



WOODFIN
GREENWAYS, SIDEWALKS,
AND BIKEWAYS
PLAN

Town of Woodfin
North Carolina



Greenways, Sidewalks, and Bikeways Plan

Adopted by the Town of Woodfin Board of Alderman



Town of Woodfin
North Carolina



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INTRODUCTION

The Town of Woodfin is located in a region that has experienced significant growth in the past decade and that is poised to accommodate more growth in the coming decade (see Map 1). Community goals have been established by the Town to aid it in accommodating the past and anticipated future growth. Providing a community in which residents and visitors can walk for both recreation and transportation is a goal that has been embraced by the Town of Woodfin. As described more fully later in this document, limited opportunities currently exist in the Town for people to walk safely and in comfort. This plan is the first step in the commitment by the Town of Woodfin to the implementation of a system of sidewalks, greenways, and bikeways to serve residents and visitors. Woodfin's geographic location, extending from the French Broad River to mountain ridges, provides a great deal of potential for walking and biking. However, the Town currently lacks the physical infrastructure necessary to realize this potential. The *Woodfin Greenways, Sidewalks, and Bikeways Plan* sets forth a plan for the provision of pedestrian and bicycle facilities that will serve the entire community, giving residents and visitors options for meeting their transportation and recreation needs and realizing the potential afforded by the Town's location and natural attributes. The plan identifies opportunities for pedestrian and bicycle facilities within the Town as well as connections to existing and proposed facilities in neighboring jurisdictions.

The overall goal of the *Woodfin Greenways, Sidewalks, and Bikeways Plan* is to provide a guide for the construction of pedestrian and bicycle facilities, identifying the location and a proposed schedule for construction of greenways, sidewalks, and bikeways. These facilities will increase the transportation and recreational opportunities available to current and future residents of the Town, employees of businesses located in the Town, and visitors to the Town. With the achievement of this goal, it is anticipated that the challenge of improving the physical health of residents and the environmental health of the community will be addressed. In order to meet the goal, this Plan achieves the following tasks:

- Identifies locations for greenway, sidewalks, and bikeways throughout the Town;
- Recommends timeframes for the construction of the identified facilities through the phasing of the implementation of this plan;
- Identifies potential funding sources for the construction of the



Greenway trails provide opportunities for recreation, exercise, and transportation alternatives.

greenways, sidewalks, and bikeways;

- Recommends facilities and amenities to complement the sidewalks and greenways and identifies locations for these facilities and amenities; and
- Identifies potential connections to existing and proposed pedestrian and bicycle facilities in the region.

While most people know what a sidewalk is, a description of greenways

may be appropriate for a fuller understanding of this document. Greenways are corridors of protected open space managed for conservation and recreation purposes, typically developed with a trail suitable for walking, running, and biking. Greenways often follow natural land or water features, and link nature reserves, parks, cultural features, and historic sites with each other and with populated areas. Greenways can be publicly or privately owned, and some are the result of public/private partnerships.

EXISTING PEDESTRIAN AND BICYCLE FACILITIES WITHIN THE TOWN OF WOODFIN

Woodfin currently has a good network of highways, roads, and streets providing vehicular access throughout the Town, but it lacks safe facilities for pedestrians (see Map 2). There is a section of sidewalk approximately 1,200 feet in length along Elk Mountain Road extending from just west of Woodfin Elementary school east to Town Hall, ending at Woodfin Street, and a short section (approximately 100 feet in length) adjacent to the MSD office building on Riverside Drive. In addition, sidewalks are being constructed within the new Town Center. An existing greenway trail is located in Woodfin Riverside Park, located on Riverside Drive. Several roads within the Town are designated as bicycle routes by the NC Department of



Transportation (see Map 3). The designated bicycle routes are:

- Riverside Drive (NC 151)
- Weaverville Highway (US 25)
- Elk Mountain Road
- Old Marshall Highway

EXISTING AND PROPOSED REGIONAL FACILITIES

Of the areas around Woodfin, the City of Asheville has the most developed system of pedestrian and bicycle facilities. Map 4 depicts Asheville’s existing and proposed greenway system. Within the City of Asheville, the existing portion of the Reed Creek and Glenn’s Creek greenways are the greenways closest to the Town of Woodfin. A proposed greenway along the French Broad River in Asheville would extend to the Woodfin Town Limits. Opportunities for connecting to this proposed greenway should be explored, with extension of the French Broad Greenway through the Town of Woodfin identified as a goal for the Town.



No other greenways currently exist in the area around Woodfin. Buncombe County recently adopted a greenways master plan and is aggressively pursuing the development of greenways to serve the County’s residents and visitors. Greenways recommended for construction by the Buncombe County Greenway Plan are shown on Map 5. The plan shows the French Broad Greenway going through the Town of Woodfin and continuing northward along the river to the Madison County line and on to Marshall. Buncombe County is currently preparing a conceptual plan and feasibility study for the French Broad Greenway from the Asheville City Limits to the Madison County line. Also depicted on the Buncombe County Greenway Plan is a greenway on the former golf course in Woodfin. Construction of the segment of the French Broad Greenway located within the Town of Woodfin and of the Beaverdam Creek Greenway, located on the edge of the former golf course, is listed as a goal of this plan.

Connections to existing greenways in adjacent communities provide enhanced opportunities for transportation and recreation.

The proposed greenways and sidewalks in the Town of Woodfin should be envisioned as not only serving the citizens of Woodfin but also as part of a regional system. Development of a regional system of pedestrian and bicycle facilities would benefit Buncombe County and all municipalities in the county, as well as surrounding jurisdictions. Where and when possible, jurisdictions should cooperate to achieve the goal of developing a regional system of pedestrian and bicycle facilities. This plan identifies

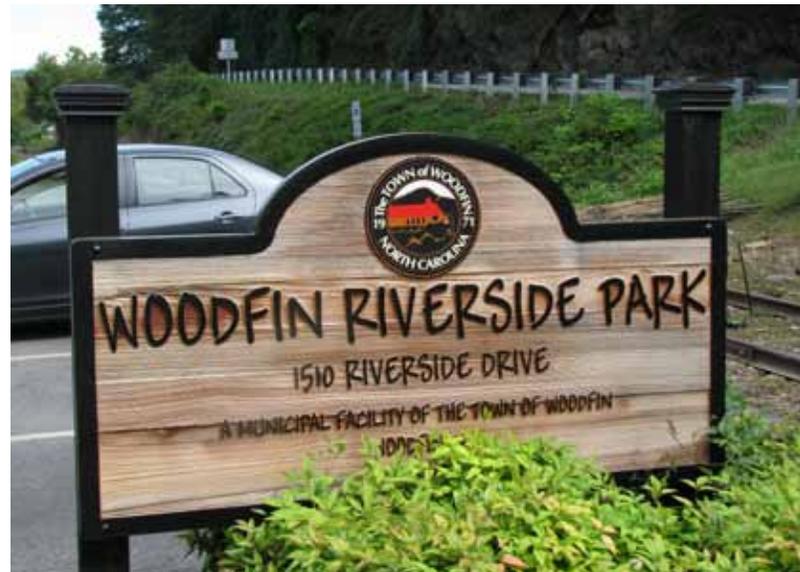
potential connections to proposed and existing sidewalks and greenways in neighboring jurisdictions. The Town of Woodfin is working closely with Buncombe County in the planning and development of a regional greenway system. Opportunities exist for cooperation between the Town and the

City of Asheville to ensure pedestrian linkages between the two municipalities.

BENEFITS OF GREENWAYS, SIDEWALKS, AND BIKEWAYS

Greenways, sidewalks, and bikeways have a variety of both direct and indirect benefits. By offering options for recreation and transportation, and by protecting natural corridors, these facilities offer benefits to the individual, the community, and the environment. Perhaps the most visible benefit is the provision of safe routes that can be used for recreation and/or transportation. We are made aware on almost a daily basis of the declining state of health of Americans and of

our environment. One of the solutions to this dilemma may be simpler than we think. Many people realize exercise is important for maintaining good health in all stages of life; however many do not regularly exercise. The U.S. Surgeon General estimates that 60% of American adults are not regularly active and another 25% are not active at all. The Centers for Disease Control and Prevention indicates that 64% of the U.S. population is clinically overweight, with over 31% obese. In communities across the country, people do not have access to sidewalks, greenways, parks, or other recreation areas close to their homes. Sidewalks and greenways provide a safe, inexpensive avenue for regular exercise for people living in rural, urban, and suburban areas. Additionally, sidewalks, greenways, and bikeways can provide an alternate mode of transportation enabling people to walk or bike to work, school, shopping, and to meet other needs. These facilities can not only help improve the physical health of Woodfin's residents but also the environmental health of the community.



Greenways and sidewalks can provide safe pedestrian connections to parks and other community facilities.



The growth of most American communities since the mid-1940's has been in a sprawling, suburban form as a result of dependence upon the automobile as the sole means of transportation. Americans have abandoned some traditional forms of transportation (such as passenger train service),



and have been slow to improve other forms of transportation (bicycle and pedestrian networks, local and regional bus systems). In order to provide options for transportation in Woodfin, future transportation planning and development should be concentrated on providing a choice in mode of travel to local residents. These mode choices should offer the same benefits and appeal currently offered by the automobile: efficiency, safety, comfort, reliability and flexibility. Greenway corridors and sidewalks throughout Woodfin can serve as extensions of the road network, offering realistic and viable connections between origins and destinations such as work, schools, libraries, parks, shopping areas, and tourist attractions. Sidewalks and greenway-based bikeways and walkways are most effective for certain travel distances. National surveys by the Federal Highway Administration have shown that Americans are willing to walk as far as two miles to a destination, and bike as far as five miles. It is easily conceivable that destinations can be linked to multiple origins throughout the Town with a combination of off-road trails and on-road bicycle and pedestrian facilities.



By incorporating stormwater measures, greenways can address flooding and run off issues.

Greenways, sidewalks, and bikeways can help improve air and water quality. By providing enjoyable and safe options for transportation, sidewalks and bikeways can reduce air pollution. Greenways provide the additional benefit of protecting land along rivers and streams, helping to prevent soil erosion and filter pollution caused by agricultural and road runoff.

Sidewalks and greenways have the power to connect us to our heritage by preserving places of historic and/or cultural significance and by providing access to them. They can give people a sense of place and an understanding of the enormity of past events, such as former industrial centers and transportation routes. Sidewalks and greenways draw the public to cultural and historic sites, linking these sites to the rest of the community. The Town's sense of community can be enhanced by a greenway and sidewalk system. Sidewalks connect neighborhoods and provide a meeting place for residents. Greenways across the United States have served as new "main streets," where neighbors meet, children play, and community groups gather to celebrate. For cities and towns large and small, greenways have become a

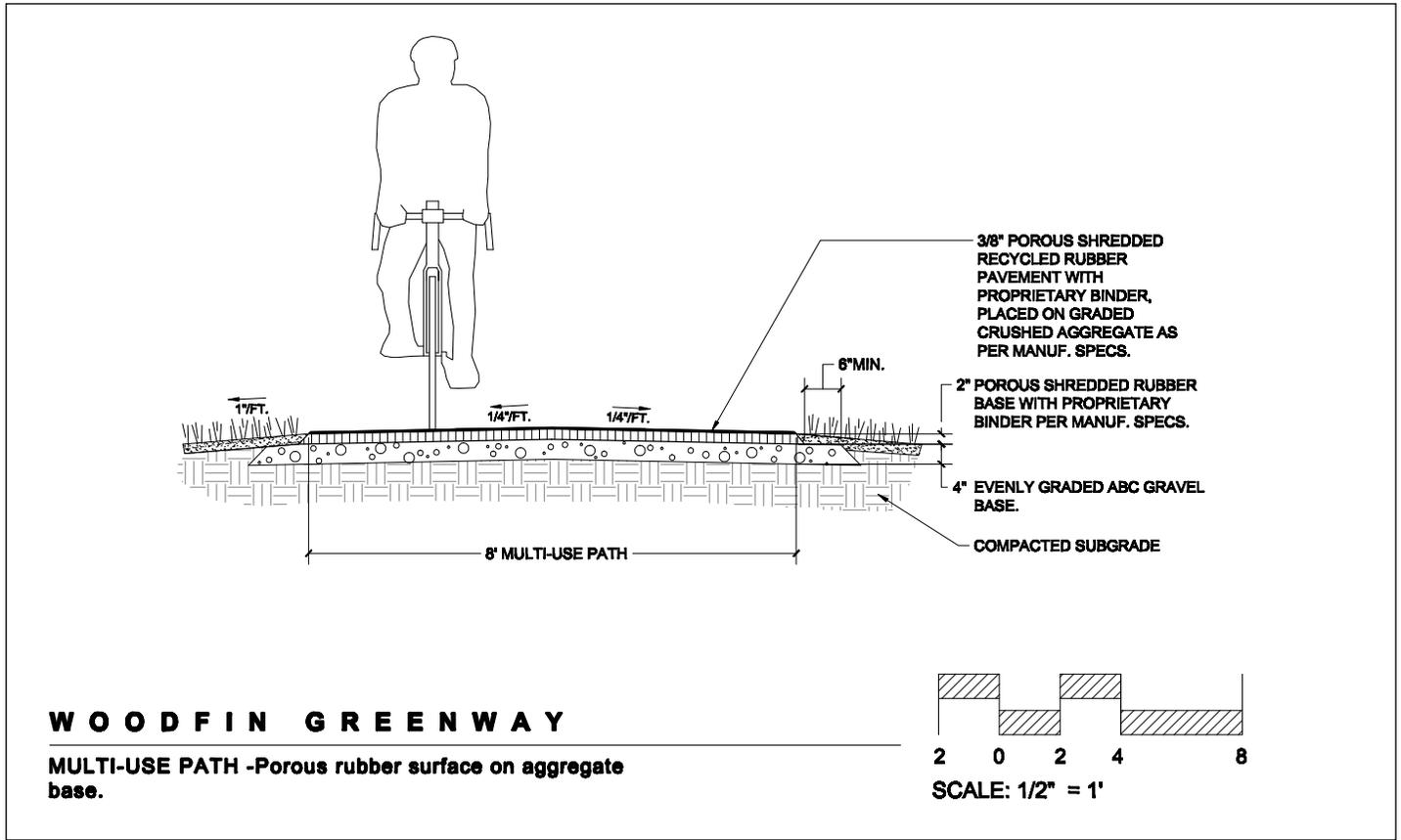


Figure 1: Greenway trails should be wide enough to safely accommodate bicyclists and pedestrians.

cultural asset and focal point for community activities. Various walking and running events are held on greenways to support charity or extend traditional sporting events. Many civic groups adopt segments of greenways for clean-up, litter removal, and environmental awareness programs.

Greenways offer numerous economic benefits to the Town of Woodfin, including higher real estate property values, increased tourism and recreation related revenues, and cost savings for public services. Greenways have been shown to raise the value of immediately adjacent properties by as much as 5 to 20 percent. Many home buyers and business owners are looking for real estate that provides direct access to public and private greenway systems. Greenways are viewed as amenities by residential, commercial, and office park developers who, in turn, are realizing higher rental values and profits. Additionally, greenways in Woodfin can also save local tax dollars by utilizing resource-based strategies for managing community stormwater and hazard mitigation, thus placing into productive use landscapes that would not normally be developable in a conventional manner.

Greenways and sidewalks encourage more people to walk or bike to short distance destinations, which improve the health of residents. Studies have

shown that as little as 30 minutes a day of moderate-intensity exercise (such as bicycling, walking, in-line skating, or cross-country skiing) can significantly improve a person's mental and physical health and prevent certain diseases. Providing opportunities for participation in these outdoor activities, close to where people live and work, is an important component of promoting healthy lifestyles for residents of Woodfin. The proposed greenway, sidewalk, and bikeway system for Woodfin will supplement the community's existing parks and open space system. Greenway and sidewalk systems could be developed not only for alternative transportation, but also to serve as primary recreation and fitness resources. Greenways and sidewalks can help meet the passive recreation needs of Woodfin's population of older residents, enhancing the Town's livability. A system of greenways and sidewalks connecting residential areas to schools, recreational facilities, and retail centers will also benefit young residents as they will be provided with a safe means of traveling from home to school, recreational activities, homes of friends, and other destinations. As a result children will no longer be as dependent upon parents or other adults to drive them to activities, giving them a greater sense of independence.



Greenways often preserve wooded open spaces along creeks and streams that absorb flood waters and filter pollutants from stormwater. By developing greenways in floodplains, flood prone areas become linear open space that serves as an amenity to local residents and businesses whose property lies adjacent to the greenway, as well as providing important flood water storage capacity. As a flood control measure, greenway corridors serve as a primary storage zone during periods of heavy rainfall. The protected floodplain can also be used during non-flood periods for other activities, including recreation and alternative transportation. Greenways offer a long term, inexpensive investment in flood protection by limiting development in the flood plain. In conjunction with development activity in Woodfin, greenways can be established as development occurs. The expense associated with the establishment of the greenway system can be offset by the savings realized in reduced flood damage claims. Greenway corridors also serve to improve the surface water quality of local rivers and creeks by filtering pollutants from stormwater.

Greenways as alternative transportation corridors could serve to reduce traffic congestion, helping to improve local air quality. Automobile emissions are a major source of the air pollutants nitrogen oxide and carbon monoxide in Buncombe County. Offering viable, alternative transportation choices through greenways may encourage people to bicycle and walk more often, especially on short trips, thereby reducing traffic congestion and automobile



Fences adjacent to greenway trails can protect neighboring properties and greenway users.

emissions. Buncombe County is able to meet air quality standards at present and has not been designated as a federal “non-attainment” area. However, air quality monitoring shows that levels of air pollutants, such as ozone, are increasing. Due to the area’s topography, weather inversions can confine and concentrate these pollutants in the French Broad River Valley, causing air pollution concerns at times.

Greenways can also provide a direct economic benefit to residents using these corridors for alternative modes of transportation. In the summer of 2008, the nation experienced record high gasoline prices. This increase in gas prices had a rippling effect on the economy. When families had to spend more money on gas and less money on other necessities, the entire economy suffered. It is likely that the country will continue to feel the pain of fluctuating oil costs. Alternative transportation opportunities, including pedestrian routes and bikeways, provide citizens with transportation options when they need them most, thus having a lasting impact on the economic sustainability of a community.

A summary of the ways in which greenways can foster benefits for the public health and the economic development of a community includes the following:

- Enhance our quality of life by providing scenic places for us to enjoy.
- Provide close to home outdoor recreation opportunities. Because greenways are typically long and narrow, they provide more access to more people.
- Improve water quality and lessen the impact of flooding. Trees and other vegetation along river/stream greenways filter surface runoff (pollutants) and prevent erosion by anchoring the soil along the banks. Also streamside vegetation acts as a sponge to help absorb swollen rivers.
- Enhance or protect forests. Forests filter air pollutants and improve air quality. Forests also provide food and shelter for wildlife and lower summertime city temperatures by providing natural air conditioning.
- Benefit the economy by increasing adjacent property values, attracting new industry, stimulating reinvestment in once blighted urban areas, and encouraging tourism.
- Raise the property value of neighborhoods that are adjacent or in close proximity to greenways.
- Lower the crime rate of neighborhoods with greenways.

- Provide trails for recreation and for transportation routes that connect people, communities, and the countryside.
- Improve personal health and fitness for greenway trail users.
- Act as outdoor classrooms. What better way to learn about one's world than by being out in it.
- Encourage growth while protecting the green landscape for which Buncombe County is famous.

GREENWAY DEVELOPMENT AND PROPERTY VALUES

In times of lower real estate values, budgetary cuts, and municipality financial setbacks, it is important to demonstrate the financial benefits of open space infrastructure and greenway development. The benefits of greenways, both tangible and intangible, must be able to be quantified. Opponents of greenway development list a variety of negative externalities which they fear will cause property values to decrease. However, the benefits of greenway infrastructure far out weigh the negative externalities. A study of real estate values in Austin, Texas found that a house that sits within 1,500 feet of a park or greenway increased the sale price of that home by \$2,262 according to a linear regression model (Crompton and Nicholls, 2005). The study also found that property value increased in regards to the size of the open space or park asserting that “homes located within 1,500 feet of a natural area enjoyed statistically significant property premiums, of an average of \$10,648, compared to \$1,214 for urban parks, \$5,657 for specialty parks” (Crompton and Nicholls, 2005). A study of the three greenways in Boulder, Colorado examined the property value of homes within 3,200 feet of the greenway and found that property values descended as homes moved away from the greenway. The study found that the average property value declined by \$4.20 with each foot away from the greenway. The study stated that “The average price of a property adjacent to a greenbelt was \$54,379, while the average at a distance of 3,200 feet from such an amenity was only \$41,206” (Crompton and Nicholls, 2005).

Greenways located near residential areas provide convenient places for exercise and recreation, adding value to the residential areas.



GREENWAY AND SIDEWALK CONSTRUCTION COSTS

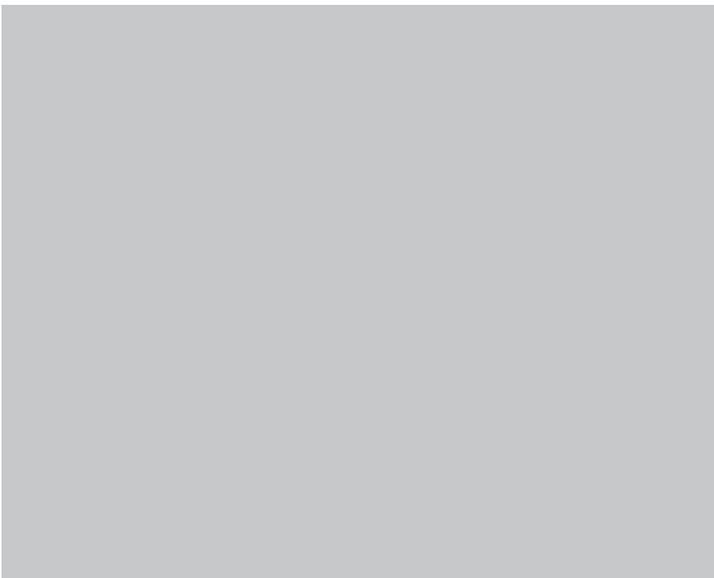
The cost of greenway and sidewalk construction can vary greatly depending upon the cost of land, the topography, the existing infrastructure, and other factors. The wide range of costs should be kept in mind during all phases of the planning and designing of greenways, sidewalks, and trails. The location selected for these pedestrian facilities can affect cost, as can the design of the facilities. Locating greenways and sidewalks, to the extent possible, so as to minimize grading and avoid stream crossings can significantly reduce costs. Below are estimates of the costs associated with the construction of greenways and sidewalks:

Item Estimated	Estimated Cost
Sidewalk (5 ft. Concrete) depending on terrain	\$40-\$70 per linear ft.
8-10ft wide multipurpose asphalt path depending on terrain	\$35-\$100 per linear ft
8-10ft crushed stone walkway	\$15-25 per linear ft.
6-8ft wooden or recycled synthetic material boardwalk	\$200-\$250 per linear ft.
Pedestrian bridge	\$70,000 - \$85,000
Simple crosswalk (signs & paved markings)	\$200-\$250 per linear ft.
Enhanced crosswalk	\$5,000-\$7,500
Raised crosswalk (speed table)	\$5,000-\$15,000
Speed hump (signage & paved markings)	\$1,700-\$2,000 per hump
Refuge island	\$10,000-\$40,000
Pedestrian signal	\$40,000-\$75,000
Pedestrian signs	\$250-\$350
Curb extension	\$10,000 per corner
Curb & gutter	\$15-\$25 per linear ft.
Retaining wall	\$125 per linear ft.
Design, engineering, surveying & administrative	15% of construction costs

The aforementioned costs are exclusive of land costs, which can significantly increase the cost of greenways and sidewalks. Where possible, the Town should work with property owners in an effort to obtain easements for the greenways and sidewalks. Given the benefits, both tangible and intangible, greenways and sidewalks bring to adjacent properties and the community as a whole, a convincing argument can be made for the granting of easements for these facilities. Easement agreements for greenways and sidewalks should clearly state that the easement is for the construction of the facility and its use by the general public. The easement agreement should state that the Town is responsible for maintenance of the greenway and/or sidewalk and assumes all reasonable liability associated with the use of the facility by the public.

USE OF EXISTING EASEMENTS AND RIGHTS-OF-WAY

Existing easements and rights-of-way should be used for the location of sidewalks, greenways, and trails wherever possible. Street and highway rights-of-way should be evaluated for their ability to accommodate sidewalks. Often the right-of-way is wide enough to permit the location of a sidewalk, particularly the rights-of-way of newer streets and highways. On those streets with curb and gutter installed, with stormwater management systems in place, the cost of sidewalk construction is reduced significantly. In some cases, the right-of-way is already graded, farther reducing the cost of constructing a sidewalk. Along NC DOT streets and highways, agreements between the Town and DOT granting permission for the construction of the sidewalk and addressing maintenance responsibilities will be required.



Utility corridors, particularly those for underground utilities, often offer opportunities for the location of sidewalks, greenways, and trails. Development within these corridors is limited and the construction of pedestrian facilities or use of the areas for open space typically does not place additional limits on the development of the property. Because the easement agreements between the property owner and the utility usually address the use of the easement for the location and maintenance of utilities only, an additional easement agreement is required for the construction and maintenance of greenways and trails. Again, since development of the easement is restricted by the utility, securing an easement for the construction and maintenance of a trail and/or



Pedestrian and bicycle facilities should connect community facilities to residential areas.

the preservation of open space should not be difficult. Utility easements can provide good locations for greenways and trails. Sewer mains often follow streams and creeks, affording an opportunity for the location of trails providing access to these water courses. The Town is working with MSD (Metropolitan Sewerage District) on the use of their sewer main easements for the

location of greenways and trails. By taking advantage of existing utility easements and road rights-of-way, the Town of Woodfin may be able to achieve its goal of providing sidewalks and greenways in a cost effective manner that enables the construction of more pedestrian facilities with the limited funds available. MSD should be commended for its willingness to work with Woodfin in enabling greenways, sidewalks, and trails to be constructed in its easements.

FUNDING SOURCES FOR GREENWAYS, SIDEWALKS, AND BIKEWAYS

The relatively high cost of pedestrian and bicycle facility construction, and limited Town funds, means that financial assistance from all sources is needed to make the Town's dream of a comprehensive pedestrian and bicycle system a reality. There are a variety of funding sources, primarily governmental, that provide funding for the planning and development of pedestrian and bicycle facilities. Brief descriptions of these potential funding sources are provided below. Due to the current economic conditions and the impact upon governmental budgets, the status of funding sources is constantly changing. Potential funding sources should be investigated as plans are being prepared for construction of pedestrian and



bicycle facilities to identify the ability of the funding source to provide financial assistance for the project.

Public Funding Sources

Transportation Equity Act for the 21st Century (TEA21)

The primary source of federal funding for greenways is through the Transportation Equity Act of 1998 (TEA21), formerly the Intermodal Surface Transportation Efficiency Act (ISTEA). ISTEA provided millions of dollars in funding for bicycle and pedestrian transportation projects across the country and TEA21 will provide millions more. There are many

sections of TEA21 that support the development of bicycle and pedestrian transportation corridors. NCDOT can utilize funding from any of these subsets of TEA21. Those sections that apply to the creation of greenways, sidewalks and bikeways include:

Surface Transportation Program (STP) funds

These funds can be used for bicycle and pedestrian facility construction or non-construction projects such as brochures, public service announcements, and route maps. The projects must be related to bicycle and pedestrian transportation and must be part of the Long Range Transportation Plan. These funds are programmed by the Metropolitan Planning Organization (MPO) in the Transportation Improvement Program.

Transportation Enhancements Program

Ten percent of North Carolina's annual STP funds are available for Transportation Enhancements, which include projects such as trails, greenways, sidewalks, signage, bikeways, safety education and wildlife undercrossings. There is usually a 20 percent local match required (some states will accept donations of services, materials or land in lieu of cash). Projects must also comply with various federal laws and regulations in order to receive these funds. The North Carolina DOT administers TEA21 funding and should be contacted for further details.

National Recreational Trails Fund Act (NRTFA or Symms Act)

A component of TEA21, the NRTFA is a funding source to assist with the development of non-motorized and motorized trails. The Act uses funds paid into the Highway Trust Fund from fees on non-highway recreation fuel used by off-road vehicles and camping equipment. This money can be spent on the acquisition of easements and fee simple title to property, trail development, construction and maintenance. Through state agencies, “Symms Act” grants are available to private and public sector organizations. NRTFA projects are 80 percent federally funded, and grant recipients must provide a 20 percent match. Federal agency project sponsors or other federal programs may provide additional federal share up to 95 percent. Local matches can be in the form of donations of services, materials or land. Projects funded must be consistent with the *Statewide Comprehensive Outdoor Recreation Plan*.

Powell Bill Funds

The State of North Carolina, through the Department of Transportation, provides funds to cities and towns to assist with the cost of maintaining local streets under the Powell Bill program. Monies for these funds are generated through the state gasoline tax. The use of these funds for the construction and maintenance of sidewalks, bikeways, and trails is permitted if the facility is located within the right-of-way of a street or road approved for Powell Bill Funding.



Land and Water Conservation Fund (LWCF) Grants

This federal funding source was established in 1965 to provide park and recreation opportunities to residents throughout the United States. Money for the fund comes from the sale or lease of nonrenewable resources, primarily federal offshore oil and gas leases and surplus federal land sales. LWCF funds are used by federal agencies to acquire additions to National Parks, Forests, and Wildlife Refuges. In the past, Congress has also appropriated LWCF monies for so-called “state-side” projects. These “state-side” LWCF grants can be used by communities to acquire and build a variety of park and recreation facilities, including trails and greenways. “State-side” LWCF funds are annually distributed by the National Park Service through the North Carolina Department of Environment and Natural Resources (DENR). Communities must match LWCF grants with 50 percent of the local project costs through in-kind services or cash. All projects funded by LWCF grants must be



Greenways along Beaverdam Creek can enhance stream quality and provide residents opportunities to enjoy nature.

used exclusively for recreation purposes, in perpetuity.

North Carolina Parks and Recreation Trust Fund

This relatively new funding source provides more than \$5 million in matching funds annually for local recreation land acquisition, development and renovation to communities across the state. The funding source, which comes from a real estate transfer tax, requires

a 50-50 match from local government and no more than \$250,000 can be requested. The Recreation Resources Service should be contacted for additional information (919-515-7118).

NC Trails Adopt a Trail Program

The NC Adopt a Trail Program awards \$108,000 annually to local governments, nonprofits, and private trail groups. These funds can be used for trail maintenance and upkeep, trail signage, trail brochures and maps, and trail development. This grant program requires no matching funds or In-Kind resources by the grantee.

The Recreational Trails Program (RTP)

This program provides \$1.3 million in funding annually. It is a program that is funded by Congress with money gathered from taxes that U.S. citizens pay on gas. All grant applicants must be able to contribute 20% of the total cost of the project. The maximum grant amount is \$75,000.

Clean Water Management Trust Fund

In 1996, the General Assembly established the Clean Water Management Trust Fund (CWMTF) to provide grants to local governments, state agencies, and nonprofit conservation organizations for projects that address water

pollution problems. Six and a half percent of the unreserved credit balance in the state's general fund, or a minimum of \$30 million annually, is allocated to the CWMTF. In its first year of operations, the CWMTF received \$39 million. CWMTF grants are selected by an independent 18-member Board of Trustees for projects that: 1) enhance or restore degraded waters; 2) protect unpolluted waters; and/or 3) contribute towards a network of riparian buffers and greenways for environmental, educational, and recreational benefits. Projects range from land acquisition for greenways and riparian buffers to sewage treatment plant upgrades to planning and mapping for water quality protection. From 1997-2007, 53% of allocated funds went to land acquisition costs.

Local Capital Improvements Program

Some local governments have initiated a yearly appropriation for sidewalk, greenway, and trail development in the capital improvements program. Even a relatively small amount of dedicated funding per year can fund a significant amount of sidewalk, greenway, and trail construction over a number of years. Local funds set aside for this purpose can provide the local match required for state and federal programs identified above,

greatly increasing the Town's ability to construct pedestrian facilities.

Private Funding Sources

Many communities have solicited greenway funding from a variety of private foundations, corporations, and other conservation-minded benefactors. As a general rule, local foundations and businesses will have a greater interest in and be more likely to fund local projects. These local sources should be approached first, before seeking funds outside the community.

Local Foundations

Several local philanthropic foundations in Asheville have among their priorities funding for community projects like greenway and an interest in environmental and conservation issues. All local foundations have differing eligibility requirements, application procedures and funding guidelines. Foundations which may fund greenway activities should be carefully researched. An initial letter of inquiry is usually the best way to determine if a foundation will consider an application for funding a



Providing pedestrian and/or bicycle facilities in outlying areas of Woodfin will make these areas feel more like a part of the town.

greenway project.

Local Businesses

Local governments should seek funding from inside the community before soliciting funding from outside of the community. It is important to educate members of the public and community businesses on projects seeking funding in order to encourage local donations. Local industries and private businesses may agree to provide support for development of greenways through:

- donations of cash to a specific greenway segment;
- donations of services by corporations to reduce the cost of greenway implementation, including equipment and labor to construct and install elements of a trail;
- reductions in the cost of materials purchased from local businesses which support greenway implementation and can supply essential products for facility development.

This method of raising funds requires a great deal of staff coordination and time, making it a challenge for small communities like Woodfin that have limited staff.

Trail Sponsors

A sponsorship program for greenway and sidewalk amenities allows for smaller donations to be received both from individuals and businesses. The program must be well planned and organized, with design standards and associated costs established for each amenity. Project elements which may be funded can include wayside exhibits, benches, trash receptacles, entry signage, and picnic areas. Usually, plaques recognizing the individual contributors are placed on the constructed amenities or at a prominent entry point to the greenway.

Volunteer Work

Community volunteers may help with trail construction, as well as fund raising. Potential sources of volunteer labor in Woodfin could include college students (since some local colleges require community service), local bicyclists, local historical groups, neighborhood associations, local churches, conservation groups, school groups, and local civic clubs such as Kiwanis,

Rotary and Lions Clubs. As with several of the sources mentioned in this section, the establishment and coordination of volunteer work programs can require a good deal of time.

RECOMMENDED GREENWAYS, SIDEWALKS, AND BIKEWAYS

In creating a system of greenways, sidewalks, and bikeways for the Town of Woodfin, a major goal was to provide connections that would enable people to walk or bike to meet daily needs as well as for recreation. In order to accomplish this goal, the recommended system of pedestrian and bicycle facilities must provide access from residential areas to activity areas within the Town. Among the areas that must be connected in order for the network of greenways, sidewalks, and bikeways to be successful are:

- Residential neighborhoods,
- Schools,
- Parks and recreation facilities,
- Community facilities,
- Commercial centers, and
- Employment centers.



Benches located along greenways provide areas for rest and reflection.

These community facilities and activity areas are shown on Map 6. In addition, the proposed network of pedestrian and bicycle routes should provide safe pedestrian and bicycle access to the French Broad River, Beaverdam Creek, and significant open spaces. By providing these connections, it is anticipated that the proposed pedestrian and bicycle network will be used by a broad range of people to meet both transportation and recreation needs. Map 7 depicts the

Woodfin Comprehensive Greenways, Sidewalks, and Bikeways Master Plan.

Several challenges will confront the Town as it works to build a network of pedestrian and bicycle facilities to serve the citizens of Woodfin. These challenges had to be weighed against the benefits of pedestrian connections in several areas to determine if the benefits of constructing pedestrian facilities outweighed the cost. Decisions on whether to recommend a sidewalk or greenway, and the priority assigned to the implementation, were based on this evaluation. An initial challenge in identifying routes

for sidewalks and bikeways was the narrow roadway corridors in much of the Town and its planning area. These narrow corridors, with limited rights-of-way, provide little room for the construction of sidewalks and/or for widening to incorporate bike lanes. Where possible, sidewalks are proposed for construction within existing street/road rights-of-way to reduce the cost of construction. The topography of western North Carolina poses another challenge to the construction of sidewalks. Steep topography, with cut banks and fill slopes often located immediately adjacent to the edge of streets, will result in a higher cost for sidewalk construction along several streets in the Town. In several locations retaining walls of varying height will be necessary to address the challenge created by the cross slopes. The low density pattern of development in some sections of Woodfin, especially the portion west of the French Broad River, makes it difficult to justify the cost of sidewalk development at this time. As new development in this area increases the number of potential users, the construction of sidewalks should be reevaluated to assess the feasibility of undertaking their construction.

The cost of implementing this plan, which depicts over six (6) miles of greenways and more than ten (10) miles of sidewalks, is beyond the capacity of Woodfin to accomplish in a couple years, even with assistance from funding sources such as those identified earlier. Therefore a phased approach to the construction of the recommended sidewalks, greenways, and bikeways is recommended. The implementation period for the plan is ten (10) years with three phases proposed. The phases are:

- Phase 1 – Short range projects, 1 to 3 years to complete
- Phase 2 – Medium range projects, 5 to 7 years to complete

Sidewalks are necessary to provide safe areas for pedestrians.



- Phase 3 – Long range projects, 8 to 10 years to complete.

The phasing of the projects allows for the budgeting of monies to fund the construction of the facilities over time. In identifying a project as short range, medium range, or long range, the following factors were considered:

- Connections to schools and parks were given a high priority;
- Extensions of and connections to existing pedestrian and bicycle facilities were assigned a high priority;
- Projects that could be constructed relatively easily due to adequate existing right-of-way and lack of topographical and similar challenges were given a high priority;
- Projects that provide access to the French Broad River, Beaverdam Creek, and large open spaces were assigned a high priority;
- Projects for which existing easements and rights-of-way permit the construction of facilities (such as along streets and highways) and for which property owners have expressed a willingness to provide easements were given a high priority;
- Projects that connect to other existing and proposed sidewalks and greenways were given a high priority; and
- Projects that can be financed with existing and/or assured sources of funds were assigned a high priority.

These guidelines were used to assign the proposed projects to phases. Maps 8, 9, and 10 show the sidewalks, greenways, and bikeways proposed for implementation during each phase. Within each phase the timing of the construction of the projects will be determined based primarily upon the



availability of funding and the ability to secure the easements necessary to permit the project construction and maintenance. Periodic evaluation of the recommended projects and phasing is recommended to account for changing conditions and needs. The projects are listed and described for each phase below. As the Town grows, additional pedestrian facilities may be required to serve growth areas and to link new developments to other parts of the Town. This plan should be evaluated and updated periodically as Woodfin grows.

PHASE 1 PROJECTS

The Phase 1 projects (Map 8) are located largely within the central part of Woodfin, providing an initial pedestrian circulation system to serve a

concentrated area of homes, businesses, and public facilities. The greenways, sidewalks, and bikeways proposed for implementation during Phase 1 will provide safe pedestrian access to Woodfin Elementary School, Woodfin Town Hall, Roy Pope Memorial Park, the Town Center, the French Broad River, Beaverdam Creek, and other areas and facilities. The following short range projects are proposed for implementation in years 1–3:



Interpretive signage can inform and educate greenway and sidewalk users about natural and manmade features.

link several residential areas to Woodfin Elementary School, Town Hall, Roy Pope Memorial Park, Riverside Business Park, and the French Broad River. This sidewalk can be constructed within the existing NC DOT right-of-way along Elk Mountain Road. A challenge with the construction of this sidewalk will be the crossing of the I-26/US 19/23 access and exit lanes. Some redesign of these areas may be required to make them safe for pedestrians. A sidewalk exists on the bridge over I-26/US 19/23.

Elk Mountain Road Sidewalk

New sidewalk construction along Elk Mountain Road is recommended as a high priority project. Two sections of sidewalk are proposed, one continuing westward from the existing sidewalk segment to Riverside Drive and the other extending eastward from the existing sidewalk segment to N Woodfin Avenue. Construction of this sidewalk would

Beaverdam Creek Greenway



Located along Beaverdam Creek on the edge of the former Woodfin Municipal Golf Course, the construction of this greenway will provide users with access to large areas of open space and a mountain stream in the center of Woodfin. Much of the greenway can be located on an existing MSD sewer easement. The property owner has expressed a willingness to dedicate the necessary easement for the construction and maintenance of the greenway. The construction of low impact stormwater management measures will enable the greenway to be a demonstration and learning environment for groups ranging from school children to design professionals to contractors. A trail head and parking area on Riverside Drive at the Beaverdam Creek crossing is proposed as part of this project (see Figure

—).

Sidewalk along Jonestown Road from Elk Mountain Road to Roy Pope Memorial Park

This short segment of sidewalk will provide a much needed pedestrian link from the Elk Mountain Road sidewalk to a heavily used Town park. This sidewalk also will provide a safe pedestrian route from Woodfin Elementary School to the park. Students use the park on a regular basis and the construction of the sidewalk will make the walk from the school to the park much safer.

N. Woodfin Avenue/Brookdale Road Sidewalk

This sidewalk will provide a connection from the Elk Mountain Road sidewalk to the Beaverdam Creek greenway and Weaverville Road. Most of this sidewalk can be built within the existing road right-of-way. A crossing of Beaverdam Creek will be required, but a proposed new bridge over the creek has been designed to include a pedestrian crossing. This sidewalk, connected with the Elk Mountain Road sidewalk and the Beaverdam Creek greenway, will provide a pedestrian loop approximately three (3) miles in length.

Weaverville Highway Sidewalk/Greenway

A sidewalk/greenway along Weaverville Road from the intersection of N Woodfin Avenue to the Town Limits (Elkmont Avenue) is proposed. The sidewalk/greenway is shown on the west side of the road. As the Town

develops, pedestrian facilities should be provided on both sides of the road. This sidewalk/greenway would provide a connection from the Town Center to the Beaverdam Creek greenway and the N Woodfin Avenue sidewalk. The potential to provide a greenway along Beaverdam Creek, paralleling Weaverville Road, should be explored as this would separate pedestrians from the vehicular traffic. This sidewalk/greenway would provide a segment of a potential pedestrian link to Beaver Lake and the North Asheville Library; construction of a sidewalk in the City of Asheville would be required to complete this link.



Construction of a sidewalk along Weaverville Highway will be challenging but will help convert it from an automobile dominated road to a town street.

French Broad River Greenway

A segment of the French Broad River greenway from Elk Mountain Road to the Craggy Bridge (Old Leicester Highway) is proposed as a phase 1 project. Connecting to the Beaverdam Creek greenway and the Elk Mountain Road sidewalk, this greenway segment would provide pedestrian access to the river. Users of the Town's pedestrian system could walk from the Town Center to Woodfin Riverside Park.

Due to existing development adjacent to the river, some portions of this segment will be a sidewalk or trail adjacent to Riverside Drive. This segment will enable employees at MSD and the Riverside Business Park to walk to the Woodfin Riverside Park.

Elk Park Drive Sidewalk and Trail

The Phase 1 Plan proposes a sidewalk along a portion of Elk Park Drive, from Elk Mountain Road to the Elk Park Business Park. A trail is proposed to connect the sidewalk to the Beaverdam Creek Greenway. Due to the steep terrain between the Business Park and the greenway, the trail is proposed as a limited access trail. The primary purpose of the trail will be to provide an alternative means of access to the Beaverdam Creek greenway for residents of the western end of the Elk Mountain Road corridor.

Washington Street Sidewalk and Trail

A sidewalk is proposed along the east side of Washington Street from Elk Mountain Road to just south of the Buncombe County Schools bus maintenance facility. A trail is proposed to connect the sidewalk to the

Beaverdam Creek Greenway. Both the sidewalk and most of the trail are proposed to be located within the right-of-way of US 19/23, so cooperation with NC DOT will be



Sidewalks in Woodfin's commercial areas should be wide enough to accommodate sidewalk dining and other activities to enhance the businesses.

necessary for construction of these facilities. Due to the steep terrain between the bus maintenance facility and the greenway, the trail will be limited access. The trail will provide residents of adjacent neighborhoods with access to the greenway. The sidewalk will provide a connection from these residential areas to the Elk Mountain Road sidewalk and to the school and other facilities accessed by it.

Bike Lanes on Elk Mountain Road

The existing pavement width along Elk Mountain Highway from the intersection of Jonestown Road to Riverside Drive is adequate to accommodate

striped bike lanes. The marking of bike lanes along this section of the road is recommended as a way of making the road safer for all who use it. Bike lanes 6 feet in width are proposed on both sides of the road, leaving vehicle lanes 11 feet in width. With the construction of a sidewalk and the marking of bike lanes as proposed in this plan, Elk Mountain Road will become a multi-use corridor serving the needs of a range of users. Figure 7 provides a recommended cross section on Elk Mountain Road incorporating bike lanes.

PHASE 2 PROJECTS

During Phase 2 of the plan implementation (Map 9), projects are proposed to expand the initial system developed during Phase 1 of the plan implementation. The greenways, sidewalks, and bikeways proposed for construction during Phase 2 will provide additional connections between neighborhoods and activity centers as well as provide enhanced access to the



Bridges will be necessary to cross the many tributaries intersecting the proposed French Broad Greenway.

French Broad River. The following medium range projects are proposed for implementation in years 5–7:

French Broad River Greenway

The segment of the French Broad River Greenway from the Craggy Bridge (Old Leicester Highway) to Woodfin/Asheville Corporate Limits is proposed for construction during Phase 2. This segment of the greenway will be over 2 miles in length and will pass through a significant industrial area. In addition to the industrial area, significant parcels within this segment are owned by the State of North Carolina. While some portions of this greenway segment can be developed adjacent to the river, some sections will have to be located alongside Riverside Drive due to inadequate room along the river. Construction of this segment of the French Broad River Greenway will provide the City of Asheville with the opportunity to link the Reed Creek Greenway to the river as well as the potential to connect the proposed Wilma Dykeman Parkway's pedestrian facilities to this greenway.

Weaverville Road Sidewalk

Construction of a sidewalk along Weaverville Road from Senator Reynolds Boulevard north to the Town Limits is proposed during years 5 – 7 of the plan implementation. Upon construction of this section of sidewalk, the Town will have a sidewalk from the south Town Limits to the north Town Limits, a major step in creating a walkable community. Completion of this sidewalk and the Elk Mountain Road sidewalk will provide a framework that can be built upon to meet the needs of the entire Town.

Lookout Road Sidewalk

A sidewalk along Lookout Road from Campus View Road to Riverside Drive is proposed for construction during Phase 2. This sidewalk will provide a link from the UNCA campus to the French Broad River, providing students and faculty with a means of safe pedestrian access to the river. UNCA has a good system of sidewalks in place on its campus and this sidewalk would enhance and extend that system. Construction of some parts of this sidewalk will be challenging due to narrow road corridors and topographic conditions.

Jonestown Road Sidewalk

Continuation of the sidewalk along Jonestown Road, linking Elk Mountain Road to Riverside Drive, is proposed during Phase 2. This sidewalk will provide a pedestrian link from several residential areas to Town Hall, Roy Pope Memorial Park, and the elementary school. A pedestrian crossing of Riverside Drive, proposed as part of this project, will provide a connection

to the phase 2 segment of the French Broad River Greenway. Residents of the Jonestown Road area will then be able to walk safely to the Woodfin Riverside Park.

PHASE 3 PROJECTS

Projects identified for implementation during Phase 3 will extend the Town's pedestrian and bicycle network and provide more connections within the framework developed during Phases 1 and 2. The Phase 3 projects (Map ___) will continue to improve pedestrian access throughout the Town with sidewalks extending into residential neighborhoods. Several of the streets along which Phase 3 sidewalks are proposed have limited rights-of-way and/or steep topography, making the construction during this phase more challenging. The following long range pedestrian projects are proposed for implementation in years 8 - 10:

French Broad River Greenway

The segment of the French Broad Greenway from Elk Mountain Road north to the Town Limits (intersection of Riverside Drive and Old Marshall Highway) is proposed as a Phase 3 project. This will be the final segment of the approximately 5 mile long greenway in the Town and may be the most challenging. The challenges result from the topography in this part of the corridor and with the land uses. River front land uses along this segment include a sewer treatment facility, a former landfill, and a prison. This segment of the greenway will include a roadside sidewalk or trail as well off-road trail.

Cottage Drive Sidewalk

A proposed sidewalk along Cottage Drive will provide a connection from several residential areas to the Elk Mountain Road sidewalk. This is a relatively short section of sidewalk but will serve a number of residences.

Elkwood Avenue/Elk Mountain Road Sidewalk

Construction of a sidewalk along Elkwood Avenue from Riverside Drive to Elk Mountain Road and along Elk Mountain Road to N Woodfin Avenue is proposed as a Phase 3 project. This sidewalk will provide another connection to the French Broad River greenway. In addition it will provide a connection between residential areas and Woodfin Elementary School and Town Hall. This sidewalk segment will connect with



Well designed sidewalks can benefit businesses by providing areas for dining and conversation.

the phase 1 section of the Elk Mountain Road sidewalk and the French Broad Greenway to provide a large pedestrian loop within the Town. A narrow street right-of-way along Elkwood Avenue and steep topography will make construction of this sidewalk challenging.

Goodman Road/Wind Whisper Drive/Firethorn Drive/Mills Place Sidewalk

A sidewalk proposed for construction along these streets will provide another connection from Weaverville Road to the French Broad Greenway. Much

of this area was either developed recently or is currently being developed, with most street rights-of-way wide enough to accommodate a sidewalk. The zoning of a portion of the area requires the construction of sidewalks or pedestrian trails by the developer, which should reduce the cost of construction to the Town. The most challenging portion of this project will be the construction of the sidewalk along Goodman Road.

Breckenridge Parkway/Laurel Terrace/Wellington Drive

A sidewalk along the loop created by these streets is proposed for construction during Phase 3. This sidewalk will provide a connection from a large residential area to the Weaverville Highway sidewalk and from there to the Town's entire pedestrian system. The dedicated rights-of-way along these streets are adequate in most places to accommodate a sidewalk, although the topography will make construction challenging in some areas.

Reynolds Mountain Boulevard

Construction of a sidewalk along Reynolds Mountain Boulevard will provide a connection to the Weaverville Road sidewalk and the Town's pedestrian network for the businesses, hotel, assisted living facility, and apartments located on the street. Although a relatively short sidewalk segment, it has the potential to be heavily used due to the density of development it will serve.



Pedestrians and vehicles can be safely accommodated in areas with low traffic volumes with properly designed and marked walkways.

Martel Lane/Fifth Street/Sixth Street

Construction of a sidewalk along these streets will provide pedestrian access to residents of the historic mill village area. This sidewalk will serve a dense residential area, connecting to the Elk Mountain Road sidewalk and the Town's pedestrian system. Limited street right-of-way width (30 feet) and steep topography in some area will make the sidewalk construction challenging.

Leicester Highway/Gorman Bridge Road/Dryman Valley Road

The proposed sidewalk along these roads would connect residents along the route and of the Crest Mountain area with the French Broad River Greenway and with Woodfin's pedestrian network. Narrow road corridors, steep topography, and the presence of a stream along one side of Dryman Valley Road will make construction of this sidewalk challenging.

Green Oak Road/Woodfin Avenue

A sidewalk is proposed along these streets from Riverside Drive to Elk Mountain Road during Phase 3 of the plan implementation. The sidewalk will provide another connection from Elk Mountain Road to the French Broad River, enhancing the pedestrian

connectivity of the Town. A narrow street right-of-way (30') and steep topography will make the construction challenging.

Old Marshall Highway

A sidewalk along Old Marshall Highway from its intersection with Weaverville Road to its intersection with Riverside Drive is proposed as the final Phase 3 project. This recommended sidewalk will provide a connection from the northern end of Woodfin to the recommended French Broad greenway, affording a large area with pedestrian and bicycle access to the river. While this is a long segment of sidewalk, the highway right-of-way has been graded to the outer edge of the shoulder in most areas, making construction less costly. Currently this highway serves as the northern limits of the Town and it is recommended that this sidewalk not be constructed until all properties adjoining Old Marshall Highway are within the Town or until a cost share agreement is reached with NC DOT or Buncombe County for the sidewalk construction.

Amenities and Facilities



The history of the Martel Mill and Mill Village should be told with interpretive signage along sidewalks and greenways.

GREENWAYS, SIDEWALKS, AND BIKEWAYS AS PART OF A MULTI-MODAL TRANSPORTATION SYSTEM

Greenways, sidewalks, and bikeways can play an important role in addressing the community's transportation needs. Greenways and bikeways can provide an option for short trips (2 miles or less) and bikeways provide options for longer trips. In order to serve as a viable transportation alternative, greenways, sidewalks, and bikeways must provide connections between places where people live (residential areas) and places where they work, shop, and play. The pedestrian and bicycle networks recommended in this plan provide these connections among live, work, play, and shop areas.

Even with connections among the live, work, and play areas in Woodfin, the ability of the pedestrian and bicycle networks to meet the transportation needs of citizens is limited by the distances people are willing to walk or bike. For this reason, pedestrian and bicycle facilities work best as a transportation option when they are part of a multi-modal system that acknowledges the importance of and includes transit systems and private vehicles. Greenways, sidewalks, and bikeways should provide connections to bus stops and provide areas where motorists can park their vehicles in order to access the pedestrian and bicycle facilities. This complete streets approach acknowledges that no one system can meet all needs, but by coordinating the various modes of transportation, the health of the Town of Woodfin and its citizens can be improved.

Development of new trailheads with parking areas and the designation of existing parking areas as trailheads are recommended in this plan. Implementation of these recommendations will make accessing the greenways and sidewalks easier, increasing their use. Development and/or designation of the trailheads with parking will also reduce the use of unofficial/dangerous and private parking areas located near the pedestrian and bicycle networks.

Limited bus service is available in Woodfin at this time, but providing better pedestrian access to bus stops and bus routes could increase ridership, leading to enhanced service for residents. The sidewalk systems recommended in this plan provide connections to those streets (Weaverville Road and Elkwood Avenue) on which bus service is currently available. As bus service is expanded, sidewalks should be provided to connect the bus stops to areas where residents live, work, play, and shop.

AMENITIES AND FACILITIES

As greenways, sidewalks, and bikeways are constructed in Woodfin, the need for complementing amenities and facilities will arise and must be addressed. Amenities and facilities needed to complement the proposed greenways, sidewalks, and bikeways will range from small items such as directional signage to parking areas and restroom facilities. These amenities and facilities are an important feature and often are critical in determining the success of the pedestrian infrastructure. If potential greenway trail users cannot find a place to park so that they can access the greenway, then they will not use the trail. Benches and picnic areas can enhance the quality of a greenway and lengthen the stay of those using it. Appropriate lighting along trails can increase the safety for users. Trash cans placed at convenient locations along a sidewalk can assure that litter is controlled. Fences and landscaping at appropriate locations along sidewalks and greenways can serve as buffers, can serve as a safety barrier, and/or can deter users from venturing into areas off limits to them. Existing facilities can meet the need for pedestrian and bicyclist related amenities and facilities in some places. The picnic facilities, restrooms, and parking at Woodfin Riverside Park make this a perfect trailhead amenity for the French Broad River Greenway proposed in this plan. Amenities and facilities at other locations should be accounted for during the preparation of detailed plans for the construction of greenways and sidewalks. A trailhead is recommended at each end of the proposed Beaverdam Creek Greenway, with plans developed for a trailhead with parking on the west end of the proposed greenway (see Figure ___). Signage can serve to provide directions, particularly along greenway trails, note safety regulations, and can also be an educational tool to inform users of environmental, cultural, and historic features of the community. Throughout this plan are details, photographs and other information about various amenities and facilities that must be included in the detailed planning for Woodfin's greenways, sidewalks, and bikeways. In preparing the budget for greenways, sidewalks, and bikeways, it should be kept in mind that facilities and amenities can play an important role in determining the success or failure of the pedestrian and bicycle routes. With this in mind, funding should be allocated for well planned amenities and facilities.

In addition to meeting the need for parking, restrooms, and similar amenities and facilities, opportunities to make the walking and bicycling experience more enjoyable and educational should be recognized and incorporated into the detailed planning. As greenways are developed along streams and the French Broad River, opportunities to inform users of the need to protect surface waters and to identify ways to do this should be a

part of the greenway development. Stormwater management incorporating best management practices to address runoff along greenway trails should be a part of the greenway development. These measures should be identified and their function explained through interpretive signage. Other measures to protect and/or enhance surface waters and water quality, such as streambank stabilization efforts, also should be identified and explained. Opportunities to preserve small natural areas and to provide open space for users of the pedestrian and bicycle networks, and for the general population are present along the corridors of the proposed greenway and sidewalk system. There are several such areas along Beaverdam Creek and the French Broad River that can be cleared of invasive and weedy plants to create small natural open spaces for the enjoyment of trail users. Placing benches and other facilities as appropriate in these open spaces will increase their appreciation by the public and could increase the use of the greenway trails. A 0.5 acre parcel owned by the Town of Woodfin is located at the intersection of Elk Mountain Road and Martel Lane, paralleling Elk Mountain Road for approximately 450 feet, adjacent to the proposed Elk Mountain Road sidewalk. A drainage swale that serves as a stormwater channel is located within the parcel. It is recommended that the invasive plants and weeds be removed from the parcel, the existing trees, which include a 40" white oak and 40" poplar, be fertilized, and the area maintained as an open space. Signage explaining the area's function in accommodating stormwater could make it an educational facility for Woodfin Elementary School students. Opportunities such as these exist along all the proposed greenway, sidewalk, and bikeway corridors; recognizing these opportunities and incorporating them into the detailed planning will enhance the Town's pedestrian and bicycle network.

RECOGNIZING ENVIRONMENTAL, CULTURAL, AND HISTORIC FEATURES

The Town of Woodfin is blessed with outstanding environmental features and a rich culture with an interesting history. The French Broad River and Beaverdam Creek corridors are teeming with a variety of flora, fauna, and aquatic life that makes them ideal outdoor classrooms for the study of nature and the environment. With the connection between these corridors and Woodfin Elementary School recommended in this plan, students and teachers will have a safe direct link from school to the corridors. As the detailed plans for greenways along the French Broad River and Beaverdam Creek are developed, their capacity to serve as outdoor classrooms should be considered. Signage noting the types of flora, fauna, and aquatic life should be incorporated into the detailed design and construction of the greenways,



Sidewalks connecting Woodfin Elementary School to the surrounding community will enable students to walk to school and teachers to incorporate walking field trips into their lesson plans.

as well as signage describing the important role these waterways play in maintaining a balance in nature and the role of humans in protecting the waterways and keeping them clean. Access areas that will allow people to get close to or even in the water should be incorporated into the detailed design for the greenways.

Elements of the region's history are still evident in Woodfin, with some of them along the routes recommended for sidewalks and greenways. As pedestrian routes pass near these features, their story and role in the development of western North Carolina should be noted through interpretive signage. The French Broad River corridor was the route of the Drover's Trail, the route for people driving livestock from upper east Tennessee to the railroad in Greenville, South Carolina. This route then became the Buncombe Turnpike, continuing its role as a major transportation corridor in the region. Another form of transportation that served the Woodfin area at the turn of the 20th century still has remnants

along the recommended sidewalk and greenway routes.

The Asheville Trolley Company operated two trolley lines through the Woodfin area. The Craggy Line and the Weaverville Line split on the south end of Woodfin, with the Craggy Line paralleling Beaverdam Creek to the French Broad River and the Weaverville Line continuing north along the corridor now occupied by Weaverville Highway. The old trolley station is still standing along Beaverdam Creek at the location where the two lines split. The sidewalk system proposed in this plan will go by and through Martel Village, the residential area which housed employees of the Martel Mill, while the proposed greenway will go by the mill itself. The history of the mill and its role in the community should be recognized with signage near these locations. Also located along the proposed pedestrian routes is the former electrical power plant, which played a role in the industrial development of the area. The power plant and its role in the community also should be

recognized. The sidewalk proposed along Weaverville Highway will pass by Log Cabin Motor Court, one of the area locations for the filming of "Thunder Road". Signage recognizing this location should be provided when the sidewalk is constructed. By providing recognition of these features, the story of Woodfin and its citizens can be told and preserved.

INTERGOVERNMENTAL COOPERATION

The greenways, sidewalks, and bikeways identified in this plan will provide a good network on pedestrian and bicycle facilities within the Town of Woodfin. Upon the completion of the recommended projects, Woodfin residents will be able to walk and/or bicycle throughout the community. The opportunities for recreation and alternative transportation available

to the citizens of Woodfin can be greatly enhanced by cooperation with neighboring governmental entities. Both the City of Asheville and Buncombe County are either constructing greenway trails and sidewalks or planning for their construction.

The City of Asheville annually constructs new segments of greenways and sidewalks and upgrades/repairs existing segments. Coordinating with the City of Asheville on the construction of certain segments of greenway trails and sidewalks will enable citizens of and visitors to

both communities to take advantage of significantly more opportunities for alternative transportation and recreation. Below are the greenway and sidewalk segments on which coordination between the Town of Woodfin and the City of Asheville is recommended:

¼ The French Broad Riverway – The City of Asheville’s plan for the French Broad riverfront, the Wilma Dykeman Riverway Master Plan, calls for the construction of pedestrian and bicycle along the length of the French Broad River within the City. Connection of the Asheville sections of these trails with the French Broad greenway proposed in this plan will enable users to walk and/or bike for more than 10 miles along the French Broad. In addition, the Asheville trails and the Woodfin segment of the French Broad greenway will connect to parks, amenities, and other trails and sidewalks that provide numerous opportunities for recreation, education, and



Greenways along the French Broad River in Woodfin will enable users to enjoy activities ranging from fishing to bird watching.

employment.

¼ Old Weaverville Highway/Merrimon Avenue – A sidewalk and/or greenway trail along Old Weaverville Highway south to the Woodfin/Asheville limits. Connecting this sidewalk and/or trail to a sidewalk along Merrimon Avenue in the City of Asheville would enable Woodfin residents and visitors to walk and/or bike to Beaver Lake and the North Asheville Library.

¼ Elkwood Avenue – For some distance Elkwood Avenue is the boundary between Woodfin and the City of Asheville. A sidewalk the entire length of Elkwood would provide a connection for residents of this area to the French Broad greenway to the west and to Old Weaverville Highway/Merrimon Avenue to the east. Elkwood Avenue is a bus route; a sidewalk along the street would provide a great intermodal connection.

Buncombe County is currently working to prepare a conceptual plan and a feasibility study for the French Broad greenway from the City of Asheville to Madison County. Approximately five (5) miles of this fifteen (15) mile corridor are located within the Town of Woodfin. Working together to construct the segment of the greenway trail located within the Woodfin will enable both the Town and the County to use the limited funds available for pedestrian and bicycle facilities more effectively. Working together on projects that are identified as priorities by both governments would be an efficient use of resources. Joint Town/County projects designed to enhance pedestrian and bicycle facilities likely will be reviewed more favorably by funding sources, as evidenced by the recent award of a Fit Community grant from the Health and Wellness Trust Fund. An application submitted by Buncombe County for a project in Woodfin, which includes assistance in the construction of the Elk Mountain Road sidewalk, was awarded funds for the 2010 – 2011 funding cycle.

POLICY RECOMMENDATIONS

The adoption of the Town of Woodfin Greenways, Sidewalk, and Bikeways Plan and the construction of greenways, sidewalks, and bikeways as identified in this Plan will be tangible evidence of Woodfin's commitment to provide a pedestrian circulation system to serve residents, visitors, and businesses. Such a commitment is a major step for the Town and has the potential to provide many benefits. These benefits will range from meeting the recreation and transportation needs of the citizens of Woodfin to creating a stronger sense of community. The Town's commitment to providing a pedestrian circulation system can be strengthened by

policy actions that can help achieve the goals identified in this Plan. Recommended policy actions are:

- Include pedestrian facilities in the Town's annual budget and budget funds annually for construction and maintenance of greenways, sidewalks, and bikeways.
- Include construction of pedestrian facilities in the Town's Capital Improvements Plan and Capital Improvements Budget.



- Continue to identify funding sources for pedestrian facilities and aggressively pursue these sources of funding.
- Work with NC DOT to assure that all new DOT highway construction projects incorporate complete streets principles and design.
- Build public support for the pedestrian system by promoting the benefits of walking and by encouraging events that make use of the pedestrian facilities.
- Encourage denser infill development within the core area of the Town to take advantage of existing and proposed pedestrian infrastructure.
- Establish design and construction standards for sidewalks, trails, bikeways and other pedestrian and bicycle facilities.
- Require all new developments above a certain threshold to provide sidewalks along existing road frontages. This requirement should be made a part of the Town's development ordinances.
- Continue to work with MSD to achieve shared use of easements for sewer mains and for greenways.
- Continue to work with NC DOT to locate sidewalks within street/road rights-of-way and to include sidewalk construction with all new road construction.
- Continue to work with NC DOT to designate appropriate roads and highways as bike routes and to provide bicycle lanes on exiting roads and highways where feasible.
- Amend the Town's development ordinance to require sidewalks to be constructed whenever new streets and roads are constructed. Permit trails to be constructed in lieu of sidewalks upon approval by the Town.

- Establish an “Adopt a Sidewalk/Adopt a Trail” program and encourage civic groups and community organizations to adopt sections of sidewalk and/or trails. Adopters would pick up litter and perform minor maintenance tasks.
- Establish a greenway commission to promote the development of greenways in the Town. An option would be to work with the Buncombe County Greenway Commission for the development of greenways in the Town.
- Coordinate with other Greenway commissions and organizations in the region to achieve a regional greenway system.

Accomplishment of the goals and projects identified in this plan will require a long term commitment by the Town of Woodfin. Commitments must be made in the short term to design and construct the phase 1 projects identified in this plan. This initial commitment must be continued with design and construction of the projects identified in phases 2 and 3. An on-going commitment must be made to maintaining facilities following their construction. This commitment will be rewarded by the creation of a pedestrian network that will provide citizens with safe and convenient opportunities for recreation and alternative transportation. With the adoption of this plan and the initiation of design and construction efforts on the Elk Mountain Road sidewalk, the Town of Woodfin has shown its commitment to providing pedestrian facilities for its citizens, thereby building a stronger, more sustainable community. The residents of Woodfin must work with the Town to ensure that this is a lasting commitment in order to accomplish the goals identified in this plan.

WOODFIN GREENWAYS, SIDEWALKS, AND BIKEWAYS PLAN
 Figure 2: Cross Section of Proposed Beaverdam Creek Greenway

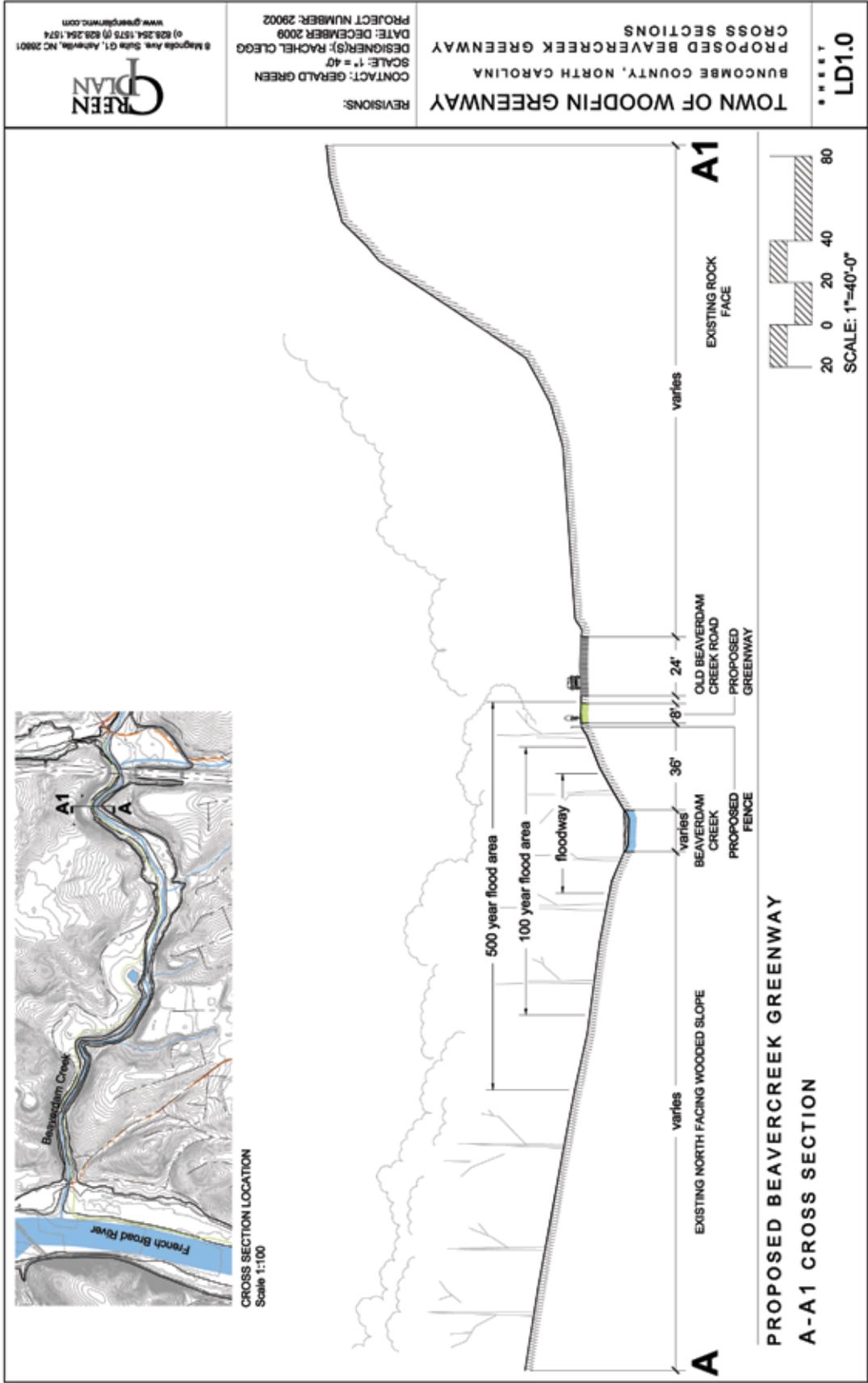
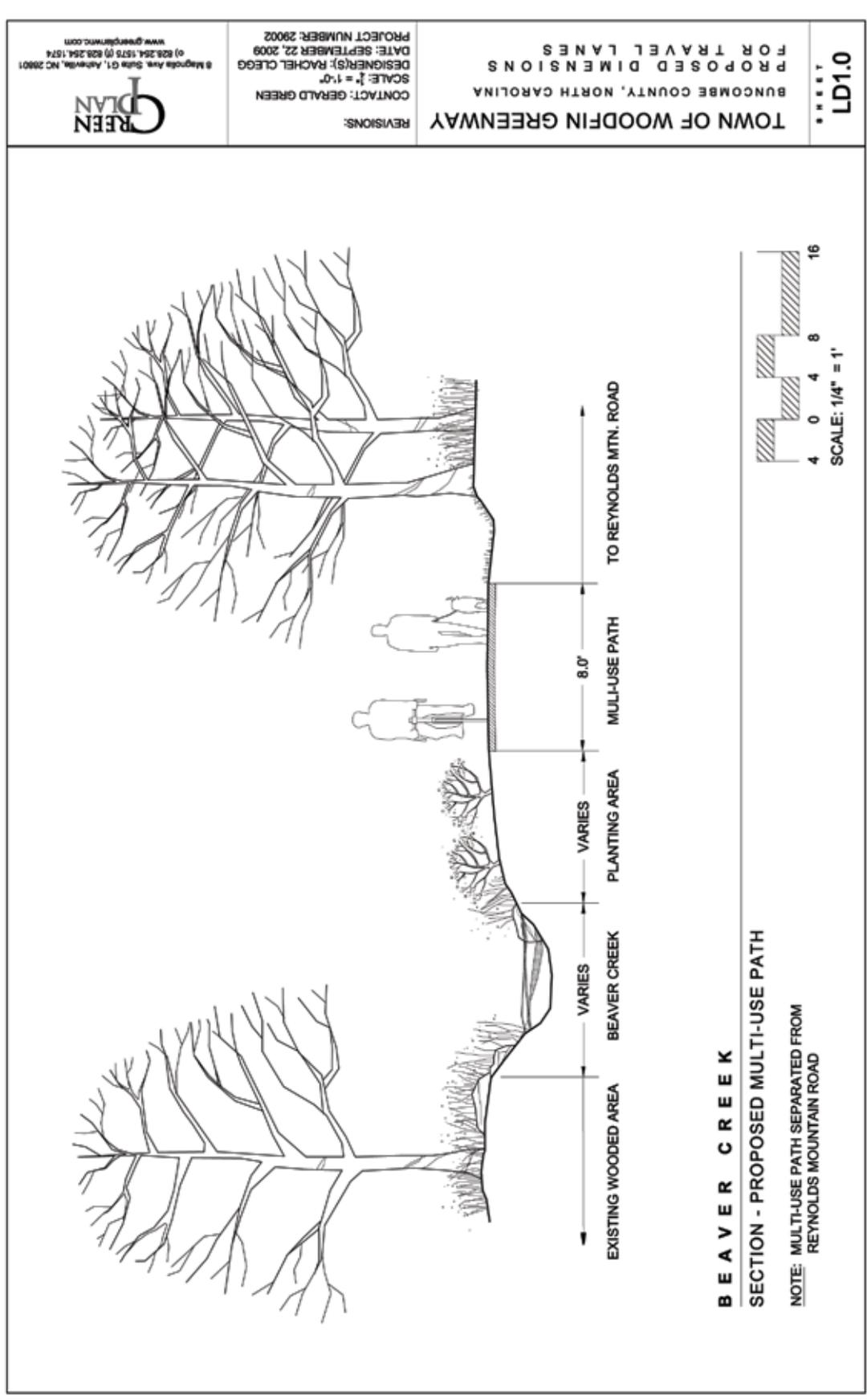
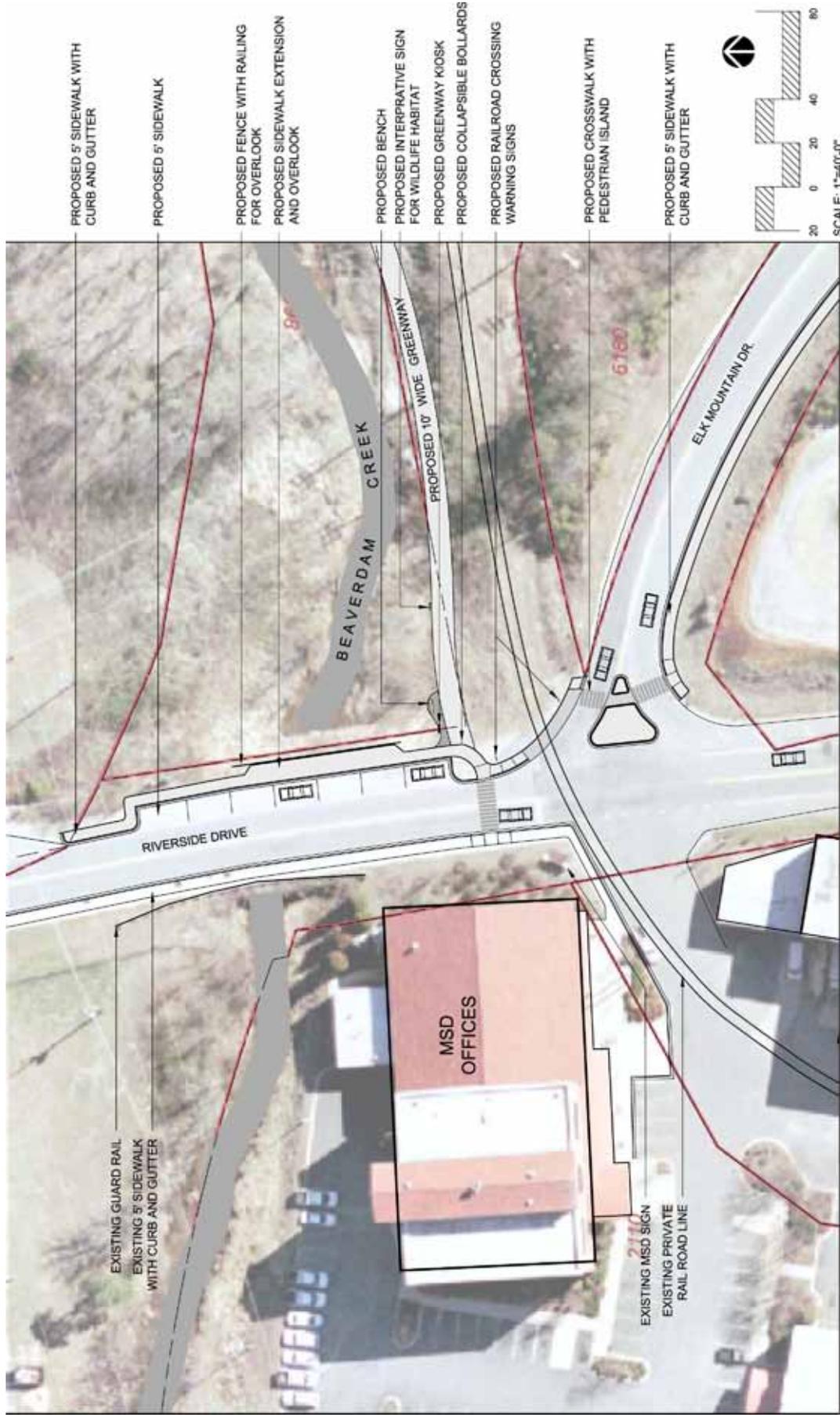


Figure 3





<p>GREEN PLAN</p> <p>8 Magnolia Ave., Suite C1, Asheville, NC 28801 (405) 828.254, 1575 (405) 828.254, 1574 www.greenplaninc.com</p>	<p>REVISIONS:</p> <p>CONTACT: GERALD GREEN</p> <p>DESIGNER(S): RACHEL CLEGG</p> <p>DATE: SEPTEMBER 22, 2009</p> <p>PROJECT NUMBER: 29002</p>	<p>TOWN OF WOODFIN GREENWAY</p> <p>BUNCOMBE COUNTY, NORTH CAROLINA</p> <p>PROPOSED DIMENSIONS FOR TRAVEL LANES</p>	<p>LD1.0</p>
	<p>www.greenplaninc.com</p>		<p>*****</p>



WOODFIN GREENWAYS, SIDEWALKS, AND BIKEWAYS PLAN
 Figure 6: Construction Details for Proposed Greenway

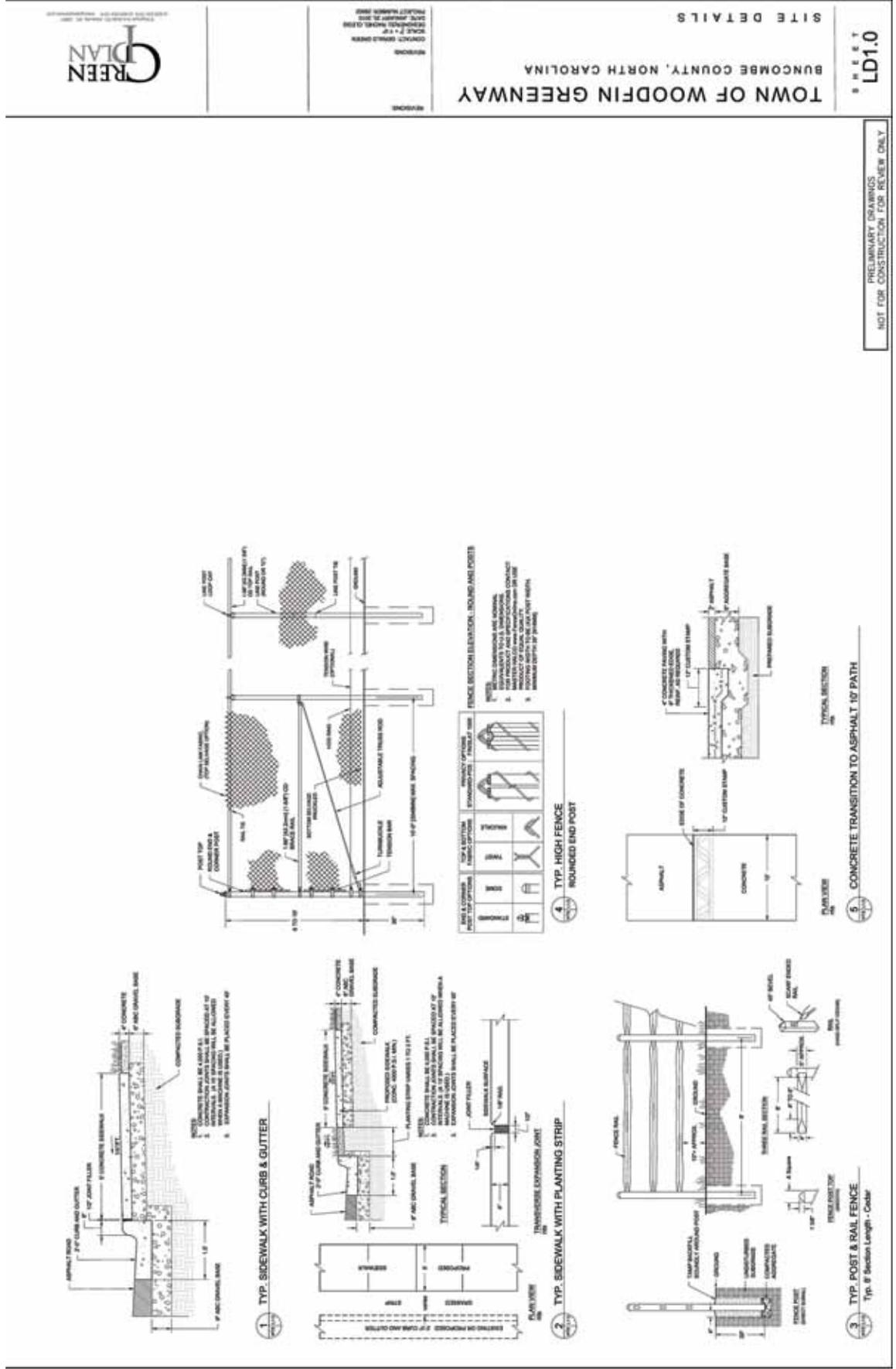


Figure 7: Proposed Elk Mountain Road Cross Section Adding Bike Lanes to Existing Road

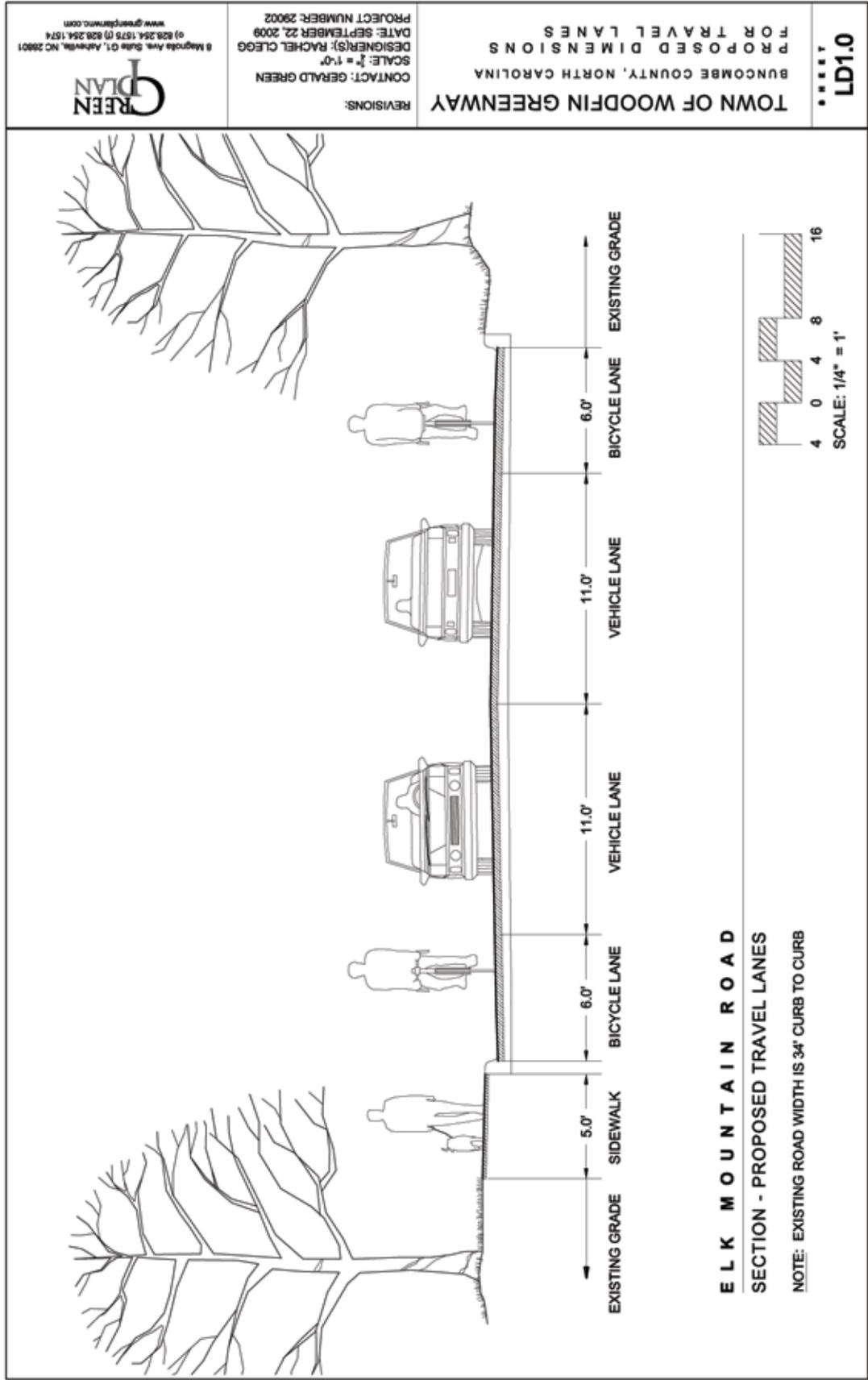
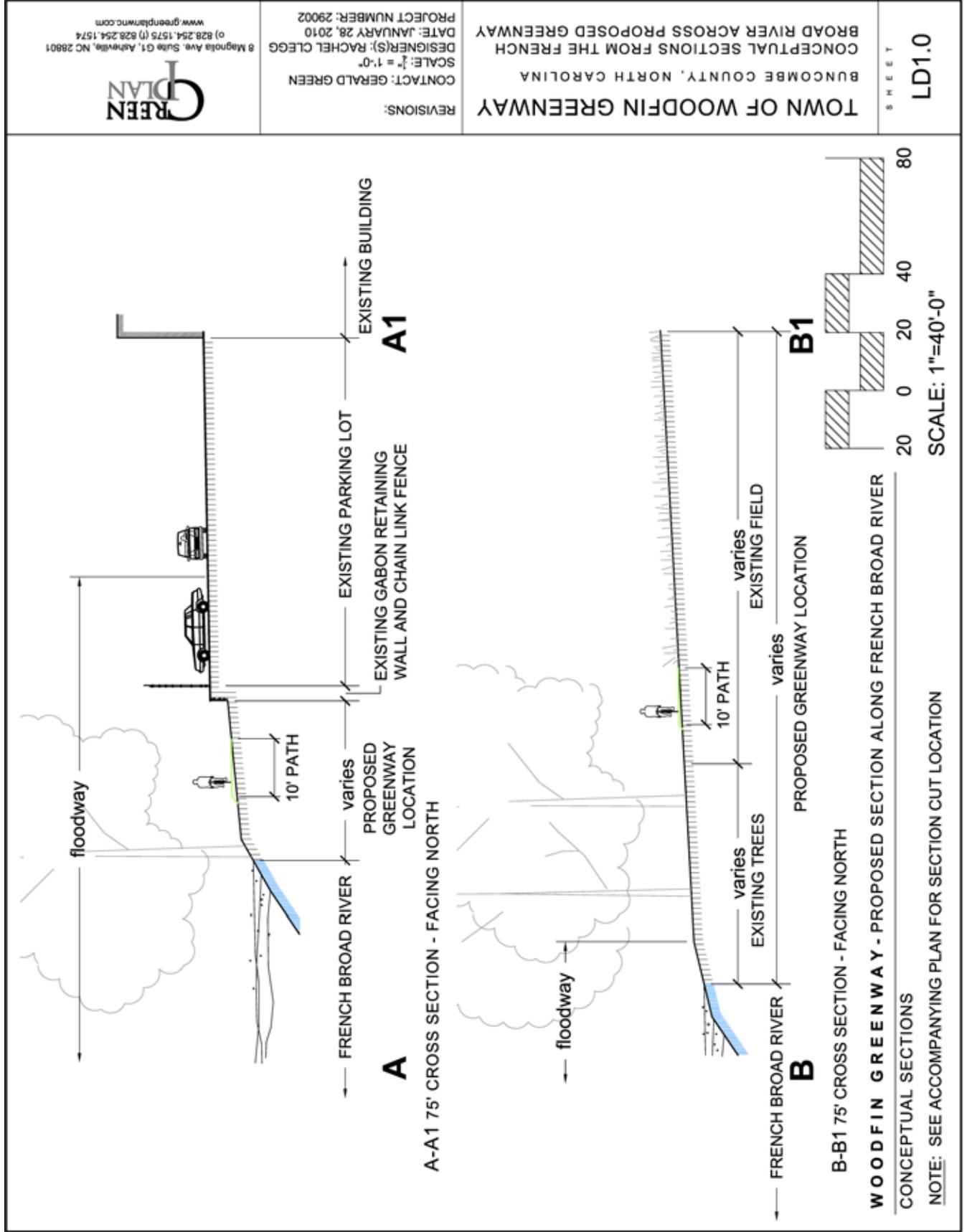


Figure 8: Cross Sections of Proposed Phase 1 French Broad River Greenway

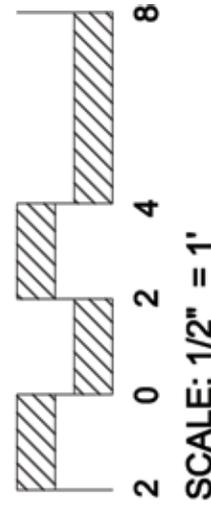
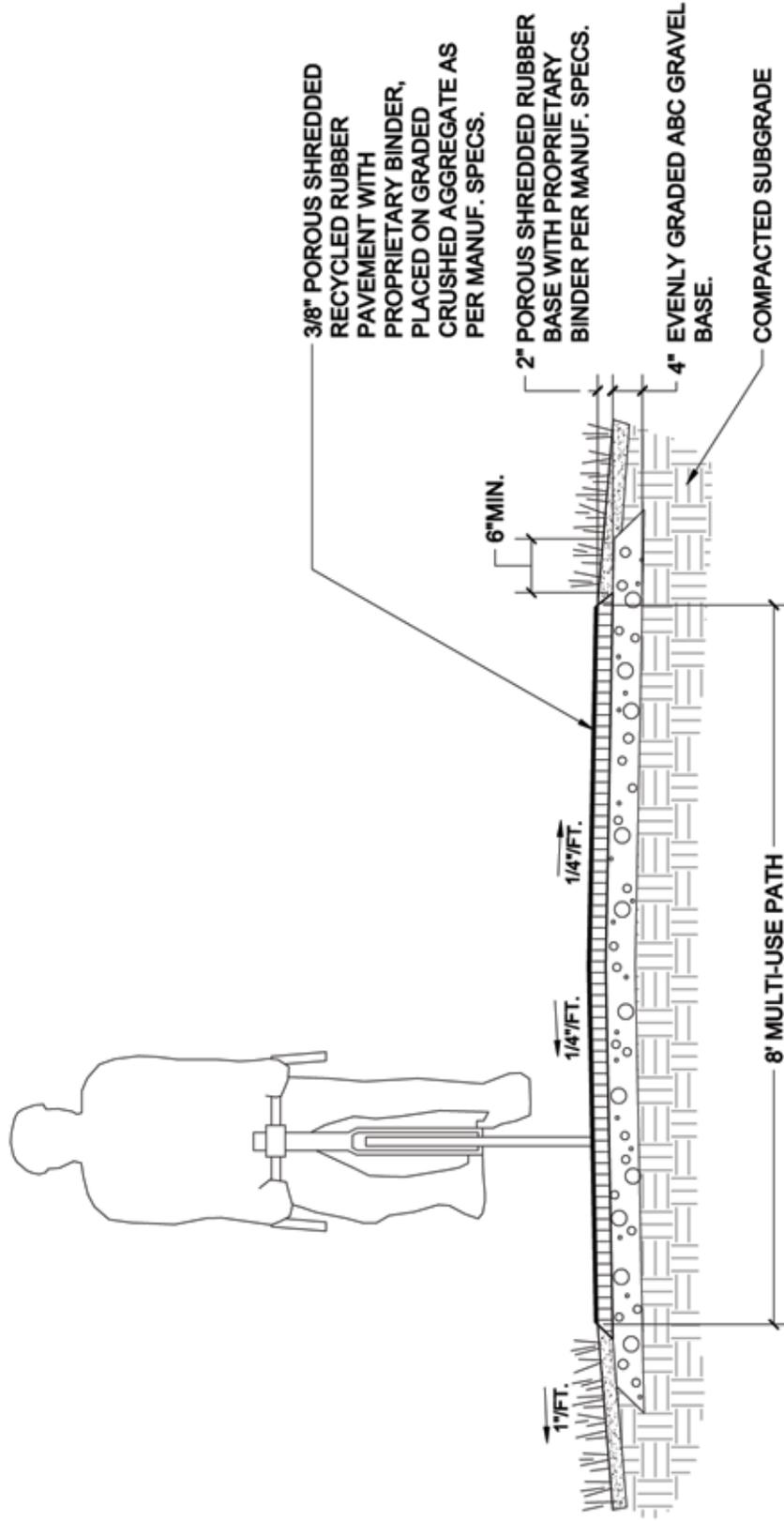


GREEN PLAN
 8 Magnolia Ave, Suite G1, Asheville, NC 28801
 (828) 254-1574
 www.greenplaninc.com

REVISIONS:
 CONTACT: GERALD GREEN
 DESIGNER(S): RACHEL CLEGG
 DATE: JANUARY 28, 2010
 PROJECT NUMBER: 29002

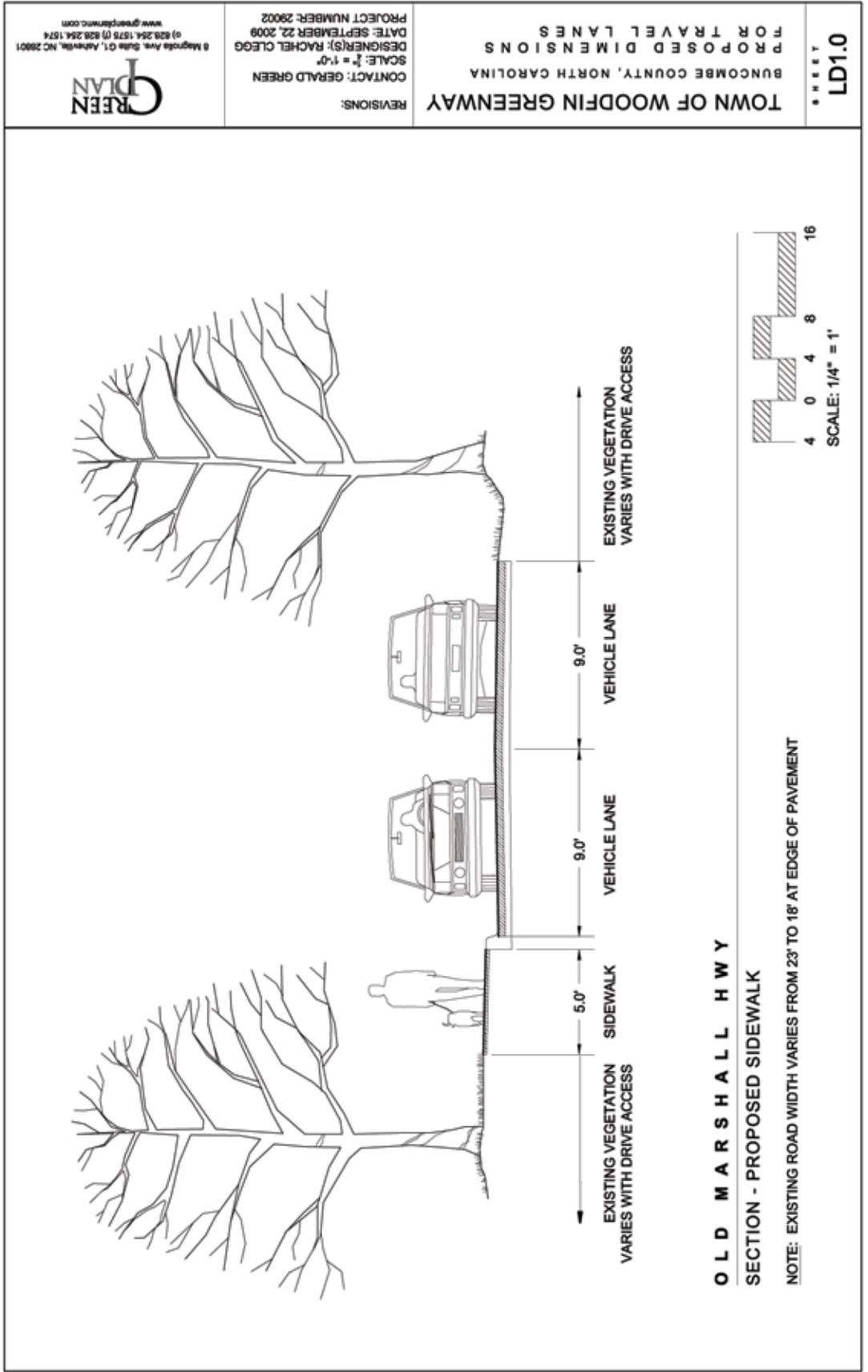
TOWN OF WOODFIN GREENWAY
 BUNCOMBE COUNTY, NORTH CAROLINA
 CONCEPTUAL SECTIONS FROM THE FRENCH
 BROAD RIVER ACROSS PROPOSED GREENWAY

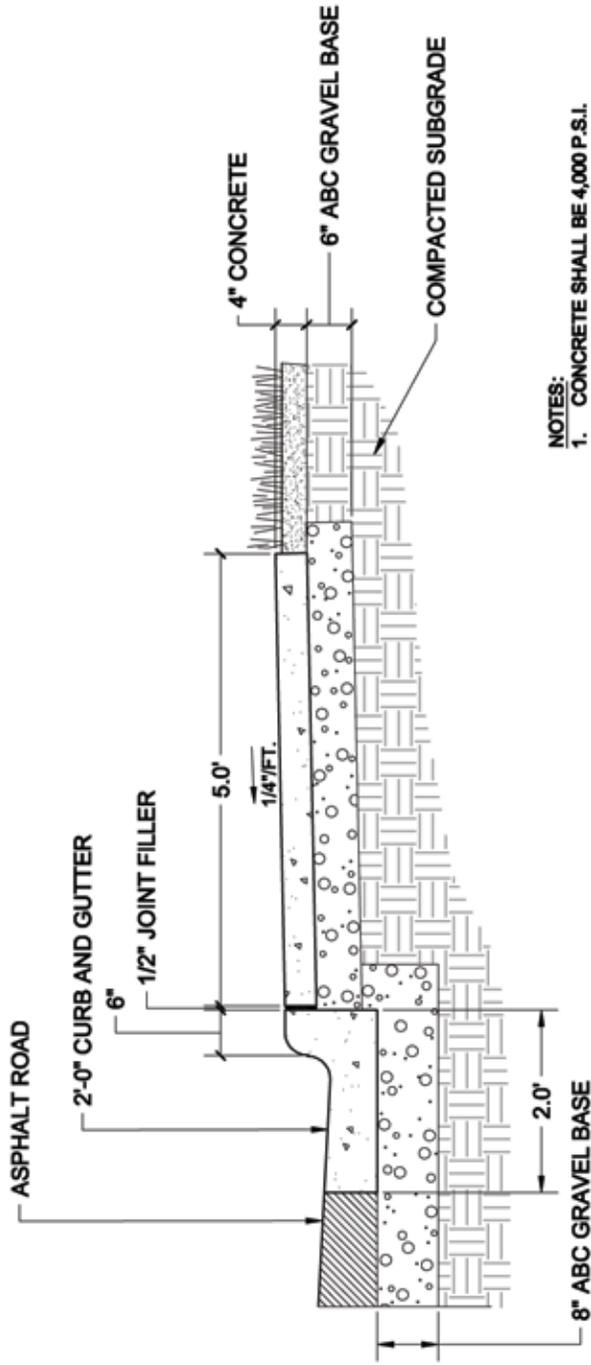
SHEET
LD1.0



WOODFIN GREENWAY
 MULTI-USE PATH -Porous rubber surface on aggregate base.

WOODFIN GREENWAYS, SIDEWALKS, AND BIKEWAYS PLAN
 Figure 10: Proposed Sidewalk Location Along Old Marshall Highway





- NOTES:**
1. CONCRETE SHALL BE 4,000 P.S.I.
 2. CONTRACTION JOINTS SHALL BE SPACED AT 10' INTERVALS. (A 15' SPACING WILL BE ALLOWED WHEN A MACHINE IS USED.)
 3. EXPANSION JOINTS SHALL BE PLACED EVERY 40'

WOODFIN GREENWAY
COMBINATION SIDEWALK WITH CURB AND GUTTER

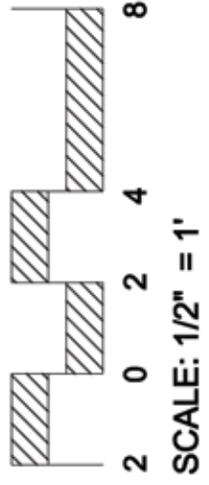
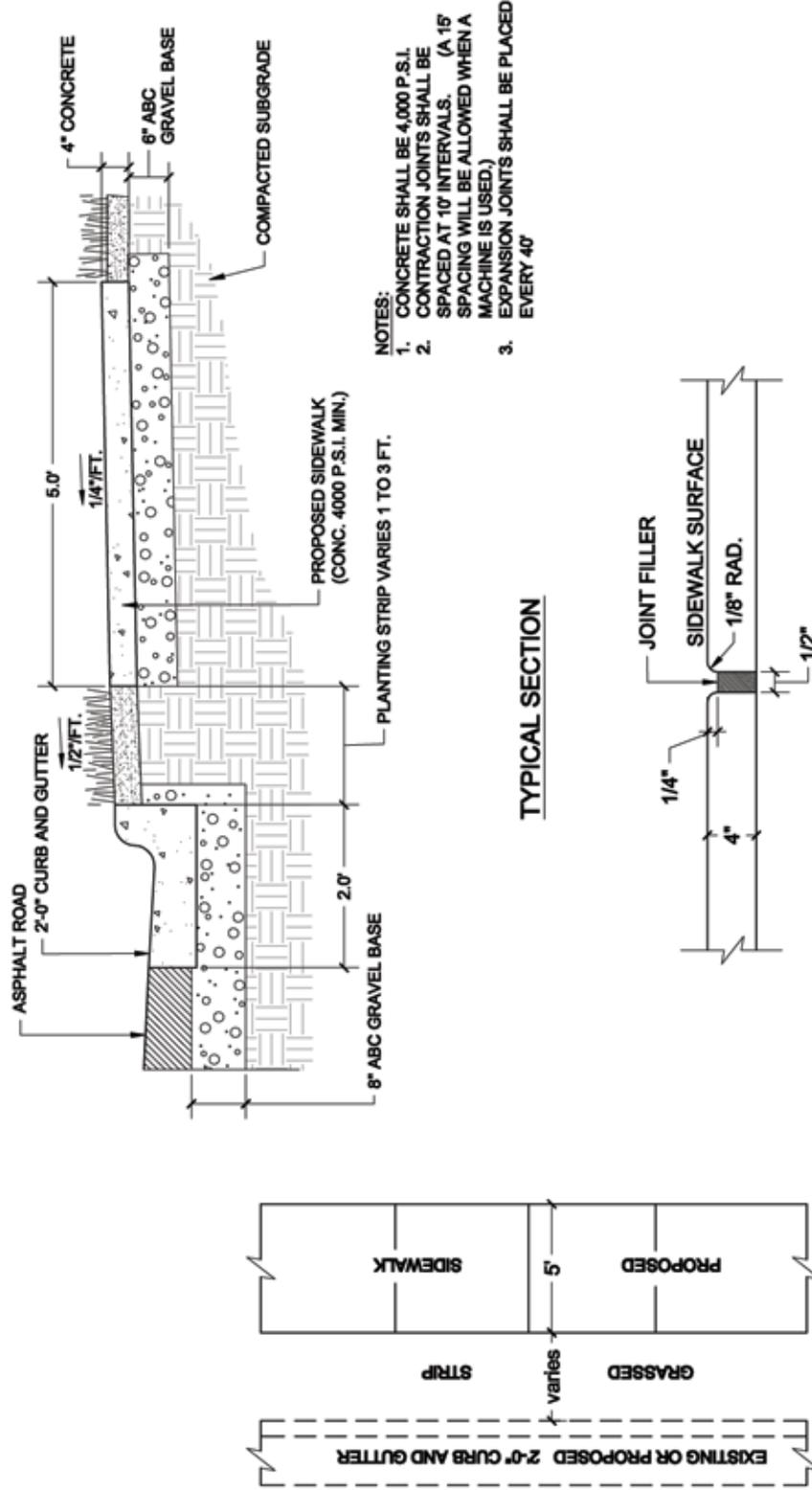
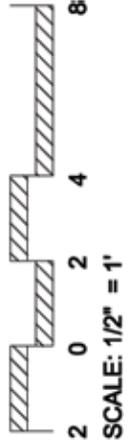


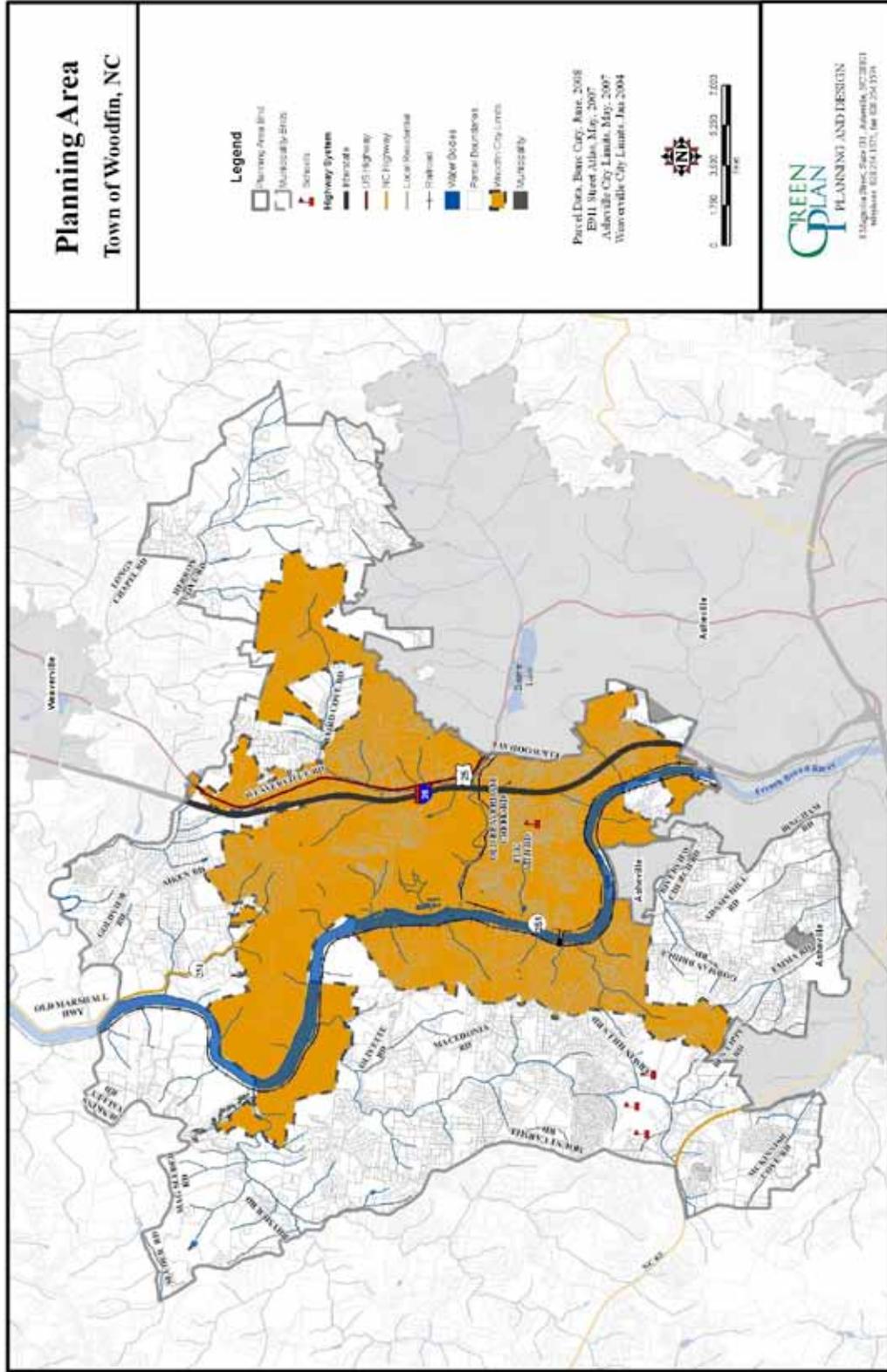
Figure 12: Sidewalk with Planting Strip Detail

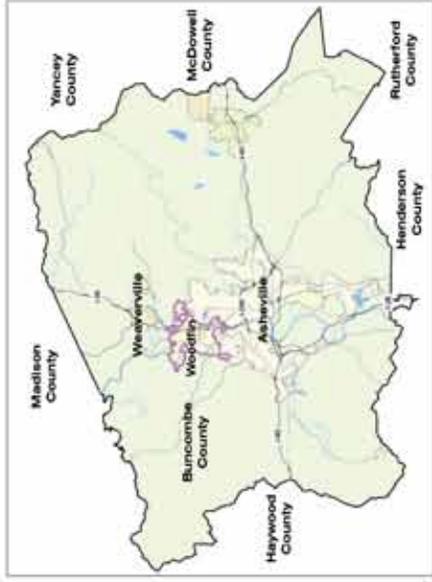
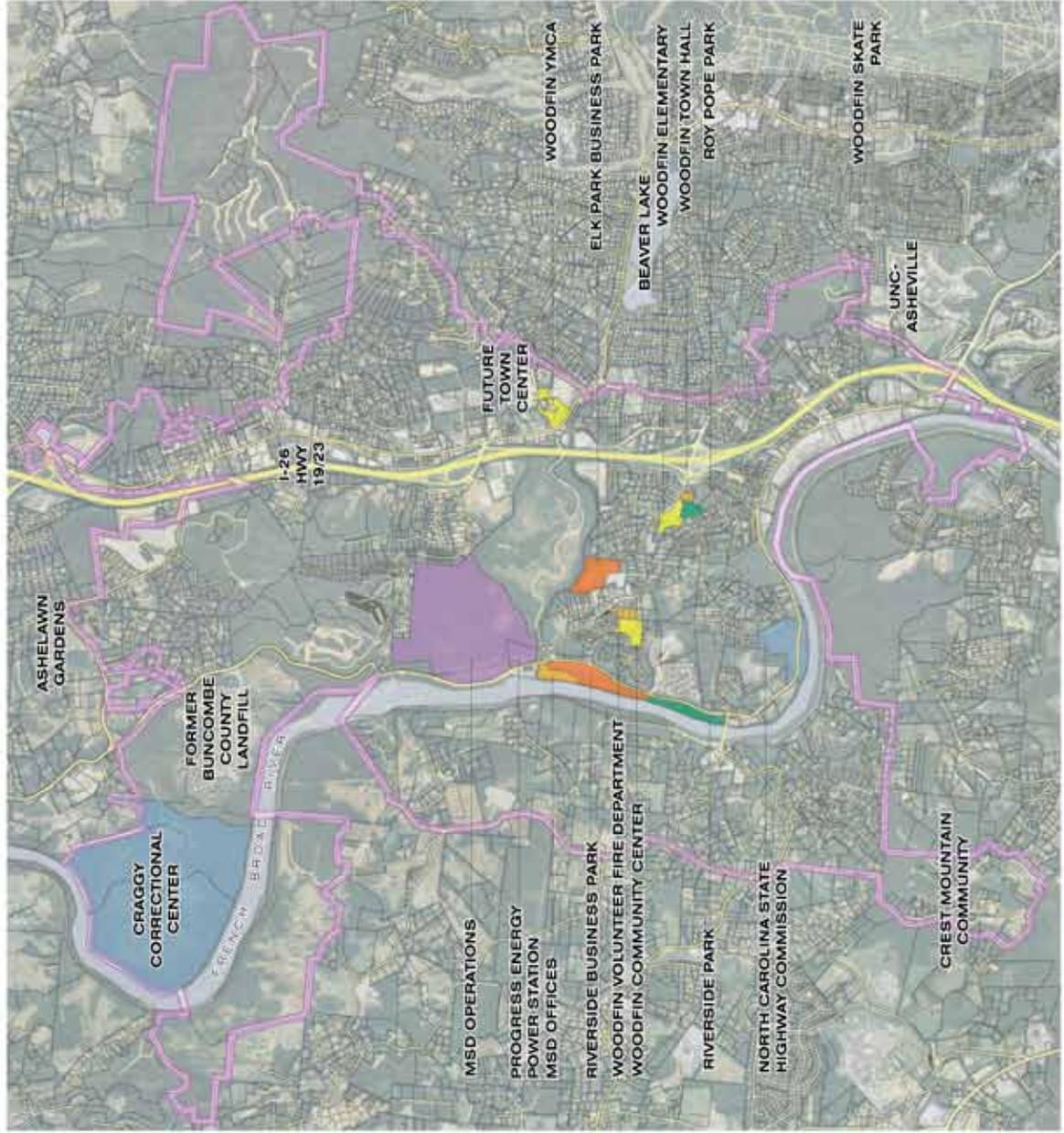


- NOTES:
1. CONCRETE SHALL BE 4,000 P.S.I. CONTRACTION JOINTS SHALL BE SPACED AT 10' INTERVALS. (A 15' SPACING WILL BE ALLOWED WHEN A MACHINE IS USED.)
 2. EXPANSION JOINTS SHALL BE PLACED EVERY 40'



WOODFIN GREENWAY
COMBINATION SIDEWALK WITH CURB AND GUTTER AND PLANTING STRIP





Woodfin Vicinity Map
n18

**TOWN OF WOODFIN
 NORTH CAROLINA
 GREENWAYS, SIDEWALKS & BIKEWAYS
 COMMUNITY FACILITIES &
 ACTIVITY CENTERS**

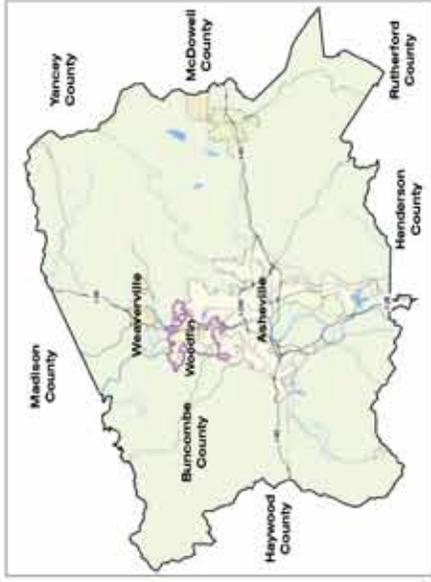
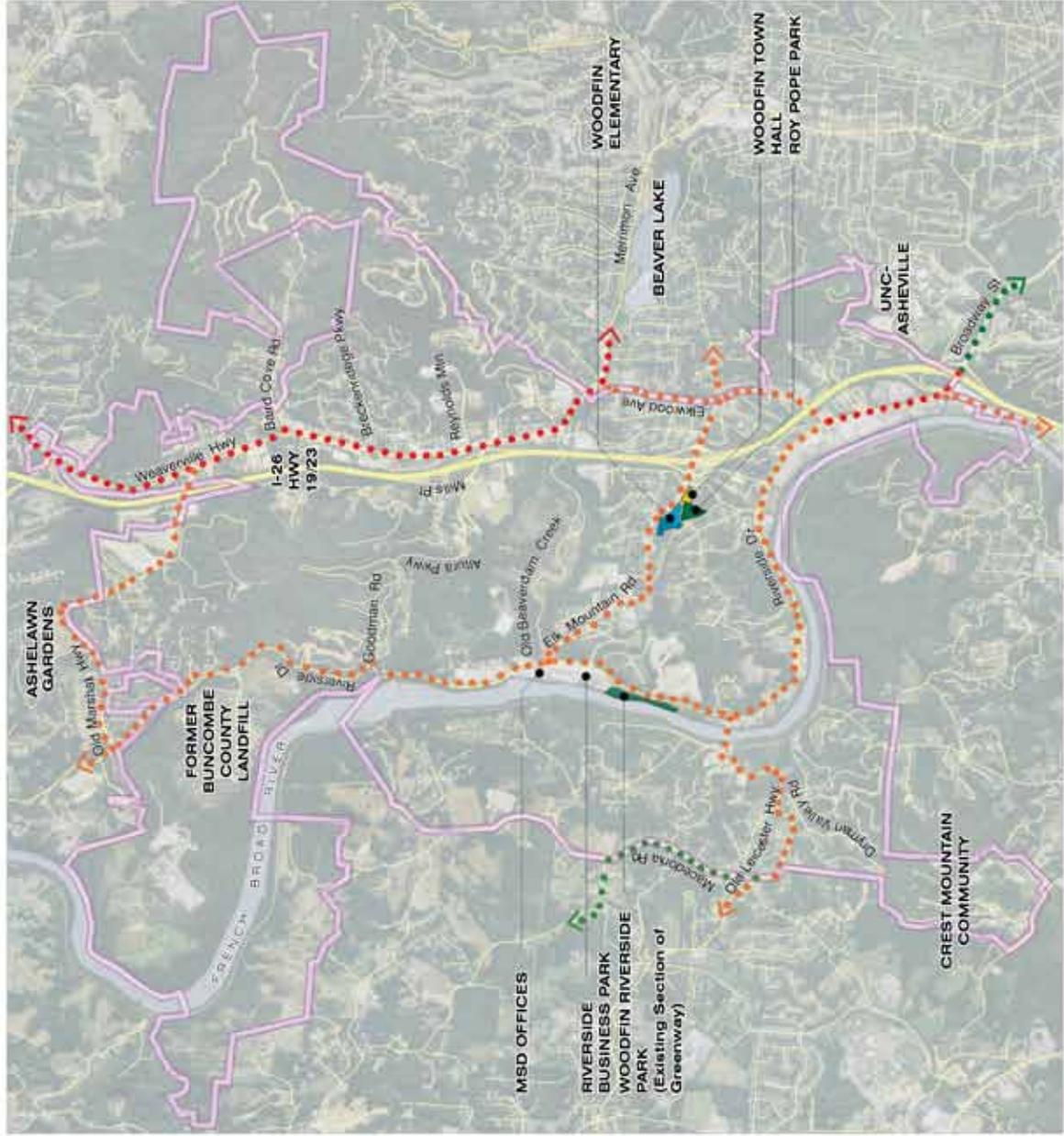
LEGEND

-  Woodfin Town Limits
-  Community Use
-  Parks & Recreation
-  Public Services
-  Business Park
-  Industrial / Utility Services
-  Institutional Centers



April 2010





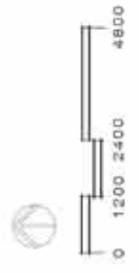
Woodfin Vicinity Map
 n18

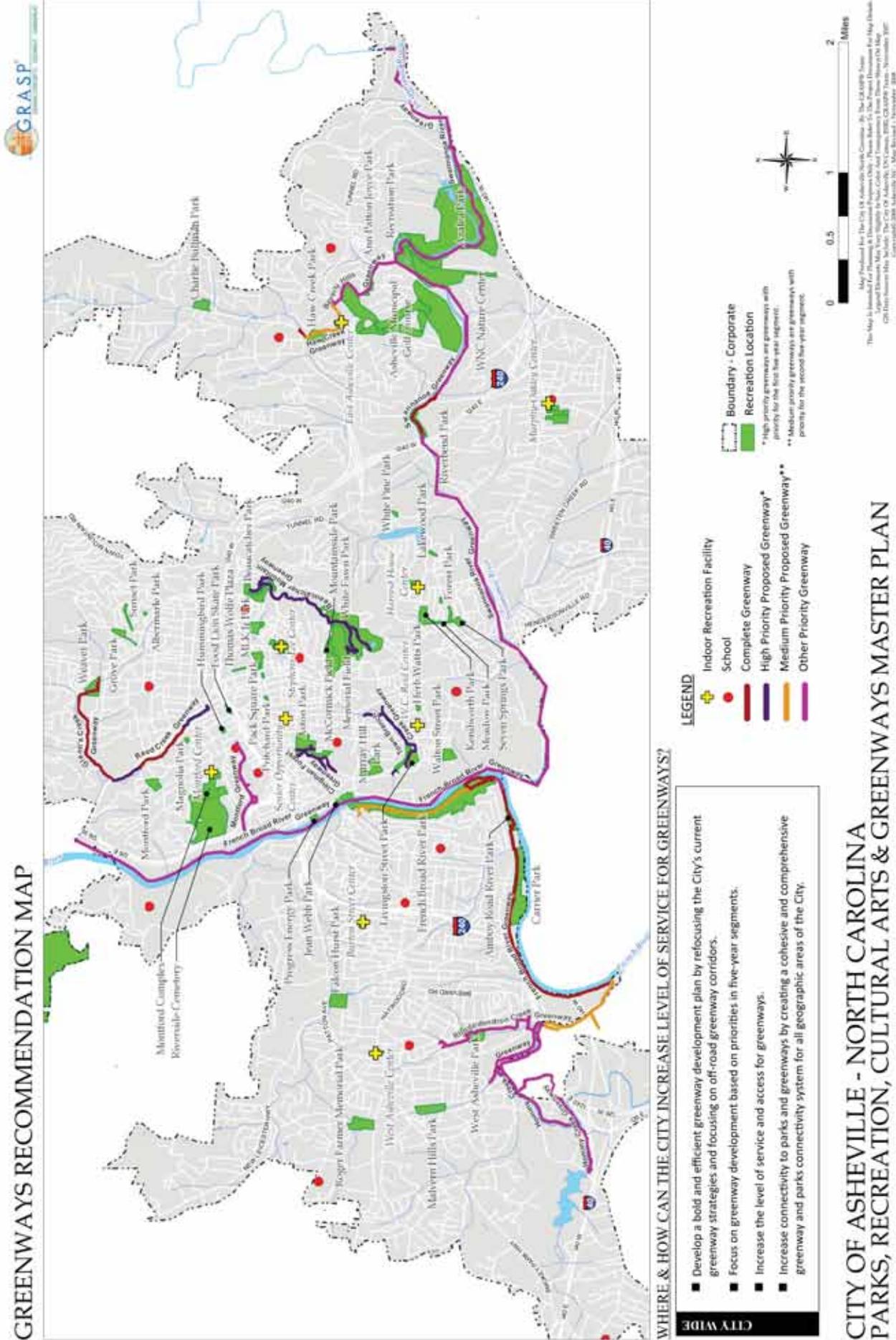
**TOWN OF WOODFIN
 NORTH CAROLINA**
 GREENWAYS, SIDEWALKS & BIKEWAYS
 NCDOT DESIGNATED BICYCLE ROUTES

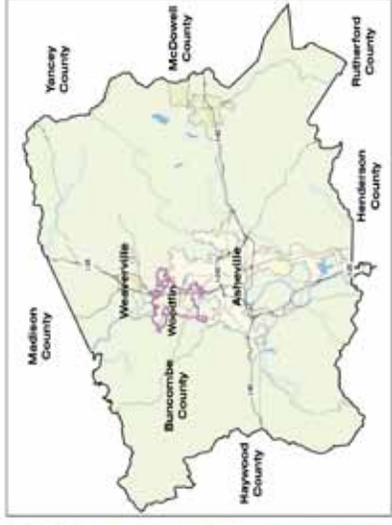
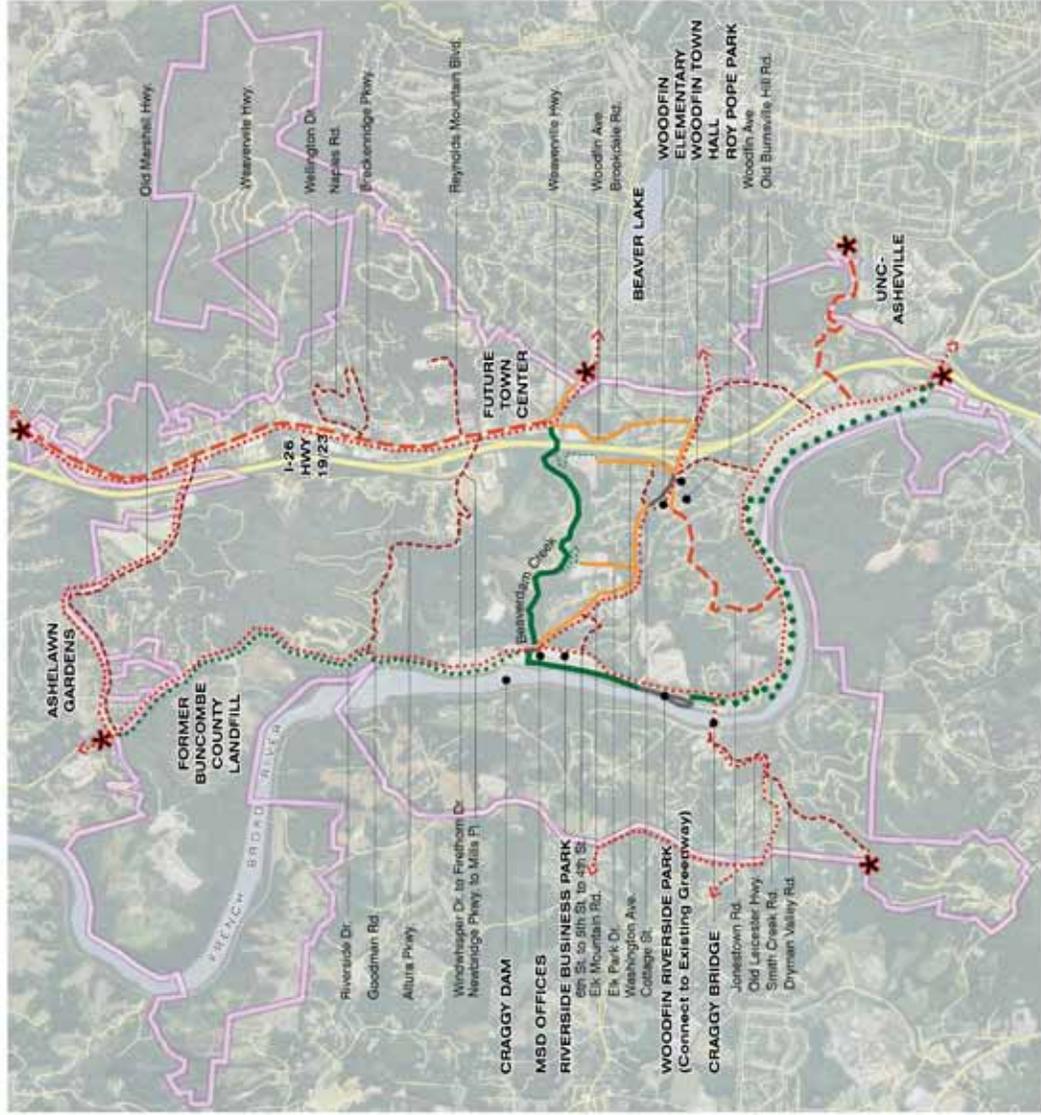
LEGEND

-  Roadways
-  NCDOT DESIGNATED BICYCLE ROUTES
Level I - Routes with typically little traffic
-  Level II - Moderate levels of traffic with possibly high volumes during certain periods of the day
-  Level III - Moderate to heavy traffic, in rural areas, may indicate sharp curves and poor sight distance
-  Level IV - Very high traffic volumes. Not recommended but included where no reasonable alternative exists
-  Woodfin Town Boundary

*Information taken NCDOT division of Bicycle and Pedestrian Transportation for Buncombe County.







Woodfin Vicinity Map
 NTS

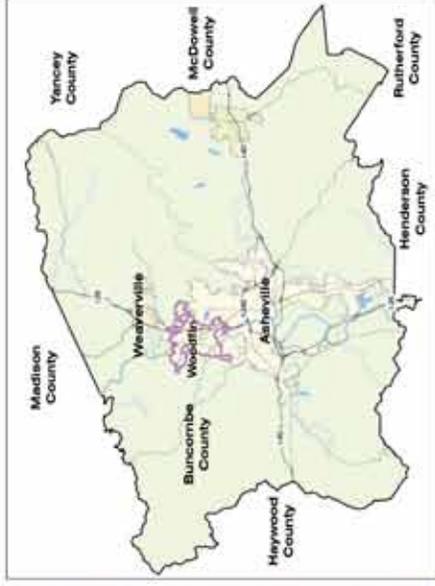
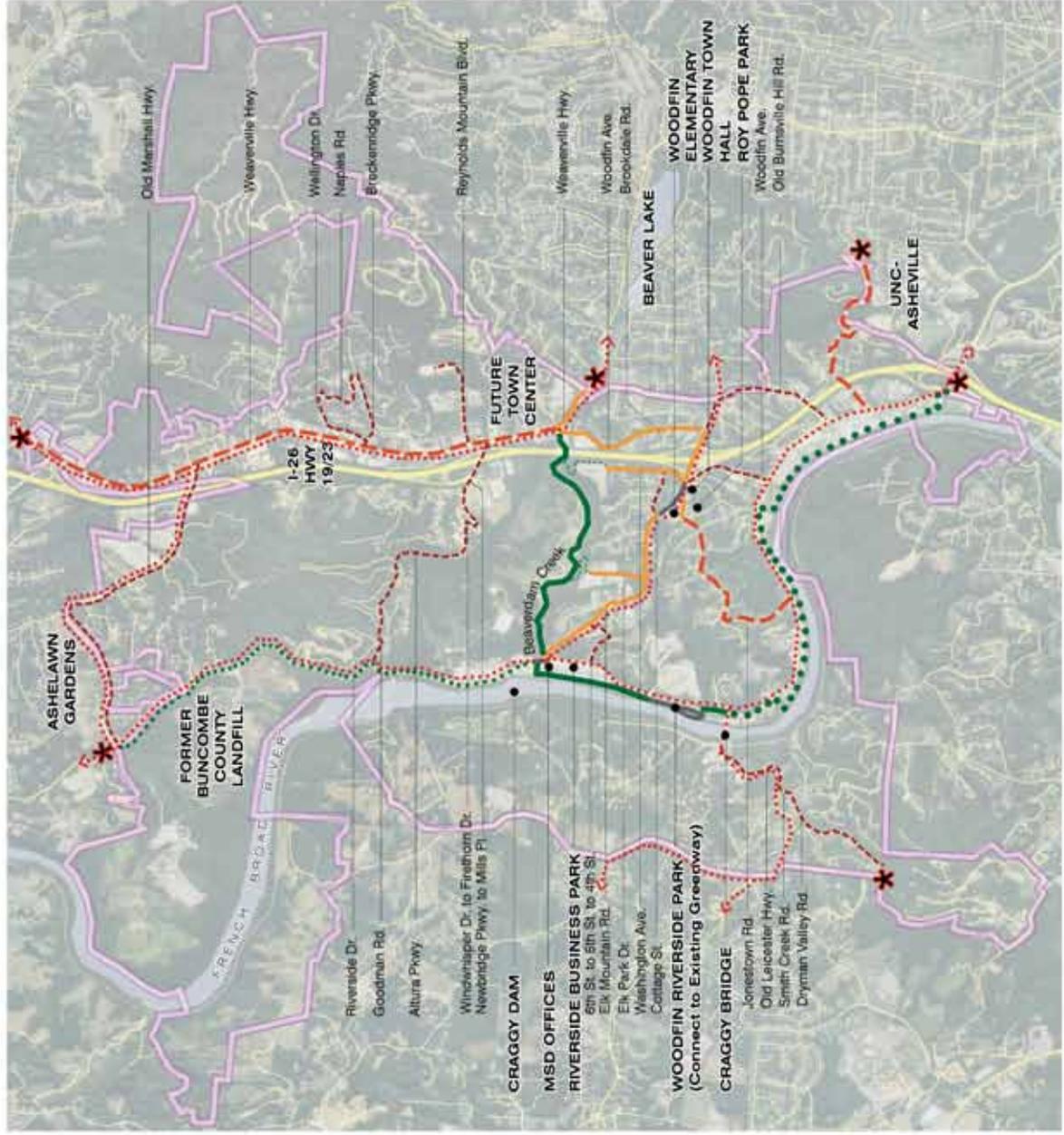
**TOWN OF WOODFIN
 NORTH CAROLINA
 GREENWAYS, SIDEWALKS & BIKEWAYS
 COMPREHENSIVE PLAN**

LEGEND

- Existing Sidewalk or Greenway
- NCDOT Designated Bike Routes
- Woodfin Town Limits
- Greenways Phase I
- Greenways Phase II
- Greenways Phase III
- Sidewalks Phase I
- Sidewalks Phase II
- Sidewalks Phase III
- Connection Opportunity to Neighboring Existing or Proposed Pedestrian Facilities

0 1200 2400 4800

April 2010
 GREEN PLAN



Woodfin Vicinity Map
 nts

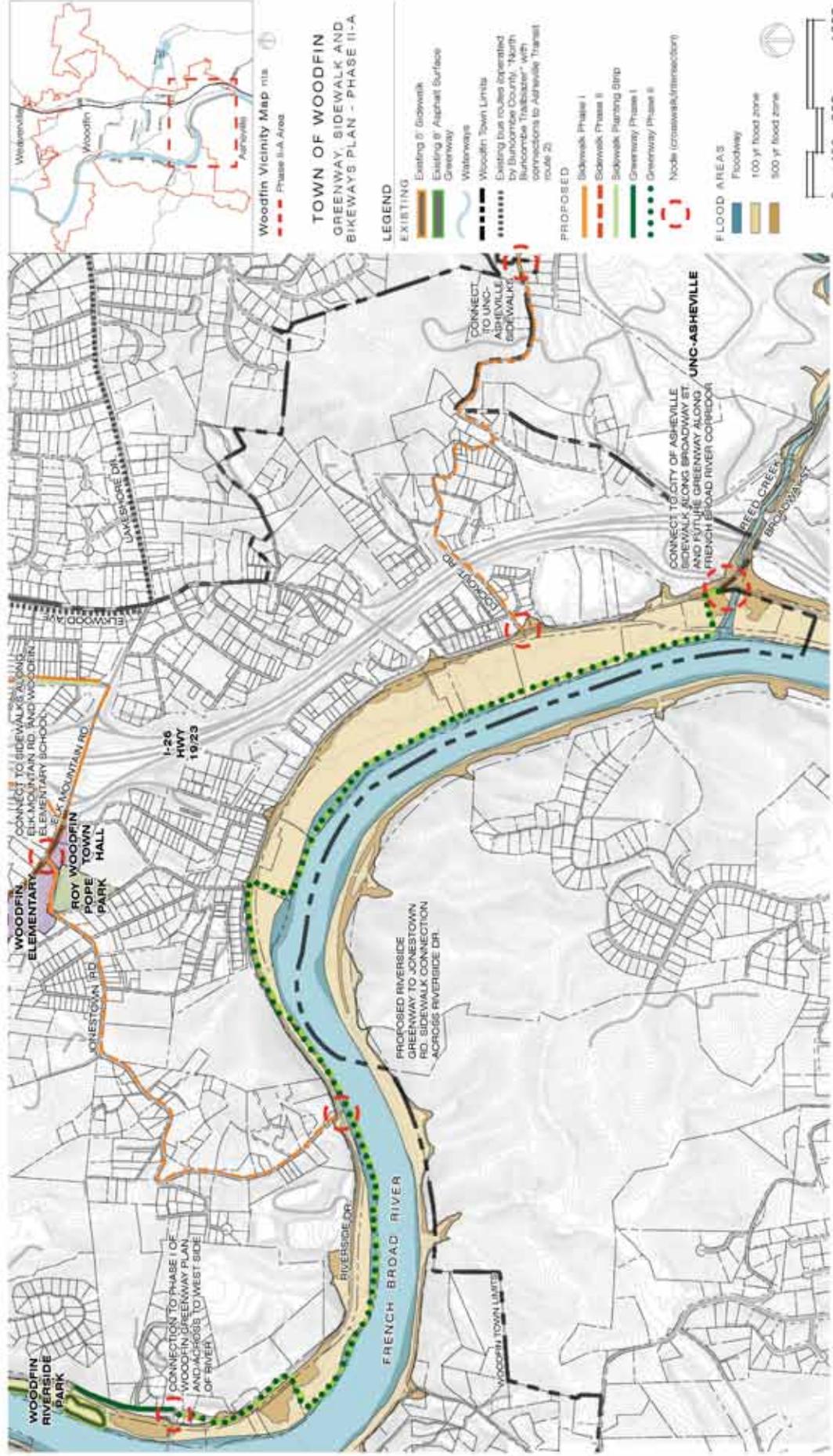
**TOWN OF WOODFIN
 NORTH CAROLINA
 GREENWAYS, SIDEWALKS & BIKEWAYS
 COMPREHENSIVE PLAN**

LEGEND

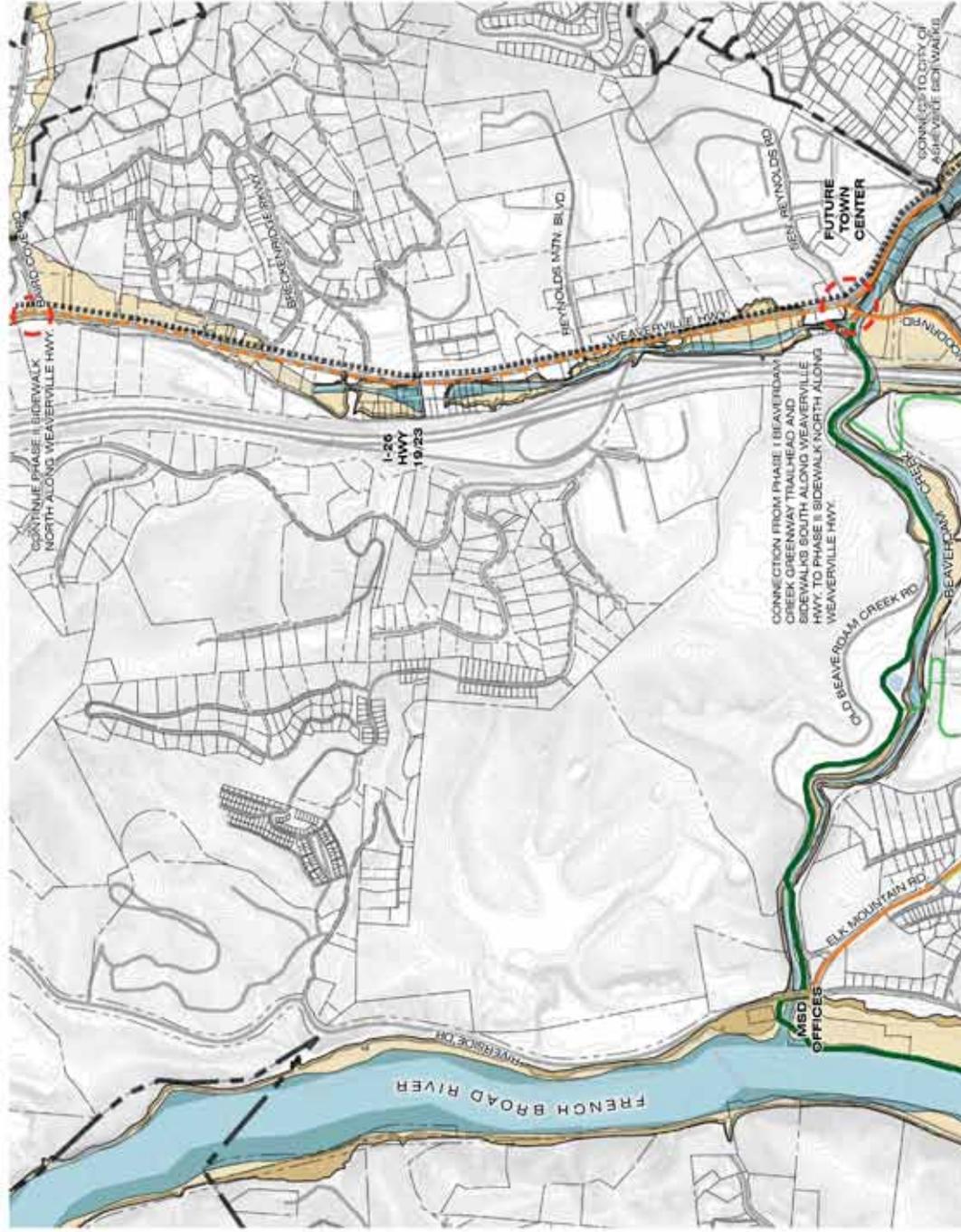
- Existing Sidewalk or Greenway
- NCDOT Designated Bike Routes
- Woodfin Town Limits
- Greenways Phase I
- Greenways Phase II
- Greenways Phase III
- Sidewalks Phase I
- Sidewalks Phase II
- Sidewalks Phase III
- Connection Opportunity to Neighboring Existing or Proposed Pedestrian Facilities



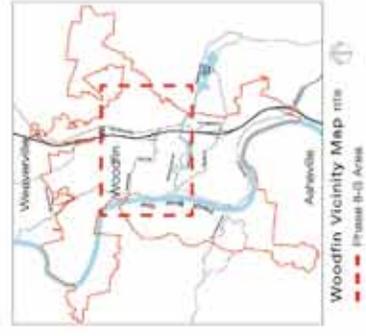
APRIL 2010
 GREEN PLAN



Town of Woodfin, North Carolina
 Proposed Greenway, Sidewalk and Bikeways Plan
 Phase II-A Plan



Town of Woodfin, North Carolina
 Proposed Greenway, Sidewalk and Bikeways Plan
 Phase II-B Plan



**TOWN OF WOODFIN
 GREENWAY, SIDEWALK AND
 BIKEWAYS PLAN - PHASE II-B**

LEGEND

- EXISTING**
- Existing Sidewalk
 - Existing Asphalt Surface
 - Greenway
 - Waterways
 - Woodfin Town Limits
 - Existing bus routes (operated by Buncombe County, "North Buncombe Trailblazer" with connections to Asheville Transit route 2)
- PROPOSED**
- Sidewalk Phase I
 - Sidewalk Phase II
 - Sidewalk Paving Strip
 - Greenway Phase I
 - Greenway Phase II
 - Node (greenway/intersection)

- FLOOD AREAS**
- Floodway
 - 100 yr flood zone
 - 500 yr flood zone





**TOWN OF WOODFIN
 GREENWAY, SIDEWALK AND
 BIKEWAYS PLAN - PHASE II-C**

LEGEND

EXISTING

- Existing Sidewalk
- Existing Asphalt Surface
- Greenway
- Waterways
- Woodfin Town Limits
- Existing bus routes (operated by Buncombe County "North Buncombe Trailways" with connections to Asheville Transit route 2)

PROPOSED

- Sidewalk Phase I
- Sidewalk Phase II
- Sidewalk Planting Strip
- Greenway Phase I
- Greenway Phase II

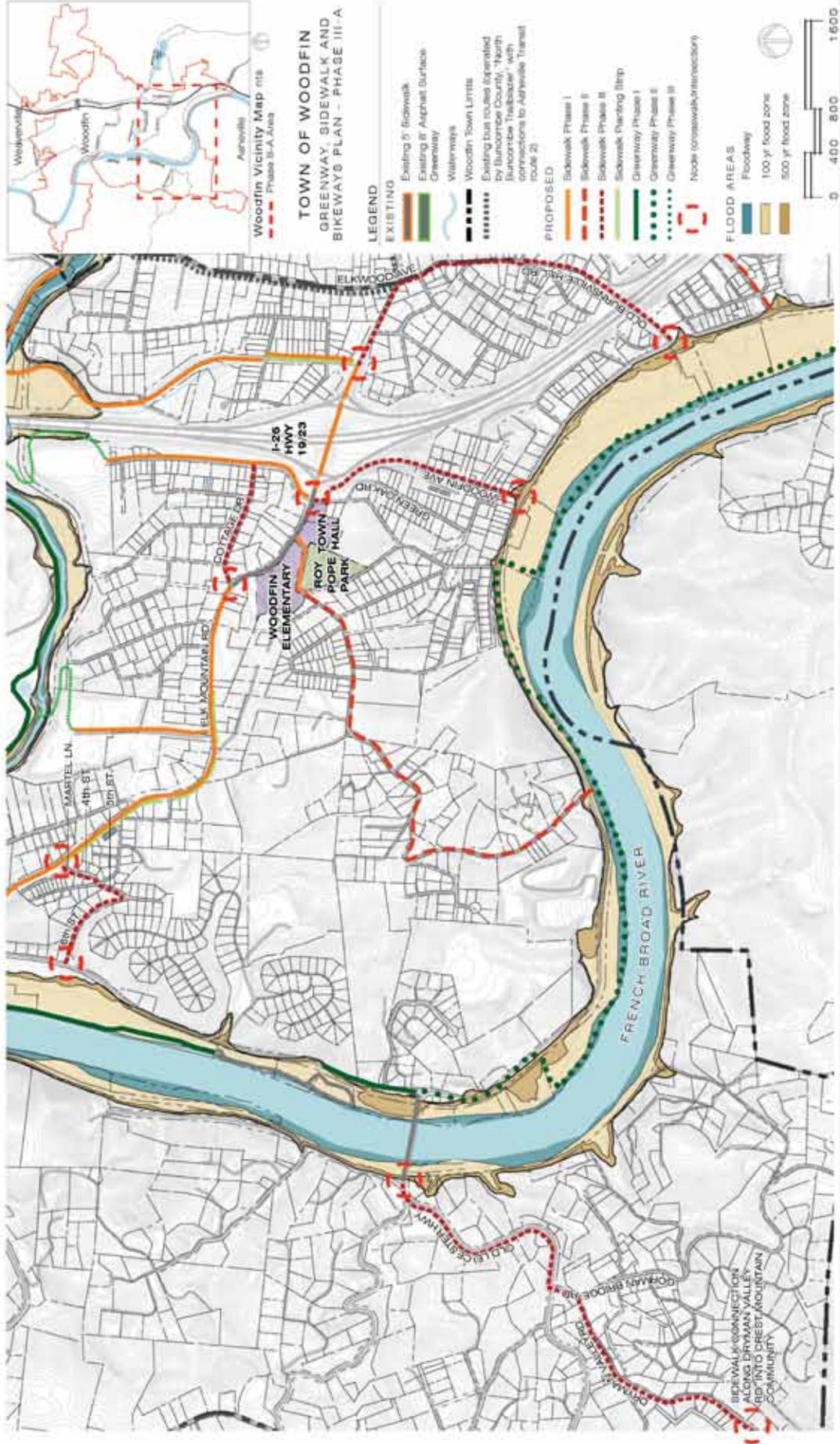
Node (sidewalk/intersection)

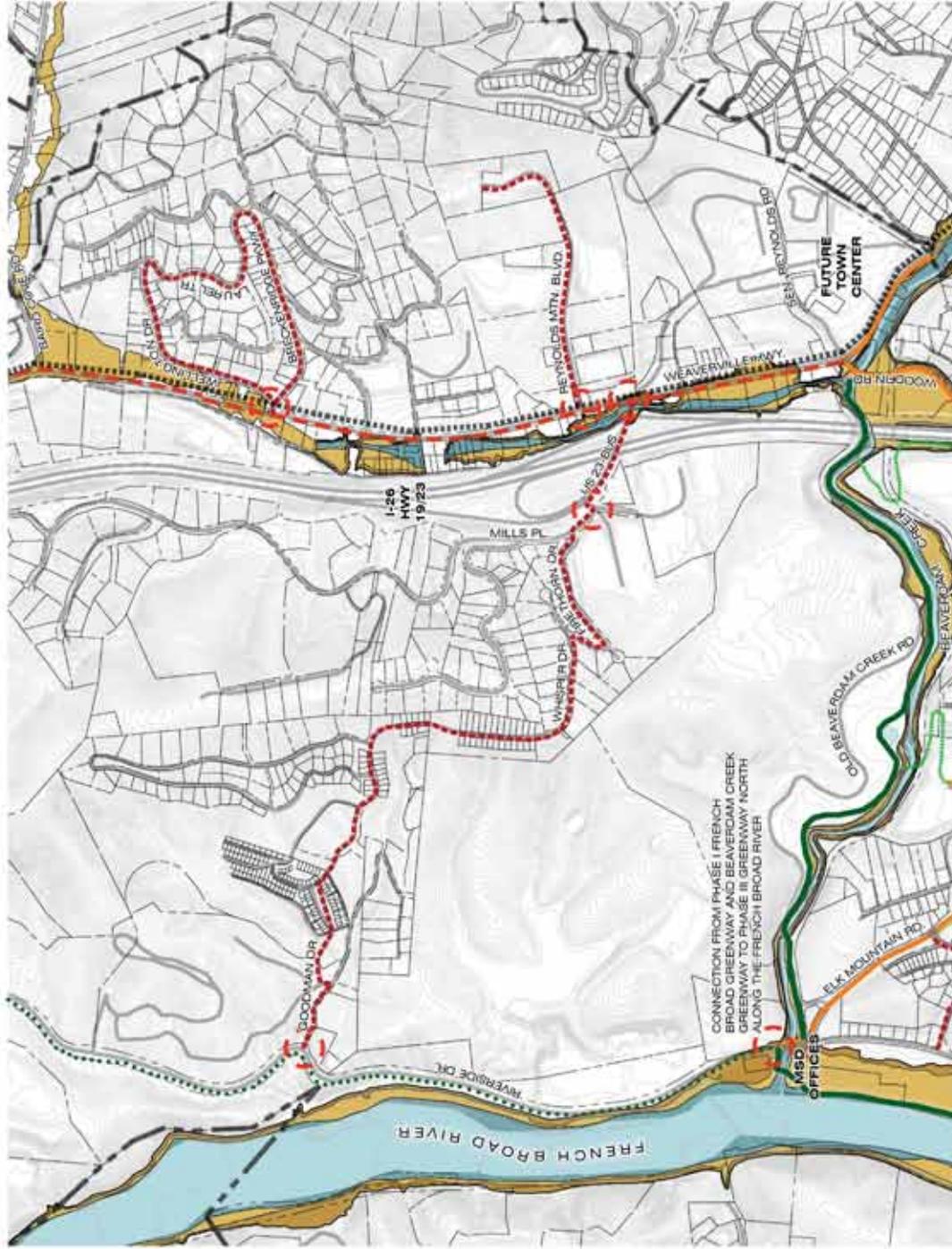
FLOOD AREAS

- Floodway
- 100 yr flood zone
- 500 yr flood zone

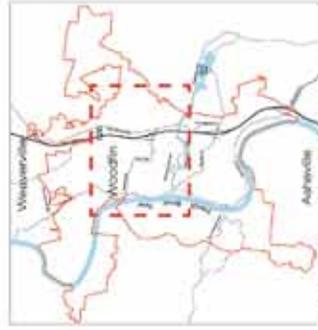
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March 2010





Town of Woodfin, North Carolina
 Proposed Greenway, Sidewalk and Bikeways Plan
 Phase III-B Plan



Woodfin Vicinity Map title
 --- Phase III-B Area

**TOWN OF WOODFIN
 GREENWAY, SIDEWALK AND
 BIKEWAYS PLAN - PHASE III-B**

LEGEND

EXISTING

- Existing 5' Sidewalk
- Existing 8' Asphalt Surface
- Greenway
- Waterways
- Woodfin Town Limits
- Existing bus routes operated by Buncombe County, "North Buncombe Transfer" with connections to Asheville Transit route 25

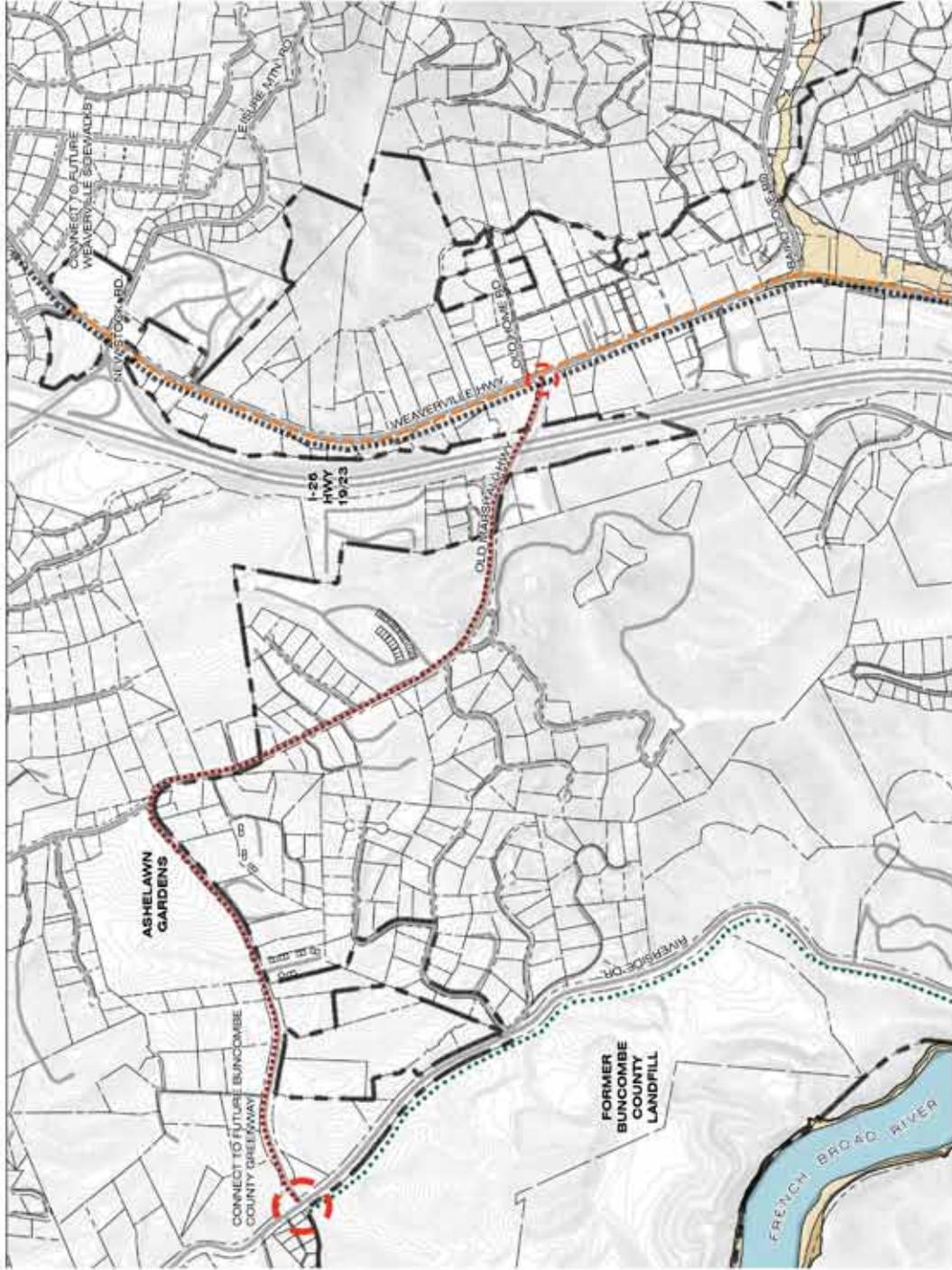
PROPOSED

- Sidewalk Phase I
- Sidewalk Phase II
- Sidewalk Phase III
- Sidewalk Planting Strip
- Greenway Phase I
- Greenway Phase II
- Greenway Phase III
- Node (crosswalk/intersection)

FLOOD AREAS

- Floodway
- 100 yr flood zone
- 500 yr flood zone

0 400 800 1600



**TOWN OF WOODFIN
 GREENWAY, SIDEWALK AND
 BIKEWAYS PLAN - PHASE III-C**

LEGEND

EXISTING

- Existing Sidewalk
- Existing B' Alphabet Surface
- Greenway
- Waterways
- Woodfin Town Limits
- Existing bus routes (operated by Buncombe County, "North Buncombe Trailblazer" with connections to Asheville Transit route 2)

PROPOSED

- Sidewalk Phase I
- Sidewalk Phase II
- Sidewalk Phase III
- Sidewalk Parking Strip
- Greenway Phase I
- Greenway Phase II
- Greenway Phase III
- Node (sidewalk/greenway)

FLOOD AREAS

- Floodway
- 100 yr flood zone
- 500 yr flood zone

Scale: 0 400 800 1600

March 2010

Town of Woodfin, North Carolina
 Proposed Greenway, Sidewalk and Bikeways Plan
 Phase III-C Plan



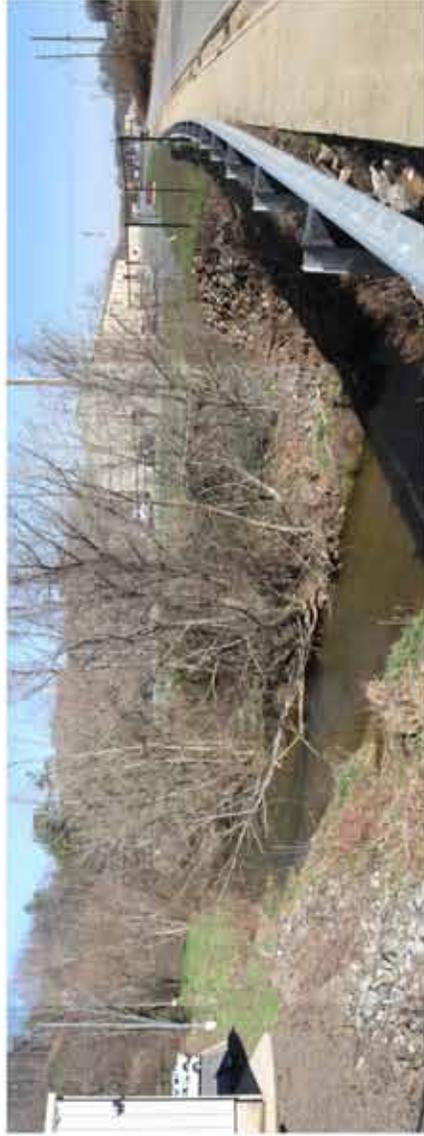
EXISTING VIEW LOOKING NORTH ACROSS PICNIC AREA TOWARDS CRAIGY DAM.



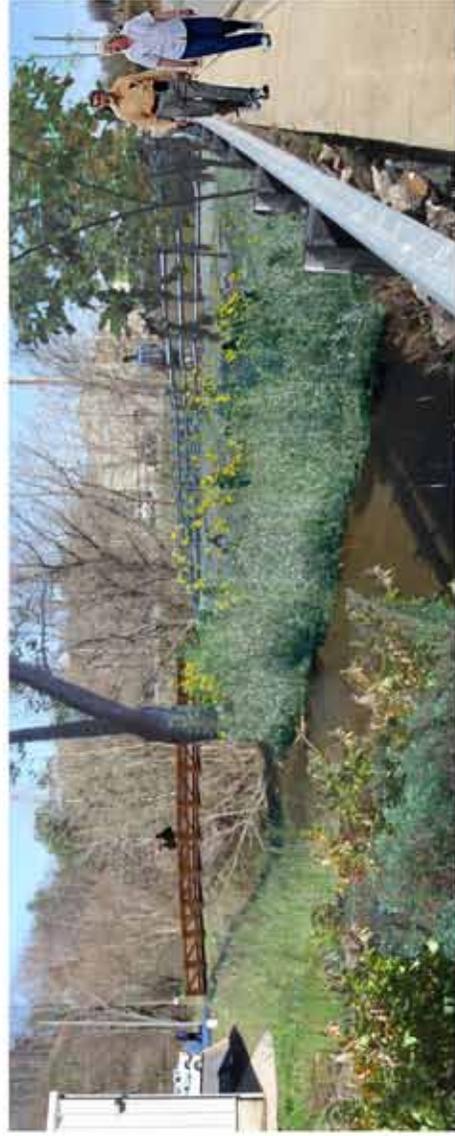
ILLUSTRATIVE VIEW OF PROPOSED GREENWAY WITH SPLIT RAIL FENCE SEPARATING MSD PICNIC AREA FROM PUBLIC GREENWAY



TOWN OF WOODFIN
 ILLUSTRATIVE OF PROPOSED GREENWAY AT PERIMETER
 OF MSD OFFICE PICNIC AREA



EXISTING VIEW LOOKING NORTH ALONG RIVERSIDE DRIVE SIDEWALK



PROPOSED GREENWAY RUNNING AT THE TOP OF THE NORTH BANK ALONG BEAVERDAM CREEK AND PROPOSED PEDESTRIAN BRIDGE



0 40 80 160

TOWN OF WOODFIN
 ILLUSTRATIVE OF PROPOSED GREENWAY AT PERIMETER
 OF MSD OFFICES