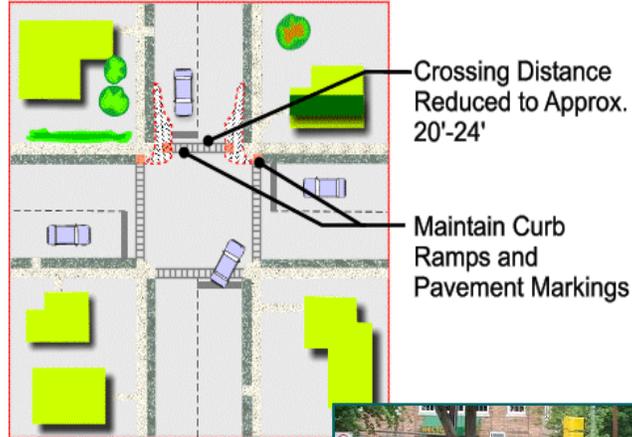
Granite Falls' has several shopping centers and areas with large parking lots, and others may be on the way. It is important that the Town keep the pedestrian's access and safety in mind when reviewing development proposals. Through better design and better design review, the Town will be able to create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

#### **4.9 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 following paragraphs.

#### 4.9.1 Curb Extensions (Bulb-Outs) and Curb Radii

The primary purpose of bulb-outs is to shorten the distance that pedestrians must travel to cross a street. In addition, they may encourage motorists to drive slower by narrowing the travel lane and reducing vehicular speeds during turning movements at intersections. Motorists will travel more slowly around corners with smaller curb radii even without the use of curb extensions. Landscaping and other aesthetic treatments such as special paving textures should be carefully designed to avoid hazards to drivers and visually-impaired citizens while minimizing maintenance costs. Figure 4-19 shows an example bulb-out placement to reduce curb radii and make an intersection more pedestrian-friendly.

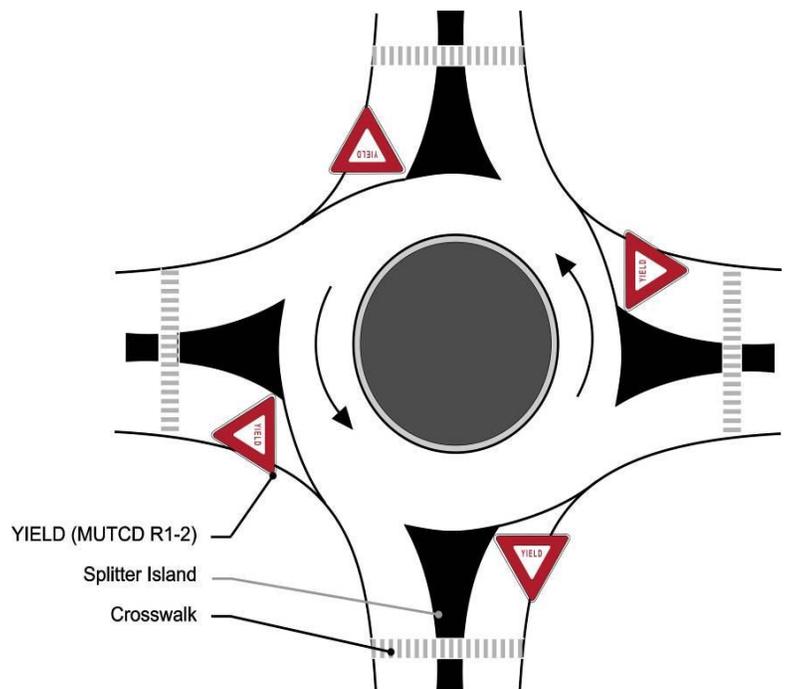


**Figure 4-19.** An example of bulb-out placement to reduce curb radii and shorten travel distance for pedestrians crossing at an intersection in Chapel Hill, NC.



#### 4.9.2 Medians and Refuge Islands

Figure 4-20 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



**Figure 4-20.** Simple roundabout design graphic.

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.

### **4.9.3 Roundabouts**

Roundabouts are an innovative intersection design treatment commonly used in European cities, and are becoming increasingly popular in the United States. Roundabouts can improve motorist safety by encouraging traffic to slow down in both approaches to and within an intersection, while also allowing for continual traffic flow. Poorly-designed roundabouts can be unfriendly to pedestrians, but a number of features included in the design can ensure pedestrian safety.

While no NC-specific guidelines exist for roundabout design, the Federal Highway Administration (FHWA) has published a Roundabout Informational Guide that addresses design as well as safety issues: <http://www.fhrc.gov/safety/00068.pdf>. Generally, single-lane roundabouts have fewer points of conflict and higher safety ratings for pedestrians. Design “best practices” for pedestrian safety call for the inclusion of splitter islands (see Figure 4-20) on each “leg” or approach to a roundabout, regardless of the number of approach lanes. Splitter islands provide a space for pedestrians in the middle of each crossing and offer pedestrians a refuge between lanes, so that a pedestrian only crosses one direction of traffic at a time. The recommended width for a splitter island, at the point of pedestrian crossing, is 6 ft minimum. Each splitter island should provide a clear, well-aligned pathway leading to/from a high-visibility crosswalk on each leg of the intersection. Crosswalks should be set at least one full car length back from the yield line. This provision ensures that pedestrians do not have to cross in front of drivers that are looking for a gap in traffic.

In addition to these basic provisions, roundabouts should be equipped with appropriate curb cuts and detectable warning strips to allow for access and safe use by physically-disabled pedestrians. Figure 4-20 illustrates appropriate placement of these features. The American Access Board also recommends a number of features to ensure safety for visually-impaired pedestrians; these include:

- Well-defined walkway edges
- Tactile markings across sidewalks to identify crossing locations
- Bollards or architectural features to indicate crossing locations
- Detectable warnings at street edge
- Perpendicular crossings, using curbing for alignment cues
- High-contrast markings (including high-visibility crosswalks)
- Pedestrian lighting
- Raised Crosswalks (especially at exit)
- “Yield to Ped” markings and other warnings for motorists
- Sounds surfaces on entrance/exit legs

#### 4.10 Road Diets

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

#### 4.11 Railroad Crossing Treatments

The Town of Granite Falls has a special interest in ensuring that pedestrian crossings of the local railroads are handled safely, since the Caldwell County rail line runs along the downtown area and neighborhoods and separates potential origins and destinations. The resulting “barrier effect” is strong, implying a need to provide safe pedestrian connectivity over active railroad tracks. Working with railroad companies, which



**Figure 4-21.** Sample Illustration of a Road Diet.

**Top.** North Capitol Blvd in Washington DC is a 6-lane road with wide crossing distances for pedestrians.

**Bottom.** To make the road more pedestrian-friendly, a road diet could add landscaped medians for pedestrian refuge at intersections and curb extensions that shorten pedestrian crossings and add sidewalk width.



Railroad tracks and sidewalk running along US 321A

typically have ownership of their rights-of-way in fee simple arrangements and closely guard the frequency and width of crossings of any sort (“encroachments”), has proved to be time consuming in many cases. However, ideas that improve safety, stem from published FRA (Federal Railroad Administration) sources, and can reduce liability are more likely to receive a favorable reception from the railroad. Treatments can be thought of in three broad categories:

- Crossings adjacent to an existing or planned roadway;
- Crossings independent of an existing or planned roadway (e.g., greenways); and



**Figure 4-22.** “Low-Rise” Pedestrian signal in use in Portland, Oregon.  
Source: FRA Compilation of Pedestrian Safety Devices in Use at Grade Crossings



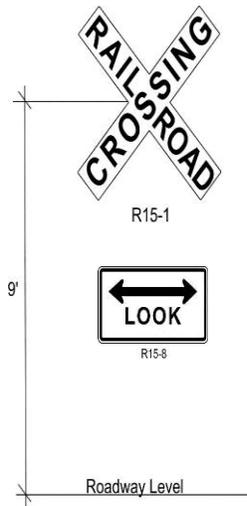
**Figure 4-23.** “Look for Trains” Warning Sign  
Source: FRA Compilation of Pedestrian Safety Devices in Use at Grade Crossings.

- Education and Enforcement techniques discussed in Section 6.

Additionally, railroad crossing safety devices can be thought of as either active and change their appearance and/or position in the event of an oncoming train (e.g. gates and flashing signals), or passive, such as the familiar “crossbuck” sign.

It is interesting to note that the Federal Railroad Administration, a traditionally conservative agency, in recent guidance has stated that “a guiding principle in the design and development of pedestrian crossing facilities should be to cause as little deviation as is practical from a direct pathway.” It is also important to note that several of these devices or treatments are not in widespread use at this time, and are not incorporated into the Manual on Uniform Traffic Control Devices (MUTCD) at this point in time. Hence, the application of any such device cannot be required, and would need to be coordinated with appropriate state and federal transportation agencies. Innovation is warranted in preventing train-pedestrian collisions, however, since the potential for serious injuries in any collision with a moving train is very

high. The amount of dynamic energy that even a slow-moving train possesses is enormous, with the result that collisions are frequently fatal. Additionally, the rail line in Granite Falls is still active, with one to three trains running daily.



**Figure 4-24.** Crossbuck and “Look” Signs

The standard crossbuck warning sign (passive) is indicated in Figure 4-24). The “Look” sign can be used below the crossbuck sign to reinforce this message to the eye-height of most pedestrians. The Number of Tracks signage (MUTCD R15-2) supplements the crossbuck when there is more than one set of tracks to cross.

There has also been a recommendation by FHWA to allow the standard crossbuck sign to be supplemented with a Yield or Stop sign for motorists immediately below the crossbuck on the same post. However, this has not yet been adopted in the MUTCD. Further, the Yield option may send an inaccurate message to the driver, who is used to different operating characteristics associated

with cars at a Yield control on cross-streets, and is therefore not recommended here.

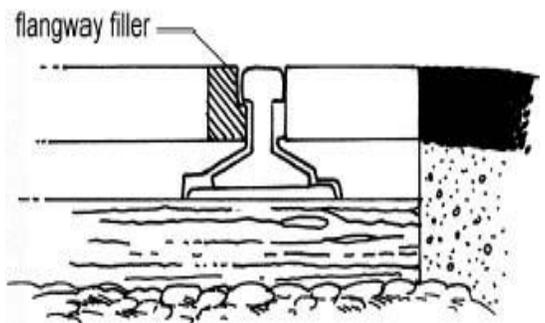
An active, low-rise pedestrian signal design has been put into place in Portland, Oregon (Figure 4-25). The flashing signal is accompanied by a warning sign cautioning pedestrians to look in both directions. Again, this device is not mentioned in the MUTCD, and would need special attention in terms of its design, placement, and allowance at any location.

A second active signalization type (not shown) for combination roadway – pedestrian crossings is when the crossing gate arm is mounted behind the sidewalk, so that when horizontal the arm crosses both the sidewalk (and, potentially, the bike lane, if present) and the roadway. A more eye-catching – although non-regulatory – sign is shown in Figure 4-24. A combination of passive (pavement markings) and active (sign mounted to counterweight of crossing arm) is shown in Figure 4-25. This installation is near the light rail line in Salt Lake City, Utah.

It is worthwhile to note here that the American Railroad Engineering and Maintenance-of-Way Association (AREMA) is considering crossing treatments for pedestrian and cycling paths (e.g., greenways) that are not adjacent to a roadway. At the time of this writing, new standards or design recommendations have not been promulgated.

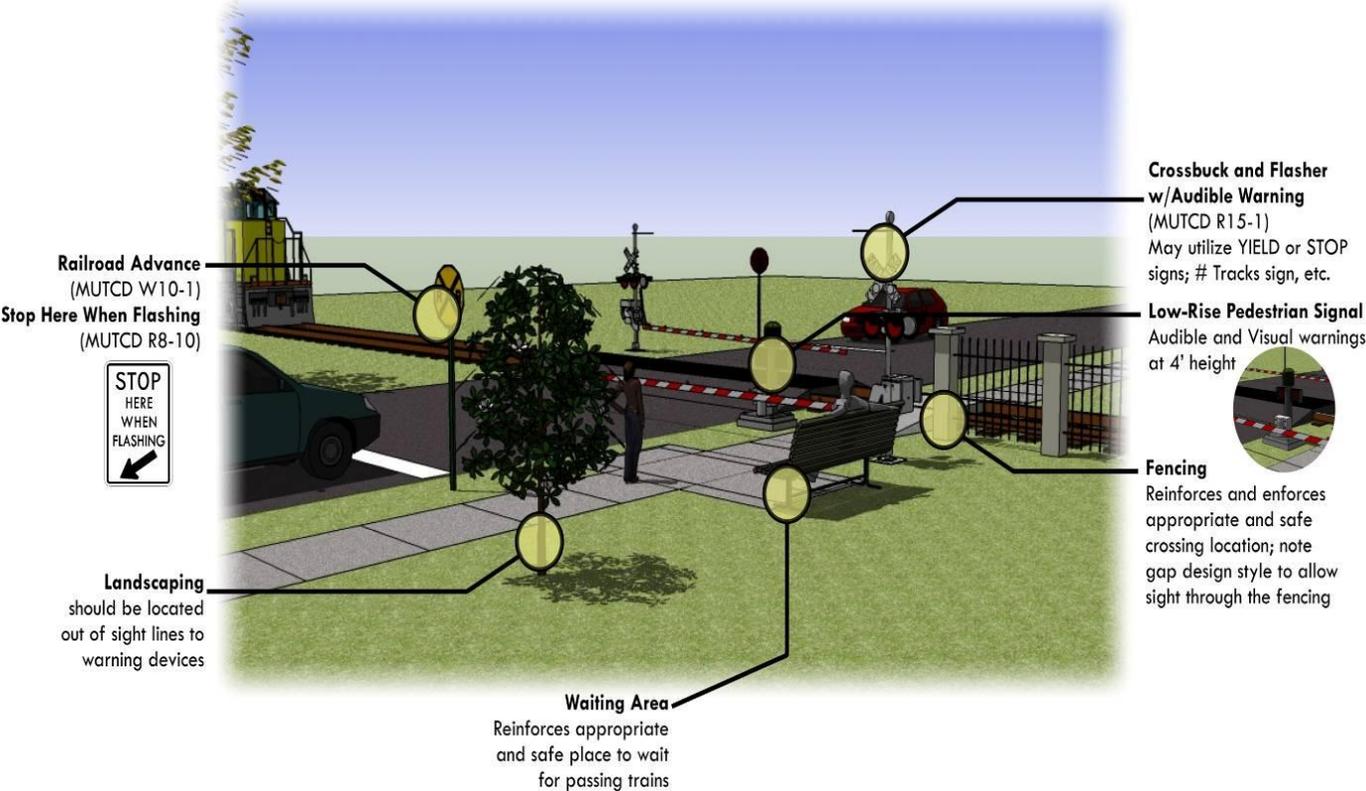


**Figure 4-25.** Pavement Marking and Counterweight-Mounted Warning Sign  
Source: FRA Compilation of Pedestrian Safety Devices in Use at Grade Crossings.



**Figure 4-26.** Diagram of Flangeway Filler  
Source: Designing Sidewalks and Trails for Access Part II of II: Best Practices Design Guide, Chapter 8.11.

Another useful reference is ([www.fhwa.dot.gov/environment/sidewalk2](http://www.fhwa.dot.gov/environment/sidewalk2)), especially Chapter 8.11 on railroad-pedestrian crossings. Figure 4-26 illustrates an important safety consideration for both cyclists and wheelchair or cane users: the flangeway filler to close the gaps that often exist in older crossings between the rail and adjacent asphalt or concrete surfaces. Such a filler helps to create a smoother ride for wheelchair users particularly, although there are similar benefits for road bikes (skinny tires) as well.



**Figure 4-27.** Typical Railroad Crossing Treatments

Source: FRA *Compilation of Pedestrian Safety Devices in Use at Grade Crossings*; *Manual on Uniform Traffic Control Devices*; The Louis Berger Group, Inc.

Figure 4-27 shows an amalgam of typical railroad crossing treatments. Minimum standards, such as the 18' minimum distance between railroad centerline and gate crossing or the 38' maximum gate length, will also influence the placement of warning devices. Note how landscaping allows for current and future sight distances to the warning devices; the fencing style ensures adequate sight through it; and painted stop bars and advance warning signals in addition to stop controls (not shown) reinforce safe stopping distances. The standard crossbuck sign/flasher/audible warning (with or without gate) may also be supplemented with a YIELD or STOP control; however, NCDOT is reviewing the appropriate design situations where these controls may be used, based in part on a 2006 Federal Highway Administration (FHWA) memorandum describing their usage.

The audible signal on these devices ties to the signalization of the train, and is typically a minimum of 85 decibels. Continuous bell warnings are warranted in select cases, but the level of noise intrusion, especially in sensitive areas such as churches, cemeteries, schools, health facilities, and residential areas often produce conflicts with audible warning devices.

**I.I. = [(PF)\*(ADT)\*(TV)\*(TSF)\*(TF)]/160 + (70\*A/Y)<sup>2</sup> + SDF**

*Where:*

- PF** = **Protection Factor**  
*No Warning Devices = 1.0*  
*Crossbuck Signs = 1.0*  
*Traffic Signal Preemption Only = 0.5*  
*Flashing Light Signals = 0.2*  
*Flashing Light Signals with Gates = 0.1*
- ADT** = **Average Daily Traffic**  
*When school buses use crossing:*  
*Add (No. of School Bus Passengers / 1.2) to ADT*  
*When passenger trains use crossing: Multiply ADT\*1.2*
- TV** = **Train Volume**
- TSF** = **Train Speed Factor (Max. Allowable Train Speed, MPH)/50+0.8)**
- TF** = **Track Factor**

No. of Tracks	● No. of Through Tracks				
	0	1	2	3	4
1	1.00	1.00	--	--	--
2	1.50	1.75	2.00	--	--
3	1.60	1.85	2.25	2.50	--
4	1.75	2.00	2.50	2.75	3.00

- A/Y** = **Train-Vehicle Accidents per Year**  
*Note: Model uses a 10-year history of crashes; therefore, input is normally in tenths. This input can calculate a value for any given number of crashes within a given period of time in years.*
- SDF** = **Sight Distance Factor**  
*SDF = [sum(SDF<sub>n</sub>)/4]\*16*  
*Where SDF<sub>n</sub> = Sight Distance Factor for Quadrant n*  
*SDF = 0 when Sight Distance is Open/Clear*  
*SDF = 2 when Sight Distance is Average*  
*SDF = 4 when Sight Distance is Poor*

**Figure 4-28. NCDOT Investigative Index (I.I.) Formula. The NCDOT I.I. uses train frequencies and speeds, as well as sight distance, existing crossing treatments and accident histories, to determine an objective measure of the hazard potential for every rail – roadway crossing in North Carolina.**

More expensive devices, such as fencing, waiting areas, and low-rise pedestrian signals, would be used only in situations where there is a high exposure of trains and pedestrians

(for example, at rail stations, event areas, and so forth). The choice of each device is dependent on the number of pedestrians, speed/frequency of trains, sight distances, and so forth. Generally, the following questions should be considered when considering the type, design, and placement of devices.

- What is the accident history involving pedestrians?
- What is the sight distance and crossing distance for pedestrians? Are the pedestrians crossing at a “skewed” angle?
- How many pedestrians are crossing the tracks?
- What are the numbers of trains and speeds at a crossing?

The last two bullets (number of pedestrians and number of trains crossing in a day), when combined, can produce an exposure index that indicates a relative prioritization method for pedestrian crossings. Even when exact pedestrian counts are not available, a Likert-scale rating system can be employed to produce priority locations for improvements. The second bullet impacts the design and treatment placing characteristics. Putting these factors together results in a typical priority index that is easily represented by the formula:

$$Px = Tx * Px$$

Where:

Px = Priority of Crossing X

Tx = Number of Trains / Day at Crossing X

Px = Number of Pedestrians / Day at Crossing X

NCDOT uses a similar index, the Investigative Index (I.I.), to prioritize every rail crossing in the State. As funds have become available, safety improvements are installed. Figure 4-29 illustrates how this index is calculated. Even if a particular crossing ranks highly on the index, availability of funds and the costs associated with modifying the safety treatments at a particular location will influence how quickly these improvements can be implemented. The use of this index is primarily oriented towards vehicular crossing traffic.

ADA		
Are there curb cuts at nearby intersections and a clear path present to curb cuts at nearby intersections?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are detectable warnings advised?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is the path width adequate (36" is minimum)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are there vertical obstructions (standard: none between 27" to 80" above ground or within path)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Slope of path transition (standard is 12:1 or less)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Landing platform (standard is level and 5' x 5' or more)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is surface smooth (standard: passable by a wheelchair, no broken or buckled asphalt, edges < 1/4")?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Panel length (crossing surface panel needs to extend 1' behind back of path to be standard)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are there flange gaps 2% or less, or flange fillers?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Can full flange fillers be used in low speed applications?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is grade 5% or less? If grade is over 5%, how long is grade?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If grade is 8% and 200', 10% and 30' or 12.5% and 10', are there rest areas?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are there 43" handrails for grades over 5%?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is widening proposed? How wide? When? Consider in project?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Mitigation:		

AWARENESS OF XING		
Overall awareness of railroad crossing, including visibility and effectiveness of possible signs, signals and markings.	<input type="checkbox"/> Acceptable	
Horizontal and vertical alignment considerations.	<input type="checkbox"/> Acceptable	
Pedestrian Sight Distance: Clearing sight distance of _____ from 17' from rail needed. North/East Side of Xing _____ South/West Side of Xing _____	<input type="checkbox"/> Acceptable	
Bicycle Sight Distance 1: Distance where crossing can be identified. North/East Side of Xing _____ feet South/West Side of Xing _____ feet	<input type="checkbox"/> Acceptable	
Bicycle Sight Distance 2: Need _____ down tracks from _____ down path. North/East Side Looking East/North _____ West/South _____ South/West Side Looking East/North _____ West/South _____	<input type="checkbox"/> Acceptable	<input type="checkbox"/> Recommend Improvement
Bicycle Sight Distance 3: Distance down path to see _____ down tracks if #2 not acceptable. North/East Side Looking East/North _____ West/South _____ South/West Side Looking East/North _____ West/South _____	<input type="checkbox"/> Acceptable	<input type="checkbox"/> Recommend Improvement
Bicycle Sight Distance 4: Stopped 17' from rail need _____ down tracks. North/East Side Looking East/North _____ West/South _____ South/West Side Looking East/North _____ West/South _____	<input type="checkbox"/> Acceptable	<input type="checkbox"/> Recommend Improvement
Nighttime visibility, including ambient lighting.	<input type="checkbox"/> Acceptable	
Skew of Xing: _____ Does skew limit perception?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are there simultaneous train movements on multiple tracks? Can standing boxcars block the view?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/>
Do Pedestrians and bicycles violate warning devices?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Mitigation of inadequate perception:	<input type="checkbox"/> Additional Signage	<input type="checkbox"/> Luminaires & Where <input type="checkbox"/> Multiple Track Removal

Figure 4-29. ADA Evaluation (bottom) and Pedestrian/Cyclist Evaluation (top)  
Source: Nevada DOT Railroad Safety Diagnostic Review Form

In terms of policy, the Nevada DOT has adopted an exemplary policy for pedestrian crossings at railroad tracks, which is worthy of reprinting here nearly verbatim.

- Grade crossing design features follow all national standards including the FHWA *Designing Sidewalks and Trails for Access Part II*.
- All signals are to be set behind the sidewalk, to provide the same level of warning for pedestrians as motor vehicles. If this cannot be done, add pedestrian gates. With signals set in back of the sidewalks, Nevada has found that they do not run into conflicts with the ADA prohibition of protrusions over the walkway.
- Crossing surface panels must be at least one foot wider than the sidewalk or edge or roadway, if there is no sidewalk.
- There must be a level turn-around area (for wheelchair users) next to the rail that is five feet by five feet wide, on both sides of the track. The sidewalk slope cannot increase more than 1 in 12 after that.
- The walkways can be no less than 36" wide but Nevada encourages the use of walkways that are six feet wide.
- "RxR" pavement markings are applied in bicycle lanes and W10-1 Advance Warning signs are placed next to the pavement markings. This is in addition to the W10-1 signs placed further back for motorists.

The diagnostic tool that Nevada DOT uses is also useful for considering alternative treatments for cyclists, pedestrians, and persons falling under the Americans with Disabilities Act (ADA). A portion of the diagnostic in Figure 4-29 deals with pedestrian/cyclist and mobility impaired crossing considerations. In contrast to the NCDOT Investigative Index, the Nevada diagnostic relates to pedestrians, cyclists, and ADA public segments more directly.

#### **4.12 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 available online at <http://www.ncdot.org/doh/preconstruct/altern/value/manuals/tnd.pdf>. These guidelines are available for proposed TND developments and permit localities and developers to design certain roadways according to TND guidelines rather than the conventional subdivision street standards. The guidelines recognize that in TND developments, mixed uses are encouraged and pedestrians and bicyclists are accommodated on multi-mode/shared streets.

#### **4.12 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, Granite Falls should be able to create a built environment that will promote walking and increase the number of pedestrians in the Town.

## Section 5. Implementation Plan

### 5.1 Introduction

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

The first half of this Plan outlines the existing conditions in Granite Falls and identifies the pedestrian needs that should be addressed where improvements need to be made. Projects in this section were developed based upon input from Town staff, the Steering Committee, focus groups and public input. Completion of the Town of Granite Falls Pedestrian Plan is only the first step in creating a walkable community. The implementation of the Pedestrian Plan will require a coordinated effort among Town officials, leaders, and citizen volunteers. This section provides a series of action steps for moving forward with the recommendations of the Plan, as well as potential funding sources and partners for proposed projects. Additionally, this section identifies a phased implementation schedule that considers priority and cost with the goal of creating a pedestrian-friendly community.

### 5.2 Projects

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

The thirty-two sidewalk projects recommended in Figure 5-1 include a variety of short term projects that will fill gaps in the existing sidewalk network, as well as more significant sidewalk corridor projects. The mid and long term sidewalk corridor projects are more extensive in nature and will help create connectivity along major thoroughfares. Though the corridor projects are typically more costly and/or difficult to construct, they will have a significant impact on the walkability of Granite Falls as a whole. All sidewalk projects have been prioritized based on criteria set by the Steering Committee, which included proximity to local shopping venues, parks and the Town Center.

Recommended sidewalk and intersection locations and treatments for each project type are summarized, respectively, in Tables 5-1, 5-2, and 5-3. Each table shows the project, proposed action, and cost. The crossing improvements recommended in Table 5-6 recognize the need for important safety improvements at key intersections and crossings, including the installation of crosswalks, signage, and/or pedestrian signals. Pedestrian-friendly crossings are also 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. Figure 5-4 is a map identifying the locations of the proposed sidewalk projects. Figure 5-5 is a map identifying the recommended intersections for pedestrian improvements.

Following project development, sidewalk projects were then prioritized. As can be seen in Tables 5-1, 5-2 and 5-3, the proposed sidewalk corridor projects are extensive – they cover over 8.8 miles of roadway in Granite Falls. Even if Granite Falls plans to expand its budget for pedestrian facilities, it will still take a long time for all of these projects to be constructed. To help the Town determine which projects to construct first, an analysis was performed to prioritize projects and create a recommended phasing schedule of short-term, mid-term, and long-term projects for construction.

The following tables summarize specific sidewalk project recommendations that have been made in order of short-term, mid-term, and long-term time frames. Each table should be used by the Town as a flexible framework for implementing the projects in the Plan – recognizing that it is important to capitalize on unexpected opportunities while also pursuing long term goals. In general, the Town should consider working with a wide range of partners, such as those listed in Section 6, to implement projects as well as the policies and programs recommended in Section 4 and conduct periodic evaluations.

The project costs are based on past, actual construction costs for similar project types. Curb-and-gutter, wheelchair (ADA-compliant) ramps, and occasional needs for right-of-way acquisition are accounted for in these estimates. However, more detailed engineering design studies are required to finalize the cost estimates, and materials costs have tended to fluctuate significantly in the recent past, in part due to swings in the overall economy and the price of fuel and asphalt.

**Short-Term Projects**

Projects identified as short-term are intended to reflect both a high priority for the Town of Granite Falls and an opportunity to identify project partners and funding sources over the next five to seven years. Some projects are already being pursued with NCDOT through annual requests through the Division Operations budget while others are being proactively planned for by the Town of Granite Falls and other area interests.

The project recommendations included in these tables are intended to reflect a planning-level analysis of these projects with regards to design, influences and cost estimates. Constructing new projects in the built environment has many challenges that can greatly influence the ultimate project design, budget and implementation schedule. These factors can also influence which side of the street projects are constructed. All costs are intended to reflect constructing sidewalks on one-side of the street, unless otherwise noted. (Note: Numbers and letters in parentheses reflect identification symbol on the project map. Numbers = corridors; Letters = intersections.)

**Sidewalk Projects**

<b>Chestnut St, Sterling St to Falls Ave (18)</b>		<b>Cost: \$36,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along west side to connect Falls Avenue to Sterling Park.</li> <li>New curb ramps at Falls Avenue and along route for ADA compliance.</li> <li>Consider connections to walking facilities in Park with Sterling St, Main to Woodlane project</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Sterling Park</li> <li>Downtown</li> <li>Shopping</li> <li>Terrain</li> </ul>
<b>Responsible Agencies: Town of Granite Falls</b>		<b>Length: 700 ft.</b>

<b>Lakeside Ave, Town Public Facilities Building to Lakeside Park (10)</b>		<b>Cost: \$221,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along west side, transitioning to east side near tennis courts.</li> <li>Town has funding through Safe Routes to Schools program</li> <li>Construction expected in 2011</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Lakeside Park</li> <li>Post Office</li> <li>Recreation</li> <li>Constrained rights-of-way</li> <li>Terrain</li> </ul>
<b>Responsible Agencies: Town of Granite Falls, NCDOT</b>		<b>Length: 4,400 ft.</b>

<b>Madison Ave., Main St (US 321-A) to Midway St (14)</b>		<b>Cost: \$20,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along west side</li> <li>• Creates connection to/from downtown in combination with Midway, Madison to Lakeside Project.</li> <li>• Intersection improvements at Main Street included in separate intersection project.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Post Office</li> <li>• Railroad tracks</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 400 ft.</b></p>

<b>Midway St, Madison Ave to Lakeside Ave (13)</b>		<b>Cost: \$40,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north side.</li> <li>• Crosswalks across Lakeside Ave.</li> <li>• Connects to existing sidewalks on Lakeside Ave.</li> <li>• Creates connection to/from downtown in combination with Madison Ave, Main St to Midway St project.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Post Office</li> <li>• Lakeside Park</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls</b></p>	<p><b>Length: 800 ft.</b></p>

<b>South Main Street (US 321-A), Short St to Forest Ave (19)</b>		<b>Cost: \$10,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• New sidewalks to fill gaps in this section along east side.</li> <li>• Curb ramps at commercial driveways and street intersections</li> <li>• Re-configure continuous driveway access to single or multi-point access for pedestrian safety.</li> <li>• Creates connection with mid-term project on Forest Ave., Crestview St. to S. Main St.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Existing development</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 100 ft.</b></p>

<b>Sterling St, S. Main St (US 321-A) to Woodlane Street (20)</b>		<b>Cost: \$55,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• New sidewalks along north side.</li> <li>• Connect to Sterling Park</li> <li>• Creates continuous sidewalk system with other projects noted in Pedestrian Plan</li> <li>• New curb ramps at Crestview and other connecting streets</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Sterling Park</li> <li>• Residential neighborhoods</li> <li>• Downtown</li> <li>• Shopping</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 900 ft.</b></p>

**Intersection Projects**

<b>Dudley Ave &amp; Archer St (A)</b>		<b>Cost: \$10,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Re-establish crosswalk (paved over) with high visibility crosswalks</li> <li>• Connect sidewalk along west side to crosswalk</li> <li>• School crossing signage</li> <li>• Advanced "Ped Xing" pavement markings</li> <li>• Construct ADA-compliant curb ramps</li> <li>• Enforce sidewalk clearance on nearby residential properties</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Elementary school</li> <li>• Residential neighborhoods</li> <li>• Street / intersection geometry</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 75 ft.</b></p>

<b>Dudley Ave &amp; Park Square to N. Main Street (US 321-A) (B)</b>		<b>Cost: \$10,000-\$25,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Upgrades to improve issues of sight distance.</li> <li>• High visibility crosswalks and advance signage (consider flashing beacons)</li> <li>• Re-configure sidewalks through streetscape improvements at downtown.</li> <li>• Continue crosswalks to connect to square across N. Main Street.</li> <li>• Consider restricting truck traffic on Dudley to install raised crosswalk at N. Main Street.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Existing buildings</li> <li>• Town square</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: Varies</b></p>

<b>Fall Ave &amp; Park Square (C)</b>		<b>Cost: \$10,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Reconfigure crosswalk due to sight distance issues</li> <li>• Install high visibility crosswalk</li> <li>• Construct curb bulbouts from north side to meet travel lanes</li> <li>• Re-construct curb ramps for ADA compliance</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Park Square</li> <li>• Town Hall</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 60 ft.</b></p>

<b>N. Main St (US 321-A) &amp; Highland Ave (D)</b>		<b>Cost: \$20,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Construct sidewalk connection from school, from railroad tracks to N. Main St.</li> <li>• High visibility crosswalks &amp; pedestrian crossing signage on N. Main St., east leg</li> <li>• ADA-compliant curb ramps on all four corners of intersection.</li> <li>• Pedestrian countdown signals.</li> <li>• Pedestrian way should continue across railroad tracks</li> <li>• Consider crossing gates (not included in cost estimate)</li> <li>• Bulbouts in middle school parking lanes for pedestrian crossing of parking access</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Middle school</li> <li>• Residential neighborhoods</li> <li>• Downtown</li> <li>• Railroad tracks</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT, Caldwell County Schools</b></p>	<p><b>Length: 100 ft.</b></p>

<b>S. Main St (US 321-A) &amp; Falls Ave / Madison Ave at Park Square (E)</b>		<b>Cost: \$10,000-\$35,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Install high-visibility crosswalks and pedestrian crossing signage</li> <li>• Install countdown pedestrian signals</li> <li>• North leg is priority for crossing of Main St. due to other recommended projects</li> <li>• Construct ADA-compliant curb ramps</li> <li>• Pedestrian way should continue across railroad tracks</li> <li>• Consider crossing gates (not included in cost estimate)</li> <li>• Bulbouts in parking lane on north leg on Park Square side</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Town Hall</li> <li>• Park Square</li> <li>• Railroad tracks</li> <li>•</li> <li>•</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 175 – 220 ft.</b></p>

<b>N. Main St (US 321-A) &amp; Park Ave (F)</b>		<b>Cost: \$10,000-\$35,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Install high-visibility crosswalks and pedestrian crossing signage</li> <li>• Install flashing beacon</li> <li>• West leg is priority for crossing of Main St. due to school sidewalk connection</li> <li>• Construct ADA-compliant curb ramps</li> <li>• Pedestrian way should continue across railroad tracks</li> <li>• Consider crossing gates (not included in cost estimate)</li> <li>• Bulbouts in parking lane of school</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Middle School</li> <li>• Downtown</li> <li>• Residential neighborhoods</li> <li>• Railroad tracks</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT, Caldwell County Schools</b></p>	<p><b>Length: 100 ft.</b></p>

<b>Pinewood Rd &amp; Highland Ave (G)</b>		<b>Cost: \$30,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Crossing from southeast corner to northwest corner is the priority movement to connect existing sidewalks.</li> <li>• Construction new ADA-compliant curb ramps on SE, SW and NW corners</li> <li>• Sidewalk connection on SW corner</li> <li>• Install high visibility crosswalks &amp; countdown signals</li> <li>• Align stop bar with crossing</li> <li>• Reduce turning radius on SE corner</li> <li>• Remove utility poles from pedestrian way</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Recreation center</li> <li>• Residential neighborhoods</li> <li>• Walking trails</li> <li>• Elementary School</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 125 ft.</b></p>

**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 Granite Falls to deliver these projects within this timeframe. Once the Plan is adopted, strategizing should begin on the best way to pursue these projects.

<b>Central Ave, S. Main St (US 321-A) / Duke St to Midway St (16)</b>		<b>Cost: \$16,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Construct sidewalks along west side of road</li> <li>Connects to future Midway Street projects to provide connection to Lakeside Ave.</li> <li>West side provides fewest conflicts with Duke St intersection.</li> <li>NCDOT has discussed several options for Duke St / S. Main St re-configuration</li> <li>Pedestrian way should continue across railroad tracks</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Downtown</li> <li>Railroad tracks</li> <li>Residential neighborhoods</li> </ul>
<b>Responsible Agencies: Town of Granite Falls, NCDOT</b>		<b>Length: 300 ft.</b>

<b>Elgin St, Park Ave to Lakeside Ave (12)</b>		<b>Cost: \$35,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>New sidewalks along north or south side to connect Lakeside to Park</li> <li>Install ADA-compliant curb ramps at intersections.</li> <li>Crosswalks on Park Ave.</li> <li>Continuation of Midway Street sidewalks to create sidewalk connectivity parallel to Main Streets</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Middle School</li> <li>Ballfields</li> <li>Lakeside Ave</li> <li>Residential neighborhoods</li> </ul>
<b>Responsible Agencies: Town of Granite Falls</b>		<b>Length: 700 ft.</b>

<b>Forest Ave, Crestview St to S. Main St (US 321-A) (21)</b>		<b>Cost: \$57,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north / west side</li> <li>• Creates connection to/from neighborhoods in combination with projects on Woodlane and Chestnut.</li> <li>• Install ADA-compliant curb ramps at intersections</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Residential neighborhoods</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 1,100 ft.</b></p>

<b>Midway St, Madison Ave to Central Ave (15)</b>		<b>Cost: \$24,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north side</li> <li>• Creates connection to/from downtown and Lakeside Ave in combination with Midway, Madison to Lakeside and Madison Ave, Main St to Midway St projects.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Post Office</li> <li>• Lakeside Park</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls</b></p>	<p><b>Length: 500 ft.</b></p>

<b>North Main Street (US 321-A), N. Summit Ave to Pinewood Road (3)</b>		<b>Cost: \$183,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north side of N. Main Street</li> <li>• Extension of sidewalk system along north side that connects to downtown.</li> <li>• Install crosswalks and ADA-compliant curb ramps at Summit, Crescent and Pinewood.</li> <li>• New crossings at Dry Ponds Road, with crosswalks.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Downtown</li> <li>• Post Office</li> <li>• Lakeside Park</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 3,700 ft.</b></p>

<b>Pinewood Rd, Bert Huffman Rd to Recreation Center (11)</b>		<b>Cost: \$57,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along north side to connect to existing sidewalks near Recreation Center driveway</li> <li>• Provides for walking route from residential neighborhoods west of recreation to recreation center.</li> <li>• First phase of sidewalk connections along Pinewood and Bert Huffman.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Recreation Center</li> <li>• High School</li> </ul>
	<p><b>Responsible Agencies: NCDOT, Town of Granite Falls</b></p>	<p><b>Length: 1,100 ft.</b></p>

<b>West Highland Ave / Woods Dr, Middle School Rd to Park Ave (8)</b>		<b>Cost: \$63,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along south side of West Highland from School to Woods.</li> <li>• Sidewalks along east or west side of Woods Drive from West Highland Ave to Park Ave.</li> <li>• Connects residential neighborhoods to school.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Middle School</li> <li>• Ballfields</li> <li>• Residential neighborhoods</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls</b></p>	<p><b>Length: 1,300 ft.</b></p>

<b>Woods Dr / Laurel St, Park Ave to Lakeside Ave (9)</b>		<b>Cost: \$100,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along east or west side of Woods Drive</li> <li>• Sidewalks along north side of Laurel (primarily town property).</li> <li>• Connects residential neighborhoods to school in conjunction with West Highland / Wood project.</li> <li>• Crosswalks at Lakeside Avenue and Park Avenue</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Middle School</li> <li>• Ballfields</li> <li>• Residential neighborhoods</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls</b></p>	<p><b>Length: 2,000 ft.</b></p>

**Long-Term Projects**

Projects identified for the Town of Granite Falls that are slotted into the Long-Term Priority category are a mix of projects seen as a 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 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 streets. 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 Granite Falls.

<b>Bert Huffman Rd, Pinewood Rd to South Caldwell High School (1)</b>		<b>Cost: \$220,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along east side of Bert Huffman Road (primarily within Granite Falls town limits and ETJ).</li> <li>Project may be constructed in phases, starting at Pinewood and working north toward the High School.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>High School</li> <li>Residential neighborhoods</li> <li>Recreation Center</li> </ul>
<b>Responsible Agencies: Town of Granite Falls, Caldwell County, NCDOT, S. Caldwell HS</b>		<b>Length: 4,000 ft.</b>
<b>Dry Ponds Rd / Turner Rd, N. Main St (US 321-A) to Sunset St (4)</b>		<b>Cost: \$175,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along one side of street to connect to Sunset St sidewalks identified in other long-term projects</li> <li>Crosswalks at major intersections.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Middle School</li> <li>Ballfields</li> <li>Residential neighborhoods</li> <li>Apartments</li> </ul>
<b>Responsible Agencies: NCDOT, Town of Granite Falls</b>		<b>Length: 3,500 ft.</b>

<b>Duke St, Cline Dr to Hickory St (17)</b>		<b>Cost: \$380,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along both sides of Duke Street to connect with existing sidewalks north of Cline Drive.</li> <li>• Crosswalks at major intersections.</li> <li>• Sidewalks may be considered on one side due to financial limitations (cost estimate is for both sides).</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Residential neighborhoods</li> <li>• Churches</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 3,800 ft.</b></p>

<b>Granite Falls Greenway, Dam St to Pine St via Sewer Easements (25)</b>		<b>Cost: \$650,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Construct new multi-use greenway path, connecting neighborhoods of east Granite Falls to the dam and falls.</li> <li>• Includes utilization of dam crossing for pathway connection to Meandering Way.</li> <li>• Estimates assume using existing Dam Street as part of pathway.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• The Falls and Dam</li> <li>• Granada Farms development</li> <li>• Potential for future park / destination</li> <li>• Residential neighborhoods</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls</b></p>	<p><b>Length: 4,600 ft.</b></p>

<b>North Main Street (US 321-A), Park Ave to Sherrill Dr (5)</b>		<b>Cost: \$375,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>• Sidewalks along south side of North Main Street or south side of railroad tracks.</li> <li>• Intersection upgrades at Sherrill, Dry Ponds, Summit, and Highland (additional streets if south of tracks).</li> <li>• Potential Rails with Trails.</li> <li>• May split into different projects starting at Park Ave and working toward Sherrill Dr.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>• Middle School</li> <li>• Railroad tracks</li> <li>• Residential neighborhoods</li> <li>• Businesses</li> </ul>
	<p><b>Responsible Agencies: Town of Granite Falls, NCDOT</b></p>	<p><b>Length: 7,500 ft.</b></p>

**North Main Street / S. Main St (US 321-A), Lakeside Ave to Duke St (22)** **Cost: \$81,000**



Recommended Improvements

- Sidewalks along south side of North / South Main Streets or south side of railroad tracks.
- Intersection upgrades at Madison, Lakeside and Duke.
- Potential Rails with Trails

Influences

- Middle School
- Railroad tracks
- Residential neighborhoods
- Downtown

**Responsible Agencies: Town of Granite Falls, NCDOT** **Length: 1,500 ft.**

**North Summit Ave, N. Main St (US 321-A) to Water St (7)** **Cost: \$35,000**



Recommended Improvements

- Sidewalks along north or south side of North Summit Avenue.
- Walk to school route for Middle School, connecting to existing sidewalks along North Main St.

Influences

- Middle School
- Residential neighborhoods
- Businesses

**Responsible Agencies: Town of Granite Falls** **Length: 700 ft.**

**Pinewood Rd, N. Main St (US 321-A) to Bert Huffman Road (2)** **Cost: \$135,000**



Recommended Improvements

- Sidewalks along one side of Pinewood based on feasibility and development potential.
- Intersection upgrades at N. Main Street, Clover Church Road and potentially Bert Huffman.
- May be split into different projects starting at Bert Huffman or N. Main Street.
- Consider open curbing or sidewalk set back of drainage ditches to lower costs.

Influences

- High School
- Residential neighborhoods
- Recreation Center

**Responsible Agencies: Town of Granite Falls, NCDOT** **Length: 2,700 ft.**

<b>Sunset St, Highland to Turner &amp; Colonial Ave, N. Main St to Sunset St. (6)</b>		<b>Cost: \$235,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along north side of Sunset (consider south side if there are feasibility issues).</li> <li>Sidewalks along east or west side of Colonial Ave.</li> <li>Middle school walk routes.</li> <li>Projects create walking loop in combination with others in Plan.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Middle School</li> <li>Residential neighborhoods</li> <li>Camelot Manor Nursing Facility</li> </ul>
<b>Responsible Agencies: NCDOT, Town of Granite Falls</b>		<b>Length: 4,700 ft.</b>

<b>Woodlane St, Simmons Ave to US 321 (23)</b>		<b>Cost: \$48,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along south side to connect to existing sidewalks west of Simmons Ave.</li> <li>Intersection improvements (crosswalks, curb ramps) at Timberbrook Lane</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Residential neighborhoods</li> <li>Businesses</li> <li>Restaurants</li> <li>Sterling Park</li> </ul>
<b>Responsible Agencies: Town of Granite Falls</b>		<b>Length: 750 ft.</b>

<b>Woodlane St, Sterling Ave to Forest Ave (24)</b>		<b>Cost: \$48,000</b>
	<p><u>Recommended Improvements</u></p> <ul style="list-style-type: none"> <li>Sidewalks along south side to connect to existing sidewalks east of Forest Ave.</li> <li>Connects to higher priority sidewalk project identified for Sterling Ave.</li> </ul>	<p><u>Influences</u></p> <ul style="list-style-type: none"> <li>Residential neighborhoods</li> <li>Sterling Park</li> <li>Businesses</li> <li>Restaurants</li> </ul>
<b>Responsible Agencies: Town of Granite Falls</b>		<b>Length: 850 ft.</b>

Special Project

**US 321 & Falls Ave Interchange – Proposed Superstreet**



**Above:** Current crossing of US 321 along Falls Avenue.



**Above:** Pedestrian crossing of superstreet on NC 54.

**Below:** View of crosswalks to reach media of NC 54 in Chapel Hill.



The North Carolina Department of Transportation is studying the conversion of US 321 to a "superstreet" which addresses turning movements at major and minor intersections by requiring U-turns at locations offset from the major intersections. These improvements are intended to reduce congestion at signalized intersections.

Part of this proposal is the conversion of the existing grade-separated interchange at US 321 and Falls Avenue to an at-grade superstreet crossing.

Currently, this is the only pedestrian connection between neighborhoods east and west of US 321. Pedestrian are relatively unimpeded along the current configuration due to a lack of traffic signals and low volumes on intersecting streets and ingress/egress ramps.

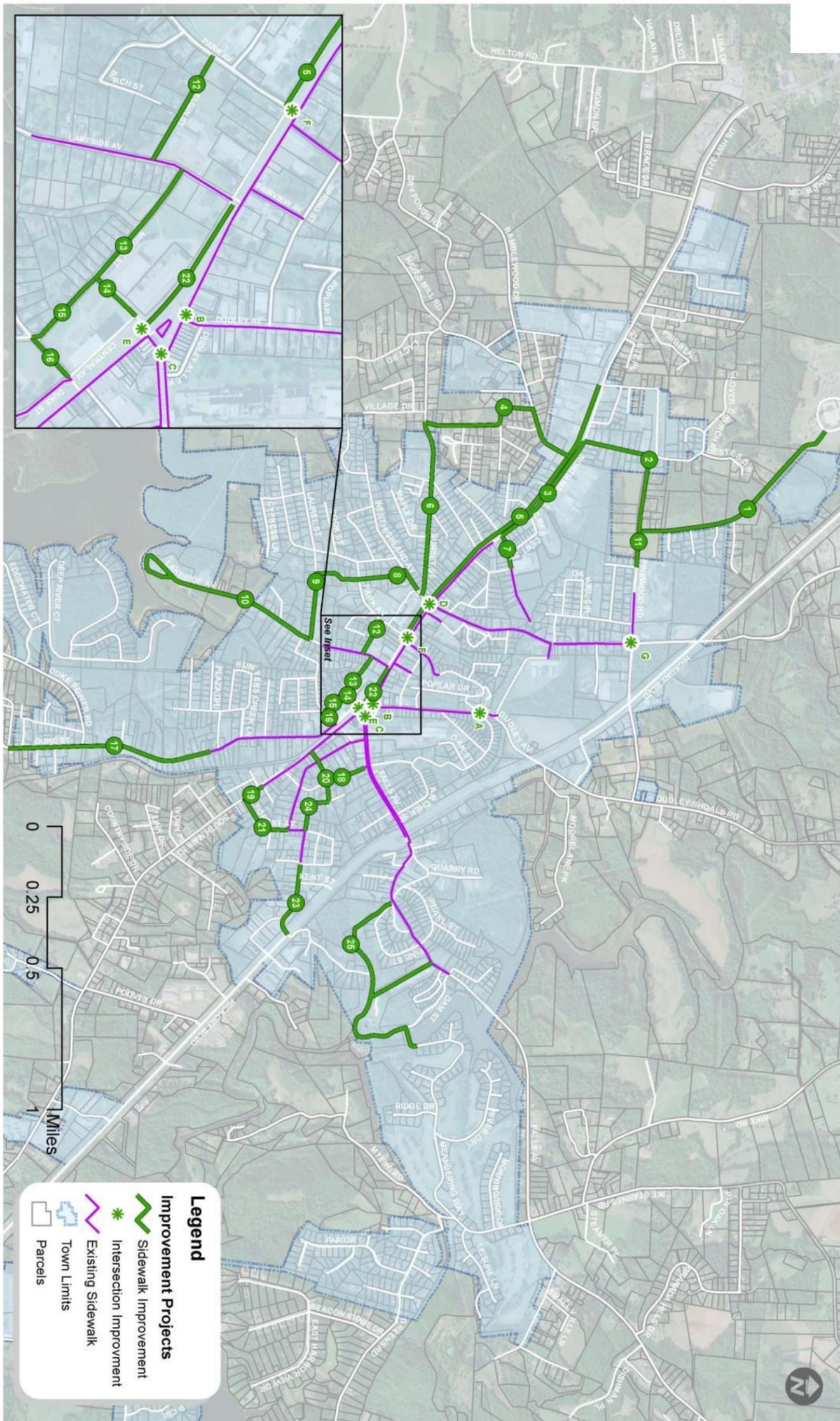
This project merits special consideration in the Granite Falls Pedestrian Plan as the conversion of the interchange to a superstreet intersection will have notable impacts to pedestrian level of service and travel times.

Currently, a pedestrian can cross the width of US 321 on the overpass in 30 to 40 seconds. Based on in-the-field analysis of a pedestrian superstreet crossing on NC 54 in Chapel Hill, NC, this crossing time could increase up to 260 seconds (4 minutes, 20 seconds). This has the possibility for major impacts to walkability and accessibility to persons living east of US 321, including the affordable housing units along Quarry Road.

A detailed analysis of the impacts of these proposed improvements is included in the Implementation chapter of the Plan.

**Responsible Agencies:** Town of Granite Falls, NCDOT

Figure 5-1. Proposed Sidewalk & Intersection Projects



Improvement Projects  
Granite Falls Comprehensive Pedestrian Plan  
M:\11\10223 Granite Falls Pedestrian Plan\Graphics\GIS\Map\Improvement\_Points.mxd

FIGURE  
A-2  
March 2011

## Factors

Prioritization and scheduling for the proposed sidewalk projects were based on the following factors:

- **Public input:** Comments from the Steering Committee and participants in the Open Houses, survey, and other public forums
- **Project characteristics:** During the second Steering Committee meeting, committee members were asked to identify their priority projects regardless of cost. Members then discussed the priority criteria that contributed to the identification of those projects, including access to schools, parks and shopping. From this discussion, the following items were identified as important project characteristics to making a project a priority:
  - Accessibility: Proximity to schools, parks, commercial areas.
  - Safety: Measured by the average daily traffic (ADT) on the roadway where the sidewalk is proposed,
  - Connectivity: Project's potential to complete a critical connection from one location to another, measured by the project's connection to existing sidewalks.
  - Locality: Determining if the proposed project was within the Town limits and whether the road the project was proposed on was Town owned.

## Process

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

**Rate projects on key characteristics.** Projects were rated on accessibility, safety and connectivity. A project received points for any of the following characteristics:

- **Accessibility:** *Commercial/Schools/Recreation Areas.* Is a major shopping venue, school or recreation area located within the project limits?
  - Less than .125 miles away = 4 points
  - .125 - .25 miles = 3 points
  - .25 - .5 miles away = 2 points
  - 5 – 1 mile away = 1 point
  - Greater than one mile away = 0 points
- **Safety.** What is the average daily traffic (ADT) count of the roadway?
  - Residential Street or Cul-de-Sac = 1
  - Collector Street = 2 points
  - Marginal Access Street = 3 points
- **Connectivity.** Does the project link one destination to another by way of existing sidewalk?
  - (Yes = 1 point, No = 0 points)
- **Feasibility.** Is the project street Town owned?
  - (Yes = 1 point, No = 0 points)
- **Public Response.** During the public involvement process, were comments received about the specific project?
  - 8 or more comments received = 3 points
  - 5-7 comments received = 2 points

2-4 comments received = 1 point  
0-1 comments received = 0 points

## Action Steps

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

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

**2) Form a Pedestrian & Trails Advisory Committee.** The pedestrian planning process has engaged many citizens in visioning and goal-setting for Granite Falls. Building on this momentum to keep citizens engaged in a permanent committee structure will allow continued citizen involvement in the Plan's implementation.

**3) Secure funding for the top priority projects.** In order for Granite Falls 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.

**4) Begin work on top priority projects listed in Section 6.3.** In addition to committing local funds to high-priority projects in the Pedestrian Plan, the Town is in a position to work with NCDOT on a local Safe Routes to School (SRTS) project and/or seek other state, national or private funding sources for continued, long-term success in implementing the Plan.

**5) Adopt policy changes that support the goals of the Pedestrian Plan.** Proposed ordinance changes that will be crucial to balancing the public/private burden of implementing this Pedestrian Plan are listed in Section 5. These include things like enforcing sidewalks in all new development projects, expanding on the definitions and criteria for sidewalks in the Development Standards section of the Zoning Ordinance, and creating a street design manual.

**6) Embark on complementary planning efforts.** The Town should incorporate the recommendations of the Pedestrian Plan into future and existing Plans developed and updated at the local, regional and statewide level. For instance, the recommendations of the Granite Falls Pedestrian Plan should be incorporated into the statewide Comprehensive Transportation Plan.

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

improvements. The recently adopted Complete Streets Policy from NC DOT provides a useful starting point for creating this type of downtown environment.

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

- Create a regular maintenance schedule for existing sidewalks and crosswalks.
- Provide crosswalks and pedestrian countdown signals at all signalized intersections throughout Granite Falls, as a routine pedestrian accommodation.
- Consider the use of in-street and overhead “Yield to Pedestrians” signage at problem intersections, as well as countdown pedestrian signals at all new and existing signalized intersections.
- Connect existing parks, trails and cultural landmarks with gateway treatments, information kiosks, and wayfinding signage to provide better pedestrian access and recognition. Such treatments should be thematic in appearance and help with visual recognition of trails and destinations “off the beaten path.” For instance, the wayfinding signage could designate a loop trail consisting of downtown sidewalks connecting to the Transportation museum or to Lakeside Park.
- Provide pedestrian-scale lighting, street trees and landscaping in the downtown and along sidewalks. Consider other pedestrian amenities (such as benches, water fountains and trash cans) for long or high-use corridors as funding allows. Ensure all street furniture purchases are coordinated and create a Town standard for color, texture, material, etc. Extending the downtown streetscaping to the Elementary and Middle Schools also expands the perception of the Town’s walkability and enhances business potential.
- Formalize a town-wide 25 -35mph speed limit (unless otherwise signed) and post related regulatory signs at major gateway entrances into the Town.
- Consider the use of in-street “Yield to Pedestrians” signage in the downtown where many pedestrians compete for space with cars.

## **Section 6. Partnerships and Funding**

### **6.1 Introduction**

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 Granite Falls should look like with the implementation of this Plan

### **6.2 Funding and Partnerships**

For project recommendations, the Town already has several established funding sources and mechanism, 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. If a project is a greenway or greenway crossing, or located near a park or community center, the Town's Parks, Recreation and Cultural Resources Department should be incorporated into the planning and funding process. 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 Caldwell County School System 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 Caldwell County School System, the Town of Granite Falls, Parent-Teacher Associations, North Carolina Department of Transportation, the Police Department, and the Caldwell County Health Department. Although the Town can spear-head tasks such as town-specific educational materials, it should also consider coordinating with the local Metropolitan Planning Organization, which may have materials that can be tailored to the Town's needs.

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

- NC DOT – Bicycle and Pedestrian Division
- Downtown Merchants Association
- Local Health Professionals
- Local Neighborhoods Groups
- Public School System
- Local Parent Teacher Associations (PTAs)
- Police Department
- Planning Board
- Shuford Recreation Center staff
- West Piedmont Council of Governments
- Local Business Owners

### **6.3 Program Evaluation**

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

- Number of students walking/biking to school;
- Records of pedestrian crashes in Granite Falls;
- Participation in programs, such as Safe Routes to School Program; and
- Database of sidewalk & intersection improvements and conditions.

## 6.4 Funding

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



Currently, Granite Falls does not have an annual budget line item specifically for pedestrian improvements. In the future, Granite Falls may wish to consider creating a specific annual budget item to set aside funds for improving pedestrian facilities, especially “spot improvements” to the local sidewalk network. A specific budget item is the most direct way to ensure that funding for pedestrian facilities is available, but 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 recommendations of *Section 6: Programs and Policy Recommendations*, this may mean the Town should require developers to install sidewalk with new construction. The Town should also consider teaming with other organizations that may have their own projects in Granite Falls.

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

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

- **Exactions.** Exactions are similar to impact fees in that they both provide facilities to growing communities. The difference is that through exactions it can be established that it is the responsibility of the developer to build the greenway or pedestrian facility that crosses through the property, or adjacent to the property being developed.
- **Payment In-Lieu Fees.** As an alternative to requiring developers to dedicate on-site sidewalk or greenway sections that would serve their development, some communities provide a choice of paying a front-end charge for off-site protection of pieces of the larger system. Payment is generally a condition of development approval and recovers the cost of the off-site land acquisition or the development's proportionate share of the cost of a regional facility serving a larger area. Some communities prefer payment in-lieu fees. This alternative allows community staff to purchase land worthy of protection rather than accept marginal land that meets the quantitative requirements of a developer dedication but falls a bit short of qualitative interests.
- **Bonds and Loans.** Bonds have been a very popular way for communities across the country to finance their pedestrian and greenway projects. A number of bond options are listed below. Contracting with a private consultant to assist with this program may be advisable. Since bonds rely on the support of the voting population, an education and awareness program should be implemented prior to any vote. Billings, Montana used the issuance of a bond in the amount of \$599,000 to provide the matching funds for several of their TEA-21 enhancement dollars. Austin, Texas has also used bond issues to fund a portion of their bicycle and trail system.
- **Revenue Bonds.** Revenue bonds are bonds that are secured by a pledge of the revenues from a certain local government activity. The entity issuing bonds, pledges to generate sufficient revenue annually to cover the program's operating costs, plus meet the annual debt service requirements (principal and interest payment). Revenue bonds are not constrained by the debt ceilings of general obligation bonds, but they are generally more expensive than general obligation bonds.
- **General Obligation Bonds.** Cities, counties, and service districts generally are able to issue general obligation (G.O.) bonds that are secured by the full faith and credit of the entity. In this case, the local government issuing the bonds pledges to raise its property taxes, or use any other sources of revenue, to generate sufficient revenues to make the debt service payments on the bonds. A general obligation pledge is stronger than a revenue pledge, and thus may carry a lower interest rate than a revenue bond. Frequently, when local governments issue G.O. bonds for public enterprise improvements, the public enterprise will make the debt service payments on the G.O. bonds with revenues generated through the public entity's rates and charges. However, if those rate revenues are insufficient to make the debt payment,

the local government is obligated to raise taxes or use other sources of revenue to make the payments. G.O. bonds distribute the costs of land acquisition and greenway development and make funds available for immediate purchases and projects. Voter approval is required.

- **Special Assessment Bonds.** Special assessment bonds are secured by a lien on the property that benefits by the improvements funded with the special assessment bond proceeds. Debt service payments on these bonds are funded through annual assessments to the property owners in the assessment area.
- **State Revolving Fund (SRF) Loans.** Initially funded with federal and state money, and continued by funds generated by repayment of earlier loans, State Revolving Funds (SRFs) provide low interest loans for local governments to fund water pollution control and water supply 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 or 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.

## 6.5 State Transportation Funding

Granite Falls 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.

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

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

■ **In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT, or “Division”)** manages the Transportation Improvement Program (TIP) selection process for independent bicycle and pedestrian projects. Projects programmed into the TIP as “independent projects” are those which are not related to a scheduled highway project. “Incidental projects” – those related to a scheduled highway project – are bicycle and pedestrian accommodations, such as sidewalks, included as incidental features of highway projects. In addition, pedestrian-safe railings are a standard feature of all highway construction. Most bicycle and pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of National Highway System funds and State Highway Trust Funds. The Division has 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. Eighty percent (80%) of these funds are typically from STP-Enhancement funds, while the State Highway Trust Fund provides the remaining 20 percent of the funding. Each year, the DBPT regularly sets aside a total of \$200,000 of TIP funding for NCDOT to fund projects such as training workshops, pedestrian safety and research projects, and other pedestrian needs statewide. Those interested in learning about training workshops, research and other opportunities should contact the DBPT for information. A total of \$5.3 million dollars of TIP funding is typically available for funding various bicycle and pedestrian independent projects, including the construction of multi-use trails, the striping of bicycle lanes, and the construction of paved shoulders, among other facilities. Prospective applicants are encouraged to contact the DBPT regarding funding assistance for bicycle and pedestrian projects. For a detailed description of the TIP project selection process, visit: <http://www.ncdot.org/bikeped/funding/default.html>.

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

- 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](http://www.ncdot.org/programs/Enhancement).

- **Spot Improvement Program** - The NCDOT Bicycle and Pedestrian Transportation Division budgets \$500,000/year for “spot” safety improvements throughout the State. These improvements include items such as signing, grate replacement, bike rack installations, hazard remediation at skewed railroad crossings, and other small-scale improvements. The Spot Improvement Program is used only for bicycle and pedestrian projects; however, it should not be viewed as a priority source for funding identified projects. It is typically used for small-scale and special-situation projects that are not of a significantly large enough scale to merit being a TIP project. Taking these requirements into consideration, proposals for projects should be submitted directly to the Bicycle & Pedestrian Transportation Division.
- **Small Urban Funds** – Small Urban Funds are available for small improvement projects in urban areas. Each NCDOT Highway Division has \$2 million of small urban funds available annually. Although not commonly used for bicycle facilities, local requests for small bicycle projects can be directed to the NCDOT Highway Division office for funding through this source. A written request should be submitted to the Division Engineer providing technical information such as location, improvements being requested, timing, etc. for thorough review.
- **Hazard Elimination Program** – This program focuses on projects intended for locations that should have a documented history of previous crashes. Bicycle and pedestrian projects are eligible for this program, although the funds are not usually used for this purpose. This program is administered through the NCDOT Division of Highways. 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](http://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/](http://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 State of North Carolina allocated \$15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. 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, visit [www.ncdot.org/programs/safety/safeRoutes](http://www.ncdot.org/programs/safety/safeRoutes) or contact the DBPT / NCDOT at (919) 807-0774.



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](http://www.portal.hud.gov/portal/page/portal//HUD/program_offices/comm_planning)

## 6.6 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](http://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. However, Congress generally appropriates only a small fraction of this amount. The allotted money for the year 2010 is \$862,000. The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the US Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Environment and Natural Resources. Since 1965, the LWCF program has built a permanent park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than \$63 million in matching grants to protect land and support more than 800 state and local park projects. More than 37,000 acres have been acquired with LWCF assistance to establish a park legacy in our state. For more information, visit: <http://ils.unc.edu/parkproject/lwcf/home1.html> or contact John Poole at (919) 715-2662 or by e-mail: [John.Poole@ncdenr.gov](mailto: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](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](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. The fund is fueled by money from the state's portion of the real estate deed transfer tax for property sold in North Carolina. For this last, the Town of Granite Falls would need to apply for the grant (although joint applications – for example, with the Caldwell County Public School System – are permissible, one agency must serve as the lead sponsor), which is a one-to-one match on local funds. Only about 30% of the PARTF program goes to fund local trail programs, and the selection process is therefore highly competitive. Selection is based on numerous factors including geographic equity, population size, and scoring criteria that notably incorporate the following: presence of planning documents that support the project; public outreach that shows support; site suitability; size/impact of project; and commitment to operating and maintaining the project upon completion. As with most grant programs, the sponsor should be prepared to adhere closely to the rules governing the grant program, including the preparation of detailed expenditure reports and requests for reimbursement ([www.ncparks.gov/About/grants/partf\\_main.php](http://www.ncparks.gov/About/grants/partf_main.php)). For information on how to apply, visit: [www.partf.net/learn.html](http://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/](http://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](http://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/](http://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](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](http://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](http://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](http://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](mailto: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](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](mailto:Gary.A.Dimmick@hud.gov) or call him at (336) 547-4000 extension

2047 or visit [www.hud.gov/offices/cpd/  
communitydevelopment/programs/stateadmin](http://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](http://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](http://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.healthwellinc.com](http://www.healthwellinc.com).

## 6.7 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. 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/](http://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/buspr/beg.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](http://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/plhcurrsola3.cfm> or contact Anna Franzino at (202) 366-9488 or via e-mail: [Anna.Franzino@dot.gov](mailto:Anna.Franzino@dot.gov).

## 6.8 Private Funding and Partnerships

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

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

The following paragraph provides a description of some private funding sources that Granite Falls 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 Granite Falls; 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. The campaign asked the North Carolina General Assembly to support issuance of a bond for \$200 million a year for five years to preserve and protect its special land and water resources. The 2010-2011 budget signed by the Governor includes \$50 million for the Clean Water Management Trust Fund and \$2 million for the Agricultural Development and Farmland Preservation Trust Fund. 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/>. 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.zsr.org](http://www.zsr.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](mailto:HSable@americanhiking.org) or visit the website : [www.americanhiking.org/alliance/fund.html](http://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 Granite Falls 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/>

## 6.9 Conclusion

Using this plan as a guide, the Town of Granite Falls should be able to create a better, safer network of sidewalks 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 and by starting to budget for future projects. Most importantly, the Town should continue its efforts to raise awareness about the importance of making a community more walkable in order to continue to cultivate support for more pedestrian improvements and programs. Residents, visitors, and local leaders should be familiar with the economic, health, and environmental benefits of a community in which there is less dependence on automobiles and more reliance on foot travel as not only a form of recreation, but also as a form of transportation.

As a small town anticipating future growth and development, Granite Falls is in an ideal situation to develop an even more walkable community. The Town should focus on its downtown retail core and its schools, to reinforce its existing pedestrian infrastructure with new projects and improvements. With careful planning, deliberate steps and persistence, Granite Falls can become a more pedestrian-friendly community.