PEDESTRIAN TRANSPORTATION PLAN

for the **City of Belmont, North Carolina**

Prepared for:
The City of Belmont, North Carolina *and*
The North Carolina Department of Transportation,
Division of Bicycle and Pedestrian Transportation

Division of Bicycle & Pedestrian Transportation

Prepared By:
Greenways Incorporated

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1 INTRODUCTION

CHAPTER OUTLINE:

OVERVIEW

In 2008, the City of Belmont applied for and was awarded a grant from the North Carolina Department of Transportation (NCDOT) to develop this Pedestrian Transportation Plan. This Plan combines past planning efforts with new research and analysis, and includes a full public input process. The result is a complete, up-to-date framework for moving forward with tangible pedestrian transportation improvements.

The City already features an excellent pedestrian-friendly historic downtown area. This plan will expand on downtown's example of sidewalks and visible crosswalks, bringing such features to other areas of the City. Beyond physical improvements, this plan also outlines policies and programs to help encourage people to walk more often, drive more safely, and to grow as a City with the needs of pedestrians taken into full consideration.

VISION *and* GOALS *for* IMPROVING PEDESTRIAN TRANSPORTATION

The following vision and goals were initially developed out of the City's planning grant application and include input from committee meetings and public workshops. The statements below apply to both the Plan itself, and the desired outcome of its implementation:

Belmont's Pedestrian Plan Vision Statement:

"The purpose of this plan is to provide recommendations for making the City of Belmont a place where people can walk safely to their destinations—to schools, places of work, parks—and for daily errands, socializing, and exercise. The City of Belmont's vision for its pedestrian transportation system is to reduce dependence on motorized travel by connecting the various parts of the city with one another through sidewalks, safe street crossings, and greenways. This plan will identify where greenways should be developed and provide strategies to fill the gaps in the existing sidewalk network. The overall network of pedestrian facilities that is developed as a result of this plan will have a positive impact on the transportation habits of residents, while improving both the health of citizens and overall quality of life."

Kick-Off Meeting, January 2009.

PLANNING PROCESS

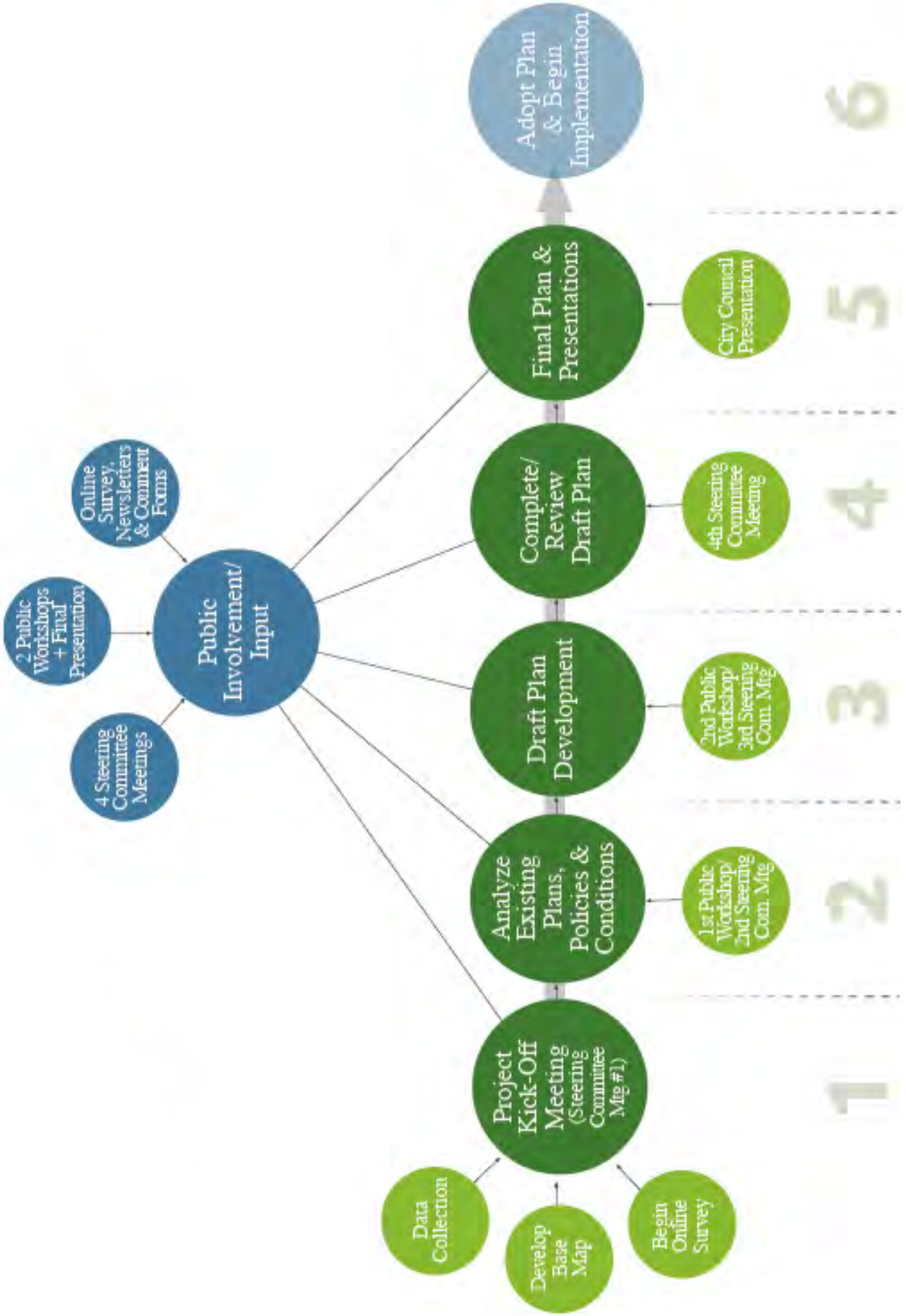
This planning process began with a 'kick-off' meeting in early 2009, followed by public workshops and development of a draft plan (see 'Planning Process Flow Chart, on page 3). The plan communicates the current conditions for walking in Belmont, recommends improvements, and outlines strategies to carry out those recommendations. Public participation (through workshops, steering committee meetings, and the online survey) played a key role in plan development.

PUBLIC BENEFITS *of* PEDESTRIAN TRANSPORTATION

When considering the dedication in time and valuable resources that it will take to fulfill the goals of this plan, it is also important to measure the immense value of pedestrian transportation. Walking helps to improve people's health and fitness, enhance environmental conditions, decrease traffic congestion, and will contribute to a greater sense of community.

Scores of studies from experts in the fields of public health, urban planning, urban ecology, real estate, transportation, sociology, and economics have supported such claims and have acknowledged the substantial value of supporting walking as it relates to active living and alternative transportation. Communities across the United States and throughout the world are implementing strategies for serving the walking needs of their residents, and have been doing so for many years. They do this because of their obligations to promote health, safety and welfare, and also because of the growing awareness of the many benefits of walking.

PLANNING PROCESS FLOW CHART



INCREASED HEALTH *and* PHYSICAL ACTIVITY

A growing number of studies show that the design of our communities—including neighborhoods, towns, transportation systems, parks, trails and other public recreational facilities—affects people's ability to reach the recommended daily 30 minutes of moderately intense physical activity (60 minutes for youth). According to the Centers for Disease Control and Prevention (CDC), "physical inactivity causes numerous physical and mental health problems, is responsible for an estimated 200,000 deaths per year, and contributes to the obesity epidemic." The increased rate of disease associated with inactivity reduces quality of life for individuals and increases medical costs for families, companies, and local governments.

The CDC determined that creating and improving places to be active could result in a 25 percent increase in the number of people who exercise at least three times a week.

The CDC determined that creating and improving places to be active could result in a 25 percent increase in the number of people who exercise at least three times a week. This is significant considering that for people who are inactive, even small increases in physical activity can bring measurable health benefits . The establishment of a safe and reliable network of sidewalks and trails in Belmont will have a positive impact on the health of local residents. The Rails-to-Trails Conservancy puts it simply: "Individuals must choose to exercise, but communities can make that choice easier."

ECONOMIC BENEFITS

Walking is an affordable form of transportation. According to the Pedestrian and Bicycle Information Center (PBIC), of Chapel Hill, NC, the cost of operating a car for a year is approximately $5,170, while walking is virtually free. The PBIC explains, "When safe facilities are provided for pedestrians and bicyclists, more people are able to be productive, active members of society. Car ownership is expensive, and consumes a major portion of many Americans' income."

Walking becomes even more attractive from an economic standpoint when the rising price of oil (and decreasing availability) is factored into the equation. The unstable cost of fuel reinforces the idea that local communities should be built to accommodate people-powered transportation, such as walking and biking. Belmont's traditional mixed-use and generally compact land development pattern, combined with new strategies for improving pedestrian transportation, could allow for a local reduction in auto- and oil-dependency.

From a real estate standpoint, consider the positive impact of trails and greenways, which are essential components of a complete pedestrian network. According to a 2002 survey of homebuyers by the National Association of Home Realtors and the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of 18 choices (incidentally, 'highway access' ranked first). Additionally, the study found that 'trail availability' outranked 16 other options including security, ball fields, golf courses, parks, and access to shopping or business

centers. Findings from the American Planning Association (How Cities Use Parks for Economic Development, 2002), the Rails-to-Trails Conservancy (Economic Benefits of Trails and Greenways, 2005), and the Trust for Public Land (Economic Benefits of Parks and Open Space, 1999) further substantiate the positive connection between trails and property values across the country.

ENVIRONMENTAL IMPROVEMENTS

When people choose to get out of their cars and walk, they make a positive environmental impact. They reduce their use of gasoline, which then reduces the volume of pollutants in the air. Other environmental impacts can be a reduction in overall neighborhood noise levels and improvements in local water quality as fewer automobile-related discharges wind up in the local rivers, streams, and lakes. Furthermore, every car trip replaced with a pedestrian trip reduces U.S. dependency on fossil fuels, which is a national goal.

Trails and greenways are also part of the pedestrian network, conveying their own unique environmental benefits. Greenways protect and link fragmented habitat and provide opportunities for protecting plant and animal species. Aside from connecting places without the use of air-polluting automobiles, trails and greenways also reduce air pollution by protecting large areas of plants that create oxygen and filter air pollutants such as ozone, sulfur dioxide, carbon monoxide and airborne particles of heavy metal. Finally, greenways improve water quality by creating a natural buffer zone that protects streams, rivers and lakes, preventing soil erosion and filtering pollution caused by agricultural and road runoff.

Environmental benefits can be further promoted through walking by offering interpretive signs that educate passers by about the local environment and environmental systems.
(Photo from americantrails.org)

TRANSPORTATION BENEFITS

In 2001, the National Household Travel Survey found that roughly 40% of all trips taken by car are less than two miles. By taking these short trips on foot, rather than in a car, citizens can have a substantial impact on local traffic and congestion. Additionally, many people do not have access to a vehicle or are not able to drive. An improved pedestrian network provides greater and safer mobility for these residents.

According to the Brookings Institution, the number of older Americans is expected to double over the next 25 years. All but the most fortunate seniors will confront an array of medical and other constraints on their mobility even as they continue to seek an active community life. Senior citizens deserve access to independent mobility, and providing safe place for them to walk is an essential factor in meeting this important need.

Children under the age of 16 also deserve access to safe mobility. According to the U.S. Environmental Protection Agency, fewer children walk or bike to school than did so a generation ago: In the past few decades, the percent of students between the ages of five and 15 who walked or biked to or from school has dropped from roughly 50% to about 15%.

By walking for our trips that are less than 2 miles, we could eliminate 40% of local car trips.

QUALITY OF LIFE

Many factors go into determining the quality of life for the citizens of a community: the local education system, prevalence of quality employment opportunities, and affordability of housing are all items that are commonly cited. Increasingly though, citizens claim that access to alternative means of transportation and access to quality recreational opportunities such as parks and greenways, are important factors for them in determining their overall pleasure within their community. Communities with such amenities can attract new businesses, industries, and in turn, new residents. Furthermore, quality of life is positively impacted by walking through the increased social connections that take place by residents being active, talking to one another and spending more time outdoors and in their communities.

2 EXISTING CONDITIONS

CHAPTER OUTLINE:

OVERVIEW

Belmont started as a textile town that was developed in the late 1800's and early 1900's, made up of a series of mill villages. These mill villages were true mixed-use developments of small houses surrounding the textile mills. The textile companies built churches, schools, and general stores around their mills to serve their employees and their families. Since the employees did not own motorized vehicles, these mill villages were dense, compact villages with sidewalks lining the streets. The New Urbanism planning movement seeks to replicate how Belmont was originally developed. "Mixed-use" and "pedestrian-friendly" are more than buzz words in Belmont; they are inherent in the culture and history of the city.

From these humble beginnings, the City of Belmont has grown and expanded beyond a series of dense villages, and now includes many areas that are challenging for pedestrians and pedestrian planning. This chapter assess Belmont's existing conditions for pedestrians—both good and bad—and also examines what the City is currently doing to improve pedestrian conditions.

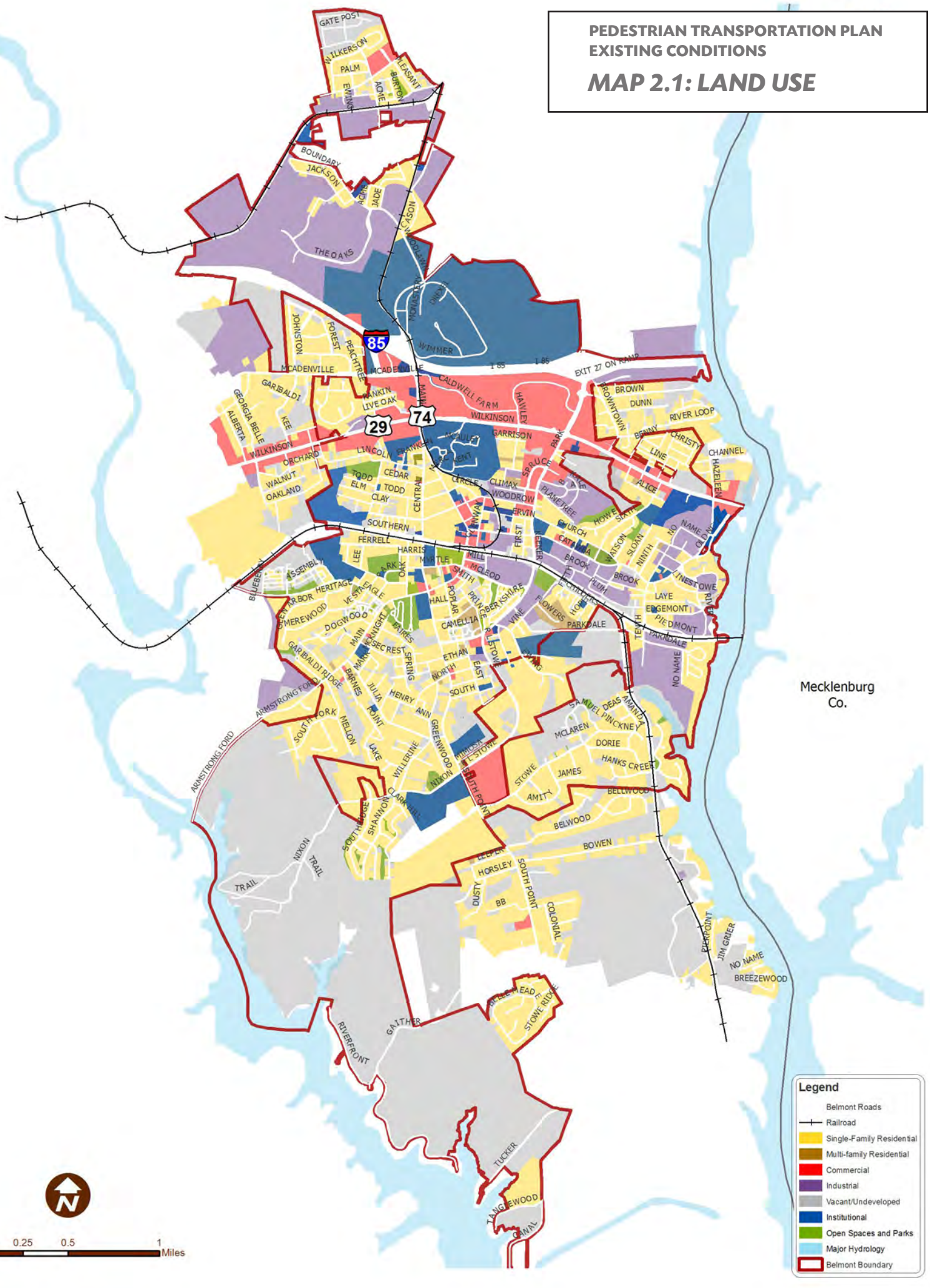
LAND USE *and* DEVELOPMENT

Belmont has seen significant residential growth in the past ten years as Charlotte has grown into a national banking center. Belmont is located on the South Point Peninsula, surrounded by the South Fork River on the west and the Catawba River on the east. This geographical constraint has required Belmont to develop as a compact town centered on its downtown (see Land Use Map, page 10). With the extension of the City's sanitary sewer system down the peninsula, many new residential neighborhoods have been developed. The opening of the Daniel Stowe Botanical Garden in the 1990's and the US National Whitewater Center in 2006 has brought more and more visitors and new residents to Belmont.

In 1995, the City of Belmont adopted its Land Development Code, which required 5' wide sidewalks on one side of the street in all new residential developments and 5' wide sidewalks in front of all new non-residential development. By 2003, the City Council updated its zoning ordinance and required 5' wide sidewalks on both sides of new residential streets and a 6' wide planting strip separating the sidewalk from the street. All non-

PEDESTRIAN TRANSPORTATION PLAN
EXISTING CONDITIONS

MAP 2.1: LAND USE



residential development is required to install an 8' wide sidewalk and a 6' planting strip along its street frontage. (For more policy-related information, see Chapter Four: Programs and Policies).

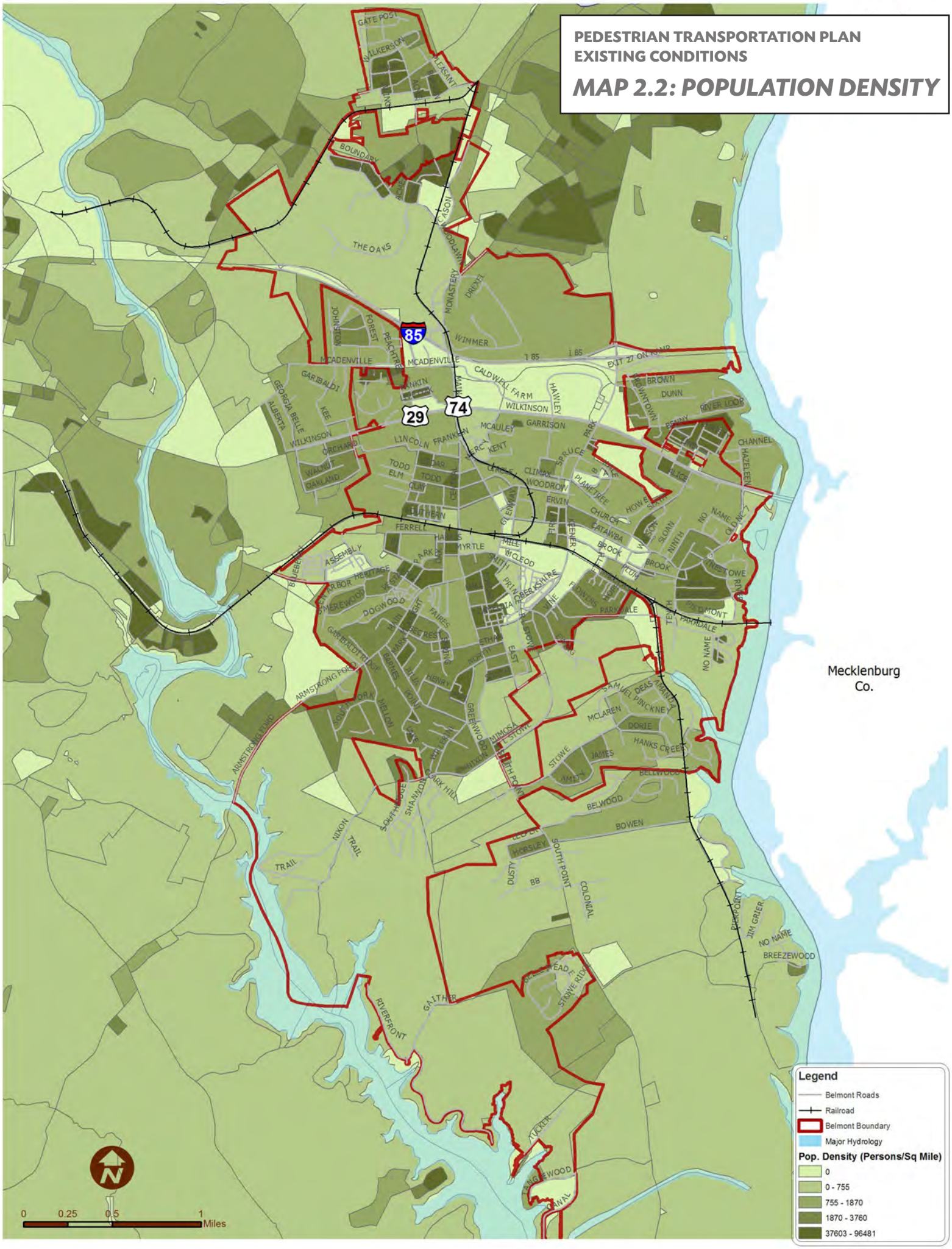
DEMOGRAPHICS

Aside from the 2008-estimated population for the City of Belmont (9,307), most of the demographic information in this section relies on data from the 2000 Census. As of the writing of this plan in 2009, this data is dated, yet remains a useful gauge of the demographic make up of the City.

In the 2000 Census, there were 3,348 households (including 2,226 families) residing in the city. Of all households, half were married couples, a third were made up of individuals, and about a third had children. More than 10% of all households had a senior citizen living alone. The average household size was 2.4 and the average family size was three. Belmont's population was spread out in 2000 in terms of age, with roughly 23% as children under 18, 64% as adults, and 13% who were 65 years of age or older. The median age was 35 years.

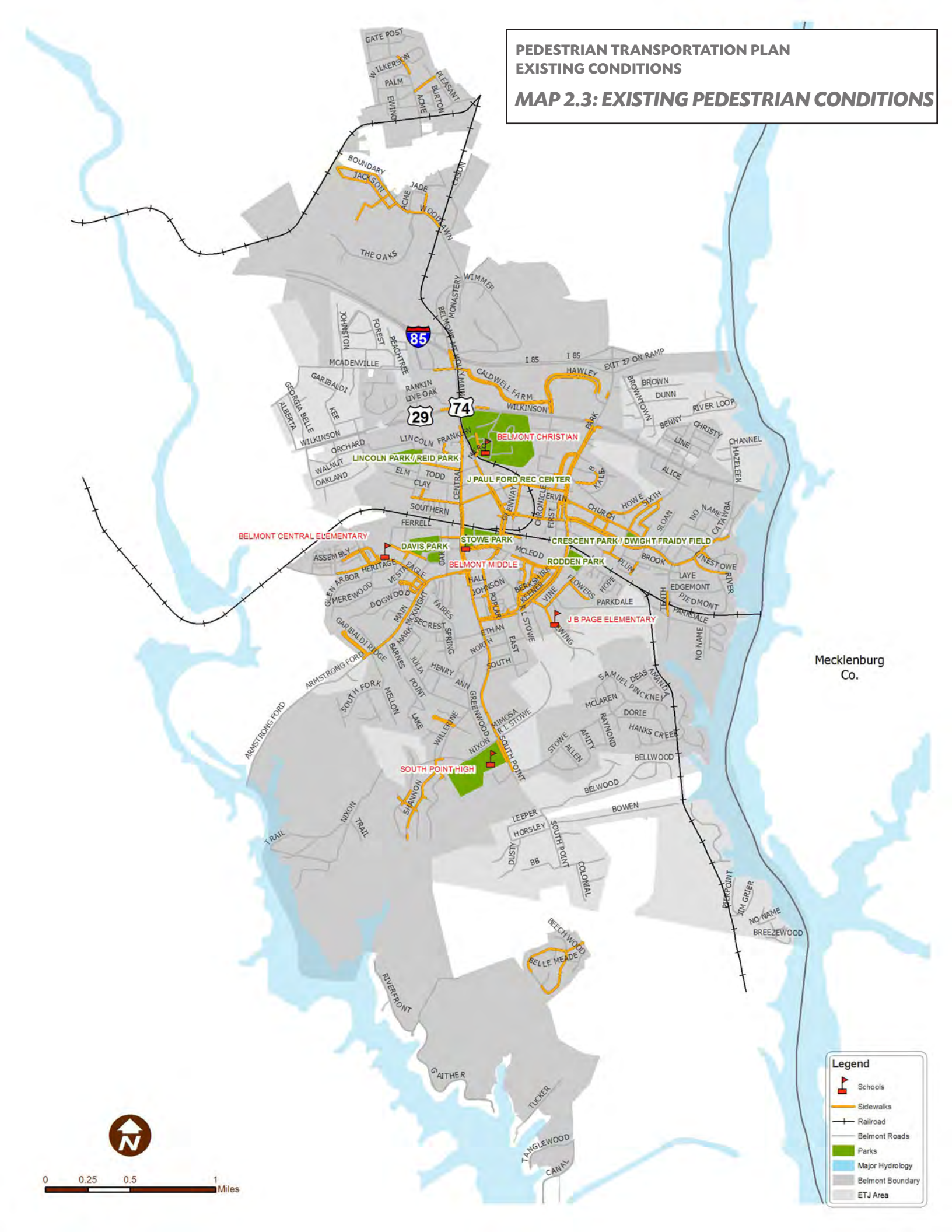
The population density was about 1,000 people per square mile, with relatively even distribution within a mile of downtown, and less density outside of that area (see Population Density Map, page 12). The city was roughly 85% White, 10% African American, and 5% from other races.

The median income for a family in the city was $46,765 and the per capita income for the city was $20,065. About 7% of families and 10% of the population were below the poverty line, including 10% of those under age 18 and 14% of those over the age of 65.


PEDESTRIAN TRANSPORTATION PLAN
EXISTING CONDITIONS
MAP 2.2: POPULATION DENSITY
Mecklenburg Co.
Legend
Belmont Roads
Railroad
Belmont Boundary
Major Hydrology
Pop. Density (Persons/Sq Mile)
0
0 - 755
755 - 1870
1870 - 3760
37603 - 96481
0 0.25 0.5 1 Miles

PEDESTRIAN TRANSPORTATION PLAN
EXISTING CONDITIONS

MAP 2.3: EXISTING PEDESTRIAN CONDITIONS



TRIP ATTRACTORS

The term 'trip attractors' refers to places which people commonly walk to or from, or places they would like to walk to or from with improved pedestrian facilities. Some of these key destinations are described below.

Downtown: Belmont has a thriving downtown area that is surrounded by older, well-established neighborhoods. The downtown area was developed on a modified grid street system with sidewalks on at least one side of each street, making the downtown very walkable.

Belmont Abbey College: Belmont is also home to the Southern Benedictine Society and Belmont Abbey College. Founded in 1876, Belmont Abbey College has a current enrollment of 1,330 students from 19 different countries. The City of Belmont would like a pedestrian plan to help connect the downtown area to Belmont Abbey College to the north and the South Point Peninsula and Daniel Stowe Botanical Garden to the south. There is an old and unused railroad line that runs from North Belmont, through the Belmont Abbey College campus, over Interstate 85, and into Downtown Belmont. This railroad line would make an ideal pedestrian connection between these areas.

Daniel Stowe Botanical Garden: The Daniel Stowe Botanical Garden is located to the southwest of town, across the South Fork River from the peninsula. This major tourist attraction and Belmont landmark needs to be connected to Belmont through a system of sidewalks, greenways, and trails. This connection would help both the Garden and the City.

South Fork River and the Catawba River: Belmont is located on the South Point Peninsula and is bordered by the South Fork River to the west and the Catawba River to the east. These two beautiful rivers could provide recreation opportunities if there were greenways and trails that could connect the downtown to these two water features. The peninsula has seen residential growth over the past twenty years, some of it when the City did not require sidewalks. A pedestrian transportation plan would help the City to connect these residential areas to one another and to the rivers.

Schools: Schools also serve as trip attractors, including Belmont Central Elementary (310 Eagle Road), Page Primary (215 Ewing Drive), North Belmont Elementary (210 School Street), Belmont Middle School (110 Central Avenue), and South Point High School (906 South Point Road). Larger campuses such as Belmont Abbey and Gaston College are also key destinations for Belmont's pedestrian network.

Parks: City of Belmont parks include Davis Park and Ballfield, Davis Park Tennis Courts, Crescent Park/Dwight Frady Field, Reid Park; Rodden Ballfield, Linford Park, and Stowe Park. Stowe Park is a central attraction of Downtown Belmont, and holds the annual GaribaldiFest, Fall Festival, Summer Celebration, movies, concerts, and has many daily visitors.

PEDESTRIAN CONDITIONS

The central area of Belmont, including Downtown, was developed with 4-5' wide sidewalks on both sides of the street, which in most cases were built against the curb. Belmont's city center was built on a modified grid system with short blocks supporting interconnectivity, so there is a very good pedestrian infrastructure in this area (See Existing Conditions Map, page 13).

Belmont does not have any greenways or trails within its jurisdiction, although several new residential neighborhoods are installing greenways that will connect to one another in the fast-growing area south of downtown. These greenways will be extended to the edges of these neighborhoods for future connection and extension. Additionally, the City recently adopted the Gaston County Greenway Plan, featuring a portion of the Carolina Thread Trail that connects to Downtown Belmont.

There are several potential barriers that could inhibit the development of the pedestrian transportation system in Belmont. Many of the existing developed areas of Belmont have sidewalks, but do not have pedestrian connections to adjacent developments except via the public street. It would take public access easements in order to connect these areas with greenways and trails. There are also narrow right-of-way widths on many of the older streets in Belmont, making it difficult to install sidewalks in areas without them.

Belmont is also separated by Wilkinson Boulevard (Highway 29/74), a 4-6 lane highway with no sidewalks that is difficult and dangerous to walk across, as well as Interstate 85. Signalized intersections in Belmont were inventoried for their existing pedestrian facilities (See Intersection Inventory, page 16).

To the north of Wilkinson Boulevard and Interstate 85 is Belmont Abbey College and a large residential community referred to as North Belmont. Belmont Abbey College is only one mile from downtown Belmont, but students must cross Wilkinson Boulevard to walk there. On a positive note, there is a wide shoulder on an overpass of I-85 that pedestrians can use to cross the Interstate.

INTERSECTION INVENTORY, 2009

Road 1	Road 2	Reason (Major intersection, school, connectivity, etc	Sight Distance	Signage	Stop Light/ Stop Sign	Curb Ramp	Curb Ramp	Curb Radius	Marked Crosswalk	Number and Location of Crosswalks Adequate	Highly Visible	Crosswalk Condition (Good/Fair /Poor)	Advanced stop line	Pedestrian Xing Signal (Y/N)	Curb Extension	Sidewalk	Median Island	Median Island Condition and Width	Estimated Traffic Volume	Speed Limit
Hawley	Park	Commercial	Fair	N	SL	N	-	Wide	N	N	-	-	-	N	N	No	N	-	High	35/45
Park	Wilkinson	Commercial	Good	N	SL	Y	Incomplete	VeryWide (Right Hand Slip Turn)	N	N	-	-	-	N	N	Incomplete	Y	Narrow/ concrete	High	35/45
Park	Plane Tree	Offices/commercial	Poor	N	SL	Y	Incomplete	Not Wide	N	N	-	-	-	N	N	Incomplete	N	-	High	35
Park	Catawba	Mill village connection to Downtown; residnetial	Fair	N	SL	Y	Incomplete	Very wide	N	N	-	-	-	N	N	Incomplete	N	-	High	35
Keener	Ft. William/ Stowe	School; residential	Poor	N	SL	Y	Complete (some with truncated dome)	Wide	Y	N	N	F	Y	N	N	Complete	N	-	Medium	35/45
Keener	South Point	Residential	Good	N	SL	Y	Incomplete	NotWide	N	N	-	-	-	N	N	Incomplete	N	-	Medium	35
South Point	Nixon	High school; residential	Fair	N	SL	Y	Inc (some with truncated dome)	Wide	N	N	-	-	-	N	N	Incomplete	N	-	Medium	35
Central (midblock, uncontrolled)	Between Harris and Myrtle	School; residential	Poor (with parked cars)	Y	-	N	-	-	Y	Y	Y	G	-	N	N	Complete	N	-	Medium	25
Myrtle	Central	School; residential	Good	N	SL	Y	Complete (yetllow truncated domes)	Not Wide	Y	Y	Y	G	Y	N	n	Complete	N	-	Medium	25
Central	Main	School;residential; convenient store; Carolina Thread Trail	Fair	N	SL	Y	Complete (some with truncated dome)	Not Wide	N	-	-	-	-	N	N	Complete	N	-	Medium	25
Main	Myrtle	Downtown; Carolina Thread Trail	Fair	N	SL	Y	Incomplete	Not Wide	Y	N	N	F	Y	N	N	Incomplete	N	-	Medium	25
Main	Catawba	Downtown; Carolina Thread Trail	Fair	N	SL	Y	Complete	Not Wide	Y	Y	N	F	Y	N	N	Complete	N	-	Medium	25
Main	Woodrow	Downtown; Carolina Thread Trail	Fair	N	SL	Y	Incomplete	Not Wide	Y	N	N	F	Y	N	N	Complete	N	-	Medium	35
Central	Woodrow	Near Downtown; School; residential	Fair	N	SL	Y	Incomplete	Not Wide	N	N	-	-	-	N	N	Incomplete	N	-	Medium	25
Main	Wilkinson	Major intersections; Commercial; Carolina Thread Trail	Good	N	SL	Y	Incomplete	Wide	N	N	-	-	-	N	N	Incomplete	Y	Narrow/ concrete	High	35
Main	McAdenville	Major intersection; Commercial	Good	N	SL	N	Incomplete	Very Wide	N	N	-	-	-	N	N	Incomplete	N	-	High	45
Wilkinson	Mercy	Christian School campus; Wal Mart/Lowes	Good	N	SL	N	Incomplete	Very Wide (Right hand slip turn)	N	N	-	-	-	N	N	No	Y	Narrow/ concrete	High	45
Wilkinson	Hawley	Major intersection; Wal-Mart	Good	N	SL	Y	Incomplete	Wide	N	N	-	-	-	Y; not countdown	N	Incomplete	Y	Narrow/ concrete	High	45

REPORTED PEDESTRIAN CRASHES *in* BELMONT, 1990-2008

Since 1990 there have been 40 pedestrian accidents in Belmont, including five fatalities. There were 11 disabling pedestrian accidents, four of which were on Wilkinson Blvd. The following statistics are for the City of Belmont, North Carolina, during the reporting period of January 1, 1990 to October 31, 2008

On Road	*Dir*	*From Road*	*Toward Road*	*Crash Severity*	*Date of the Crash*	*Time of the Crash*
BELMONT MT HOLLY RD		WOODLAWN AVE	FORNEY ST	B-Injury (Evident)	12/7/05	6:50 AM
BELMONT MT HOLLY RD	N	WOODLAWN RD	FORNEY AVE	Property Damage Only	9/9/06	6:41 PM
CATAWBA ST	W	3RD ST	PARK ST	A-Injury (Disabling)	10/12/91	5:57 PM
CATAWBA ST	W	4TH ST	3RD ST	C-Injury (Possible)	2/9/93	7:03 PM
CATAWBA ST	E	NC 273	SECOND ST	Property Damage Only	3/18/04	5:55 PM
CATAWBA STREET	N	NORTH FIRST STREET	ERVIN STREET	B-Injury (Evident)	9/12/00	4:39 PM
CEDAR ST	E	REID ST	CENTRAL AVE	B-Injury (Evident)	6/24/08	7:03 PM
CENTRAL AVE	N	MRYTLE ST	HARRIS ST	C-Injury (Possible)	10/4/99	3:19 PM
CENTRAL AVE	S	N MAIN ST	FRANKLIN ST	Property Damage Only	11/8/01	6:30 PM
CENTRAL AVE	N	FRANKLIN ST	MAIN ST	Not Stated	6/28/07	10:38 AM
CHURCH ST	E	NC 7	THIRD ST	C-Injury (Possible)	3/6/03	5:59 PM
CHURCH ST		3RD ST	PARK ST	Fatal (Killed)	4/18/05	7:23 PM
DILLAN DR	S	NORTH DR	DEAD END RD	A-Injury (Disabling)	11/11/99	5:15 PM
DILLON DR	N	NORTH ST	DEAD END	Property Damage Only	7/11/03	8:40 PM
EAGLE RD	W	VESTA ST	ELIZABETH ST	A-Injury (Disabling)	2/12/91	8:00 AM
EWING DR	N	CHARLES DR	VINE ST	A-Injury (Disabling)	3/2/96	2:26 PM
FLOWERS CT	E	VINE ST	DEAD END	B-Injury (Evident)	9/24/08	9:42 AM
I-85	W	SR 2093	SR 2000	Fatal (Killed)	12/5/96	1:05 AM
I-85	W	SR 2093	NC 7	B-Injury (Evident)	12/10/05	10:25 PM
JULIAN AVE	W	DAVID ST	HUGH ST	A-Injury (Disabling)	1/22/00	9:22 PM
KEENER BLVD		CENTRAL AVE	CATAWBA ST	B-Injury (Evident)	11/27/95	3:20 PM
KENWOOD ST	W	DAVIS ST	MAIN ST	C-Injury (Possible)	4/2/90	5:50 PM
KENWOOD ST		DAVIS ST	NORTH NAIN ST	C-Injury (Possible)	7/14/03	1:14 PM
LINCOLN ST	W	WILKERSON ST	SACCO ST	C-Injury (Possible)	4/8/96	9:59 PM
MAIN ST	S	OAK ST	EAGLE RD	Fatal (Killed)	6/21/90	9:01 PM
NC 273	N	CATAWBA ST	CHURCH ST	B-Injury (Evident)	10/5/95	7:19 AM
NORTH MAIN ST	N	OAK ST	EAGLE RD	Property Damage Only	8/7/07	6:35 PM
PERFECTION AVE	E	CARSON ST	ACME RD	A-Injury (Disabling)	7/21/00	8:06 PM
R I STONE RD	S	NC 273	NOATH ST	B-Injury (Evident)	8/30/02	7:38 AM
US 29	W	NC 273	HAWLEY AVE	A-Injury (Disabling)	6/9/98	6:52 PM
US 29	W	HAWLEY AVE	NORTH MAIN ST	Property Damage Only	8/4/07	11:12 PM
US 29	E	FULLER STREET	CATAWBA STREET	Fatal (Killed)	2/20/08	9:49 PM
US 29	W	MOORES CHAPEL RD	CATAWBA ST	Fatal (Killed)	8/7/08	10:02 PM
VINE ST	N	FLOWERS CT	FIFTH ST	B-Injury (Evident)	7/17/96	5:03 PM
WILKINSON BLVD	E	ARCHIBALD ST	MAIN ST	A-Injury (Disabling)	2/28/91	7:05 PM
WILKINSON BLVD	E	HAWLEY AVE	PARK ST	A-Injury (Disabling)	9/11/91	9:41 PM
WILKINSON BLVD	W	PARK ST	HAWLEY AVE	A-Injury (Disabling)	12/22/94	5:24 PM
WILKINSON BLVD	W	LINCOLN ST	MAIN ST	B-Injury (Evident)	10/16/97	10:16 AM
WILKINSON BLVD	W	WALLACE ST	CREST DR	A-Injury (Disabling)	8/18/99	4:00 PM
WILKINSON BLVD	S	WALLACE ST	FULLER ST	C-Injury (Possible)	7/2/08	5:15 PM

CURRENT PEDESTRIAN USE *and* NEEDS

Public comment regarding pedestrian use and needs in Belmont was gathered during the planning process through a comment form that was made available both online and in hardcopy format. The full results, including responses from more than 230 people, are available in Appendix A. A sample of the responses are shown below. Additionally, the maps on pages 19 and 20 illustrate where people reportedly walk to work the most, and how vehicle ownership is distributed throughout Belmont. These maps should be updated and analyzed further when the 2010 census data is available.

1. How do you rate present pedestrian conditions in the Belmont area? (select one)

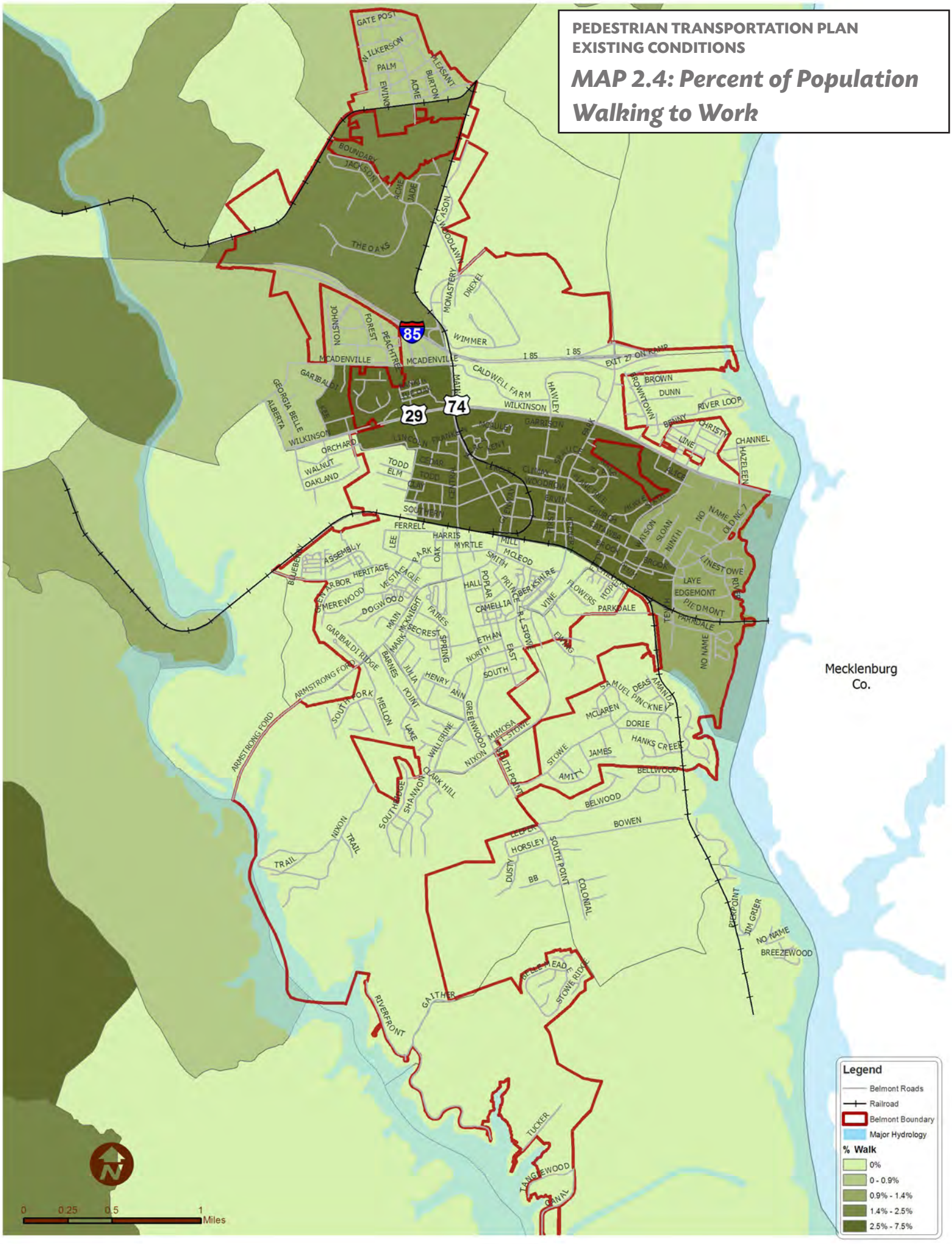
	Response Percent	Response Count
Excellent	12.3%	29
Fair	**72.0%**	**170**
Poor	15.7%	37

9. What walking destinations would you most like to get to? Select all that apply.

	Response Percent	Response Count
Place of work	11.9%	27
School	33.2%	75
Restaurants	80.1%	181
Public Transportation	12.8%	29
Shopping	63.3%	143
Parks	**88.9%**	**201**
Entertainment	54.0%	122
Trails and greenways	81.0%	183
Libraries or recreation centers	57.1%	129

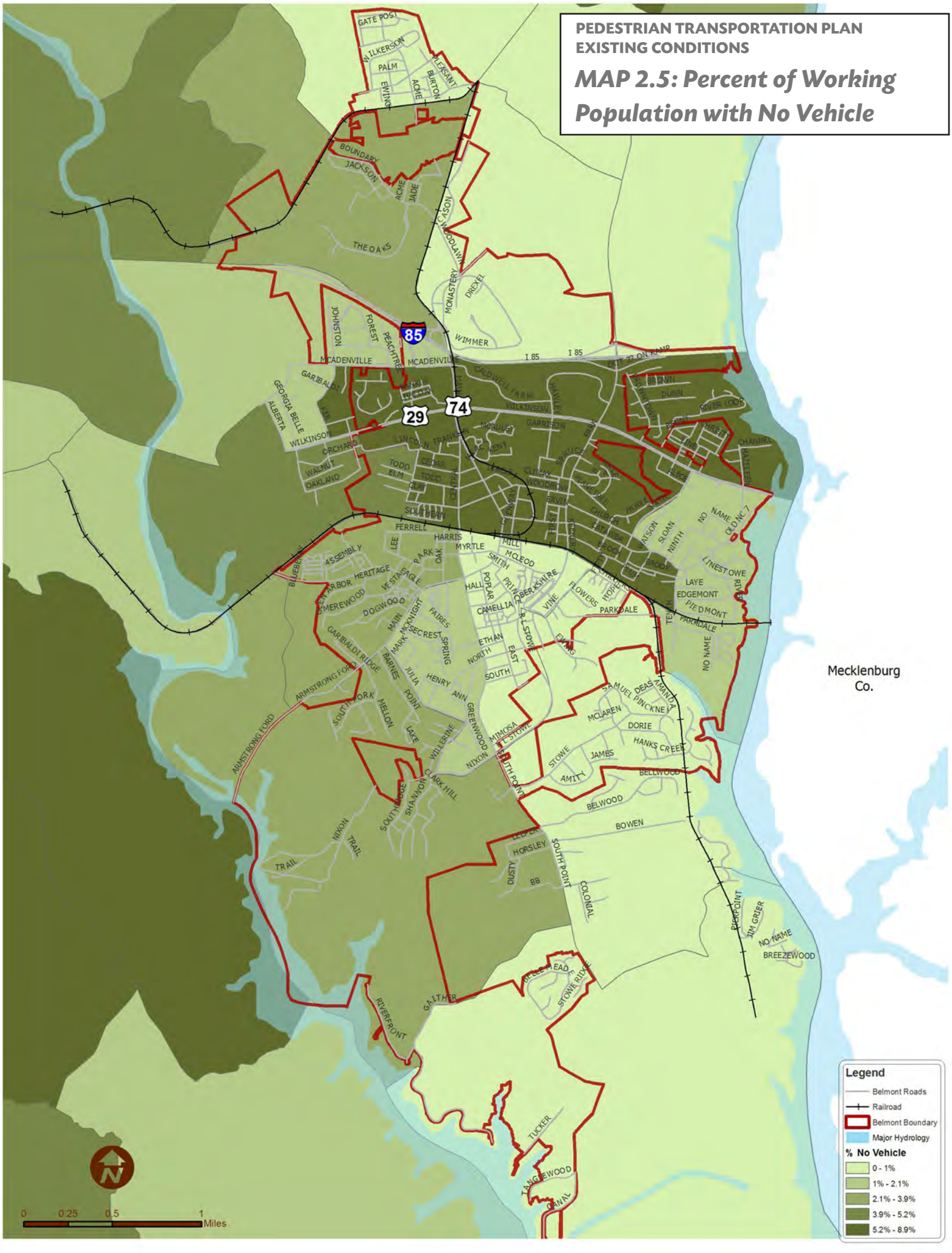
10. What factors discourage walking? Select all that apply.

	Response Percent	Response Count
Lack of sidewalks and trails	**80.1%**	**181**
Lack of crosswalks at traffic signals	41.6%	94
Lack of pedestrian signals at intersections	38.1%	86
Automobile traffic and speed	58.4%	132
Pedestrian unfriendly streets and land uses	57.1%	129
Lack of interest	2.7%	6
Lack of time	14.2%	32
Aggressive motorist behavior	28.8%	65
Sidewalks in need of repair	42.5%	96
Lack of nearby destinations	19.5%	44
Criminal activity	8.4%	19
Level of street lighting	27.9%	63
Lack of landscaping and/or buffer between sidewalks and road	35.8%	81


PEDESTRIAN TRANSPORTATION PLAN
EXISTING CONDITIONS
MAP 2.4: Percent of Population Walking to Work
Mecklenburg Co.
Legend
Belmont Roads
Railroad
Belmont Boundary
Major Hydrology
% Walk
0%
0 - 0.9%
0.9% - 1.4%
1.4% - 2.5%
2.5% - 7.5%
0 0.25 0.5 1 Miles

PEDESTRIAN TRANSPORTATION PLAN
EXISTING CONDITIONS

MAP 2.5: Percent of Working Population with No Vehicle



SUMMARY *of* EXISTING PLANNING EFFORTS

Below is a brief history pedestrian-related planning efforts in Belmont, followed by summaries of existing plans. Some of the plans that are summarized are highly relevant and should be consulted for more information.

BRIEF HISTORY *of* PEDESTRIAN-RELATED PLANNING EFFORTS

2007-2008

The City of Belmont is working with the Carolina Thread Trail on a greenway and trail network in Belmont and in Gaston County, which would eventually connect to the 15 county/2 state Carolina Thread Trail. Gaston County has been selected as a Carolina Thread Trail pilot location and has been awarded a planning grant that will yield a County-Wide Master Greenway Plan.

2007

The Belmont City Council adopted the City's first Comprehensive Land Use and Transportation Plan, which calls for mixed-use and pedestrian-scaled developments, as well as greenways and trails, to connect various parts of the city to one another.

2003

The Belmont Parks and Recreation Master Plan recommended greenways and linear parks to be added to Belmont, but also recommended that a more detailed Greenway Master Plan be conducted.

2002

The Gaston County Comprehensive Plan recommended a countywide greenway system that includes Belmont.

COMPREHENSIVE LAND USE PLAN (2007)

The City of Belmont adopted the land use plan on August 7, 2007 that provides strong recommendations for pedestrian planning efforts. The citizens of Belmont responded in public meetings and survey that walk-ability, sidewalk connections, and greenways are highly important to the future growth of the city. The plan also recommends several village centers that would serve as small commercial areas in each district within Belmont to provide residents with amenities within walking distance. Furthermore, each different type of land use mentioned in the plan provides accommodation for pedestrians through recommendations of sidewalks on both sides of the street, safe and attractive facilities, and connections between each of these types of land uses.

Below are excerpts from the Comprehensive Land Use Plan that demonstrate the commitment that the City of Belmont has already made towards accommodating pedestrians:

"Belmont is a walking community in its historic core and older neighborhoods, and there is a strong sentiment that all of the city should be a walking community. Pedestrian connectivity is needed throughout the community. The two-lane roads outside the city limits are dangerous to walk on." (Section 3 E)

"Walkable aspects of the neighborhood should be incorporated, including sidewalks. Traffic planning should emphasize slower driving speeds that respect pedestrians, children playing, and the residential character of the neighborhood. Convenient connections to other parts of Belmont should be given careful consideration, especially for pedestrians and bicycles." (Section 4 C)

"The streets within the neighborhood should form a connected network. This provides a variety of itineraries and disperses traffic congestion. They should also be relatively narrow and shaded by rows of trees. This slows down the traffic, creating a comfortable environment for pedestrians and bicyclists." (Section 4 D)

"From a safety perspective, probably the most important aspect of connectivity relates to bicycle and pedestrian facilities. Belmont has little, if any, extended sections of sidewalk that connect more than local neighborhoods and the historical downtown area. With little or limited connectivity to other areas of town, there is a missed opportunity for more trips being made without the need for a vehicle, since many pedestrians are wary of walking where portions of the trip do not feature continuous sidewalk, crosswalk, or pedestrian signalization at high traffic volume intersections." (Section 4. 2.2)

"Accommodation of pedestrians and bicycles is incorporated into the street typologies. Trees are located between the roadway pavement and sidewalks wherever possible, to provide a safe and attractive pedestrian environment." (Section 4.2.6)

"The Land Use Plan includes an interconnected system of greenway trails throughout much of Belmont, using a combination of creeks, Duke Energy electric transmission line easements or rights-of-way, and NCDOT inactive railroad rights-of-way.... This system links neighborhoods together, and provides access to Lake Wylie and the South Fork of the Catawba River, where waterfront parks can be developed. The greenway system also links, wherever possible, to the Downtown Commercial and Civic Center, Village Commercial and Civic Centers, and schools." (Section 4.3.3)

"The City should coordinate closely with Gaston County Schools to keep school capacity abreast of Belmont population growth, and for the location of the schools. The Belmont Comprehensive Plan encourages the location of schools in the Village Commercial and Civic Centers, to enable more students to walk to school, and to reduce the length of driving trips for parents who do drive their children to school." (Section 5.7.4)

MONTCROSS NORTH SMALL AREA PLAN

"Provide landscaping, signage design, lighting, sidewalks and other streetscape design elements along Belmont-Mt. Holly Road and Woodlawn Street to provide a high quality of public environment; and Allow development of a rails-to-trails or trails-along-rails pedestrian and bicycle path along the currently inactive railroad lines owned by the North Carolina Department of Transportation, which is included as a recommended part of the City's greenway system in this Comprehensive Plan."

CATAWBA STREET CORRIDOR PLAN

East Belmont residents desire to have the connection to downtown improved through a revitalization of Catawba Street. Some of the recommendations for this area include a pedestrian friendly street that would serve as a main street for East Belmont connecting to Main Street in downtown.

LAND DEVELOPMENT CODE (2003)

The City of Belmont adopted the land development code in July 2003. This code supports the comprehensive land use plan by requiring pedestrian facilities in all new developments and roadways. The City of Belmont was one of the first communities to adopt a New Urbanist zoning ordinance that stresses the importance of walkable, sustainable, and visually appealing communities. Below are some excerpts from the land development code that show how highly important pedestrian facilities are to the City of Belmont:

8.1 General Street Design Principles

"...the Code encourages the development of a network of sidewalks and bicycle lanes that provide an attractive and safe mode of travel for pedestrians and cyclists... It is the intent of this ordinance to build streets that are integral components of community design. Streets shall be detailed to compliment neighborhoods and commercial centers and shall be pedestrian in scale."

"Streets shall be designed as the main public space of the City and shall be scaled to the pedestrian."

"Streets shall be bordered by sidewalks on both sides."

"Streets shall be designed with street trees planted in a manner appropriate to their function. Commercial streets shall have trees which compliment the face of the buildings and which shade the sidewalk. Residential streets shall provide for an appropriate canopy, which shades both the street and sidewalk, and serves as a visual buffer between the street and the home."

"The use of traffic calming devices such as raised intersections, landscaping bulb-outs, and traffic circles are encouraged as alternatives to conventional traffic control measures."

8.2 Street Engineering and Design Specifications

"Sidewalks shall be constructed along both sides of all streets except alleys and lanes. Residential sidewalks shall be a minimum of 4 ft in width. Sidewalks serving mixed use and commercial areas shall be a minimum of 8 ft in width (10-12 ft is preferable in front of shopfronts). All sidewalks shall be paved with brick or concrete pavers, concrete, or a similar material. Concrete sidewalks shall be a minimum of 4" in depth. Sidewalk material may vary according to the overall design and character of the development."

"Bulb-outs are discouraged on narrow streets (less than 30' face-of-curb to face-of-curb) but encouraged on wider streets."

"Curb radii shall be designed to reduce pedestrian crossing times along all streets requiring sidewalks. In general, curb radii should not exceed 20 ft."

8.5 General Greenway Design Principles

"The Code encourages the development of a network of multipurpose trails that connect active and passive parks, schools, cultural sites, neighborhoods, and commuter destinations. When a greenway is part of a development, the following standards apply:

Greenways shall be planned following the designated circulation system shown on the Comprehensive Plan map and the Parks and Recreation Master Plan.

Greenways shall connect to new development wherever possible. Greenway stubs should be provided when development is adjacent to open land scheduled for greenway construction to provide for future connections. Stubs must extend to the neighboring property line

Greenways should be designed to fit the contours of the land and should minimize removal of significant trees.

All greenways shall be constructed in accordance with the design and construction standards in this code and shall be maintained for public access whether by easement or by public dedication."

LONG RANGE TRANSPORTATION PLAN 2030 (2005)

The Gaston Urban Area Metropolitan Planning Area 2030 Long Range Transportation Plan supports pedestrian transportation by establishing the following goals and objectives:

"Develop a transportation system that integrates pedestrian and bicycle modes of transportation with motor vehicle transportation and encourages the use of walking and bicycling as alternative modes.

- Increase the design sensitivity of specific transportation projects to the needs of pedestrians and bicyclists.

- Assist the development of pedestrian and bikeway systems for both recreation and transportation purposes.

- Improve the transportation system to accommodate pedestrian and bicycle access along roadways through design and facility standards.

- Increase pedestrian and bicycle safety through public awareness programs.

- Provide linkages for pedestrian and/or bicyclists between neighborhoods, employment centers, services, cultural facilities, schools, parks, and businesses." (Chapter 2.3.5)

"In our auto-centered society, citizens frequently consider only one modal option, the private automobile, to carry them to and from their destinations. Most trips, however, no matter the mode, begin with a walking trip. Whether it is on either end of an automobile trip, or to and from a transit stop, it is imperative that pedestrians are accommodated with safe, accessible pathways. As transportation professionals, we also endorse this concept in the hope that improved pedestrian facilities will relieve the burden on congested roads by encouraging alternate forms of transportation. To this end, several cities within the Gaston Urban Area have implemented sidewalk policies for inclusion with new development." (Section 4.2.4)

Chapter 6 of the 2030 Transportation Plan identified several road projects in the unmet needs list that should integrate pedestrian facilities into them. They are listed below:

- Wilkinson Blvd. (US 29/74) Catawba River Bridge- Road widening and bridge replacement project

- Widen existing four-lane bridge to six-lanes, and widen existing four-lane cross section to six-lanes from Catawba Street (NC 7) to the east bank of the Catawba River.

- NC 273 (South Point Road)- Road widening project

- Widen existing two-lane road to a four-lane divided facility from Nixon Road (SR 2534) to Lower Armstrong Road (NC 273).

GASTONIA RAPID TRANSIT ALTERNATIVES STUDY (2005)

A study was conducted by Gastonia and the Gaston Urban Area Metropolitan Planning Organization (MPO) to identify options for improving the transit network in the Gastonia-Charlotte corridor. This study recommends five route alternatives, all of them including stops for Belmont. This study calls for these stops to be sited and designed so that they are pedestrian friendly and easily accessible by foot.

CAROLINA THREAD TRAIL (2008)

The Carolina Thread Trail will be a trail network that will eventually reach 15 counties in the Charlotte region, and over two million people. The Carolina Thread Trail will develop over time as communities build trails that will eventually link parks, green spaces and attractions throughout the region. Not all local trails and greenways will become part of the Carolina Thread Trail. Analogous to highway systems, The Thread will develop as a "green interstate" focused on linking local trails and regionally significant attractions.

Some of the specific destinations of the trail have already been identified within each of the 15 counties. In Gaston County two of the destinations that directly affect the City of Belmont include the Daniel Stowe Botanical Garden and the U.S. National Whitewater Center. Specific routes to link these destinations to the Thread Trail have yet to be determined. One option that stands out for connecting to Downtown Belmont is creating a rail-trail from the north through Belmont Abbey, then south along Main as a 'street trail' (using bicycle-friendly street design and wide sidewalks).

3 RECOMMENDATIONS

CHAPTER OUTLINE:

OVERVIEW

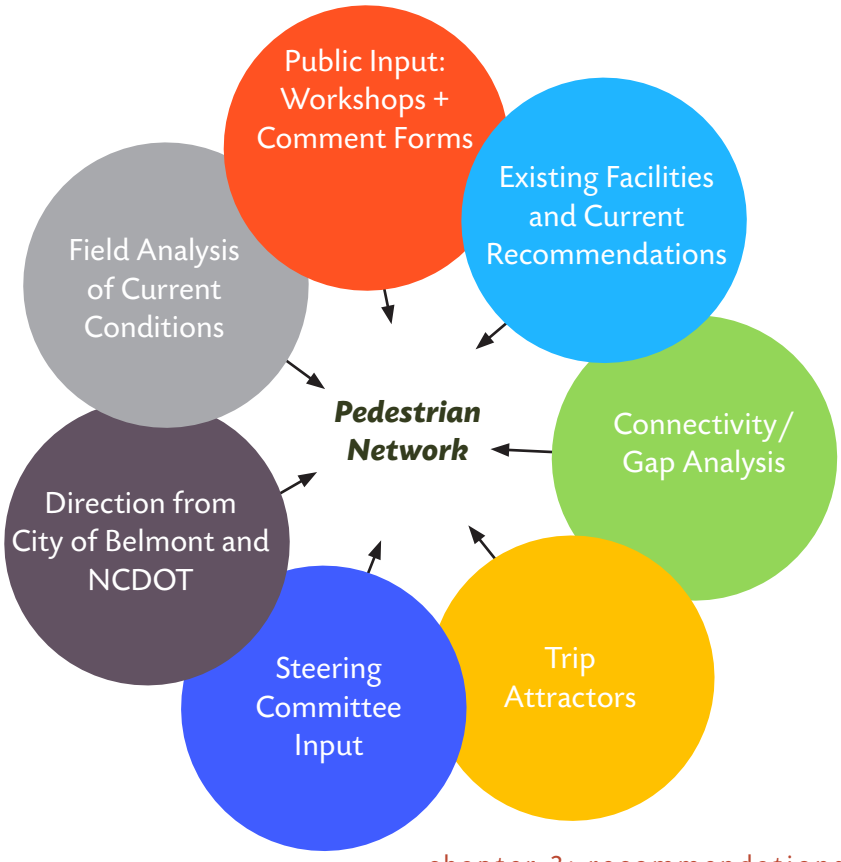
This chapter contains a series of recommended changes to the City of Belmont's physical environment that will create a more connected, comprehensive pedestrian network. The core focus is on methodology, the overall pedestrian network map, and the recommended project packages.

METHODOLOGY

A variety of sources were consulted during the development of the Pedestrian Network: previous plans and studies, maps of existing pedestrian conditions, the consultant's fieldwork inventory, public input, and noted pedestrian trip attractors. Fieldwork included an examination of conditions at all major intersections, muti-use trail feasibility along creeks, conditions along primary corridors, and a consideration of sidewalk gap connectivity. Map discussion and analysis was conducted at steering committee meetings and public meetings to pinpoint specific areas in need of pedestrian improvements.

INPUTS FOR PEDESTRIAN NETWORK DEVELOPMENT

This diagram illustrates the inputs used to design the Pedestrian Network.



THE PEDESTRIAN NETWORK

Three main types of pedestrian projects have been identified for the City of Belmont and are outlined on the following pages. They include sidewalks, crossing improvements, and multi-use trails (a.k.a rail-trails, greenway trails, sidepaths, etc). Conceptually, these pedestrian recommendations can be seen as a network of 'hubs and spokes', with Downtown Belmont being the central point of connection (see right). Parks, schools, shopping centers, and other places where people might walk to and from are the 'hubs', whereas sidewalks, crosswalks, trails, and other pedestrian facilities are the 'spokes' that connect them.

The 'hubs and spokes' model conceptually illustrates how destinations are linked through various types of pedestrian facilities.

The complete recommended network of sidewalks, crossing improvements, and trails can be found on Map 3.1 (fold-out page 29).

The network should be completed in phases (as prioritized in Chapter 5: Implementation). However, individual projects within the network could be developed as opportunities arise, regardless of the order. Also, new ordinances should make pedestrian accommodations a mandatory part of any commercial or residential development, especially as recommended in this plan (as discussed in Chapter 4: Policies and Programs).

SIDEWALKS

The recommended sidewalks in Belmont aim to expand upon the existing network of downtown sidewalks (see Map 3.1). These are mainly along N. Main Street, on future roadways, the 29/74 corridor, NC 273, and small sections that fill key gaps. Sidewalk projects are described in more detail at the end of this chapter, and guidance for their design is provided in Chapter 6.

PEDESTRIAN-FRIENDLY INTERSECTIONS

For the City of Belmont, most of the recommended pedestrian improvement are at intersections. This is partly due to the fact that Belmont already has a very good downtown sidewalk network, leaving the main area of improvement in the realm of intersections (and in sidewalk expansion out of downtown, as noted above).

Pedestrians have a much greater risk of being struck by a vehicle when crossing a roadway as opposed to walking on the shoulder or sidewalk beside it. Nationally, nearly 75% of all police-reported pedestrian crashes involve pedestrians crossing roadway travel lanes.

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MAP 3.1: Recommended Facilities

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TABLE 3.1: Intersection Improvements

At a minimum, intersections with sidewalks approaching them should possess curb cuts with ramps and marked crosswalks (which helps to satisfy the standards set forth by the American Disability Act of 1991). Major intersections could have a variety of improvements, such as pedestrian-activated crossing and countdown signals, curb extensions, medians, and pedestrian refuge islands. Some of these treatments have been proven to reduce crashes, as shown in the 2007 FHWA Crash Reduction Factors Study (http://safety.fhwa.dot.gov). The table below shows some typical countermeasures and associated crash reduction factors from that study.

PEDESTRIAN CRASH REDUCTION FACTORS

Countermeasure	Crash Reduction Factor
Install sidewalk	*74%*
Install pedestrian countdown signal heads	*25%*
Install pedestrian refuge islands	*56%*
Improve/install pedestrian crossings	*25%*

Consultant fieldwork and public input helped to identify numerous intersections in Belmont that are in need of minor to significant pedestrian facility improvements (shown in Map 3.1, and listed in Table 3.1). Depending on the method and agency involved in implementation, some of these recommended intersection improvements may require a more detailed review. Also, please refer to Chapter 6 for design guidelines that apply to intersection improvements.

GREENWAYS/MULTI-USE TRAILS

A greenway is defined as a linear corridor of land that can be either natural, such as rivers and streams, or man-made, such as utility corridors or abandoned railroad beds. Most greenways contain trails. Greenway trails can be paved or unpaved, and can be designed to accommodate a variety of trail users, including bicyclists, walkers, hikers, joggers, skaters, horseback riders, and those confined to wheelchairs (hence, the term 'multi-use trail').

Greenway corridors can serve environmental purposes, protecting forests, enhancing water quality, and offering ample opportunities for environmental education. Greenway trails can be constructed of natural materials, gravel, crushed stone, asphalt, or concrete, depending upon the projected usage and surrounding landscape. Greenway trails in Belmont should be integrated with and serve as an off-road extension of the on-road pedestrian network. Numerous greenway opportunities were identified throughout Belmont in the 2007 Land Use Plan, and through regional planning efforts. Proposed trail corridors are illustrated on Map 3.1.

This is a planning level of analysis for trail corridors. Each trail project should still have its own public input process, specifically including the property owners adjacent to each corridor. Particular attention should be given to

the design of landscape screening, fencing, and other treatments that help ensure the privacy (if so desired) of adjacent properties. The benefits of greenways (economic, environmental, etc), which are outlined in Chapter 1 of this Plan, should also be emphasized during the planning process for specific greenway corridors.

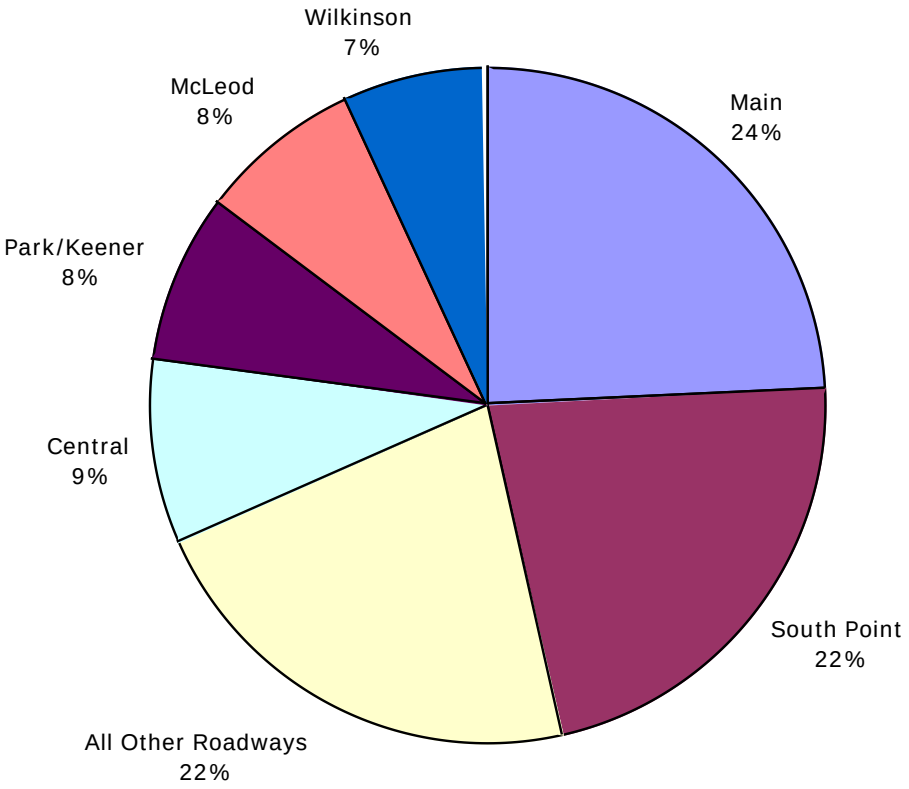
RECOMMENDED PROJECT PACKAGES

A 'Project Package' is a set of recommended facilities or facility improvements that are logically grouped together for purposes of prioritization, funding and implementation.

Factors that influence project *grouping* include the location of projects (along a certain corridor, surrounding a particular school, etc.), the owner and operator of the facility (City of Belmont, NCDOT, etc.), and the major stakeholders involved (certain City departments, local schools, colleges, local businesses, etc.).

Factors that influence project *priority* are the same that influenced the development of the overall recommendations (see "Inputs for Pedestrian Network Development" on page 21). The chart below shows priorities for pedestrian improvments along roadway corridors, according to responses from the public comment form.

TOP ROADWAY CORRIDORS FOR PEDESTRIAN IMPROVEMENTS ACCORDING TO PUBLIC INPUT



Note: All public input results are provided in Appendix A: Public Input.

Main and Central

The following represent the most important improvements that should be made for pedestrians within the horizon of this plan, in order of recommend priority (See Map 3.2, page 34, for general locations of these projects). The target dates for completing these projects will depend primarily on level of coordination and funding put forth for implementation, all of which is the subject of Chapter 5.

PROJECT PACKAGE #1: CAROLINA THREAD TRAIL CORRIDOR IMPROVEMENTS

Location: This corridor follows Main Street from Belmont Abbey College in the north to Belmont city limits on Eagle Street to the south and west.

Description: Projects primarily consist of intersection improvements, but also includes sections of new sidewalk and a potential widening of the walkway over the I-85 bridge. See inset box below for specific recommendations related to a section of this corridor.

Importance: This corridor is the City of Belmont's official section of the 15-county regional trail initiative, the Carolina Thread Trail. As portions of the regional trail network are completed in neighboring Mt. Holly and Gaston County, it will be critical for the City of Belmont to provide safe pedestrian and bicycle access to the downtown area. Without such access, not only will regional trail users not be able to have an economic impact for Belmont, but the residents of Belmont will also not have access to this highly significant regional recreation and alternative transportation resource. Furthermore, the corridor also connects Belmont Abbey College to the heart of downtown (and to the new Sacred Heart Campus located south of Wilkinson Boulevard), which is a specific goal of this planing effort, as identified by the City and the project steering committee. Finally public input from more than 200 City of Belmont residents indicates not only a strong desire for access to trails, but also that Main Street is their top choice for pedestrian improvements.

Key Stakeholders: City of Belmont, NCDOT, and the Carolina Thread Trail

Cost Estimate: $1,870,260

Schools and Trails

For the portion of trail proposed through Belmont Abbey College, a particularly useful example of a similar existing trail is the portion of the City of Raleigh's Reedy Creek Greenway that runs through Meredith College, the largest private women's college in the Southeast: http://www.ncdot.org/transit/bicycle/projects/highlights/offroad/offroad_reedycreekgreenway.html

Recommendation for the Main St Sidewalk Gap (Part of Project Package #1):

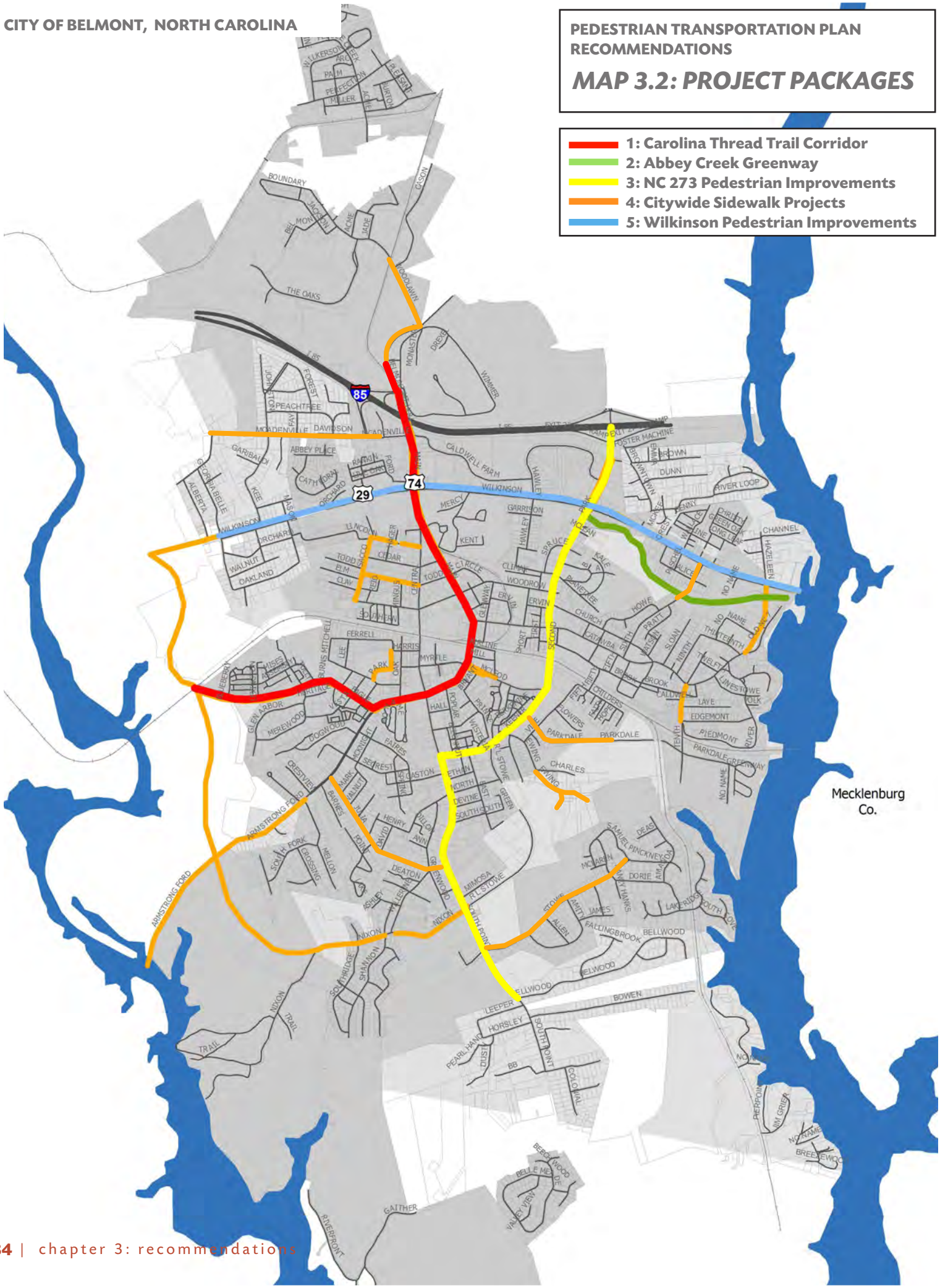
The section of Main St (roughly south of Wilkinson and north of Cedar) is an important connection between downtown and Belmont Abbey, and is one of the only missing sections of sidewalk for the Carolina Thread Trail route in Belmont. Installing sidewalks is difficult due to narrow rights-of-way. The recommendations for improving this situation are:

- Move the Main/Central median island pedestrian refuge area slightly north so that it is in line with the stop bars of Main St and Central Ave.
- Stripe high visibility cross-walks, install ADA curb ramps, and install pedestrian countdown signals at Main St and Central Ave, so they align with the new median island refuge area.
- Install new sidewalk on the west side of Main St., using the shoulder space. Restriping this section of Main may be necessary to take full advantage of the shoulder widths.
- Install a trail that runs parallel to the existing rail road tracks on the east side of Main St This would require working closely with Sisters of Mercy/Belmont Abbey College Sacred Heart Campus and the NCDOT Rail Division to design a trail that would work for all parties involved (see note on page 67, regarding the rail-trail).

PEDESTRIAN TRANSPORTATION PLAN RECOMMENDATIONS

MAP 3.2: PROJECT PACKAGES

- 1: Carolina Thread Trail Corridor
- 2: Abbey Creek Greenway
- 3: NC 273 Pedestrian Improvements
- 4: Citywide Sidewalk Projects
- 5: Wilkinson Pedestrian Improvements



Abbey Creek Greenway Corridor

PROJECT PACKAGE #2: ABBEY CREEK GREENWAY

Location: This proposed trail would run along the creek just south of Wilkenson Blvd, from Park Street to Catawba Street.

Description: This is multi-use trail development project that will consist of just over one mile of 10-ft wide paved trail.

Importance: In the project comment form results, parks, trails, and greenways were the top choices for walking destinations. This corridor is ideal for trail development as it is already cleared and graded with strong destination points (the future city park along the Catawba River and Gaston College East Campus). The current sewer easement along the corridor should be renegotiated to include public access, if not already included (see sewer-trail easement example in Appendix C: Acquisition Strategies).

Key Stakeholders: City of Belmont Parks and Recreation, Planning and Public Works departments; Gaston College (East Campus)

Cost Estimate: $745,040

PROJECT PACKAGE #3: NC 273 PEDESTRIAN IMPROVEMENTS

Location: Park, Keener, and South Point roads

Description: This project consists of 3,570 feet of new sidewalk plus eight new crosswalks along NC 273.

Importance: When asked which roadways are most in need of improvements for pedestrians, 30% of all responses from City of Belmont residents who participated in the planning process named Park, Keener and South Point roads as most in need of pedestrian improvements. This is a higher priority because it is relatively small project package that addresses a large portion of public input.

Key Stakeholders: City of Belmont, NCDOT

Cost Estimate: $306,360

Park and Wilkinson

PROJECT PACKAGE #4: CITYWIDE SIDEWALK PROJECTS

Location: Primarily, sections of Central, Myrtle, Nixon, Catawba, Armstrong, Ford, McLeod, and S 10th, among others.

Description: These project are mainly new sidewalks and crosswalks that fill gaps in the overall pedestrian network, totaling nearly 13,000 feet of new sidewalk.

Importance: More than any other single project, this collection of improvements will fill the gaps of the existing and future pedestrian network, allowing for overall pedestrian connectivity across the City of Belmont. Public Input and gap analysis were the main inputs used to determine the projects. Altogether, this project package accounts for 39% of all roadways identified as 'most in need of improvement' in the public comment form.

Key Stakeholders: City of Belmont, NCDOT

Cost Estimate: $839,760

Belmont-Mt.Holly Road and I-85 ramp.

PROJECT PACKAGE #5: WILKINSON PEDESTRIAN IMPROVEMENTS

Location: Wilkinson Blvd, from city limits to the east and west.

Description: This project consists of sidepaths along both sides of Wilkinson Blvd., including several new crosswalks.

Importance: When asked which roadways are most in need of improvements for pedestrians, 7% of all responses from City of Belmont residents who participated in the planning process named Wilkinson Blvd. as most in need of pedestrian improvements. This corridor also serves many business and has a history of pedestrian crashes (see Chapter Two, page 16). This project package should be considered part of the overall redevelopment of Wilkinson Blvd as outlined in Belomnt's Land Development Code (see right).

Key Stakeholders: City of Belmont, NCDOT

Cost Estimate: Sidepaths are to be constructed with development along the corridor. However, if intersection improvements are created as stand-alone projects, the estimate would total about $14,240. This estimate appears low because most intersection improvements for Wilkinson were already included in estimates for preceding project packages. Sidepaths on both sides of the entire length of Wilkinson built as a stand-alone project would total nearly $2 million.

See section 5.15 of **Belmont's Land Development Code**, which states the following to address non-motorized mobility and aesthetics of the **Wilkinson Boulevard corridor:**

"Streetscape Requirements:

All development shall provide the following improvements across the frontage:

- 10 foot landscape strip between the curb and multi-use path
- 12 foot wide multi-use path
- 8 foot (minimum) landscape strip behind the sidewalk
- Canopy Trees planted 40 feet on-center on both sides of the multi-use path staggered every 20 feet (Where aerial utility lines prohibit the installation of Canopy Trees, Small Maturing Trees may be substituted with permission of the Planning Director)"

Above: an example of a multi-use path along a roadway corridor, also known as a sidepath.

4 PROGRAMS + POLICIES

CHAPTER OUTLINE:

OVERVIEW

Meeting the goals of the City of Belmont Pedestrian Transportation Plan will require more than construction and installation of recommended pedestrian facilities. It will also require the initiation and continued support of pedestrian-related programs from local officials, local residents, and community organizations. In addition, the implementation of these facilities and programs will require the adoption and enforcement of new pedestrian-related policies. This chapter outlines recommended programs, policies, and in some cases, policy changes for the City of Belmont to meet the needs of pedestrians that cannot be met through facility construction alone.

PROGRAM RECOMMENDATIONS AND RESOURCES

Pedestrian-related programs fall into three main categories: education, encouragement, and enforcement. The programs listed below are provided to demonstrate the variety of opportunities that exist for promoting walking and active lifestyles in Belmont. Communities all across North America are using these programs. The City of Belmont should work closely with local volunteers and community organizations to initiate at least one of the following programs or events (whichever are deemed the most appropriate and/or feasible to those organizing) within the first year of adopting this plan. Also, it will be necessary for staff to be assigned to focus on programming, researching additional program ideas, and working with local groups, non-profits, schools, and citizens to develop programs further.

EDUCATION

PEDESTRIAN ADVOCACY GROUPS

The City of Belmont should assist in organizing a local pedestrian advocacy group. Local advocacy groups are beneficial resources for promoting safe pedestrian travel, providing feedback on opportunities and obstacles within the pedestrian system, and coordinating events and outreach campaigns (such as the programs outlined throughout this section). Advocacy groups also play a critical role in encouraging and evaluating the progress of overall plan implementation. Many municipalities form a combined bicycle and pedestrian advocacy committee (BPAC), or even use the more broad approach of forming an 'active living' advocacy group. Given the size of this community, Belmont's Parks and Recreation Citizen's Advisory Board could be considered for the role of a BPAC.

PUBLIC EDUCATION

Educational materials can focus on safe behaviors, rules, and responsibilities. Information may include important pedestrian laws, bulleted keys for safe pedestrian travel, safe motor vehicle operation around pedestrians, and general facility rules and regulations. This safety information is often available for download from national pedestrian advocacy organizations, such as the Pedestrian and Bicycle Information Center website, www.walkinginfo.org.

Information can be distributed through brochures, newsletters, newspapers, bumper stickers, and other print media that can be inserted into routine mailings. It can also be posted on municipal websites. Local events should be utilized to distribute information and a representative from the pedestrian advocacy group can answer questions related to pedestrian safety. A booth could also be used to display safety information at various community events.

INTERNAL EDUCATION

'Internal' education refers to the training of all people who are involved in the actual implementation of the Pedestrian Transportation Plan. Internal training will be essential to institutionalizing pedestrian issues into the everyday operations of engineering, planning, and parks and recreation departments. In addition to relevant City staff, members of the local planning board, NCDOT Division 12 staff, and Gaston County staff should also be included in training sessions whenever possible. This training should cover all aspects of the transportation and development process, including planning, design, development review, construction, and maintenance. This type of 'inreach' can be in the form of brown bag lunches, professional certification programs and special sessions or conferences. Even simple meetings to go over the Pedestrian Plan and communicate its strategies and objectives can prove useful for staff and newly elected officials that may not have otherwise learned about the plan. Pedestrian planning and design issues are complex, and national research and guidelines continue to evolve. Therefore, training sessions need to be updated and repeated on a regular basis.

Local law enforcement should be trained in accurate reporting of pedestrian crashes involving automobiles. In many communities, police do not always adequately understand the rights of pedestrians. Proper interpretation of individual circumstances and events is critical for proper enforcement and respect between motorists and pedestrians. Special training sessions should be instituted and occur annually for new employees within the Police Department that focus on laws relating to pedestrian travel.

ENVIRONMENTAL AND HISTORIC EDUCATION/INTERPRETATION

Educational programs and interpretative signage could be developed along greenways and pedestrian routes. Greenways provide opportunities for learning outside the classroom. Specific programs that focus on water quality and animal habitat are popular examples. Events such as learning walks about specific animals or insects, tree identification, wildflower walks, environmental issues, stewardship education, and sustainability could be led by area experts. Also, simple educational signage would offer interactive learning opportunities for people who use the trail.

These signage examples provided and designed by Cloud Gehshan Associates at www.cloudgehshan.com.

INTERPRETIVE TRAILS/GUIDED TOURS

An educational component to the pedestrian network could be added by developing historical, cultural, and environmental themes for the facilities. This idea can be adapted to create walking tours throughout the City, using signage to identify the events, architecture, and landmarks that make the City of Belmont unique. These tours should be simple to navigate and should stand alone as an amenity. However, brochures can be used to supplement signage with more detailed information and a map of the tour. Other ideas to supplement the signage could be organized "talks" or lectures by local experts.

EDUCATION ACTIONS

- The City of Belmont should assist in organizing a Bicycle and Pedestrian Advisory Committee (BPAC), or consider adding traditional BPAC roles and responsibilities to the Parks and Recreation Citizen's Advisory Board

- The City of Belmont should consider sponsoring annual training sessions for pedestrian design/review

- The City of Belmont should consider sponsoring a session for law enforcement focusing on pedestrian issues

- Create a self-guided walking tour of downtown historical/cultural sites

- Build a kiosk at Stowe Park that features a walking and biking map of Belmont (including the aforementioned self-guided walking tours)

- Establish outdoor classrooms utilizing interpretative signage in open space, parks, greenways, etc.

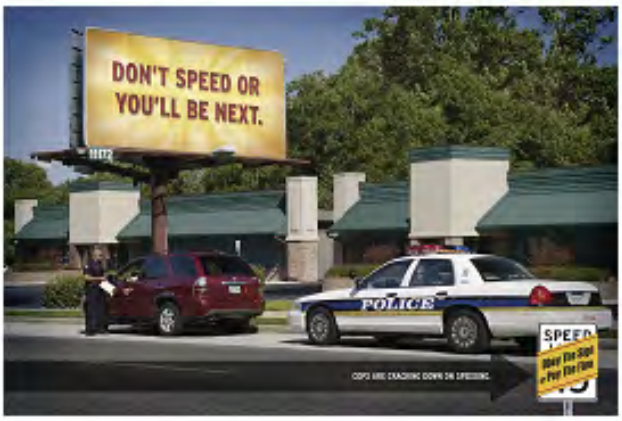
- Produce and/or obtain a variety of safety materials for distribution to various age groups and at various events/locations

EDUCATION RESOURCES

America Walks is a national coalition of local advocacy groups dedicated to promoting walkable communities. Their mission is to foster the development of community-based pedestrian advocacy groups, to educate the public about the benefits of walking, and, when appropriate, to act as a collective voice for walking advocates. They provide a support network for local pedestrian advocacy groups. http://americawalks.org

Safe Communities is a project of the National Highway Traffic Safety Administration (NHTSA). Nine agencies within the U.S. Department of Transportation are working together to promote and implement a safer national transportation system by combining the best injury prevention practices into the Safe Communities approach to serve as a model throughout the nation. http://www.nhtsa.dot.gov/safecommunities

Speed Campaign Tool Kit. The intent of this National Highway Traffic Safety Administration (NHTSA) tool kit is to provide marketing materials, earned media tools, and marketing ideas for communities to distribute to fit local needs and objectives while at the same time partnering with other states, communities, and organizations all across the country on a speed management program. It includes messaging and templates you may choose from to support your speed management initiatives. Free TV and radio materials, posters, billboards, and other media materials can be downloaded here: http://www.nhtsa.gov/speed/toolkit/index.cfm Example posters below:



Stepping Out is an online resource for mature adults to learn about ways to be healthy by walking more often, and walking safely. www.nhtsa.dot.gov/people/injury/olddrive/SteppingOut/index.html

Pedestrian Fatalities Related to School Travel is a fact sheet pertaining to school age children (NHTSA).
http://www.nhtsa.gov/gtss/kit/pedestrian.html

Safe Kids Worldwide is a global network of organizations whose mission is to prevent accidental childhood injury, a leading killer of children 14 and under. More than 450 coalitions in 15 countries bring together health and safety experts, educators, corporations, foundations, governments and volunteers to educate and protect families. Visit their website to receive information about programs, involving media events, device distribution and hands-on educational activities for kids and their families.
http://www.safekids.org/

Rules of the Road for Grandchildren: Safety Tips is an information website for grandparenting. If you are a grandparent, you can play an important role in teaching your grandchildren the "rules of the road." AARP.
http://www.aarp.org/confacts/grandparents/rulesroad.html

Streets in America are Unsafe and Unforgiving for Kids. Article by the Pedestrian Safety Roadshow. U.S. Department of Transportation. Federal Highway Administration.
http://www.tfhrc.gov/safety/pedbike/articles/unsafe.htm

Focusing on the Child Pedestrian. Pedestrian information related to children from the FHWA. http://safety.fhwa.dot.gov/roaduser/pdf/PedFacts.pdf

Eat Smart, Move More is a statewide movement that promotes increased opportunities for healthy eating and physical activity wherever people live, learn, earn, play and pray. http://www.eatsmartmovemorenc.com/

NCDOT Division of Bicycle and Pedestrian Transportation provides significant information related to pedestrian programming.
http://www.ncdot.org/transit/bicycle/

ENCOURAGEMENT

SCHOOL PROGRAMS

Many programs exist to aid communities in developing safer pedestrian facilities around schools. Programs can be adopted by parents or the schools to provide initiatives for walking or biking. Information is available to encourage group travel, prevent pedestrian related injuries, and sponsor commuter related events. For example, a 'Walking School Bus' is an encouragement program that provides an alternative way to transport children to school. A parent can be responsible for accompanying a group of children to school by utilizing the pedestrian system in Belmont.

The City of Belmont is using the Safe Routes to School program to encourage and enable more children to safely walk and bike to school. The National Center for Safe Routes to School aims to assist communities in developing successful Safe Routes programs and strategies. The Center offers a centralized resource of information on how to start and sustain a Safe Routes to School program, case studies of successful programs as well as many other resources for training and technical assistance.

AWARENESS DAYS/EVENTS

A specific day of the year can be devoted to a theme to raise awareness and celebrate issues relating to that theme. A greenway and its amenities can serve as a venue for events that will put the greenway on display for the community. Major holidays, such as July 4th, and popular local events serve as excellent opportunities to include pedestrian information distribution. The following are examples of other national events that the City of Belmont can use to improve usage of pedestrian facilities:

WALK TO WORK DAY/INTERNATIONAL CAR FREE DAY (SEPTEMBER 22)

Designate one day a year for people to walk to work to help advance programs, promote active living, and raise awareness for environmental issues. Walk to Work Day can be at the end of an entire week or month of pedestrian promotional activities, including fitness expos, walking and jogging group activities, running and bicycling races and rides, etc.

"STRIVE NOT TO DRIVE DAY"

This event example, from the Town of Black Mountain, NC, is an annual event to celebrate and promote the Town's pedestrian achievements for the year throughout their region. Awards for pedestrian commuters, as well as booths, contests, and other events are organized through their local MPO Bicycle and Pedestrian Task Force and the Land-of-Sky Regional Council. A similar event could be held in Belmont, as the Pedestrian Plan is implemented.

NATIONAL TRAILS DAY

This event is held every year in June. Other events, competitions, races, and tours can be held simultaneously to promote trail use within Belmont. For example, the City of Greensboro sponsors events for National Trails Day every year, and it has become a huge event for the City.

EARTH DAY

Earth Day is April 22nd every year and offers an opportunity to focus on helping the environment. Efforts can be made to encourage people to help the environment by walking to destinations and staying out of their vehicles. This provides an excellent opportunity to educate people of all ages in Belmont.

USE FACILITIES TO PROMOTE OTHER CAUSES

Network facilities, especially trails, could be used for events that promote other causes, such as health awareness. Not only does the event raise money/publicity for a specific cause, but it encourages and promotes healthy living and an active lifestyle, while raising awareness for pedestrian activities. Non-profit organizations such as the American Cancer Society, American Heart Association, and the Red Cross sponsor events such as Breast Cancer Walk, Diabetes Walk, etc.

PEDESTRIAN ACTIVITIES/PROMOTION WITHIN LOCAL ORGANIZATIONS

The City of Belmont has numerous organizations that could be utilized to promote pedestrian activities (e.g. local schools/PTAs, neighborhood groups, homeowners associations, etc). Education, enforcement, and encouragement programs can be advertised and discussed in local organization newsletters, seminars, and meetings. Such organizations could even organize their own group walks, trail clean-ups, and other activities listed in this section.

ART IN THE LANDSCAPE

The inclusion of art along pedestrian corridors and trails would encourage use of facilities and provide a place for artwork and healthy expression to occur. Artwork could be displayed in a variety of ways and through an assortment of materials. Living artwork could be "painted" through the design and planting of various plant materials. Sculpture gardens could be arranged as an outdoor museum. Art through movement and expression could be displayed during certain hours during the day or during seasonal events. An "Art Walk" could be established as an event featuring destinations throughout the City that display local art. Artwork can be provided by local schools, special interest clubs and organizations, or donated in honor or memory of someone.

WALKING/RUNNING CLUBS

Neighborhoods, local groups, or businesses could promote walking or running clubs for local residents or employees to meet at a designated area and exercise on certain days before or after work, during lunch breaks, or anytime that works for the group. This informal group could be advertised on local bulletin or information boards. These clubs could be specialized to attract different interest groups. Examples include:

- Relay for Life (cancer support)
- Mother's Morning Club (mom's with strollers)
- Walking Wednesdays (senior groups)
- Lunch Bunch (office workers who run during their lunch hour)

ADOPT-A-TRAIL

Local clubs and organizations provide great volunteer services for maintaining and patrolling trails. This idea could be extended to follow tour routes or specified streets/sidewalks. A sign to recognize the club or organization could be posted as an incentive to sustain high quality volunteer service. The Boy Scouts of America serve as a good model for participation in this type of program.

REVENUE GENERATING PROGRAMS

The City of Belmont should be proactive in increasing revenue from programs and events that can help fund the building, management, and maintenance of future facilities. Fees could be increased in events annually or biannually to increase revenue. Specific program and event ideas that are being used to generate revenue across the country include:

- Races/triathlons (fees and/or donations)
- Concessions
- Educational walks/Nature walks/Historic walks (fees and/or donations)
- Fund-raisers including dinners/galas
- Moonlight bike rides and walks (fees and/or donations)
- Greenway parade (fees and/or donations)
- Concerts (fees and/or donations)
- Art events along greenway (fees and/or donations)
- Events coincident with other local events such as fairs, festivals, historic/folk events, etc.
- Media events and ribbon-cuttings for new walkways (donations)

ENCOURAGEMENT ACTIONS

- Encourage children to walk to school, safely, through a combination of programs, listed under encouragement resources
- Establish awareness days
- Encourage the establishment of walking clubs
- Use pedestrian facilities, particularly trails, to promote causes and hold special events for causes
- Utilize greenways for artwork and plantings

ENCOURAGEMENT RESOURCES

Safe Routes to School (SR2S) is a great example of an existing pedestrian program in Belmont. SR2S is a national program with $612 million dedicated from Congress from 2005 to 2009. Local Safe Routes to School programs are sustained by parents, community leaders, and citizens to improve the health and well-being of children by enabling and encouraging them to walk and bicycle to school. Recently, the state of North Carolina has started the NC Safe Routes to School Program based off of the national program. The state has $15 million over the next 5 years for infrastructure improvements within 2 miles of schools. This funding can also be used towards the development of school related programs to improve safety and walkability initiatives. The state requires the completion of a competitive application to apply for funding and a workshop at the school to determine what improvements are needed. http://www.saferoutesinfo.org

National Walk our Children to School Day is usually held in October with the objective to encourage adults to teach children to practice safe pedestrian behavior, to identify safe routes to school, and to remind everyone of the health benefits of walking. To register walking events in Belmont, go to the main webpage, and follow the International Walk to School links: www.walktoschool-usa.org

Walk a Child to School in North Carolina. Forty years ago, half of all U.S. school children walked to school. Today, according to the Centers for Disease Control, only an estimated 10 percent walk to school. In many communities, as much as 30 percent of morning commuter traffic is generated by parents driving their children to school. These traffic habits and children's lifestyle choices can have serious consequences. Traffic jams around our schools foul the air, waste fuel, and create safety problems for children. In addition, the U.S. Surgeon General recently reported that thirteen percent of children aged 6 to 11 years and 14 percent of adolescents aged 12 to 19 were overweight in 1999. This statistic has nearly tripled in the past two decades for adolescents. A growing number of community groups throughout the nation, such as health professionals, 'Smart Growth' advocates, traffic safety groups, local PTAs, and elected officials, are promoting walking to school initiatives. In North Carolina, Walk a Child to School Programs have gained a foothold and are growing each year. To date more than 5,000 students in 12 communities in the state have participated. www.walktoschool.org

Preventing Pedestrian Crashes: Preschool/Elementary School Children provides information to parents on pedestrian risks for preschool and elementary school children. Information about the Safe and Sober Campaign is available on the NHTSA website. www.nhtsa.dot.gov/people/outreach/safesobr/15qp/web/sbprevent.html

Walk to School Day in Belmont

Belmont Central Elementary participated in International Walk to School Day in October 2009 with 237 students walking and riding bicycles. Also, Belmont Central had over 100 students walking at least part of the way to school every Wednesday in September and October 2009.

Kidswalk-to-School is a resource guide to help communities develop and implement a year-long walk-to-school initiative; sponsored by the Centers for Disease Control and Prevention.
http://www.cdc.gov/nccdphp/dnpa/kidswalk/

ENFORCEMENT

MOTORIST ENFORCEMENT

Based on crash data analysis and observed patterns of behavior, law enforcement can use targeted enforcement to focus on key issues such as motorists speeding, not yielding to pedestrians in crosswalks, parking on sidewalks, etc. Sidewalk parking, for example, is often not enforced but should be in order to maintain pedestrian accessibility, avoid maintenance issues, and comply with local ordinances. All of these key issues should be targeted and enforced consistently. The goal is for pedestrians and motorists to recognize and respect each other's rights on the roadway.

As traffic continues to increase on North Carolina's streets and highways, concern has grown over the safety of our children as they walk to and from school. At the same time, health agencies, alarmed at the increase in obesity and inactivity among children, are encouraging parents and communities to get their children walking and biking to school. In response, the Division of Bicycle and Pedestrian Transportation funded a study on pedestrian issues, including school zone safety, and decided to establish a consistent training program for law enforcement officers responsible for school crossing guards. According to the office of the North Carolina Attorney General, school crossing guards may be considered traffic control officers when proper training is provided as specified in GS 20-114.1.

PEDESTRIAN ENFORCEMENT

Observations made by local trail and pedestrian facility users can be utilized to identify any conflicts or issues that require attention. To maintain proper use of trail facilities, volunteers could be used to patrol the trails, particularly on the most popular trails and on days of heavy use. The volunteer patrol can report any suspicious or unlawful activity, as well as answer any questions a trail user may have. The volunteer patrol could be a responsibility of the pedestrian advocacy group. When users of the pedestrian network witness unlawful activities, they should have a simple way of reporting the issue to police. A hot line should be created, which would compliment trail patrol programs. People could call in and talk to a live operator or to leave a voice mail message about the activity they witnessed. Accidents could also be reported to this hot line. Accident locations could then be mapped to prioritize and support necessary facility improvements.

ENFORCEMENT ACTIONS

- Target and enforce all illegal motorist and pedestrian behavior, especially speeding

- Consider speed limit reductions on streets recommended by the PARCAB or BPAC

- Require all crossing guards to complete an NCDOT Crossing Guard Training Program

- Establish a crossing guard program for peak school hours

- Establish a local "Trail Patrol"

- Establish an enforcement hot line

- Develop a simple brochure that outlines local leash laws, to be distributed as warnings from police officers and as education tools at pet stores and veterinarian offices. This may help to decease incidents where pedestrians are intimidated or even harmed by unleashed dogs.

ENFORCEMENT RESOURCES

NCDOT School Crossing Guard Program
http://www.ncdot.org/transit/bicycle/safety/programs_initiatives/crossing.html

NCDOT's A Guide to North Carolina Bicycle and Pedestrian Laws. For an online resource guide on laws related to pedestrian and bicycle safety (provided by the National Highway Traffic Safety Administration), visit
www.nhtsa.dot.gov/people/injury/pedbimot/bike/resourceguide/index.html

POLICY RECOMMENDATIONS

While the physical recommendations described in this Plan represent an overall pedestrian network, strong pedestrian-oriented policies and regulations are also necessary to ensure these facilities are developed, especially when new development takes place. The recommended policy statements would help the City of Belmont achieve its vision of becoming a pedestrian-friendly community. City planning staff should become familiar with these policies and regulations to ensure the full suite of policy tools are used and enforced. Further tools to initiate pedestrian development are described in Chapter 5 and the appendices.

Policy statements that require pedestrian facilities with development must be somewhat flexible and practical within regulations for physical restrictions. All decisions need to be environmentally sensitive. Sidewalk locations and widths may need to be modified on a case-by-case basis. There must be a proven environmental constraint for pedestrian modifications.

Source Document	Reference	Existing Text	Recommended Change	Notes
Land Devt Code	CHAPTER 2: DEFINITIONS 2.2 DEFINITIONS	Five (5) Minute Walk: The five minute walk is the basic increment of good traditional neighborhood design. An average adult can walk _ mile (1320 feet) in five minutes. For the purposes of this code, higher densities of residential development are encouraged within a five minute walk of a designated neighborhood, village, and City centers. Properties just outside (within 130 feet) of the _ mile radius may qualify for privileges associated with this measurement provided there is a qualified pedestrian connection (sidewalk required) to the designated center.	NA	Listed here for reference only.
Land Devt Code	CHAPTER 2: DEFINITIONS 2.2 DEFINITIONS	Pedestrian Oriented Development: Any development type which accommodates the needs of the pedestrian. Such development will have parking to the side or rear of a building, will mix uses and provide them in proximity to one another, will allow the pedestrian the option of accomplishing certain trips without automobile use, and will provide a variety of interesting and detailed streetscapes which balance the need of the pedestrian and car equally.	NA	Listed here for reference only.
Land Devt Code	CHAPTER 2: DEFINITIONS 2.2 DEFINITIONS	Street, Public: A right-of-way or fee simple tract of land which has been set aside for public travel, dedicated to the public, and eligible for maintenance by either the City of Belmont or the State of North Carolina.	[Add new sentence after 1st sentence of 'Street, Public' definition]: Regardless of classification, the design and construction of streets and intersections in the City of Belmont should aim to serve all types of users, including pedestrians, bicyclists, and motorists, and should be inclusive of all levels of ability, such as those in wheelchairs, the elderly and the young.	Language for transit and transit users could also be added.
Land Devt Code	CHAPTER 2: DEFINITIONS 2.2 DEFINITIONS	NA	[Add New Definition] *Traffic:* Pedestrians and vehicles including bicycles, automobiles and other conveyances either singly or together while using streets for the purposes of travel.	This language was adapted for Belmont from the Uniform Vehicle Code (UVC), the national model code which forms a basis for most state codes. Using this definition ensures that pedestrians will be considered where 'traffic' is considered (in the classification of street types for example). Bicycles are also included in any definition that includes 'vehicle', because NC law defines bicycles as vehicles.
Land Devt Code	CHAPTER 3: GENERAL PROVISIONS 3.2 URBAN LOT STANDARDS (I)	All lots shall front upon a street built in accordance with Chapter 9. Generally, all buildings shall front directly upon a street in a manner that creates a public space that is conducive to pedestrian use. With the provision of lane or alley access, lots may front upon a close or a square, but shall be of sufficient design to allow for the provision of emergency services.	[Add After 2nd Sentence]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 3: GENERAL PROVISIONS 3.4 BLOCKS	Needs of non-vehicular and vehicular traffic circulation and the control and safety of such traffic.	[Revise]: Needs of non-vehicular (pedestrians and bicyclists) and vehicular traffic circulation and the control and safety of such traffic.	
Land Devt Code	CHAPTER 4: BUILDING TYPE REQUIREMENTS SECTION 4.1 BUILDING TYPES ESTABLISHED (3)	All buildings, except accessory structures, shall have a main, useable entrance opening onto a street or square from the front facade. On a corner lot, the principal entrance in both design and function should be from the primary pedestrian street. (Exception: Flex Commercial buildings may be accessed from entries located in the front half of the building)	[Add Sentence after 2nd Sentence]: Sidewalk connections to sidewalks on adjoining streets and parking lots shall be built.	

Source Document	Reference	Existing Text	Recommended Change	Notes
Land Devt Code	CHAPTER 4: BUILDING TYPE REQUIREMENTS SECTION 4.7 FLEX COMMERCIAL BUILDING	Description: Similar to a shopfront in use, the highway commercial building is specifically coded for automobile-oriented uses that are found along Wilkinson Boulevard. This building type provides convenient automobile access from the fronting thoroughfare, while minimizing the negative impacts of parking lots on an active pedestrian realm. The use permitted within the building is determined by the District in which it is located.	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	Adding this language helps in not diminishing the importance of pedestrian facilities
Land Devt Code	CHAPTER 4: BUILDING TYPE REQUIREMENTS All Sections from 4.2 to 4.8	Parking and Vehicular Access:…..	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 5: DISTRICT PROVISIONS 5.5 NEIGHBORHOOD CENTER RESIDENTIAL (NC-R)	The Neighborhood Center Residential District is coded to provide for areas for residential and mixed-use development in close proximity to existing and planned commercial centers. The intent is to create higher density residential areas that compliment commercial districts with physical proximity and pedestrian interaction. Different housing types and lot styles are encouraged as well as office and limited retail uses.	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 5: DISTRICT PROVISIONS 5.8 HIGHWAY COMMERCIAL (HC)	The intensity of commercial development in the Highway Commercial district is established by the traffic of the fronting thoroughfare. Though coded primarily for auto dependent development along the frontage, buildings that do not front along Wilkinson Boulevard shall be scaled to the pedestrian.	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 5: DISTRICT PROVISIONS 5.10 TRADITIONAL NEIGHBORHOOD DEVELOPMENT (TN-D)	The intent of this District is to allow for the development of fully integrated, mixed-use pedestrian oriented neighborhoods that minimize traffic congestions, suburban sprawl, infrastructure costs, and environmental degradation. Traditional Neighborhoods adhere to the following design principles: All neighborhoods have identifiable centers and edges Edge lots are readily accessible to retail and/or recreation by non-vehicular means (a distance not greater than _ mile) Uses and housing types are mixed and in close proximity to one another Street networks are interconnected and blocks are small Civic buildings are given prominent sites throughout the neighborhood	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 5: DISTRICT PROVISIONS Sections 5.3- 5.12	Specific District Provisions..	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the	
Land Devt Code	CHAPTER 5: DISTRICT PROVISIONS 5.15 HIGHWAY CORRIDOR OVERLAY (HC-O)	This District is coded to preserve and improve the transportation efficiency, non-motorized mobility, and aesthetics of the Wilkinson Boulevard corridor. All provisions of the underlying district shall be effective except those specifically stated in this chapter.	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	May not be needed if same recommended statement is adopted in CHAPTER 5: DISTRICT PROVISIONS 5.8 HIGHWAY COMMERCIAL (HC), as noted above.
Land Devt Code	CHAPTER 5: DISTRICT PROVISIONS 5.16 RURAL COMMERCIAL (RC) (1)	Intent: Rural Commercial is coded for commercial clusters along primary rural corridors within the extraterritorial jurisdiction of the city and for existing commercial clusters within the City which are less pedestrian oriented in design than NC-C development.	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	Adding this language helps in not diminishing the importance of pedestrian facilities

Source Document	Reference	Existing Text	Recommended Change	Notes
Land Devt Code	CHAPTER 7: OPEN SPACE SECTION 7.4 OPEN SPACE TYPES TYPE II - PUBLIC OPEN SPACE (I)	PARKWAYS / GREENWAYS Parkways and greenways are large, irregular open spaces designed to incorporate natural settings such as creeks and significant stands of trees within neighborhoods. Parkways are to be entirely bounded by streets or pedestrian R-O-Ws within developed areas. Greenways are exempt from this requirement. Parkways and greenways differ from parks and squares in that their detailing is natural (i.e. informally planted) except along rights-of-way, and may contain irregular topography. Parkways and greenways may be used for certain active recreational uses and shall provide at a minimum, recreation trails approved by the Planning Department for walking, jogging, or bicycling. Interior areas shall remain natural and any additional plantings shall be informal in design.	[Add After 3rd Sentence]: Parkways and Greenways provide important pedestrian and bicycle connections to neighborhoods, recreation facilities, parks, shopping, and other destinations.	Conveys the importance of greenways for transportation purposes in addition to recreation.
Land Devt Code	CHAPTER 7: OPEN SPACE SECTION SECTION 7.3 OPEN SPACE GENERAL PROVISIONS (2)	Open space shall be planned and improved, accessible and usable by persons living nearby. Improved shall mean cleared of underbrush and debris and may contain one or more of the following improvements: landscaping, walls, fences, walks, statues, utilities, irrigation, fountains, ball fields, and/or playground equipment.	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.1 GENERAL STREET DESIGN PRINCIPLES	This Code encourages the development of a network of interconnecting streets that work to disperse traffic while connecting and integrating neighborhoods with the existing urban fabric of the City. Equally as important, the Code encourages the development of a network of sidewalks and bicycle lanes that provide an attractive and safe mode of travel for pedestrians and cyclists. It is the intent of this ordinance to build streets that are integral components of community design. Streets shall be detailed to compliment neighborhoods and commercial centers and shall be pedestrian in scale. In addition to these standards, streets shall conform to the provisions of City of Belmont Land Development Standards Manual.	[Add]: and the City of Belmont Pedestrian Plan Design Guidelines	This or similar language should be used to require developers to adhere to the design standards for pedestrian facilities in the Belmont Pedestrian Plan.
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.1 GENERAL STREET DESIGN PRINCIPLES	In an effort to protect this investment, the City views streets as the most important public space and therefore has developed a set of principles which permit this space to be used by both cars and people.	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.1 GENERAL STREET DESIGN PRINCIPLES	*Streets shall interconnect within a development and with adjoining development. Cul-de-sacs are permitted only where topographic conditions and/or exterior lot line configurations offer no practical alternatives for connection or through traffic. Street stubs should be provided with development adjacent to open land to provide for future connections. Streets shall be planned with due regard to the designated corridors shown on the Thoroughfare Plan. *Streets shall be designed as the main public space of the City and shall be scaled to the pedestrian. *Streets shall be bordered by sidewalks on both sides. *Streets shall be designed with street trees planted in a manner appropriate to their function. Commercial streets shall have trees which compliment the face of the buildings and which shade the sidewalk. Residential streets shall provide for an appropriate canopy, which shades both the street and sidewalk, and serves as a visual buffer between the street and the home.	[Add to last bullet at left]: Every effort shall be made to plant trees that are native to the Belmont area, and consideration should be given to planting fruit or nut trees near concentrated residential areas and on greenways.	

Source Document	Reference	Existing Text	Recommended Change	Notes
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.1 GENERAL STREET DESIGN PRINCIPLES (continued)	*Wherever possible, street locations should account for difficult topographical conditions, paralleling excessive contours to avoid excessive cuts and fills and the destruction of significant trees and vegetation outside of street-rights-of way on adjacent lands. *All streets shall be constructed in accordance with the design and construction standards in this code and shall permit public access whether by easement or by public dedication. Closed or gated streets are strictly prohibited. *All on-street parking provided shall be parallel. Curb or angle parking is permitted upon approval of the Planning Board and the City Council when the fronting buildings are more than 22 feet in height to ensure a safe and usable pedestrian realm. *The use of traffic calming devices such as raised intersections, landscaping bulb-outs, and traffic circles are encouraged as alternatives to conventional traffic control measures."	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.2 STREET ENGINEERING AND DESIGN SPECIFICATIONS (3)	Sidewalks: Sidewalks shall be constructed along both sides of all streets except alleys and lanes. Residential sidewalks shall be a minimum of 4 ft in width. Sidewalks serving mixed use and commercial areas shall be a minimum of 8 ft in width (10-12 ft is preferable in front of shopfronts). All sidewalks shall be paved with brick or concrete pavers, concrete, or a similar material. Concrete sidewalks shall be a minimum of 4" in depth. Sidewalk material may vary according to the overall design and character of the development. The City Council may grant exceptions to this in accordance with the Belmont Public Infrastructure Acceptance Policy. Streets that serve less than 8 Detached Home-Street Lots from the nearest intersection may install sidewalk on one side of the street.	[Revise]: Change minimum 4 ft in width to minimum 5 ft in width	
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.2 STREET ENGINEERING AND DESIGN SPECIFICATIONS (7)	Intersections:…	[Add]: The use of traffic calming devices such as raised intersections, lateral shifts, and roundabouts are encouraged as alternatives to conventional traffic control measures with approval of the Planning Board. A pedestrian crosswalk at least ten feet in width may be required to provide convenient public access to a public area such as a park, greenway, or school, or to a water area such as a stream, river, or lake. Any intersection with a sidewalk on each side shall have, at a minimum, a crosswalk and curb ramp that connects to the sidewalk. All signalized intersections shall have, at a minimum, a high visibility marked crosswalk, curb ramps, and a pedestrian countdown signal. Such pedestrian facilities must be ADA compliant and shall be installed in accordance to the City of Belmont Pedestrian Transportation Plan.	
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.3 STREET DESIGNS	Street Designs…	Consider modifying entire section to accommodate bicycle facilities. In the State of North Carolina, bicycles are vehicles by law, and the City of Belmont's streets should accommodate them.	

Source Document	Reference	Existing Text	Recommended Change	Notes
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.5 GENERAL GREENWAY DESIGN PRINCIPLES (A)	Greenways shall be planned following the designated circulation system shown on the Comprehensive Plan map and the Parks and Recreation Master Plan.	[Add]: and the City of Belmont Pedestrian Plan	This or similar language should be used to require developers to adhere to the design standards for pedestrian facilities in the Belmont Pedestrian Plan.
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.5 GENERAL GREENWAY DESIGN PRINCIPLES (D)	All greenways shall be constructed in accordance with the design and construction standards in this code and shall be maintained for public access whether by easement or by public dedication.	[Add after the word "code"]: and the City of Belmont Pedestrian Plan	This or similar language should be used to require developers to adhere to the design standards for pedestrian facilities in the Belmont Pedestrian Plan.
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.6 GREENWAY ENGINEERING AND DESIGN SPECIFICATIONS	Greenway designs shall permit comfortable use by both bicyclists and pedestrians. Refer to the North Carolina Bicycle Facilities Planning and Design Guidelines for specific information on engineering details.	[Add]: and the City of Belmont Pedestrian Plan	This or similar language should be used to require developers to adhere to the design standards for pedestrian facilities in the Belmont Pedestrian Plan.
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.6 GREENWAY ENGINEERING AND DESIGN SPECIFICATIONS (4)	Boardwalks, or wood surface trails, are typically required when crossing wetlands or other poorly drained areas. Boardwalk trails are composed of lumber or synthetic wood. Boardwalk trails must be a minimum of 4’ wide.	[Revise last sentence]: Boardwalk trails must be a minimum of 5' wide.	
Land Devt Code	CHAPTER 8: STREETS AND GREENWAYS 8.6 GREENWAY ENGINEERING AND DESIGN SPECIFICATIONS	1. Floodway Trails Multi-use trails within the floodway (within the “Managed Use Zone”, see Stream Buffers, Section 22) are designed to accommodate a variety of users including walkers, joggers, cyclists, and rollerbladers. These trails are typically positioned within the floodway, but not directly adjacent to streams. A minimum of 20’ vegetative buffer between the stream and trail should be left intact. . Floodway trails shall be a minimum of 10’ wide. These trails shall be 2” machine-laid asphaltic concrete surface with a 4” aggregate base over compacted soil. 2. Floodplain Trails These multi-use trails are positioned outside of the floodway, within the floodplain (within the “Managed Use Zone”, see Stream Buffers, Section 17). Significant vegetative buffer between the stream and trail should be left intact. Floodplain trails shall be a minimum of 10’ wide. These trails shall be composed of 2” machine-laid asphaltic concrete surface with a 4” aggregate base over compacted soil. 3. Upland Trails Upland multi-use trails are positioned completely outside designated floodplains (within the “Upland Zone”, see Stream Buffe	[Revise each type description to include]: These trails should be a minimum of 10' wide in rural areas and a minimum of 12' wide in urban areas. In compact urban areas, a minimum of 14' wide is recommended.	

Source Document	Reference	Existing Text	Recommended Change	Notes
Land Devt Code	CHAPTER 9: PARKING 9.1 OFF-STREET PARKING AREA DESIGN SPECIFICATIONS	Off-street parking areas should be designed to minimize breaks in the pedestrian environment along the public street and create safe and comfortable passage for pedestrians.	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 9: PARKING 9.1 OFF-STREET PARKING AREA DESIGN SPECIFICATIONS (E)	Parking lots shall be designed to allow pedestrians to safely move from their vehicles to the building. On small lots (36 spaces or less), this may be achieved by providing a sidewalk at the perimeter of the lot. On larger lots, corridors within the parking area should channel pedestrians from the car to the perimeter of the lot or to the building. These corridors are delineated by a paving material that differs from that of vehicular areas and are planted to provide shade. Small posts or bollards may be included.	[Add]: Providing adequate facilities for all types of traffic, including motorists, pedestrians, bicyclists, and transit users, and including of all levels of ability, such as those in wheelchairs, the elderly and the young.	
Land Devt Code	CHAPTER 15: DEVELOPMENT PLAN REVIEW PROCESS 15.12 IMPROVEMENT GUARANTEES (5)	Payment in Lieu: Sidewalks As an alternative to the construction of sidewalks, the City of Belmont may, at its discretion, accept a payment made to the City in lieu of sidewalk construction. The City shall use such payment only for the construction of sidewalks within the same general area of the new development, with the City ofBelmont. The amount of the payment shall be determined by the Public Works Director of the City of Belmont. The amount of the payment shall be based upon the length of the sidewalk as required for the project times its width as required by the Land Development Code times the unit cost currently paid by the City of Belmont for sidewalk construction. Payment in lieu of sidewalk construction shall be approved as part of the Schematic Plan. All payments made in lieu of construction shall be made at the time of Construction Document approval. Failure to submit the required fee will delay approval of such submissions until payment is rendered.	[Revise or Delete]: Consider revising to to increase the cost of the payment in lieu of sidewalks or deleting this section completely.	Deleting this section will force developers to build sidewalks at all times. An alternative would be to increase the payment in lieu to make it more expensive and less attractive.
Land Devt Code	CHAPTER 16: DEVELOPMENT PLAN REQUIREMENTS 16.1 GENERAL PROVISIONS (H)	Incorporate bike paths and pedestrian paths, which are designed to connect with similar planned or existing local or regional facilities as shown on official plans and maps of the City of Belmont, neighboring municipalities, or Gaston County. Streets, pedestrian paths and bike paths shall contribute to a system of fully connected routes to all destinations. Designs shall encourage pedestrian and bicycle use by being spatially defined by buildings, trees, and lighting, and by discouraging high-speed traffic.	[Revise 1st sentence to]: Incorporate bike paths, sidewalks, pedestrian paths, greenways, and other pedestrian facilities to connect with similar planned or existing local or regional facilities as shown on official plans and maps of the City of Belmont, the Belmont Pedestrian Plan, neighboring municipalities, or Gaston County.	
Land Devt Code	CHAPTER 16: DEVELOPMENT PLAN REQUIREMENTS 16.4 CONFORMANCE WITH ADOPTED PLANS (C)	RESERVATION OF SCHOOL SITES AND OTHER PUBLIC BUILDINGS….	[Add]: School sites will be located within a 5 minute walking distance of the residential area it serves.	Addition of this or similar language assures that schools are built within walking distance of the children that the school serves. This also helps to locate schools within urban/developed areas to aid in controlling sprawl.

ADDITIONAL POLICY RECOMMENDATIONS

Additional recommended policy statements are provided below for consideration:

- All roads surrounding schools should have sidewalks on both sides of the road with safe crosswalks.

- Pedestrian access should be provided through culs-de-sac and large parking lots, which are typical obstacles to pedestrian connectivity.

- Pedestrians and bicyclists should be accommodated on roadway bridges, underpasses, and interchanges and on any other roadways that are impacted by a bridge, underpass, or interchange project (except on roadways where they are prohibited by law). All new bridges should be constructed with bicycle lanes and wide sidewalks.

- Identify pedestrian facilities that are not ADA-compliant including missing, damaged, or non-compliant curb ramps, stairs, or sidewalk segments of inadequate width and create a plan for improving them.

- The buffer space between the sidewalk and the curb and gutter should be maximized within the available right-of-way. 4' is suggested as a minimum on major thoroughfares, but could be decreased in areas with slower and lower volume automobile traffic. Larger buffers are preferred for street tree health and pedestrian comfort. Suggested width is flexible related to environmental constraint.

- Require street trees and planting buffers between the sidewalk and the street along all new roadways and sidewalk construction. Keep all vegetation trimmed.

- Encourage and/or require private owners (of residences and businesses) to keep their area in and around the sidewalk free of debris and litter.

- 'Greenways' should be defined as part of the City of Belmont's public infrastructure. Greenways are public infrastructure that provide important functions to not only offer transportation alternatives, but to protect public health safety and welfare. Within flood prone landscapes, greenways offer the highest and best use of floodplain land, mitigate the impacts from frequent flooding and offer public utility agencies access to floodplains for inspection, monitoring and management. Greenways filter

pollutants from stormwater and provide an essential habitat for native vegetation that serves to cleanse water of sediment. Greenway trails provide viable routes of travel for cyclists and pedestrians and serve as alternative transportation corridors for urban and suburban commuters. Greenways serve the health and wellness needs of our community, providing close-to-home and close-to-work access to quality outdoor environments where residents can participate in doctor prescribed or self-initiated health and wellness programs. All of these functions make greenways a vital part of community infrastructure.

- Subdividers are required to provide natural buffers along both sides of all perennial streams. Public greenway trails with limited disturbance along perennial and intermittent streams are excellent uses for these spaces and should be dedicated during the subdivision process.

- Encourage utility corridor development practices that allow for maximum compatibility with pedestrian and bikeway corridors. Land purchased and easements negotiated for the purpose of providing utilities (such as water and sewer) can serve a greater community benefit if established to also accommodate a public access for trails.

5 IMPLEMENTATION

CHAPTER OUTLINE:

OVERVIEW

Successful implementation will require the dedication of City staff, the creation of a Bicycle and Pedestrian Advisory Committee, and the support of local advocates. This chapter will serve as a simple guide with key action steps, priority projects, staffing recommendations, an evaluation and monitoring process, methods of pedestrian facility development and greenway acquisition.

KEY ACTION STEPS

These following steps are integral to achieving the goals and vision of this Plan. As guiding recommendations and the clearest representation of specific items to accomplish, they should be referred to often. With the exception of the first step, there is no particular order in which these should be addressed.

ADOPT THIS PLAN.

Through adoption, the Plan becomes a legitimate planning document of the City. Adoption shows that the City of Belmont has undergone a successful, supported planning process. The City can then use this document to receive funding through NCDOT and other resources. The City Boards and Planning staff should become knowledgeable of this Plan and support ordinance amendments and policy recommendations. Finally, this Plan should also be integrated into future City of Belmont planning documents.

BEGIN PRIORITY PROJECTS.

The project packages in chapter three provide an organized approach to the most important projects for improving connectivity and safety. Steering Committee input, public input, and criteria such as sidewalk gap closure and proximity to schools and other trip attractors were used to develop this list. These high priority projects should be supported, at least in part, by local funding and part of the local Capital Improvement Program (CIP).

IMPROVE AND ENFORCE CITY REGULATIONS.

To ensure future development provides pedestrian facilities and improves pedestrian friendliness, regulations should be updated and enforced. These policy recommendations are provided in more detail in Chapter 4. It should be the goal of the Planning Department to update zoning and subdivision regulations as soon as possible and to enforce these. All pedestrian-related regulations should be subject to case-by-case environmental evaluation. The most important regulation updates are:

- Adopt and implement the Design Guidelines (Chapter 6).
- Mandatory development of sidewalk and greenway network when on adopted City Plan map through an area of new development.
- The creation of a mandatory dedication, impact fee, or fee-in-lieu program for new development to provide pedestrian and greenway facilities.

CREATE A REQUEST FORM FOR SIDEWALKS + SIDEWALK REPAIR.

Several communities across the state have created an on-line sidewalk request form that citizens can use to ask for sidewalks to be built on streets that they use regularly. Utilizing local citizens to help find gaps in the current sidewalk network is highly important because they are familiar with their specific neighborhoods and needs. After these forms are completed the requested sidewalk can be evaluated by a City staff person and if deemed important for connectivity purposes they should be added to the sidewalk priority project list.

CREATE A BICYCLE AND PEDESTRIAN ADVISORY COMMITTEE (BPAC).

Many communities in North Carolina have commissions and committees for this purpose. The City of Belmont could create a BPAC to embrace an advocacy role for on-road bicycle and pedestrian issues, or expand the current role of the City's Parks and Recreation Citizen's Advisory Board. The advocacy group should help coordinate the implementation of program recommendations in this Plan, listen to community needs, promote the pedestrian network, and keep positive momentum going for plan implementation. Consider appointing a liaison or providing formal reports to the Planning Board and City Board of Commissioners on development review issues related to pedestrian, bicycle, and greenway planning.

A BPAC can also help monitor the progress of the City and NCDOT as they develop new facilities and programs. This group can push for additional improvements to build upon the recommendations of this plan.

TAKE ADVANTAGE OF ALL OPPORTUNITIES

While it is ideal to develop pedestrian facilities in order of priority, it is wise to also create facilities when opportunity arises. Some of the most cost-effective opportunities to provide pedestrian facilities are during routine roadway construction, reconstruction, and repaving projects. A new commercial development or a roadway widening project, for instance, would provide the means to build sidewalks or trails as a component of an existing effort, saving costs.

SEEK MULTIPLE FUNDING SOURCES AND FACILITY DEVELOPMENT OPTIONS

Multiple approaches should be taken to support pedestrian facility development and programming. It is important to secure the funding necessary to undertake the short-term, top priority projects but also to develop a long term funding strategy to allow continued development of the overall system. Capital and Powell Bill funds for sidewalk, crosswalk, and greenway construction should be set aside every year, even if only for a small amount (small amounts of local funding can be matched to outside funding sources). A variety of local, state, and federal options and sources exist and should be pursued. These funding options are described in Appendix C. Other methods of pedestrian facility development and greenway acquisition that are efficient and cost-effective are described later in this chapter.

DEVELOP PEDESTRIAN PROGRAMMING.

Programming such as Safe Routes to School and others described in Chapter 4 can help educate and encourage users. Safe Routes to School offers a number of school workshop opportunities and construction funding for improvements around schools. Public events and media involvement should also be considered when announcing new walkways and upcoming projects.

ENSURE PLANNING EFFORTS ARE INTEGRATED REGIONALLY.

Regional efforts such as those described in Chapter 3 are opportunities for the City of Belmont. Combining resources and efforts with surrounding municipalities, regional entities, and stakeholders is mutually beneficial. Regional, long-distance trails often spark the most excitement, use, and tourism. The City should remain coordinated with Gaston County and neighboring municipalities on regional trail initiatives. It is important to stay aware and communicative with other municipal, county, state, and NCDOT efforts to ensure the City takes advantage of funding opportunities and support. A Parks and Recreation Citizen's Advisory Board member, for example, could have the responsibility of staying in tune and updating the City on regional trail initiatives.

After adoption by the City, the City should ensure that this document is recognized in regional transportation plans, as well as into the official work schedule and planning of the local NCDOT Division 12.

PRIORITY PROJECTS

The priority pedestrian projects in Belmont are ones that best reflect public input and existing plans, serving multiple functions, such as connectivity and safety. These projects should be incorporated into the City's Capital Improvement Program (CIP) and/or State Transportation Improvement Program (TIP). In order to make the State TIP list or the Priority Needs List, the City of Belmont will have to work directly to submit needs after adoption of the plan.

As described in Chapter 3, there are three core types of pedestrian facilities recommended: sidewalks, greenways, and intersection improvements. Intersection improvement projects (listed in Chapter 3) would occur according to the project package that contains their associated cross-streets.

The following table lists the project packages and estimated costs. Cost per linear foot for sidewalks and crosswalks were provided by the North Carolina Department of Transportation Division of Bicycle and Pedestrian Transportation. These figures are for planning purposes only.

PRIORITY PEDESTRIAN FACILITIES AND ESTIMATED COSTS

Priority Rank	Project Package	From	To	Facility Type	New Sidewalk or Trail,Total LF	Sidewalk Cost: $50-$75/ LF	Trail Cost: $133/ LF	# of New Countdown Signals	$800/count-down signal	# of New Crosswalks	New Crosswalks Total LF	$5.00/LF	Totals
1	**Carolina Thread Trail Coridor Improvements**	Main Street from Belmont Abbey College in the north	Belmont city limits on Eagle Street to the south and west	New Sidewalk & Crossing facilities, Multi-Use Greenway	23,600	$1,463,000	$359,100	56	$44,800	28	672	$3,360	**$1,870,260.00**
2	**Abbey Creek Greenway**	Park St	Catawba St	Multi-Use Trail/Greenway	5,600	$0	$744,800	0	$0	2	48	$240	**$745,040.00**
3	**NC 273 Improvements (Park/Keener/Southpoint)**	I-85	Stowe Rd	New Sidewalk & Crossing facilities	5,500	$385,000	$0	58	$46,400	8	192	$960	**$432,360.00**
4	**City Wide Sidewalk Improvements (Primarily, sections of Central, Myrtle, Nixon, Catawba, Armstrong Ford, McLeod, and S 10th)**	Various	Various	New Sidewalk & Crossing facilities	32,211	$2,254,770	$0	16	$12,800	8	192	$960	**$2,268,530.00**
5	**Wilkinson Improvements**	City Limits West	City Limits East	Sidepaths & Crossing facilities	*Sidepaths to be included with new development: See section 5.15 of Belmont's Land Development Code*			16	$12,800	8	288	$1,440	**$14,240.00**
												Grand Total:	**$5,330,430**

Sidewalk linear foot costs: $75 is used when curb and gutter are included; $50 is used when curb and gutter are not included.

Crosswalk linear foot costs: $5.00 assumes high-visibility thermoplastic striping.

Greenway trail costs: $700K per mile is recommended by NCDOT and is used for the table above, although some NC municipalities have built them for less ($500-$600K)

STAFFING

The City of Belmont's Planning Department is responsible for the coordination of pedestrian planning. Being the first city, in 1995, to adopt and implement a New Urbanist Zoning Ordinance in the United States, has helped Belmont to remain relatively pedestrian friendly. This zoning ordinance supports pedestrian facilities and pedestrian scale development throughout the City. The department is committed to implementing the policy recommendations of this plan in relatively short order.

The City's Governing Board, Planning Board, and Planning and Public Works Departments are all committed to increasing both the quantity and quality of pedestrian infrastructure. The Planning Department will continue to spearhead initiatives to manifest tangible, on the ground results, from this general sentiment of community support. Building upon the momentum generated from this plan, the department will continue to keep pedestrian infrastructure a high priority in all of its daily planning activities, including site review, maintenance of pedestrian related GIS files, and short to long range planning.

The City's Parks and Recreation has an interest in incorporating safe walking facilities within its growing park system and connecting their facilities via a viable greenways and sidewalk network. It's recommended that key partnerships with the Gaston County Parks and Recreation Department be maintained, particularly in regards to regional greenway planning and development.

The Public Works Director should continue to participate in the construction and maintenance of all trail and pedestrian facilities. The Public Works Director should also be aware of—and be prepared to—implement the recommendations for pedestrian facilities discussed earlier in this plan. The Public Works Department could also assist the Planning Department in updating cost estimates for future facilities, and providing practical input on this Plan's design guidelines. (See page 92 for more on maintenance).

GASTON COUNTY PARKS AND RECREATION DEPARTMENT

The City's Parks and Recreation Department should be a key partner in carrying out greenway recommendations for this Plan. The City of Belmont should work with Gaston County to apply for funding and coordinate park and greenway facility development. This includes partnering on regional trail efforts, updating and publishing new maps, creating and updating GIS layers of all greenway facilities, proposing future alternative routes, and working with adjacent communities/counties to coordinate linkages to other greenways. Education and encouragement program opportunities should be incorporated within existing parks, future parks, and recreation centers.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

NCDOT Division 12 has shown interest and early support for this Pedestrian Plan. Division 12 maintains the state-owned roads in Belmont, affecting the pedestrian facilities (or lack thereof) on much of Belmont's roadway environment. Recommendations for pedestrian facilities on NCDOT roads will have to be carried out through a coordinated effort between the City of Belmont and NCDOT Division 12. Some assistance could also be provided through NCDOT's Division of Bicycle and Pedestrian Transportation.

The City and NCDOT should pursue a pedestrian facility development model used by other North Carolina municipalities (The City of Cary, for example) for the development of priority projects that are on NCDOT roads. Rather than waiting for certain projects to make it on the TIP list (a process that can take many years), the City of Belmont should pursue an agreement with NCDOT that allows the City to complete pedestrian projects today, on NCDOT roads, with the understanding that those improvements would eventually be on the TIP. When the project year finally arrives on the

TIP, NCDOT would then reimburse the City for their original pedestrian improvements. For more information on this facility development model, contact the City of Cary and/or NCDOT Division 5. For more on the TIP process, see section 5.5 of this chapter.

POLICE DEPARTMENT

The Belmont Police Department plays a vital role in pedestrian safety. All local police officers should be educated about North Carolina's pedestrian laws to promote positive interactions between pedestrians and motorists. The Guide to North Carolina Bicycle and Pedestrian Laws, written by the NCDOT Division of Bicycle and Pedestrian Transportation, should be distributed to local law enforcement. Programs such as the Safe Routes to School grants, offer the opportunity for the Police Department to partner with other City Departments to improve pedestrian safety.

VOLUNTEERS

Services from volunteers, student labor, and seniors, or donations of material and equipment may be provided in-kind, to offset construction and maintenance costs. Formalized maintenance agreements, such as adopt-a-trail/greenway or adopt-a-highway can be used to provide a regulated service agreement with volunteers. Other efforts and projects can be coordinated as needed with senior class projects, scout projects, interested organizations, clubs or a neighborhood's community service to provide for many of the program ideas outlined in Chapter 4 of this plan. Advantages of utilizing volunteers include reduced or donated planning and construction costs, community pride and personal connections to the City's greenway and pedestrian networks.

PERFORMANCE MEASURES (EVALUATION AND MONITORING)

The City of Belmont should establish performance measures to benchmark progress towards achieving the goals of this Plan. These performance measures should be stated in an official report within two years after the Plan is adopted. Baseline data should be collected as soon as the performance measures are established. The performance measures should address the following aspects of pedestrian transportation and recreation in Belmont:

- Safety. Measures of pedestrian crashes and injuries.
- Usage. Measures of how many people walking on on-road and off-road facilities.
- Facilities. Measures of how many pedestrian facilities are available and the quality of these facilities.
- Education/Enforcement. Measures of the number of people educated and/or number of people ticketed as a part of a pedestrian safety campaign.

- Institutionalization. Measures of the total budget spent on pedestrian and greenway projects and programs or the number of municipal employees receiving pedestrian facility design training.

When establishing performance measures, the City should consider utilizing data that can be collected cost-effectively and be reported at regular intervals, such as in a performance measures report that is published every two years. As the process of collecting and reporting pedestrian and greenway data is repeated over time, it will become more efficient. The data will be useful for identifying trends in non-motorized transportation usage and conditions.

Land use, transportation, development, and the overall landscape will continue to change as Belmont grows resulting in a dynamic area. Also new opportunities or input from an on-going monitoring and evaluation process may emerge, leading to the need to adapt and update the recommendations of this Plan.

PEDESTRIAN FACILITY DEVELOPMENT

This section describes different construction methods for the proposed pedestrian facilities outlined in Chapter 3 of this Plan.

Note that many types of transportation facility construction and maintenance projects can be used to create new pedestrian facilities. It is much more cost-effective to provide pedestrian facilities during roadway and transit construction and re-construction projects than to initiate the improvements later as "retrofit" projects.

To take advantage of upcoming opportunities and to incorporate pedestrian facilities into routine transportation and utility projects, the assigned "Pedestrian Coordinator" should keep track of the City's projects and any other local and NCDOT transportation improvements. While doing this, he/she should be aware of the different procedures for state and local roads and interstates. More detail on facility design and treatment can be found in Chapter 6.

NCDOT TRANSPORTATION IMPROVEMENT PROGRAM (TIP) PROCESS

The Transportation Improvement Program (TIP) is an ongoing program at NCDOT which includes a process asking localities to present their transportation needs to state government. Pedestrian facility and safety needs are an important part of this process. Every other year, a series of TIP meetings are scheduled around the state. Following the conclusion of these meetings, all requests are evaluated. Pedestrian improvement requests, which meet project selection criteria, are then scheduled into a four-year program as part of the state's long-term transportation program.

There are two types of projects in the TIP: incidental and independent. Incidental projects are those that can be incorporated into a scheduled roadway improvement project. Independent are those that can standalone such as a greenway, not related to a particular roadway.

The City of Belmont, guided by the Pedestrian Coordinator, should strongly consider important pedestrian projects along State roads to present to the Gaston Urban Area Metropolitan Planning Organization (MPO) and State. Local requests for small pedestrian projects, such as sidewalk links, can be directed to the MPO or the local NCDOT Division 12 office. Further information, including the criteria evaluated can be found at: http://www.ncdot.org/transit/bicycle/funding/funding_TIP.html

LOCAL ROADWAY CONSTRUCTION AND RECONSTRUCTION

Pedestrians should be accommodated any time a new road is constructed or an existing road is reconstructed. All new roads with moderate to heavy motor vehicle traffic should have sidewalks and safe intersections. The City of Belmont should take advantage of any upcoming construction projects, including roadway projects outlined in local comprehensive and transportation plans. Also, case law surrounding the ADA has found that roadway resurfacing constitutes an alteration, which requires the addition of curb ramps at intersections where they do not exist.

RESIDENTIAL AND COMMERCIAL DEVELOPMENT

As detailed in Chapter 4, the construction of sidewalks and safe crosswalks should be required during development. Construction of pedestrian facilities that corresponds with site construction is more cost-effective than retro-fitting. In commercial development, emphasis should also be focused on safe pedestrian access into, within, and through large parking lots. This ensures the future growth of the pedestrian network and the development of safe communities.

RETROFIT ROADWAYS WITH NEW PEDESTRIAN FACILITIES

For top priority pedestrian projects, it may be necessary to add new facilities before a roadway is scheduled to be reconstructed. In some places, it may be relatively easy to add sidewalk segments to fill gaps, but other segments may require removing trees, relocating landscaping or fences, re-grading ditches or cut and fill sections.

BRIDGE CONSTRUCTION OR REPLACEMENT

Provisions should always be made to include a walking facility as a part of vehicular bridges, underpasses, or tunnels, especially if the facility is part of the Pedestrian Network. All new or replacement bridges should accommodate pedestrians with wide sidewalks on both sides of the bridge. Even though bridge replacements do not occur regularly, it is important to consider these in longer-term pedestrian planning. NCDOT bridge policy states that sidewalks shall be included on new NCDOT road bridges with curb and gutter approach roadways. A determination of providing sidewalks on one or both sides is made during the planning process. Sidewalks across a new bridge shall be a minimum of five to six feet wide with a minimum handrail height of 42".

SIGNAGE AND WAYFINDING PROJECTS

The City should consider developing and adopting a signage style policy and procedure, to be applied throughout the entire community, to make it easier for people to find destinations. Pedestrian route and greenway signs are one example of these wayfinding signs, and they can be installed along routes as a part of a comprehensive wayfinding improvement project. For a step-by-step guide to help non-professionals participate in the process of developing and designing a signage system, as well as information on the range of signage types, visit the Project for Public Places website:
http://www.pps.org/info/amenities_bb/signage_guide

EXISTING CITY EASEMENTS

The City has many existing easements throughout Belmont, offering an opportunity for greenway facilities. Sewer easements are very commonly used for this purpose; offering cleared and graded corridors that easily accommodate trails. This approach avoids the difficulties associated with acquiring land, and it utilizes the City's existing resources.

GREENWAY ACQUISITION

Since not all greenways can be built on existing City easements, land acquisition is an important component of greenway development. It will be necessary to work with landowners and future development projects. Land acquisition and resource protection methods should be strategic, efficient, and respectful. Non-profit land protection agencies, land trusts, and/or environmental organizations can assist when attempting to acquire or manage property. These entities often have a great deal of experience selling the greenway benefits of conservation. Because these types of organizations do not have the power to condemn land or the power to tax, they often have excellent personal and professional relations with local landowners. Many options are available to obtain different degrees of control and different ownership relationships to regulate resource use. Providing educational material to local landowners and developers about the benefits of greenways and land/easement donations is an excellent means to stimulate greenway acquisition. The following is a list of potential conservation tools, developing partnerships, development regulations, land management techniques, and acquisition/donation. A more detailed look at each of these tools is provided in Appendix D- Acquisition Strategies.

LAND ACQUISITION / CONSERVATION TOOLS

Partnerships

Partnerships with land trusts, local developers, and private land managers can assist the City of Belmont in developing greenway facilities.

- Land Trusts
- Private Land Managers

Regulatory Methods

This type of resource protection is used to shape the use and development of the land without transferring or selling the land. The rules for this type of tool are established and enforced by a governing body.

- Exactions (Development/Impact Fee, Mandatory Dedications, Fee in Lieu)
- Growth Management Measures (Adequate Public Facilities Ordinances/Concurrency)
- Performance Zoning
- Incentive Zoning (Dedication or Density Transfers)
- Conservation Zoning (Buffer or Transition Zones)
- Overlay Zoning
- Negotiated Dedications
- Reservation of Land

Pursuing a Rail-Trail in Belmont

The NCDOT rail corridor that runs from Mt. Holly to Belmont, also known as 'Piedmont Northern', is 11 miles long with a three mile spur. According to NCDOT's Rail Division, it is unlikely that the tracks would be converted to trail. However, NCDOT would work with the Town of Belmont if it pursues negotiations with adjacent land owners to build a trail that runs parallel to the rail (creating a rail *with* trail project, rather that an rails-*to*-trails project). For more information on the Rail Division, contact Shirley Williams, NCDOT Rail Division: (919) 733-7245 x273 or visit www.bytrain.org/corridor/stateowned.html

See pages 67-68 and Appendix D for more information on strategies for working with the adjacent land owners.

- Planned Unit Development
- Cluster Development

Land Management

This type of resource protection refers to developing agreements and/or management plans for public use and greenway easements through private property. This method helps conserve the resources of an open space or greenway parcel or easement.

- Management Plans
- Conservation Easement
- Preservation Easement
- Public Use Easement

Acquisition

Land acquisition is a method used to acquire property rights to protect resources or to allow access and free movement of users on a property. This type of method is permanent. Acquisition methods can be divided into two categories: 1) landowners retain ownership of the land and preserve a resource through an easement or other mutual agreement, or 2) land ownership and management is transferred or donated from a landowner to a conservation agency (local government, land trust, or other preservation organization.)

- Donation (Tax Incentives)
- Fee Simple Purchase
- Easement Purchase
- Lease Back Purchase
- Bargain Sale
- Installment Sale
- Right of First Refusal
- Purchase of Development Rights
- Land Banking
- Condemnation
- Eminent Domain

6 DESIGN GUIDELINES

CHAPTER OUTLINE:

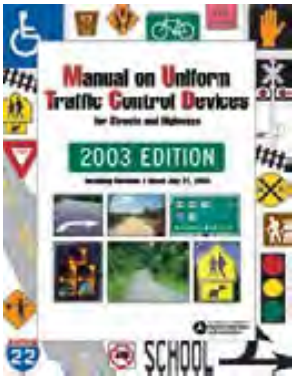
OVERVIEW

These recommended guidelines originate from and adhere to national design standards as defined by the American Association of State Highway Transportation Officials (AASHTO), the Americans with Disabilities Act (ADA), the Federal Highway Administration (FHWA) Pedestrian Facilities Users Guide, the Manual on Uniform Traffic Control Devices (MUTCD), and the NCDOT. Another major source of information in this chapter is the Pedestrian and Bicycle Information Center, found online at http://www.walkinginfo.org. Should the national standards be revised in the future and result in discrepancies with this chapter, the national standards should prevail for all design decisions. A qualified engineer or landscape architect should be consulted for the most up to date and accurate cost estimates.

The sections below serve as an inventory of pedestrian design elements/ treatments and provide guidelines for their development. These treatments and design guidelines are important because they represent minimum standards for creating a pedestrian-friendly, safe, accessible community. The guidelines are not, however, a substitute for a more thorough evaluation by a landscape architect or engineer upon implementation of facility improvements. Some improvements may also require cooperation with the NCDOT for specific design solutions.

Pedestrian and Bicycle Information Center

AASHTO
THE VOICE OF TRANSPORTATION



The Pedestrian and Bicyle Information Center, AASHTO, the MUTCD, nationally recognized trail standards, and other sources have all informed the content of this chapter.

SIDEWALKS AND WALKWAYS

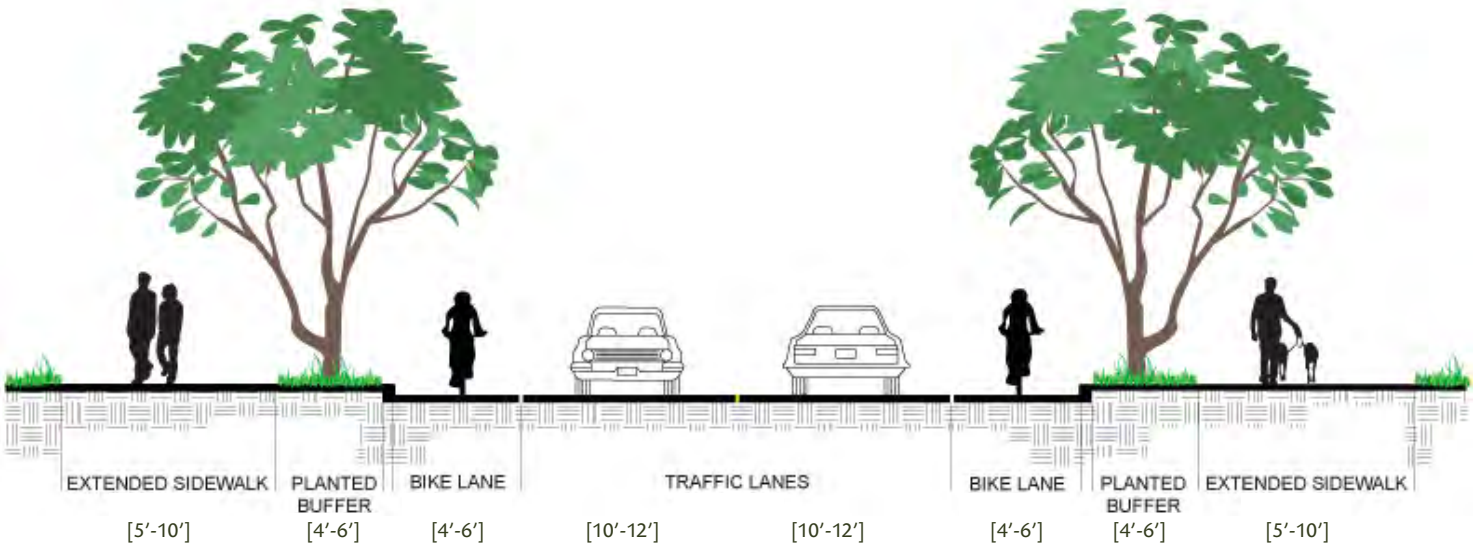
Sidewalks and walkways are extremely important public right-of-way components often times adjacent to, but separate from automobile traffic. In many ways, they act as the seam between private residences, stores, businesses, and the street.

There are a number of options for different settings, for both downtown and more rural and/or suburban areas. From a wide promenade to, in the case of a more rural environment, a simple asphalt or crushed stone path next to a secondary road, walkway form and topography can vary greatly. In general, sidewalks are constructed of concrete although there are some successful examples where other materials such as asphalt, crushed stone, or other slip resistant material have been used. The width of the walkways should correspond to the conditions present in any given location (i.e. level of pedestrian traffic, building setbacks, or other important natural or cultural features). FHWA (Federal Highway Administration) and the Institute of Transportation Engineers both suggest five feet as the minimum width for a sidewalk. This is considered ample room for two people to walk abreast or for two pedestrians to pass each other. Often downtown areas, near schools, transit stops, or other areas of high pedestrian activity call for much wider sidewalks.

A well designed residential sidewalk will have a width of at least five feet. (Image from http://www.walkinginfo.org)

Sidewalk with a vegetated buffer zone. Notice the sense of enclosure created by the large canopy street trees. (Image from http://www.walkinginfo.org)

Below: Typical street with bike lanes and adjacent sidewalk.



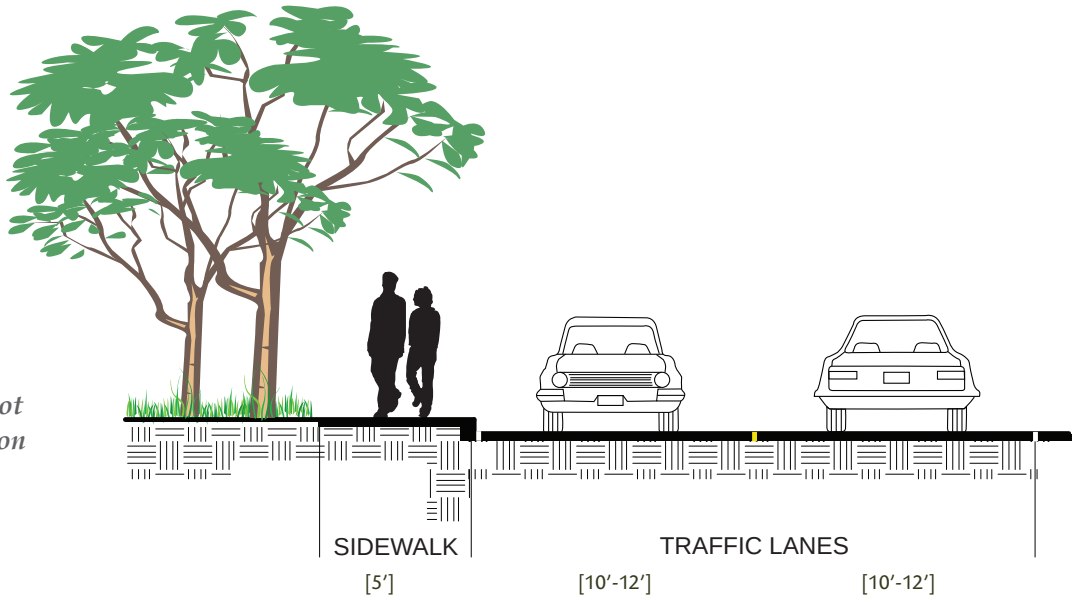
SIDEWALKS AND WALKWAY GUIDELINES:

Sidewalk Guideline Sources:

American Association of State Highway and Transportation Officials. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

Metro Regional Government. (2005). Portland, Oregon: Transportation Information Center. http://www.oregonmetro.gov

- Concrete is preferred surface, providing the longest service life and requiring the least maintenance. Permeable pavement such as porous concrete may be considered to improve water quality.
- Sidewalks should be built as flat as possible to accommodate all pedestrians; they should have a running grade of five percent or less; with a two percent maximum cross-slope.
- Concrete sidewalks should be built to minimum depth of four inches; six inches at driveways.
- Sidewalks should be a minimum of five feet wide; sidewalks serving mixed use and commercial areas shall be a minimum of 8 ft in width (12–15 feet is required in front of retail storefronts).
- Buffer zone of two to four feet in local or collector streets; five to six feet in arterial or major streets and up to eight feet in busy streets and downtown to provide space for light poles and other street furniture. See the Vegetation section later in this chapter for shade and buffer opportunities of trees and shrubs.
- Motor vehicle access points should be kept to minimum.
- If a sidewalk with buffer on both sides is not feasible due to topography and right-of-way constraints, then a sidewalk on one side is better than no facility. Each site should be examined in detail to determine placement options.



Right: Where space and topography are limiting and a planted buffer is not possible, this cross section may be applied.

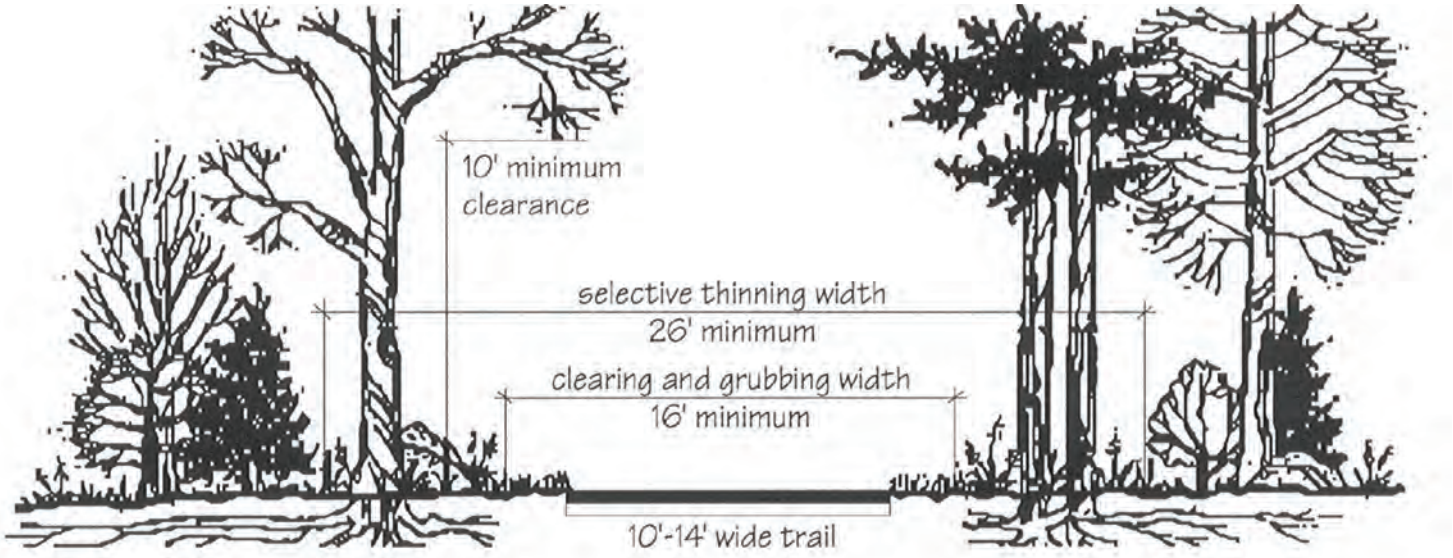
GREENWAY TRAIL

A greenway is defined as a linear corridor of land that can be either natural, such as rivers and streams, or manmade, such as abandoned railroad beds and utility corridors. Most greenways contain trails. Greenway trails can be paved or unpaved, and can be designed to accommodate a variety of trail users, including bicyclists, walkers, hikers, joggers, skaters, horseback riders, and those confined to wheelchairs.

Single-tread, multi-use trails are the most common trail type in the nation. These trails vary in width and can accommodate a wide variety of users. The minimum width for two-directional trails is 10', however 12'-14' widths are preferred where heavy traffic is expected. Centerline stripes should be considered for paths that generate substantial amounts of pedestrian traffic, or along curved portions of the trail, where sight-lines are limited. Possible conflicts between user groups must be considered during the design phase, as cyclists often travel at a faster speed than other users. Radii minimums should also be considered depending on the different user groups.

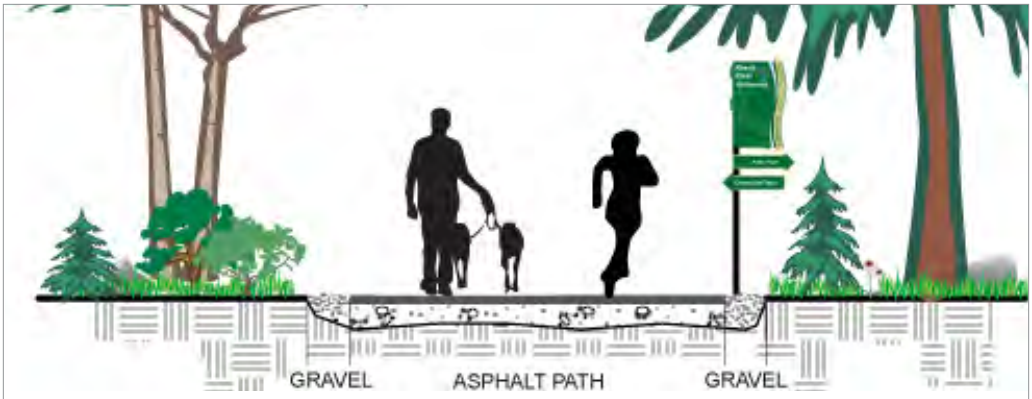
While the vegetative clearing needed for these trails varies with the width of the trail, the minimum width for clearing and grubbing a 14' wide trail is 16'. Selective thinning increases sight lines and distances and enhances the safety of the trail user. This practice includes removal of underbrush and limbs to create open pockets within a forest canopy, but does not include the removal of the forest canopy itself.

Below: Vegetation clearing guidelines

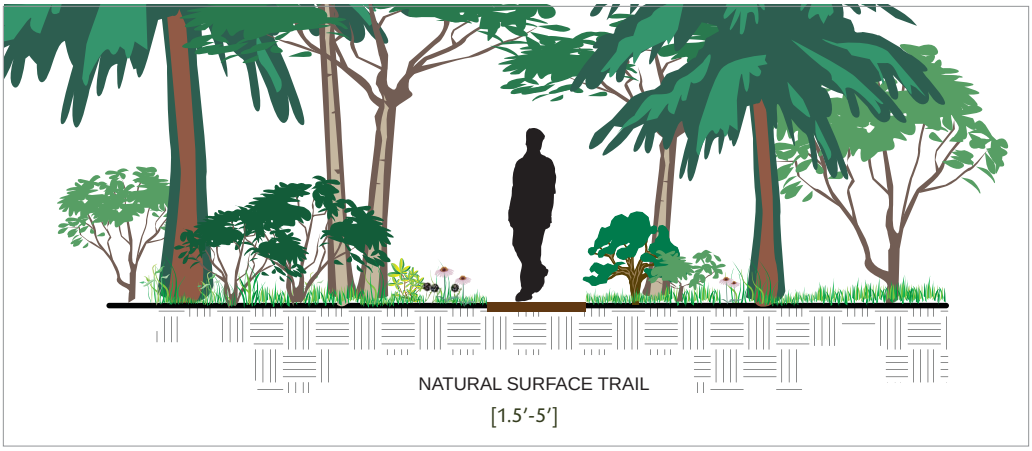


Typical pavement design for a paved, off-road, multi-use trail should be based upon the specific loading and soil conditions for each project. Asphalt or concrete trails should be designed to withstand the loading requirements of occasional maintenance and emergency vehicles.

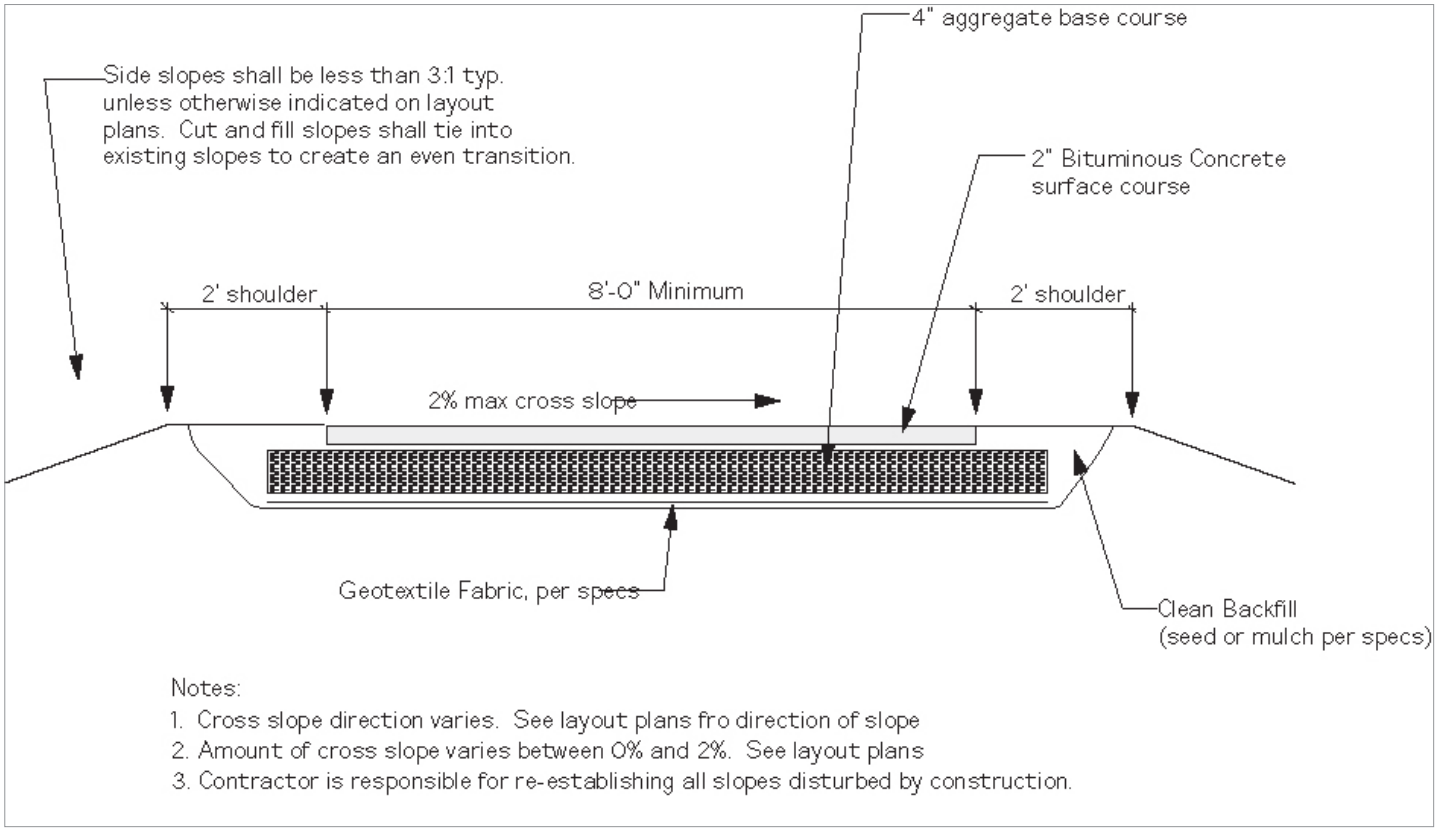
Right: Typical asphalt path section



Right: Typical natural surface trail section



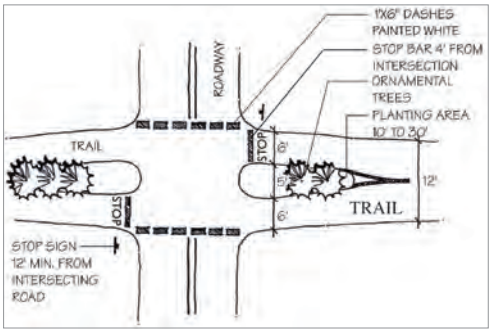
Below: Asphalt pavement construction detail



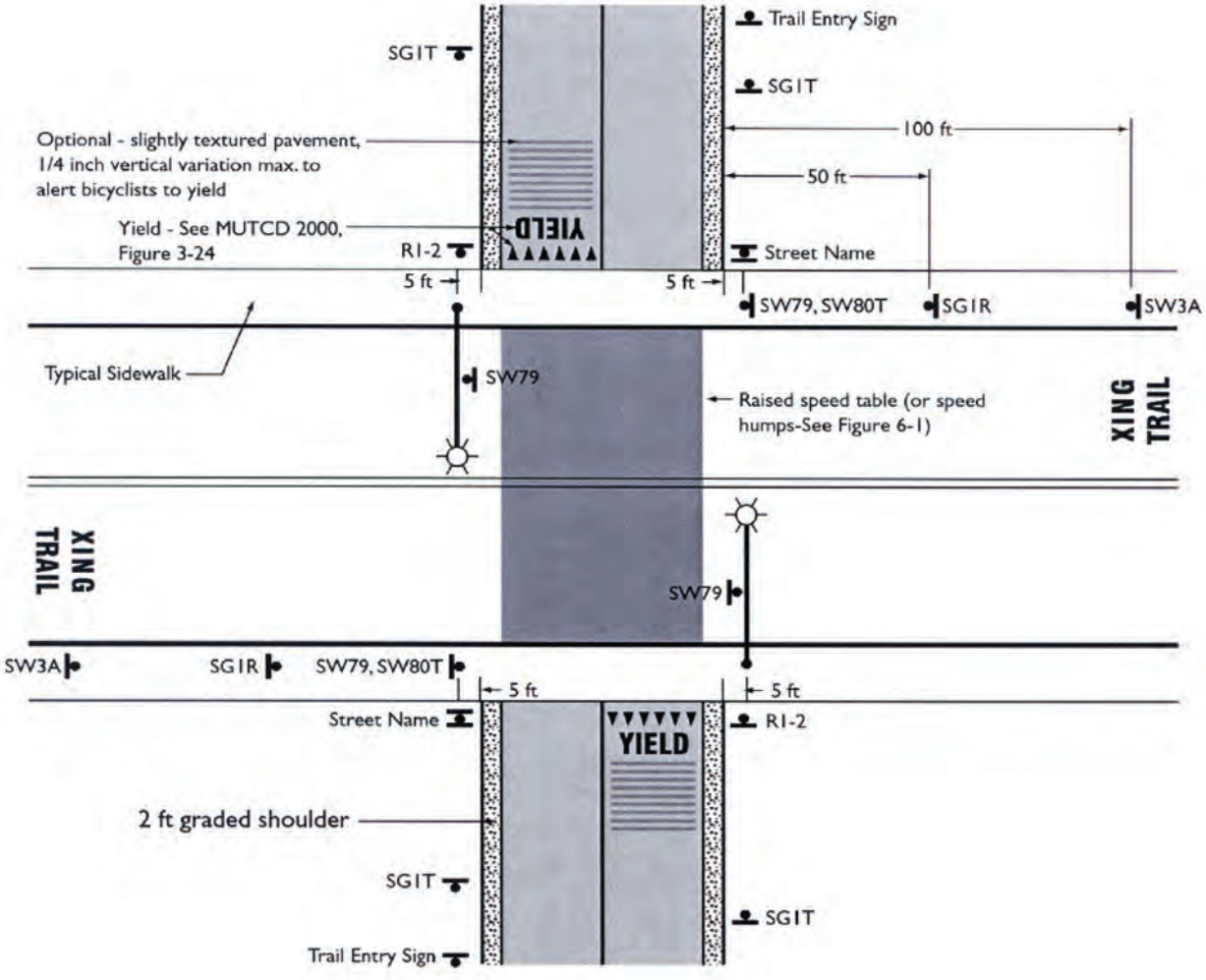
Concrete: In areas prone to frequent flooding, it is recommended that concrete be used because of its excellent durability. Concrete surfaces are capable of withstanding the most powerful environmental forces. They hold up well against the erosive action of water, root intrusion and subgrade deficiencies such as soft soils. Most often, concrete is used for intensive urban applications. Of all surface types, it is the strongest and has the lowest maintenance requirement, if it is properly installed.

Asphalt: Asphalt is a flexible pavement and can be installed on virtually any slope. One important concern for asphalt trails is the deterioration of trail edges. Installation of a geotextile fabric beneath a layer of aggregate base course (ABC) can help to maintain the edge of a trail. It is important to provide a 2' wide graded shoulder to prevent trail edges from crumbling.

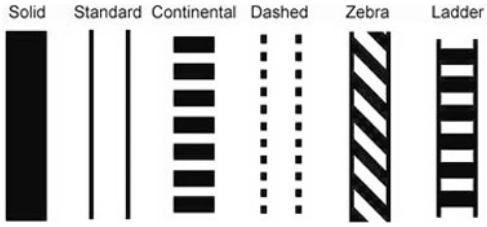
Trail and Roadway Intersections: The images below present detailed specifications for the layout of intersections between trail corridors and roadways. Signage rules for such intersections are available in the Manual for Urban Traffic Control Devices (MUTCD).



Above and below: Typical greenway trail approachs to a roadway



MARKED CROSSWALKS



A variety of patterns are possible in designating a crosswalk; an example of a 'continental' design is shown above.

A marked crosswalk designates a pedestrian right-of-way across a street. It is often installed at controlled intersections or at key locations along the street (a.k.a. mid-block crossings). Every attempt should be made to install crossings at the specific point at which pedestrians are most likely to cross: a well-designed traffic calming location is not effective if pedestrians are instead using more seemingly convenient and potentially dangerous location to cross the street. Marked pedestrian crosswalks may be used under the following conditions: 1) At locations with stop signs or traffic signals, 2) At non-signalized street crossing locations in designated school zones, and 3) At non-signalized locations where engineering judgment dictates that the use of specifically designated crosswalks are desirable.

There is a variety of form, pattern, and materials to choose from when creating a marked crosswalk. It is important however to provide crosswalks that are not slippery, are free of tripping hazards, or are otherwise difficult to maneuver by any person including those with physical mobility or vision impairments. Although attractive materials such as inlaid stone or certain types of brick may provide character and aesthetic value, the crosswalk can become slippery. Potential materials can be vetted by requesting case studies from suppliers regarding where the materials have been successfully applied. Also, as some materials degrade from use or if they are improperly installed, they may become a hazard for the mobility or vision impaired.

CROSSWALK GUIDELINES:

Crosswalk Guideline Sources:

American Association of State Highway and Transportation Officials. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

Metro Regional Government. (2005). Portland, Oregon: Transportation Information Center. http://www.oregonmetro.gov

- Should not be installed in an uncontrolled environment [at intersections without traffic signals] where speeds exceed 40 mph. (AASHTO, 2004)
- Crosswalks alone may not be enough and should be used in conjunction with other measures to improve pedestrian crossing safety, particularly on roads with average daily traffic (ADT) above 10,000
- Width of marked crosswalk should be at least six feet; ideally ten feet or wider in downtown areas.
- Curb ramps and other sloped areas should be fully contained within the markings.
- Crosswalk markings should extend the full length of the crossings.
- Crosswalk markings should be white per MUTCD.
- Either the 'continental' or 'ladder' patterns are recommended for intersection improvements for aesthetic and visibility purposes. Lines should be one to two feet wide and spaced one to five feet apart.

CURB RAMPS

Curb ramps are critical features that provide access between the sidewalk and roadway for wheelchair users, people using walkers, crutches, or handcarts, people pushing bicycles or strollers, and pedestrians with mobility or other physical impairments. In accordance with the 1973 Federal Rehabilitation Act and to comply with the 1990 Federal ADA requirements, curb ramps must be installed at all intersections and mid-block locations where pedestrian crossings exist (Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/engineering/roadway-ramps.cfm). In addition, these federal regulations require that all new constructed or altered roadways include curb ramps.

Two separate curb ramps should be provided at each intersection (see image below). With only one large curb ramp serving the entire corner, there is not safe connectivity for the pedestrian. Dangerous conditions exist when the single, large curb ramp inadvertently directs a pedestrian into the center of the intersection, or in front of an unsuspecting, turning vehicle.

CURB RAMP GUIDELINES:

- Two separate curb ramps, one for each crosswalk, should be provided at corner of an intersection.
- Curb ramp should have a slope no greater than 1:12 (8.33%). Side flares should not exceed 1:10 (10%); it is recommended that much less steep slopes be used whenever possible.

Curb Ramp Guideline Sources:

Metro Regional Government. (2005). Portland, Oregon: Transportation Information Center. http://www.oregonmetro.gov

Left: The curb ramps shown have two separate ramps at the intersection (visable across the street) (Image from http://www.walkinginfo.org).

For additional information on curb ramps see Accessible Rights-of-Way: A Design Guide, by the U.S. Access Board and the Federal Highway Administration, and Designing Sidewalks and Trails for Access, Parts I and II, by the Federal Highway Administration. Visit: www.access-board.gov for the Access board's right-of-way report.

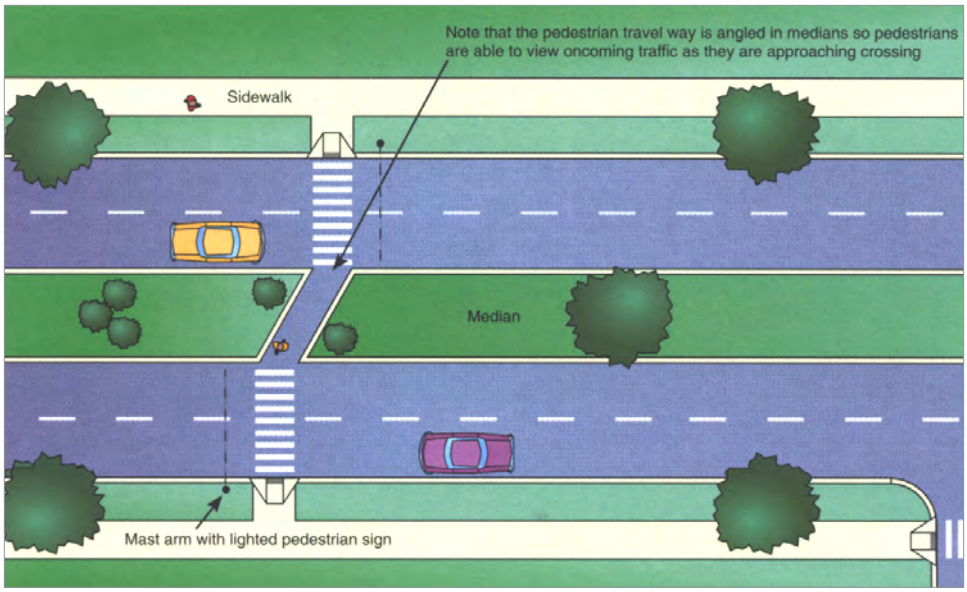
RAISED OR LOWERED MEDIANS

Medians are barriers in the center portion of a street or roadway. When used in conjunction with mid-block or intersection crossings, they can be used as a crossing island to provide a place of refuge for pedestrians. They also provide opportunities for landscaping that in turn can help to slow traffic. A center turn lane can be converted into a raised or lowered median thus increasing motorist safety.

A continuous median can present several problems when used inappropriately. If all left-turn opportunities are removed, there runs a possibility for increased traffic speeds and unsafe U-turns at intersections. Additionally, the space occupied may be taking up room that could be used for bike lanes or other treatments. An alternative to the continuous median is to create a segmented median with left turn opportunities.

Raised or lowered medians are best suited for high-volume, high-speed roads, and they should provide ample cues for people with visual impairments to identify the boundary between the crossing island and the roadway.

Right: A median used in conjunction with mid-block crossing, serving as a refuge for pedestrians. (Image from AASHTO).



Right: an attractive lowered and landscaped median that collects stormwater, yet appears to be raised. (Image from AASHTO)

MEDIAN GUIDELINES:

- Median pedestrian refuge islands should be provided as a place of refuge for pedestrians crossing busy or wide roadways at either mid-block locations or intersections. They should be utilized on high speed and high volume roadways.
- Medians should incorporate trees and plantings to change the character of the street and reduce motor vehicle speed.
- Landscaping should not obstruct the visibility between motorists and pedestrians.
- Median crossings should provide ramps or cut-throughs for ease of accessibility for all pedestrians.
- Median crossings should be at least 6 feet wide in order to accommodate more than one pedestrian, while a width of 8 feet (where feasible) should be provided for bicycles, wheelchairs, and groups of pedestrians.
- Median crossings should possess a minimum of a 4 foot square level landing to provide a rest point for wheelchair users.
- Pedestrian push-buttons should be located in the median of all signalized mid-block crossings, where the roadway width is in excess of 60 feet.

Median Guideline Sources:

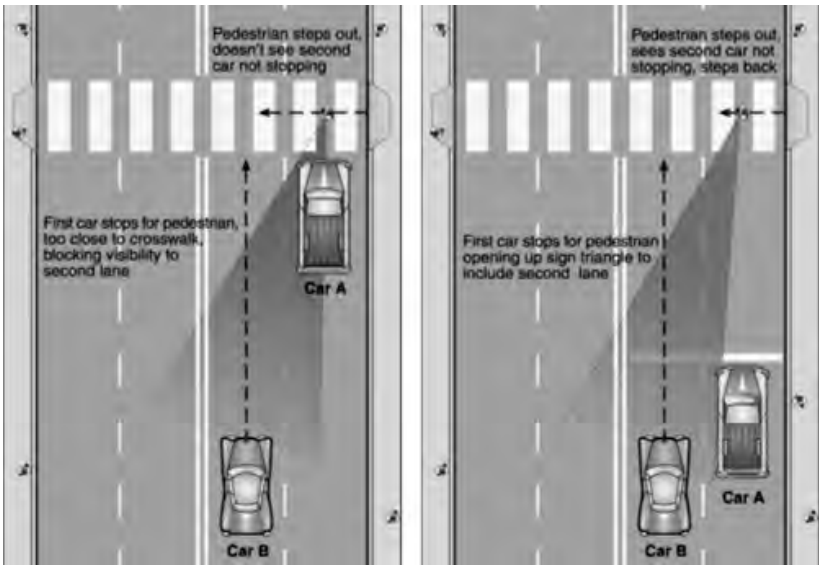
American Association of State Highway and Transportation Officials. (2004). Guide for the Planning, Design, and Operation of Pedestrian Facilities.

Metro Regional Government. (2005). Portland, Oregon: Transportation Information Center. http://www.oregonmetro.gov

ADVANCE STOP BARS

Moving the vehicle stop bar 15–30 feet back from the pedestrian crosswalk at signalized crossings and mid-block crossings increases vehicle and pedestrian visibility. Advance stop bars are 1–2 feet wide and they extend across all approach lanes at intersections. The time and distance created allows a buffer in which the pedestrian and motorist can interpret each other's intentions. Studies have shown that this distance translates directly into increased safety for both motorist and pedestrian. One study in particular claims that by simply adding a "Stop Here for Pedestrians" sign reduced pedestrian motorist conflict by 67%. When this was used in conjunction with advance stop lines, it increased to 90% (Pedestrian and Bicycle Information Center:http://www.walkinginfo.org/engineering/crossings-enhancements.cfm).

Below: Advance stop bars enhance visibility for pedestrians (Image from www.walkinginfo.org).



BULB-OUTS

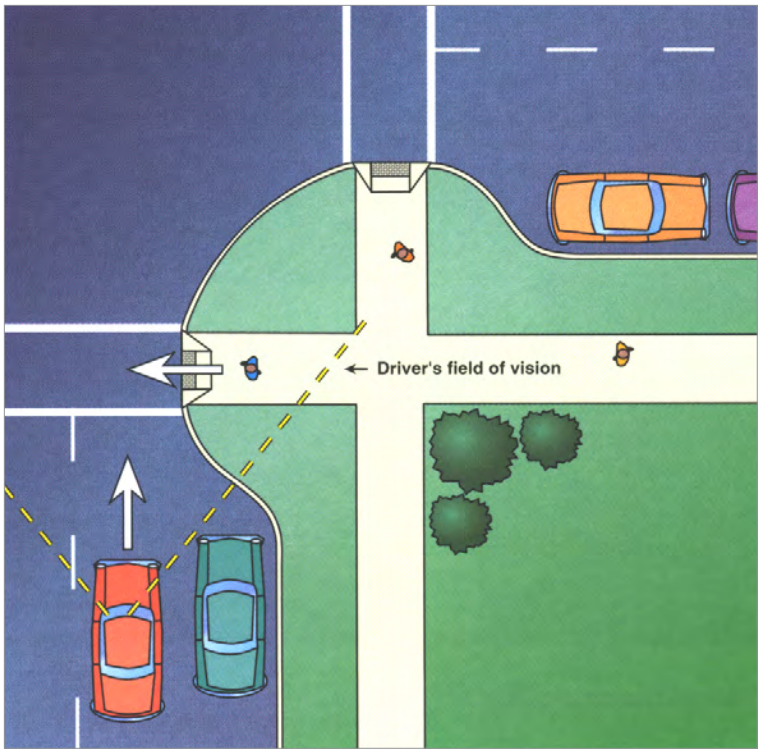
A bulb-out, or curb extension, is a place where the sidewalk extends into the parking lane of a street. Because these curb extensions physically narrow the roadway, a pedestrian's crossing distance—and consequently the time spent in the street—is reduced. They can be placed either at mid-block crossings or at intersections.

Sightlines and pedestrian visibility are reduced when motor vehicle parking encroaches too close to corners creating a dangerous situation for pedestrians. When placed at an intersection, bulb-outs preclude vehicle parking too close to a crosswalk. Also, bulb-outs at intersections can greatly reduce turning speed, especially if curb radii are set as tight as possible (Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/engineering/crossings-curb.cfm). Finally, bulb-outs also reduce travel speeds when used in mid-block crossings because of the reduced street width.

Bulb-outs should only be used where there is an existing on-street parking lane and should never encroach into travel lanes, bike lanes, or shoulders (Pedestrian and Bicycle Information Center.

By reducing a pedestrian's crossing distance, less time is spent in the roadway, and pedestrian vehicle conflicts are reduced (Image from AASHTO).

BULB-OUT GUIDELINES:



- Bulb-outs should be used on crosswalks in heavy pedestrian areas where parking may limit the driver's view of the pedestrian.
- Where used, sidewalk bulb-outs should extend into the street for the width of a parking lane (a minimum five feet) in order to provide for a shorter crossing width, increased pedestrian visibility, more space for pedestrian queuing, and a place for sidewalk amenities and planting.
- Curb extensions should be used on mid-block crossing where feasible.
- Curb extensions may be inappropriate for use on corners where frequent right turns are made by trucks or buses.

PEDESTRIAN OVERPASS/UNDERPASS

Pedestrian overpasses and underpasses efficiently allow for pedestrian movement across busy thoroughfares. These types of facilities are problematic in many regards and should only be considered under suitable circumstances or where no other solution is possible. Perhaps the best argument for using them sparingly is that research proves pedestrians will avoid using such a facility if they perceive the ability to cross at grade as taking about the same amount of time (Pedestrian and Bicycle Information Center:http://www.walkinginfo.org/engineering/crossings-overpasses.cfm).

The other areas of contention arise with the high cost of construction. There are also ADA requirements for stairs, ramps, and elevators that in many cases once complied with result in an enormous structure that is visually disruptive and difficult to access.

Overpasses work best when existing topography allows for smooth transitions. Underpasses as well work best with favorable topography when they are open and accessible, and exhibit a sense of safety. Each should only be considered with rail lines, high volume traffic areas such as freeways, and other high volume arteries.

Example trail overpass (above) and underpass (below).

OVERPASS/UNDERPASS GUIDELINES:

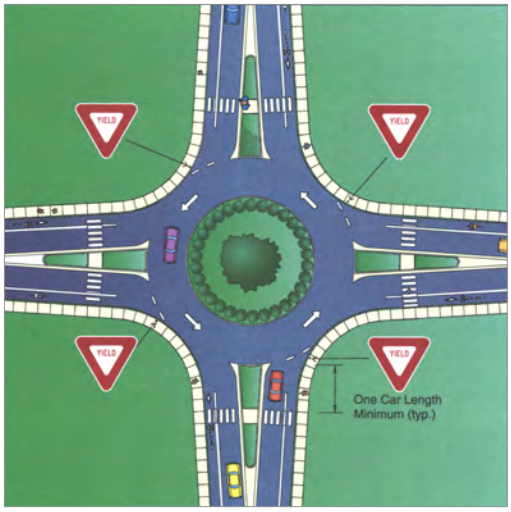
- Over and underpasses should be considered only for crossing arterials with greater than 20,000 vehicle trips per day and speeds 35 - 40 mph and over.
- Minimum widths for over and underpasses should follow the guidelines for sidewalk width.
- Underpasses should have a daytime illuminance minimum of 10 fc achievable through artificial and/or natural light provided through an open gap to sky between the two sets of highway lanes, and a night time level of 4 foot-candle.
- In underpasses, where vertical clearance allows, the pedestrian walkway should be separated from the roadway by more than a standard curb height.
- Consider acoustics measures within underpasses to reduce noise impacts to pedestrians and bicyclists.

ROUNDABOUTS

A roundabout is a circular intersection that maneuvers traffic around in a counterclockwise direction so that cars make a right-hand turn onto a desired street. Vehicles from approaching streets are generally not required to stop although approaching vehicles are required to yield to motorists in the roundabout. It is believed that this system eliminates certain types of crashes at traditional intersections.

Every effort must be made to prompt motorists to yield to pedestrians crossing the roundabout. A low design speed is required to improve pedestrian safety. Splitter islands and single lane approaches both lend to pedestrian safety as well as other urban design elements discussed in this chapter.

Typical roundabout (Image from AASHTO)



Problems also arise with the vision-impaired because there are not proper audible cues associated with when to cross. Studies are underway to develop and test solutions. Auditory accessible pedestrian signals placed on sidewalks and splitter islands are one solution, but again there is no research to prove their efficacy.

In areas where traffic is low, a roundabout presents little in the way of a barrier for bicyclists. However, in multi-lane roundabouts where speeds are higher, and the traffic is heavy, bicyclists are at a distinct and dangerous disadvantage. Adding a bike lane within such a roundabout has not proven to be effective. A possible solution involves creating a bike lane that completely skirts the roundabout allowing the cyclist to use or share the pedestrian route.

Above: A pedestrian walks through a pedestrian refuge island, as part of a roundabout.

ROUNDABOUT GUIDELINES:

- The recommended maximum entry design speed for roundabouts ranges from 15 mph for 'mini-roundabouts' in neighborhood settings, to 20 mph for single-lane roundabouts in urban settings, to 25 mph for single-lane roundabouts in rural settings.
- Refer to roundabout diagram for typical crosswalk placement.
- Please refer to FHWA's report, Roundabouts, an Information Guide, available online through: www.fhrc.gov. The report provides information on general design principles, geometric elements, and provides detailed specifications for the various types of roundabouts.

TRAFFIC SIGNALS

Traffic signals assign the right of way to motorists and pedestrians and produce openings in traffic flow, allowing pedestrians time to cross the street. When used in conjunction with pedestrian friendly design, proper signalization should allow for an adequate amount of time for an individual to cross the street. The suggested amount of pedestrian travel speed recommended in the Manual on Uniform Traffic Control Devices (MUTCD) is 4ft/sec however this does not address the walking speed of the elderly or children. Therefore it is suggested that a lower speed of 3.5ft/sec be used whenever there are adequate numbers of elderly and children using an area.

Engineering, as well as urban design judgment, must be used when determining the location of traffic signals and the accompanying timing intervals. Although warrants for pedestrian signal timing have been produced by the MUTCD, each site must be analyzed for factors including new facility and amenity construction (i.e. a popular new park or museum) to allow for potential future pedestrian traffic volume. In addition, creating better access to existing places may in fact generate a higher pedestrian volume.

Fixed timed sequencing is often used in high traffic volume commercial or downtown areas to allow for a greater efficiency of traffic flow. In such instances, the pedestrian speed must be carefully checked to ensure safety.

RIGHT TURN ON RED RESTRICTIONS

Introduced in the 1970's as a fuel saving technique, the Right Turn on Red (RTOR) law is thought to have had a detrimental effect on pedestrians. The issue is not the law itself but rather the relaxed enforcement of certain caveats within the law such as coming to a complete stop and yielding to pedestrians. Often motorists will either nudge into a crosswalk to check for oncoming traffic without looking for pedestrians or slow, but not stop, for the red-light while making the turn.

There is legitimate concern that eliminating an RTOR will only increase the number of right-turn-on-green conflicts where all of the drivers who would normally have turned on red, now are anxious to turn on green. As discussed in the prior section, LPI or exclusive pedestrian intervals my help to alleviate this problem. Eliminating RTOR should be considered on a case-by-case basis and only where there are high pedestrian volumes. This can be done by simple sign postings as illustrated at right.

A low cost sign that restricts right-hand turns at a red light (Image from http://www.walkinginfo.org).

PEDESTRIAN SIGNALS

International symbols used in a crosswalk to designate WALK and DON'T WALK (Image from http://www.walkinginfo.org).

There are a host of traffic signal features and enhancements that can greatly improve the safety and flow of pedestrian traffic. Some include countdown signals, the size of traffic signals, positioning of traffic signals, audible cues, and timing intervals which are discussed below (Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/engineering/crossings-signals.cfm).

As of 2008, new federal policy requires all new pedestrian signals to be of the countdown variety. In addition, all existing signals must be updated to countdown within 10 years (updated in MUTCD). Countdown signals have proven to be an effective measure of crash reduction (25% crash reduction in 2007 FHWA study).

Countdown signals are pedestrian signals that show how many seconds the pedestrian has remaining to cross the street. The countdown can begin at the beginning of the WALK phase, perhaps flashing white or yellow, or at the beginning of the clearance, or DON'T WALK phase, flashing yellow as it counts down. Audible cues can also be used to pulse along with a countdown signal.

Audible cues can also be used to pulse along with a countdown signal.

Signals should be of adequate size, clearly visible, and, in some circumstances, accompanied by an audible pulse or other messages to make crossing safe for all pedestrians. Consideration should be paid to the noise impact on the surrounding neighborhoods when deciding to use audible signals.

The timing of these or other pedestrian signals needs to be adapted to a given situation. In general, shorter cycle lengths and longer walk intervals provide better service to pedestrians and encourage better signal compliance. For optimal pedestrian service, fixed-time signal operation usually works best. Pedestrian pushbuttons may be installed at locations where pedestrians are expected intermittently. Quick response to the pushbutton or feedback to the pedestrian (e.g.- indicator light comes on) should be programmed into the system. When used, pushbuttons should be well-signed and within reach and operable from a flat surface for pedestrians in wheelchairs and with visual disabilities. They should be conveniently placed in the area where pedestrians wait to cross. Section 4E.09 within the MUTCD provides detailed guidance for the placement of pushbuttons to ensure accessibility (Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/engineering/crossings-signals.cfm).

There are three types of signal timing generally used: concurrent, exclusive, and leading pedestrian interval (LPI). The strengths and weaknesses of each will be discussed with an emphasis on when they are best employed.

When high-volume turning situations conflict with pedestrian movements, the exclusive pedestrian interval is the preferred solution. The exclusive

pedestrian intervals stop traffic in all directions. In order to keep traffic flowing regularly, there is often a greater pedestrian wait time associated with this system. Although it has been shown that pedestrian crashes have been reduced by 50% in some areas by using these intervals, the long wait times can encourage some to cross when there is a lull in traffic (Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/engineering/crossings-signals.cfm).

An LPI gives pedestrians an advance walk signal before the motorists get a green light, giving the pedestrian several seconds to start in the crosswalk where there is a concurrent signal. This makes pedestrians more visible to motorists and motorists more likely to yield to them. This advance crossing phase approach has been used successfully in several places, such as New York City, for two decades and studies have demonstrated reduced conflicts for pedestrians. The advance pedestrian phase is particularly effective where there is a two-lane turning movement. There are some situations where an exclusive pedestrian phase may be preferable to an LPI, such as where there are high-volume turning movements that conflict with the pedestrians crossing.

The use of infrared or microwave pedestrian detectors has increased in many cities worldwide. Theses devices replace the traditional push-button system. They appear to be improving pedestrian signal compliance as well as reducing the number of pedestrian and vehicle conflicts. The best use of these devices is when they are employed to extend crossing time for slower moving pedestrians.

PEDESTRIAN SIGNAL GUIDELINES:

- Pedestrian signals should be placed in locations that are clearly visible to all pedestrians.
- Larger pedestrian signals should be utilized on wider roadways, to ensure readability.
- Pedestrian signal pushbuttons should be well-signed and visible.
- Pedestrian signal pushbuttons should clearly indicate which crossing direction they control.
- Pedestrian signal pushbuttons should be reachable from a flat surface, at a maximum height of 3.5 feet and be located on a level landing to ensure ease of operation by pedestrians in wheelchairs.
- Walk intervals should be provided during every cycle, especially in high pedestrian traffic areas.

LANDSCAPING

The introduction of vegetation in an urban environment can provide a welcomed intervention of nature into a place that is otherwise hardened from buildings, concrete, and asphalt. It can be used to provide a separation buffer between pedestrians and motorists, reduce the width of a roadway, calm traffic by creating a visual narrowing of the roadway, enhance the street environment, and help to generate a desired aesthetic.

Street trees and other plantings provide comfort, a sense of place, and a more natural and inviting setting for pedestrians. Landscaping and the aforementioned street furniture make people feel welcome

There are also some instances where islands of vegetation are created to collect and filter stormwater from nearby streets and buildings. These islands are referred to as constructed wetlands, rain gardens, and/or bioswales. When these devices are employed, the benefits listed above are coupled with economic and ecologic benefits of treating stormwater at its source. There are many examples of this in Oregon and Washington, particularly Seattle's Green Streets Program. Using thoughtful design to treat stormwater as an amenity rather than waste to be disposed of in an environmentally harmful manner is gaining popularity nationwide.

Landscaping used on the Sea Street in Seattle, Washington shows how stormwater treatment can be tied to aesthetically pleasing plantings. (Image from Seattle, WA, Public Utilities: Seattle.gov)

An issue with this or any landscaping treatment is that of ongoing maintenance. The responsibility often falls on local municipalities although there are instances where local community groups have provided funding and volunteers for maintenance. The best way to address the maintenance issue is to design using native plant material that is already adapted to the local soil and climate. Growth pattern and space for maturation, particularly with larger tree plantings, are important to avoid cracking sidewalks and other pedestrian obstructions.

Street trees buffer and soften often urban environments in a number of psychological, physical, and ecological ways; their shade is particularly helpful to pedestrians in North Carolina during summer months.

ROADWAY LIGHTING IMPROVEMENTS

Proper lighting in terms of quality, placement, and sufficiency can greatly enhance a nighttime urban experience as well as create a safe environment for motorists and pedestrians. Two-thirds of all pedestrian fatalities occur during low-light conditions (AASHTO, 2004: Guide for the Planning, Design, and Operation of Pedestrian Facilities). Attention should be paid to crossings so that there is sufficient ambience for motorists to see pedestrians. To be most effective, lighting should be consistent, adequately spaced, and distinguished, providing adequate light.

In most cases, roadway street lighting can be designed to illuminate the sidewalk area as well. The visibility needs of both pedestrian and motorist should be considered. In commercial or downtown areas and other areas of high pedestrian volumes, the addition of lower level, pedestrian-scale lighting to streetlights with emphasis on crossings and intersections may be employed to generate a desired ambiance. A variety of lighting choices include mercury vapor, incandescent, or less expensive high-pressure sodium lighting for pedestrian level lighting. Roadway streetlights can range from 20-40 feet in height while pedestrian-scale lighting is typically 10-15 feet.

It is important to note that every effort should be made to address and prevent light pollution. Also known as photo pollution, light pollution is 'excess or obtrusive light created by humans'.

The pedestrian-scale lighting used in Downtown Belmont should be replicated for other areas where pedestrain lighting is desired.

GUIDELINES:

- Ensure pedestrian walkways and crossways are sufficiently lit.
- Consider adding pedestrian-level lighting in areas of higher pedestrian volumes, downtown, and at key intersections.
- Install lighting on both sides of streets in commercial districts.
- Use uniform lighting levels
- Use full cut-off light fixtures to avoid excess light pollution

STREET FURNITURE AND WALKING ENVIRONMENT

As part of a comprehensive sidewalk and walkway design, all street furniture should be placed in a manner that allows for a safe, pleasurable, and accessible walking environment. Good-quality street furniture will show that the community values its public spaces and is more cost-effective in the long run. Street furniture includes benches, trash bins, signposts, newspaper racks, water fountains, bike racks, restaurant seating, light posts, and other ornaments that are found within an urban street environment. Street furniture should mostly be considered in the downtown area and other important pedestrian-active areas.

In addition to keeping areas free of obstruction from furniture, a walking environment should be clean and well maintained. Attention should be given to removing debris, trimming vegetation, allowing for proper stormwater drainage, providing proper lighting and sight angles, and repairing or replacing broken or damaged paving material can make an enormous difference in pedestrian perception of safety and aesthetics. Special attention should be paid to the needs of the visually impaired so that tripping hazards and low hanging obstructions are removed.

GUIDELINES:

- Ensure proper placement of furniture; do not block pedestrian walkway or curb ramps or create sightline problems.
- Wall mounted Objects = not to protrude more than 4" from a wall between 27" and 7' from the ground
- Single post mounted Objects = not to protrude more than 4" from each side of the post between 27" and 7' from the ground
- Multiple Post Mounted Objects = lowest edge should be no higher than 27" and no lower than 7'
- Place street furniture at the end of on-street parking spaces rather than in middle to avoid vehicle-exiting conflict.

The street furniture shown here (Downtown Belmont) is placed in such a manner so as to create a safe, pleasurable, and accessible walking environment

TRANSIT STOP TREATMENTS

Where transit opportunities are available, it is appropriate to consider some of the basic elements of a well designed, accessible, and functional transit stop.

Bus or other transit stops should be located in places that are most suitable for the passengers. For example, stops should be provided near higher density residential areas, commercial or business areas, and schools, and connected to these areas by sidewalk. Some of the most important elements to consider are the most basic: sidewalk connectivity to the stops, proper lighting, legible and adequate transit stop signage, shelter, seating, trash bins, bicycle and even car parking. Transit stops create an area of activity and may generate additional business and pedestrian traffic. Therefore an opportunity is created to provide adequate sidewalks and other pedestrian oriented design elements. At a minimum, marked crosswalks (especially at mid-block stops), curb ramps, and proper sidewalk widths should be considered.

As with any human scale design element discussed, safety is an important factor to consider when locating bus stops. In the case of a bus stop, special attention should be paid to the number of lanes and direction of traffic when deciding to locate a stop on the near or far side of an intersection. Also special consideration must be paid to the wheelchair lifts in terms of how and where the mobility impaired will exit and enter the bus.

Local walking and biking maps should also be provided at bus stops, so that people are aware of the nearby destinations and how best to get there without an automobile.

This typical transit stop has all of the key features of shelter, ample seating, bicycle parking, landscaping, and trash bins (Image from http://www.walkinginfo.org).

PEDESTRIAN SIGNS AND WAYFINDING

For a step-by-step guide to help non-professionals participate in the process of developing and designing a signage system, as well as information on the range of signage types, visit the Project for Public Places website: http://www.pps.org/info/amenities_bb/signage_guide

Signage provides important safety and wayfinding information to motorist and pedestrian residents and tourists. From a safety standpoint, motorists should be given advance warning of upcoming pedestrian crossings or of traffic calming areas. Signage of any type should be used and regulated judiciously. An inordinate amount of signs creates visual clutter. Under such a condition, important safety or wayfinding information may be ignored resulting in confusion and possible pedestrian vehicle conflict. Regulations should also address the orientation, height, size, and sometimes even style of signage to comply with a desired local aesthetic.

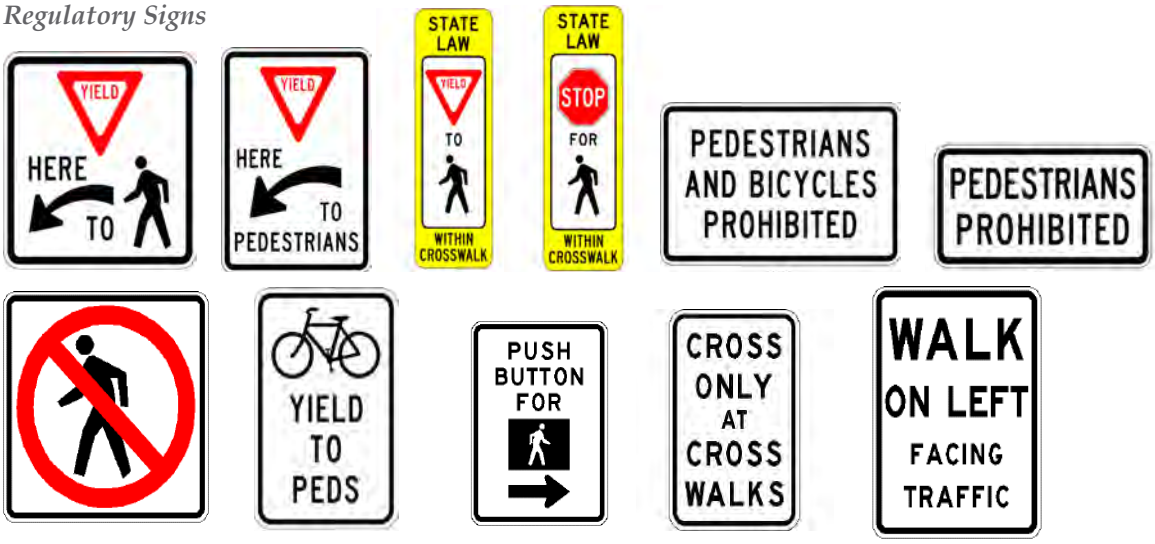
Regulatory signage is used to inform motorists or pedestrians of a legal requirement and should only be used when a legal requirement is not otherwise apparent (AASHTO, 2004: Guide for the Planning, Design, and Operation of Pedestrian Facilities).

Below: Typical traffic signs found around pedestrian friendly places.

Sign	MUTCD Code	MUTCD Section	Conventional Road	
Yield here to Peds	R1-5	2B.11	450x450 (18x18)	Regulatory
Yield here to Peds	R1-5a	2B.11	450x600 (18x24)	
In-Street Ped Crossing	R1-6, R1-6a	2B.12	300x900 (12x36)	
Peds and Bikes Prohibited	R5-10b	2B.36	750x450 (30x18)	
Peds Prohibited	R5-10c	2B.36	600x300 (24x12)	
Walk on Left Facing Traffic	R9-1	2B.43	450x600 (18x24)	
Cross only at Crosswalks	R9-2	2B.44	300x450 (12x18)	
No Ped Crossing	R9-3a	2B.44	450x450 (18x18)	
No Hitch Hiking	R9-4	2B.43	450x600 (18x24)	
No Hitch Hiking (symbol)	R9-4a	2B.43	450x450 (18x18)	
Bikes Yield to Peds	R9-6	9B.10	300x450 (12x18)	
Ped Traffic Symbol	R10-4b	2B.45	225x300 (9x12)	
School Advance Warning	S1-1	7B.08	900x900 (36x36)	School, Warning, informational
School Bus Stop Ahead	S3-1	7B.10	750x750 (30x30)	
Pedestrian Traffic	W11-2	2C.41	750x750 (30x30)	
Playground	W15-1	2C.42	750x750 (30x30)	
Hiking Trail	I-4	--	600x600 (24x24)	

1. Larger signs may be used when appropriate.
2. Dimensions are shown in millimeters followed by inches in parentheses and are shown as width x height.
3. First dimension in millimeters; dimensions in parentheses are in inches.
4. All information in table taken directly from MUTCD.

Regulatory Signs



School, Warning, and Informational Signs

Warning signage is used to inform motorists and pedestrians of unexpected or unusual conditions. When used, they should be placed to provide adequate response times. These include school warning signs and pedestrian crossing signs3.

Informational and wayfinding signage can provide information providing guidance to a location along a trail or other pedestrian facility. Wayfinding signage should orient and communicate in a clear, concise and functional manner. It should enhance pedestrian circulation and direct visitors and residents to important destinations. In doing so, the goal is to increase the comfort of visitors and residents while helping to convey a local identity.

Maintenance of signage is as important as walkway maintenance. Clean, graffiti free, and relevant signage enhances guidance, recognition, and safety for pedestrians.

Below: Wayfinding signs promote aesthetics as well as provide important information (image from Stefton, UK: http://www.sefton.gov.uk

BRIDGES

Provisions should always be made to include a walking facility as a part of vehicular bridges, underpasses, or tunnels, especially if the facility is part of the Pedestrian Network. All new or replacement bridges, other than those for controlled access roadways, should accommodate pedestrians with wide sidewalks on both sides of the bridge. Even though bridge replacements do not occur regularly, it is important to consider these in longer-term pedestrian planning.

It is DOT bridge policy that within Urban Area boundaries (which are ambiguously defined as the "outer limits of potential urban growth"), sidewalks shall be included on new bridges with curb and gutter approach roadways with no controlled access. Sidewalks should not be included on controlled access facilities. A determination on whether to provide sidewalks on one or both sides of new bridges will be made during the planning process according to the DOT Pedestrian Policy Guidelines. When a sidewalk is justified, it should be a minimum of five to six feet wide with a minimum handrail height of 42".

It is also DOT bridge policy that bridges within the Federal-aid urban boundaries with rural-type roadway sections (shoulder approaches) may warrant special consideration. To allow for future placement of ADA acceptable sidewalks, sufficient bridge deck width should be considered on new bridges in order to accommodate the placement of sidewalks. The full Bridge Policy for DOT can be download as a Microsoft Word document at this address:

www.ncdot.org/doh/preconstruct/altern/value/manuals/bpe2000.doc

BRIDGE GUIDELINES:

- Sidewalks should be included on roadway bridges with no controlled access with curb and gutter approach in Urban Areas.

- Sufficient bridge deck width should be considered on new bridges with rural-type shoulder approaches for future placement of sidewalks.

- Sidewalk should be 5' to 6' wide.

- Minimum handrail height should be 42''

SIDEWALK MAINTENANCE

Sidewalks with sections that are sunken or lifted up or areas with large cracks are considered unfit or unsafe. Sidewalks should be repaired when:

- Any vertical displacement exceeds 3/4 inch.
- There's a crack more than one inch wide.
- The surface has deteriorated, cracked or settled.
- The sidewalk doesn't allow adequate drainage.
- The sidewalk is a safety hazard.

Most sidewalks are repaired by removing and replacing the old concrete, but if the damage is minimal (short cracks only 1/4 to 1/2 inch wide or if a portion of the sidewalk is raised no more than 1 to 1-1/2 inches) repairs may be possible. In replacing a cracked or buckled sidewalk where the damage was caused by tree roots, there may be additional costs for removing the trees or cutting back the roots. The estimated cost of new sidewalk, according to the NCDOT is about $50 per linear foot, but varies widely throughout state (also, it can go up to $75 per linear foot when curb and gutter is included).

When funding for new sidewalks and sidewalk repair is attained and/or dedicated, then funding for new maintenance staff should also be considered, depending on the current capacity of the existing staff, and the degree to which the City of Belmont implements this plan's recommendations.

GREENWAY/MULTI-USE TRAIL MAINTENANCE

Annual maintenance costs for paved multi-use trails are estimated to be about $18,000 per mile which includes cleaning, resurfacing and restriping the asphalt path, repairs to crossings, cleaning drainage systems, trash removal, and landscaping. Underbrush and weed abatement should be performed once in the late spring and again in mid-summer. A maintenance task list is provided in below.

Maintenance Checklist and Schedule

Maintenance Task	Frequency
Inspections	Seasonal – at both beginning and end of summer
Signage replacement	1-3 years
Site furnishings; replace damaged components	As needed
Fencing repair	Inspect monthly for holes and damage, repair immediately
Pavement markings replacement	1-3 years
Pavement sweeping/blowing	As needed; before high use season
Pavement sealing; pothole repair	5-15 years
Lighting repair	Annually
Introduced tree and shrub plantings, trimming	1-3 years
Shrub/tree irrigation for introduced planting areas	Weekly during summer months until plants are established
Shoulder plant trimming (weeds, trees, branches)	Twice a year; middle of growing season
Major damage response (fallen trees, washouts, flooding)	Schedule based on priorities
Culvert inspection	Before rainy season; after major storms
Maintaining culvert inlets	Inspect before onset of wet season
Waterbar maintenance (earthen trails)	Annually
Trash disposal	Weekly during high use; twice monthly during low use
Litter pick-up	Weekly during high use; twice monthly during low use
Graffiti removal	Weekly; as needed

PUBLIC INPUT A

CHAPTER OUTLINE:

OVERVIEW

Input from the public was critical to the development of this plan. Suggestions made by residents during workshops, through e-mail, through the online comment form, and other avenues helped to make this plan responsive to the specific needs of local residents. This appendix summarizes the various avenues of public outreach that were employed to gather input during the planning process, which yielded responses from more than ***250*** people total.

PUBLIC WORKSHOPS

The first public workshop for the Pedestrian Plan was held at Gaston College, East Campus, on March 16, 2009. The Mayor, city planning staff, project committee members, and project consultants were in attendance and available to discuss and answer questions regarding the plan and the planning process. Fifteen people attended and the project planners received comments, both written and verbal, regarding the existing conditions and the proposed improvements.

Left: A Public Workshop flyer from March 2009

A final public input opportunity for the Pedestrian Plan was held at Mount Moriah Baptist Church on September 29, 2009. About 30 people attended and provided constructive input on the draft plan.

PUBLIC OUTREACH

Project steering committee members and project planners took the initiative to distribute and receive information for the Pedestrian Plan. For example, project newsletters, comment forms, and a public input map were made available at the Garibaldi Festival in May of 2009 (see example project newsletter on pages A-2 and A-3).

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cityofbelmont.org

Planning is Underway to Improve Conditions for Walking in Belmont, NC

The City of Belmont received funding from the North Carolina Department of Transportation (NCDOT)'s Bicycle and Pedestrian Planning Grant Initiative to develop a Pedestrian Transportation Plan.

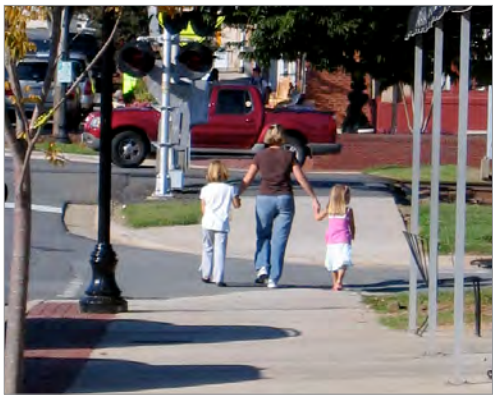
Planning began with a Steering Committee Meeting in January 2009. Project consultants, *Greenways Incorporated*, have been conducting fieldwork and evaluating the current conditions for walking in Belmont during February and March. They are currently gathering public input for the plan (see below). The draft plan will be developed over the summer and will be ready for review in August 2009.

High levels of public participation will make this plan more effective for implementation and more relevant for the particular needs of local residents. Here is how you can get involved:

1. Fill out the online comment form (address below). The questions are designed to get a better understanding of how often residents currently walk; the barriers to walking in Belmont; and priorities for future improvements. There have been 185 responses to-date. Paper comment forms are available upon request.

2. Attend the next planning workshop in July 2009. The draft plan will be reviewed and input will be gathered on project priorities. For details, visit this website: ***www.greenways.com/belmont***

3. Talk directly with project staff, committee, and consultants. Contact City of Belmont Planner, Adrian Miller (704-901-2067), or project consultant, Jason Reyes (919-484-8448 ***jason.reyes@greenways.com***), to share your ideas and/or learn more about the plan.



Top: Image from the January 2009 Steering Committee Meeting; participants identified areas in Belmont that are of particular concern for pedestrians.

Bottom: Some areas in Downtown Belmont could serve as a model for the rest of the City.

"Walking gets the feet moving, the blood moving, the mind moving. And movement is life."

~ Carrie Latet

Project info and online comment form:
www.greenways.com/belmont

The City of Belmont **Pedestrian Plan**

The City of **Belmont Pedestrian Plan**

Walking improves health and wellness, builds social capital, and is the world's cleanest form of transportation. However, the design of our streets, intersections, and land use patterns affects our ability to include walking as part of our daily routine.

According to Frank Hu, epidemiologist at the Harvard School of Public Health, "*The single thing that comes close to a magic bullet, in terms of its strong and universal benefits, is exercise.*" (Harvard Magazine, 2004)

Even though the benefits are clear, exercising on a regular basis is difficult for many people. They can't find the time. They lose their motivation. They become discouraged.

What if exercise was simply part of daily life? After all, the Centers for Disease Control and Prevention recommends a minimum of 30 minutes of moderate-intensity physical activity per day (such as brisk walking) most days of the week. The key to good health is a walk in the park. It could mean walking to lunch instead of driving, or walking downtown for a small errand. It could also mean walking to work, or combining a bus trip with walking.

The choice of walking instead of driving can be much easier when the community you live and work in is designed to accommodate pedestrians. This is where the Belmont Pedestrian Transportation Plan comes into play. The Plan aims to make walking in Belmont a safe and accessible alternative to the automobile. By studying what is on the ground today and asking for public input, the City will identify key opportunities for improving conditions for pedestrians. For example, improvements could include new sidewalks and crosswalks, more trails and greenways, and even new programs and policy changes that encourage pedestrian activity.

Public input will be especially helpful in identifying key locations in need of improvements. Above is a safe crossing on Main St. (a good example of an existing pedestrian facility).

Project info and online comment form:
www.greenways.com/belmont

PUBLIC COMMENT FORM RESULTS

The public comment form was designed to gain a better understanding of local needs and priorities related to pedestrian planning. Questions included items on:

- current walking trends
- barriers to walking in Belmont
- desired future walking opportunities
- priorities for future improvements

Over *230* people submitted comments, through both the online form, and through printed hard copies. The following pages show the results:

1. How do you rate present pedestrian conditions in the Belmont area? (select one)

	Response Percent	Response Count
Excellent	12.3%	29
Fair	**72.0%**	**170**
Poor	15.7%	37
answered question		**236**
skipped question		**0**

2. How important to you is improving walking conditions in the Belmont area? (select one)

	Response Percent	Response Count
Very important	**83.9%**	**198**
Somewhat important	14.8%	35
Not important	1.3%	3
answered question		**236**
skipped question		**0**

3. Do you feel that the city should consider non-automobile transportation (i.e. pedestrian and bicycle) as a priority? (select one)

	Response Percent	Response Count
Yes	**83.9%**	**198**
No	9.7%	23
Doesn't matter	6.4%	15
answered question		**236**
skipped question		**0**

4. How often do you walk now? (select one)

	Response Percent	Response Count
never	1.3%	3
few times per month	24.3%	57
few times per week	**44.3%**	**104**
5+ times per week	30.2%	71
answered question		**235**
skipped question		**1**

5. Would you walk more often if more sidewalks, trails, and safe roadway crossings were provided for pedestrians?

	Response Percent	Response Count
Yes	**90.2%**	**211**
No	9.8%	23
answered question		**234**
skipped question		**2**

6. Should public funds be used to improve pedestrian options and facilities?

	Response Percent	Response Count
Yes	**90.9%**	**209**
No	9.1%	21
answered question		**230**
skipped question		**6**

7. What types of funds should be used? (Choose all that apply)

	Response Percent	Response Count
Capital improvements bond or other financing strategy	60.8%	135
Existing local taxes	63.1%	140
New local taxes	15.8%	35
State and federal grants	**80.2%**	**178**
Other (please specify)	8.1%	18
answered question		**222**
skipped question		**14**

8. For what purposes do you walk most now and/or would you want to walk for in the future? Select all that apply.

	Response Percent	Response Count
Fitness or recreation	**97.0%**	**223**
Transportation to some destination	50.0%	115
Social visits	48.7%	112
Walking the dog	41.7%	96
Walking the baby / pushing a stroller	33.0%	76
answered question		**230**
skipped question		**6**

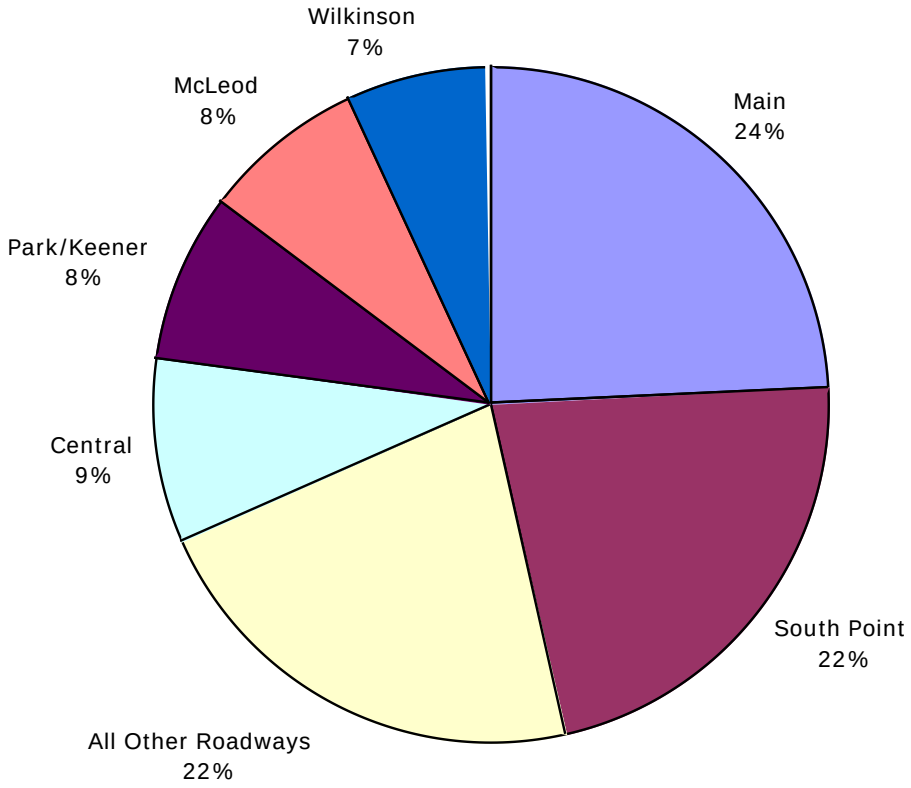
9. What walking destinations would you most like to get to? Select all that apply.

	Response Percent	Response Count
Place of work	11.9%	27
School	33.2%	75
Restaurants	80.1%	181
Public Transportation	12.8%	29
Shopping	63.3%	143
Parks	**88.9%**	**201**
Entertainment	54.0%	122
Trails and greenways	81.0%	183
Libraries or recreation centers	57.1%	129
answered question		**226**
skipped question		**10**

10. What factors discourage walking? Select all that apply.

	Response Percent	Response Count
Lack of sidewalks and trails	**80.1%**	**181**
Lack of crosswalks at traffic signals	41.6%	94
Lack of pedestrian signals at intersections	38.1%	86
Automobile traffic and speed	58.4%	132
Pedestrian unfriendly streets and land uses	57.1%	129
Lack of interest	2.7%	6
Lack of time	14.2%	32
Aggressive motorist behavior	28.8%	65
Sidewalks in need of repair	42.5%	96
Lack of nearby destinations	19.5%	44
Criminal activity	8.4%	19
Level of street lighting	27.9%	63
Lack of landscaping and/or buffer between sidewalks and road	35.8%	81
answered question		**226**
skipped question		**10**

11. What do you think are the top roadway corridors most needing sidewalk or pedestrian crossing improvements?



12. What is your zip code?

(The majority of responses were from 28012)

13. What is your gender?

	Response Percent	Response Count
M	33.8%	71
F	**66.2%**	**139**
	answered question	**210**
	skipped question	**26**

14. What is your age?

	Response Percent	Response Count
0-18	0.0%	0
19-25	0.9%	2
26-35	22.0%	49
36-45	**32.7%**	**73**
46-55	21.1%	47
56-65	17.9%	40
65 and older	5.4%	12
	answered question	**223**
	skipped question	**13**

15. Where do you live?

	Response Percent	Response Count
Belmont	**94.1%**	**209**
Mount Holly	1.8%	4
Charlotte	0.5%	1
Gaston County	3.6%	8
Mecklenburg County	0.0%	0
Other	0.0%	0
	answered question	**222**
	skipped question	**14**

FUNDING SOURCES B

CHAPTER OUTLINE:

OVERVIEW

The primary purpose of this appendix is to define and describe possible funding sources that could be used to support the planning, design and development of pedestrian and greenway improvements.

Implementing the recommendations of this plan will require a strong level of local support and commitment through a variety of local funding mechanisms. Perhaps most important is the addition of sidewalk and greenway recommendations from this Plan into the City's Capital Improvement Program (CIP). Pedestrian improvements should become a high priority and be supported through the CIP and local bonds.

The City should also seek a combination of funding sources that include local, state, federal, and private money. Fortunately, the benefits of protected greenways are many and varied. This allows programs in Belmont to access money earmarked for a variety of purposes including water quality, hazard mitigation, recreation, air quality, alternate transportation, wildlife protection, community health, and economic development. Competition is almost always stiff for state and federal funds, so it becomes imperative that local governments work together to create multi-jurisdictional partnerships and to develop their own local sources of funding. These sources can then be used to leverage outside assistance. The long term success of this plan will almost certainly depend on the dedication of a local revenue stream for greenways and sidewalks. An important key to obtaining funding is for Belmont to have adopted plans for greenway, bicycle, and pedestrian or trail systems in place prior to making an application for funding.

For the past two decades, a variety of funding has been used throughout North Carolina to support the planning, design and construction of urban and rural pedestrian and greenway projects. The largest single source of funding for these projects has come from the Surface Transportation Act, first the Intermodal Surface Transportation Efficiency Act (ISTEA) in the early to mid 1990s; then its successor, Transportation Equity Act for the Twenty-First Century (TEA-21) through the early part of 2002; and now the Safe, Accountable, Flexible and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The North Carolina Department of

Transportation manages and distributes the majority of federal funds that are derived from the Act to support the development of bicycle/pedestrian/trail development.

The majority of federal funding is distributed to states in the form of block grants and is then distributed throughout a given state for specific projects. State funding programs in North Carolina also support the creation of greenways. North Carolina has developed a broad array of funding sources that address land acquisition, green infrastructure development, and trail facility development.

Additionally, there are many things that the City of Belmont can do to establish their own funding for sidewalk and greenway initiatives. For the most part, it takes money to get money. For Belmont, it will be necessary to create a local funding program through one of the methods that is defined within this report. Financing will be needed to administer the continued planning and implementation process, acquire parcels or easements, and manage and maintain facilities.

This appendix is organized by first addressing the state sources of funding, then addresses separate federal and local government funding sources. It is by no means an exhaustive list as there are hundreds of additional funding sources available that should be researched and pursued as well.

Greenways Incorporated advises the City of Belmont to pursue a variety of funding options and establish pedestrian recommendations from this Plan as a priority in its Capital Improvement Program (CIP). This appendix identifies a list of some of the pedestrian and greenway funding opportunities that have typically been pursued by other communities. Creative planning and consistent monitoring of funding options will likely turn up new opportunities not listed here.

HIGH PRIORITY FUNDING OPTIONS

While there are a number of funding sources provided in the following pages, these sources should be the highest priority in order to achieve successful implementation. It is critical for local government to step up given the competitiveness and changing, finite availabilities of most funding sources. Details about the following sources are found later in this appendix.

- Local Capital Improvements Program (CIP)
- Local Bond
- Local Fees
- State Transportation Improvement Program (TIP)
- State Powell Bill Funds
- State Safe Routes to School Program
- State Parks and Recreation Trust Fund (PARTF)
- State Health and Wellness Trust Fund (HWTF)
- Private Sources

STATE FUNDING SOURCES

The most direct source of public-sector funding for the City of Belmont will come from state agencies in North Carolina. Generally, these funds are made available to local governments based on grant-in-aid formulas. The single most important key to obtaining state grant funding is for local governments to have adopted plans for greenway, open space, bicycle, pedestrian or trail systems in place prior to making an application for funding. Unfortunately, there is no direct correlation between any of the programs listed and a constant stream of funding for greenway or trail projects and all projects are funded on the basis of grant applications. There is no specific set aside amount that is allocated for greenway and trail development within a given program. Funding is based solely on need and the need has to be expressed and submitted in the form of a grant application. Finally, all of these programs are geared to address needs across the entire state, so all of the programs are competitive and must allocate funding with the needs of the entire state in mind.

The Powell Bill Program is an annual state allocation to municipalities for use in street system maintenance and construction activities. There is considerable local control over Powell Bill Funds (It is not a grant application process). In the past, the State allocated a considerable portion of these revenues for construction purposes. However, budgetary constraints since 2001 have led to a shift of new Powell Bill funds to cover maintenance and operations activities.

Both the Powell Bill reserves and the 2000 Transportation Bond funds are limited funding sources that will eventually be depleted. Further, federal highway funds can be expected to provide only a portion of the future resource needs of the sidewalk construction program. For this reason, the development of future state transportation bond initiatives will be critical for continuing implementation of the sidewalk construction program in the future.

In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT) has been the single largest source of funding for bicycle, pedestrian and greenway projects, including non-construction projects such as brochures, maps, and public safety information for more than a decade. DBPT offers several programs in support of bicycle and pedestrian facility development. The following information is from NCDOT's interactive web site (www.ncdot.org). Contact the NCDOT, Division of Bicycle and Pedestrian Transportation at (919) 807-2804 for more information.

North Carolina programs are listed below. A good starting website with links to many of the following programs is http://www.enr.state.nc.us/html/tax_credits.html.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Bicycle and Pedestrian Independent Projects Funded Through the Transportation Improvement Program (TIP):

In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT) manages the Transportation Improvement Program (TIP) selection process for bicycle and pedestrian projects.

Projects programmed into the TIP are independent projects – those which are not related to a scheduled highway project. Incidental projects – those related to a scheduled highway project – are handled through other funding sources described in this section.

A total of $6 million is annually set aside for the construction of bicycle improvements that are independent of scheduled highway projects in communities throughout the state. Eighty percent of these funds are from STP-Enhancement funds, while the State Highway Trust provides the remaining 20 percent of the funding.

Each year, the DBPT regularly sets aside a total of $200,000 of TIP funding for the department to fund projects such as training workshops, pedestrian safety and research projects, and other pedestrian needs statewide. Those interested in learning about training workshops, research and other opportunities should contact the DBPT for information.

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

Incidental Projects – Bicycle and pedestrian accommodations such as bike lanes, widened paved shoulders, sidewalks and bicycle-safe bridge design are frequently included as incidental features of highway projects. In addition, bicycle-safe drainage grates are a standard feature of all highway construction. Most bicycle and pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of National Highway System funds and State Highway Trust Funds.

Sidewalk Program – Each year, a total of $1.4 million in STP-Enhancement funding is set aside for sidewalk construction, maintenance and repair. Each of the 14 highway divisions across

the state receives $100,000 annually for this purpose. Funding decisions are made by the district engineer. Prospective applicants are encouraged to contact their district engineer for information on how to apply for funding.

Governor's Highway Safety Program (GHSP) – The mission of the GHSP is to promote highway safety awareness and reduce the number of traffic crashes in the state of North Carolina through the planning and execution of safety programs. GHSP funding is provided through an annual program, upon approval of specific project requests. Amounts of GHSP funds vary from year to year, according to the specific amounts requested. Communities may apply for a GHSP grant to be used as seed money to start a program to enhance highway safety. Once a grant is awarded, funding is provided on a reimbursement basis. Evidence of reductions in crashes, injuries, and fatalities is required. For information on applying for GHSP funding, visit: www.ncdot.org/programs/ghsp/.

FUNDING AVAILABLE THROUGH NORTH CAROLINA METROPOLITAN PLANNING ORGANIZATIONS (MPOS)

MPOs in North Carolina which are located in air quality no attainment or maintenance areas have the authority to program Congestion Mitigation Air Quality (CMAQ) funds. CMAQ funding is intended for projects that reduce transportation related emissions. Some NC MPOs have chosen to use the CMAQ funding for bicycle and pedestrian projects. Local governments in air quality no attainment or maintenance area should contact their MPO for information on CMAQ funding opportunities for bicycle and pedestrian facilities.

TRANSPORTATION ENHANCEMENT CALL FOR PROJECTS, EU, NCDOT

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

1. Bicycle and Pedestrian Facilities
2. Bicycle and Pedestrian Safety
3. Acquisition of Scenic Easements, Scenic or Historic Sites
4. Scenic or Historic Highway Programs (including tourist or welcome centers)
5. Landscaping and other Scenic Beautification

6. Historic Preservation
7. Rehabilitation of Historic Transportation Facilities
8. Preservation of Abandoned Rail Corridors
9. Control of Outdoor Advertising
10. Archaeological Planning and Research
11. Environmental Mitigation
12. Transportation Museums

Funds are allocated based on an equity formula approved by the Board of Transportation. The formula is applied at the county level and aggregated to the regional level. Available fund amount varies. In previous Calls, the funds available ranged from $10 million to $22 million.

The Call process takes place on even numbered years or as specified by the Secretary of Transportation. The Next Call is anticipated to take place in 2008, barring financial constraints related to federal recessions resulting from the war on terror and Hurricane Katrina. For more information, visit: www.ncdot.org/financial/fiscal/Enhancement/

BICYCLE AND PEDESTRIAN PLANNING GRANT INITIATIVE, MANAGED BY NCDOT, DBPT

To encourage the development of comprehensive local bicycle plans and pedestrian plans, the NCDOT Division of Bicycle and Pedestrian Transportation (DBPT) and the Transportation Planning Branch (TPB) have created a matching grant program to fund plan development. This program was initiated through a special allocation of funding approved by the North Carolina General Assembly in 2003 along with federal funds earmarked specifically for bicycle and pedestrian planning by the TPB. The planning grant program was launched in January 2004, and it is currently administered through NCDOT-DBPT and the Institute for Transportation Research and Education (ITRE) at NC State University. Over the past three grant cycles, 48 municipal plans have been selected and funded from 123 applicants. A total of $ 1,175,718 has been allocated. Funding is secured for 2007 at $400,000. Additional annual allocations will be sought for subsequent years. For more information, visit www.itre.ncsu.edu/ptg/bikeped/ncdot/index.html

SAFE ROUTES TO SCHOOL PROGRAM, MANAGED BY NCDOT, DBPT

The NCDOT Safe Routes to School Program is a federally funded program that was initiated by the passing of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which establishes a national SRTS program to distribute funding and institutional support to implement SRTS programs in states and communities across the country. SRTS programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The Division of Bicycle and Pedestrian Transportation at NCDOT is charged

with disseminating SRTS funding.

The state of North Carolina has been allocated $15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. An example of a non-infrastructure project is an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is construction of sidewalks around a school. Infrastructure improvements under this program must be made within 2 miles of an elementary or middle school. The state requires the completion of a competitive application to apply for funding. For more information, visit www.ncdot.org/programs/safeRoutes/ or contact Leza Mundt at DBPT/NCDOT, (919) 807-0774.

RECREATIONAL TRAILS PROGRAM (RTP)

The Recreational Trails Program (RTP) is a grant program funded by Congress with money from the federal gas taxes paid on fuel used by off-highway vehicles. This program's intent is to meet the trail and trail-related recreational needs identified by the Statewide Comprehensive Outdoor Recreation Plan. Grant applicants must be able contribute 20% of the project cost with cash or in-kind contributions. The program is managed by the State Trails Program, which is a section of the N.C. Division of Parks and Recreation.

The grant application is available and instruction handbook is available through the State Trails Program website at http://ils.unc.edu/parkproject/trails/home.html. Applications are due during the month of February. For more information, call (919) 715-8699.

POWELL BILL PROGRAM

Annually, State street-aid (Powell Bill) allocations are made to incorporated municipalities which establish their eligibility and qualify as provided by statute. This program is a state grant to municipalities for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities or for planning, construction, and maintenance of bikeways or sidewalks along public streets and highways. Funding for this program is collected from fuel taxes. Amount of funds are based on population and mileage of city-maintained streets. For more information, visit www.ncdot.org/financial/fiscal/ExtAuditBranch/Powell_Bill/powellbill.html.

NORTH CAROLINA'S CLEAN WATER MANAGEMENT TRUST FUND (CWMTF)

This fund was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection. At the end of each fiscal year, 6.5 percent of the unreserved credit balance in North

Carolina's General Fund, or a minimum of $30 million, is placed in the CWMTF. The revenue of this fund is allocated as grants to local governments, state agencies and conservation non-profits to help finance projects that specifically address water pollution problems. CWMTF funds may be used to establish a network of riparian buffers and greenways for environmental, educational, and recreational benefits. The fund has provided funding for land acquisition of numerous greenway projects featuring trails, both paved and unpaved. For a history of awarded grants in North Carolina and more information about this fund and applications, visit www.cwmtf.net/.

NORTH CAROLINA PARKS AND RECREATION TRUST FUND (PARTF)

The fund was established in 1994 by the North Carolina General Assembly and is administered by the Parks and Recreation Authority. Through this program, several million dollars each year are available to local governments to fund the acquisition, development and renovation of recreational areas. Applicable projects require a 50/50 match from the local government. Grants for a maximum of $500,000 are awarded yearly to county governments or incorporated municipalities. The fund is fueled by money from the state's portion of the real estate deed transfer tax for property sold in North Carolina.

The trust fund is allocated three ways:

- 65 percent to the state parks through the N.C. Division of Parks and Recreation.

- 30 percent as dollar-for dollar matching grants to local governments for park and recreation purposes.

- 5 percent for the Coastal and Estuarine Water Access Program. For information on how to apply, visit:: www.partf.net/learn.html

LAND AND WATER CONSERVATION FUND – NORTH CAROLINA (LWCF)

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

the year 2007 is $632,846.

The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the US Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Environment and Natural Resources. Since 1965, the LWCF program has built a permanent park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than $63 million in matching grants to protect land and support more than 800 state and local park projects. More than 37,000 acres have been acquired with LWCF assistance to establish a park legacy in our state. For more information, visit: http://ils.unc.edu/parkproject/lwcf/home1.html

NORTH CAROLINA FARMLAND PRESERVATION TRUST FUND

Established in 1986, the Farmland Preservation Trust Fund was funded by appropriations from the General Assembly. Managed by the N.C. Department of Agriculture and Consumer Services and contracted to the Conservation Trust for N.C (CTNC). The General Assembly has appropriated $2.65 M since 1998. The 2002 General Assembly appropriated $200K; 2003 General Assembly, $0. NCDACS has awarded grants to help local land trusts and counties with farmland protection programs work with farm families to arrange permanent conservation easements on over 4270 acres and large parts of 30 farms. These grants have leveraged over $20 M from other private and public funding sources and donations of development rights from farm owners. Contact CTNC at 919-828-4199. E-mail: info@ctnc.org or Web site: http://www.ctnc.org

Any county that has established by ordinance a farmland preservation program or a qualified, private, non-profit land conservation organization, is eligible to apply for a grant. Grants may be submitted for reimbursement of up to 70% of real costs for transactional expenses in acquiring agricultural conservation easements through donation or purchase, including--but not limited to--documented costs for environmental audits, legal fees, appraisals, surveys, purchase options, personnel expenses for project preparation, and long-term easement monitoring and enforcement costs. Grant requests cannot exceed a maximum of $25,000 per project.

Contact: Conservation Trust for North Carolina, 1028 Washington St, Raleigh, NC 27605. 919-828-4199. Web site: www.ctnc.org. E-mail: info@ctncc.org.

AGRICULTURE COST SHARE PROGRAM

Established in 1984, this program assists farmers with the cost of installing best management practices (BMPs) that benefit water quality. The program covers as much as 75 percent of the costs to implement BMPs. The NC

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

NORTH CAROLINA NATURAL HERITAGE TRUST FUND

This trust fund, managed by the NC Natural Heritage Program, has contributed millions of dollars to support the conservation of North Carolina's most significant natural areas and cultural heritage sites. The NHTF is used to acquire and protect land that has significant habitat value. Some large wetland areas may also qualify, depending on their biological integrity and characteristics. Only certain state agencies are eligible to apply for this fund, including the Department of Environment and Natural Resources, the Wildlife Resources Commission, the Department of Cultural Resources and the Department of Agriculture and Consumer Services. As such, municipalities must work with State level partners to access this fund. Additional information is available from the NC Natural Heritage Program. For more information and grant application information, visit www.ncnhtf.org/.

NORTH CAROLINA ADOPT-A-TRAIL GRANTS

Operated by the Trails Section of the NC Division of State Parks, annual grants are available to local governments for trail and facility construction. Grants are generally capped at about $5,000 per project and do not require a match. The Adopt-A-Trail grant program awards $135,000 annually to local governments, nonprofit organizations and private trail groups for trails projects. The funds can be used for trail building, trail signage and facilities, trail maintenance, trail brochures and maps, and other related uses. Applications for funding may be obtained by contacting a regional trails specialist or the State Trails Program at (919) 715-8699. Applications are due for the each year's funding cycle at the end of February.

Contact: Darrell McBane, State Trails Coordinator, 12700 Bayleaf Church Road, Raleigh, NC 27614 (919) 846-9991. Web site: http://ils.unc.edu/parkproject/trails/grant.html. E-mail: darrell.mcbane@ncmail.net.

NORTH CAROLINA DIVISION OF WATER QUALITY - 319 PROGRAM GRANTS

By amendment to the Clean Water Act Section in 1987, the Section 319 Grant program was established to provide funding for efforts to curb non-point source (NPS) pollution, including that which occurs though stormwater runoff. The U.S. Environmental Protection Agency provides funds to state and tribal agencies, which are then allocated via a competitive grant process to organizations to address current or potential NPS concerns. Funds may be used to demonstrate best management practices (BMPs), establish Total Maximum Daily Load (TMDL) for a watershed, or to restore impaired

streams or other water resources. In North Carolina, the 319 Grant Program is administered by the Division of Water Quality of the Department of Environment and Natural Resources. Each fiscal year North Carolina is awarded nearly $5 million dollars to address non-point source pollution through its 319 Grant program. Thirty percent of the funding supports ongoing state non-point source programs. The remaining seventy percent is made available through a competitive grants process. At the beginning of each year (normally by mid-February), the NC 319 Program issues a request for proposals with an open response period of three months. Approximately $880,000 will be available statewide for distribution to grant recipients.

Grants are divided into two categories: Base and Incremental. Base Projects concern research-oriented, demonstrative, or educational purposes for identifying and preventing potential NPS areas in the state, where waters may be at risk of becoming impaired. Incremental projects seek to restore streams or other portions of watersheds that are already impaired and not presently satisfying their intended uses. State and local governments, interstate and intrastate agencies, public and private nonprofit organizations, and educational institutions are eligible to apply for Section 319 monies. An interagency workgroup reviews the proposals and selects those of merit to be funded.

Contact: North Carolina DWQ, 512 N. Salisbury St. Raleigh, NC 27604. (919) 733-7015 Web site: www.h2o.enr.state.nc.us/nps/Section_319_Grant_Program.htm. E-mail: kimberly.nimmer@ncmail.net.

SMALL CITIES COMMUNITY DEVELOPMENT BLOCK GRANTS

State level funds are allocated through the NC Department of Commerce, Division of Community Assistance to be used to promote economic development and to serve low-income and moderate-income neighborhoods. Greenways that are part of a community's economic development plans may qualify for assistance under this program. Recreational areas that serve to improve the quality of life in lower income areas may also qualify. Approximately $50 million is available statewide to fund a variety of projects. For more information, visit www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin/ or call 919-733-2853.

NORTH CAROLINA ECOSYSTEM ENHANCEMENT PROGRAM

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

pages/partners.html or call 919-715-0476.

NORTH CAROLINA WETLANDS RESTORATION PROGRAM (NCWRP)

This is a non-regulatory program established by the NC General Assembly in 1996. The goals of the NCWRP are to:

- Protect and improve water quality by restoring wetland, stream and riparian area functions and values lost through historic, current and future impacts.
- Achieve a net increase in wetland acreage, functions and values in all of North Carolina's major river basins.
- Promote a comprehensive approach for the protection of natural resources.
- Provide a consistent approach to address compensatory mitigation requirements associated with wetland, stream, and buffer regulations, and to increase the ecological effectiveness of compensatory mitigation projects.

Additional information about the program and potential funding assistance with the restoration or creation of wetlands can be found at www.h2o.enr.state.nc.us/wrp

C

ontact: Tad Boggs, Ecosystem Enhancement Program Coordinator, NC Wetlands Restoration Program, 1619 Mail Service Center, Raleigh, NC 27699-1619. (919) 715-2227. E-mail: tad.boggs@ncmail.net.

CONSERVATION RESERVE ENHANCEMENT PROGRAM (CREP)

This program is a joint effort of the North Carolina Division of Soil and Water Conservation, the NC Clean Water Management Trust Fund, the Ecosystem Enhancement Program (EEP), and the Farm Service Agency - United States Department of Agriculture (USDA) to address water quality problems of the Neuse, Tar-Pamlico and Chowan river basins as well as the Jordan Lake watershed area.

CREP is a voluntary program that seeks to protect land along watercourses that is currently in agricultural production. The objectives of the program include: installing 100,000 acres of forested riparian buffers, grassed filter strips and wetlands; reducing the impacts of sediment and nutrients within the targeted area; and providing substantial ecological benefits for many wildlife species that are declining in part as a result of habitat loss. Program funding will combine the Federal Conservation Reserve Program (CRP) funding with State funding from the Clean Water Management Trust Fund, Agriculture Cost Share Program, and North Carolina Wetlands Restoration Program.

The program is managed by the NC Division of Soil and Water Conservation.

For more information, visit www.enr.state.nc.us/dswc/pages/crep.html

Urban and Community Forestry Assistance Program

The program operates as a cooperative partnership between the NC Division of Forest Resources and the USDA Forest Service, Southern Region. It offers small grants that can be used to plant urban trees, establish a community arboretum, or other programs that promote tree canopy in urban areas. To qualify for this program, a community must pledge to develop a street-tree inventory, a municipal tree ordinance, a tree commission, and an urban forestry-management plan. All of these can be funded through the program.

Greenways are a specific category within the program "Naturalization Projects or Greenway Development." These types of projects can be combined with tree planting, where native species are used and environmental benefits to the community are emphasized. Planning and development, assessments and studies, maps and drawings, promotional and educational materials may be eligible for funding when matched with a solid volunteer and in-kind staffing match. Forest buffers, connecting corridors between fragmented wooded areas, riparian buffers/protection, or reduction of mowing maintenance in municipal parks through edge naturalization, are some naturalization projects that will be considered for grants. Approximately $200,000 is available each year for grant recipients.

For more information and a grant application, contact the NC Division of Forest Resources and/or visit http://www.dfr.state.nc.us/urban/urban_grantprogram.htm.

WATER RESOURCES DEVELOPMENT GRANT PROGRAM

The NC Division of Water Resources offers cost-sharing grants to local governments on projects related to water resources. Of the seven project application categories available, the category which relates to the establishment of greenways is "Land Acquisition and Facility Development for Water-Based Recreation Projects." Applicants may apply for funding for a greenway as long as the greenway is in close proximity to a water body. For more information, see: www.ncwater.org/Financial_Assistance or call 919-733-4064.

NORTH CAROLINA HEALTH AND WELLNESS TRUST FUND (HWTF)

The NC Health and Wellness Trust Fund was created by the General Assembly as one of 3 entities to invest North Carolina's portion of the Tobacco Master Settlement Agreement. HWTF receives one-fourth of the state's tobacco settlement funds, which are paid in annual installments over a 25-year period.

Fit Together, a partnership of the NC Health and Wellness Trust Fund (HWTF)

and Blue Cross and Blue Shield of North Carolina (BCBSNC) announces the establishment of Fit Community, a designation and grant program that recognizes and rewards North Carolina communities' efforts to support physical activity and healthy eating initiatives, as well as tobacco-free school environments. Fit Community is one component of the jointly sponsored Fit Together initiative, a statewide prevention campaign designed to raise awareness about obesity and to equip individuals, families and communities with the tools they need to address this important issue.

All North Carolina municipalities and counties are eligible to apply for a Fit Community designation, which will be awarded to those that have excelled in supporting the following:

- physical activity in the community, schools, and workplaces
- healthy eating in the community, schools, and workplaces
- tobacco use prevention efforts in schools

Designations will be valid for two years, and designated communities may have the opportunity to reapply for subsequent two-year extensions. The benefits of being a Fit Community include:

- heightened statewide attention that can help bolster local community development and/or

- economic investment initiatives (highway signage and a plaque for the Mayor's or County Commission Chair's office will be provided)

- reinvigoration of a community's sense of civic pride (each Fit Community will serve as a model for other communities that are trying to achieve similar goals)

- use of the Fit Community designation logo for promotional and communication purposes.

The application for Fit Community designation is available on the Fit Together Web site: www.FitTogetherNC.org/FitCommunity.aspx.

Fit Community grants are designed to support innovative strategies that help a community meet its goal to becoming a Fit Community. Eight to nine, two-year grants of up to $30,000 annually will be awarded to applicants that have a demonstrated need, proven capacity, and opportunity for positive change in addressing physical activity and/or healthy eating.

The North Carolina Conservation Tax Credit (managed by NCDENR)
This program, managed by the North Carolina Department of Environment and Natural Resources, provides an incentive (in the form of an income

tax credit) for landowners that donate interests in real property for conservation purposes. Property donations can be fee simple or in the form of conservation easements or bargain sale. The goal of this program is to manage stormwater, protect water supply watersheds, retain working farms and forests, and set-aside greenways for ecological communities, public trails, and wildlife corridors. For more information, visit: www.enr.state.nc.us/conservationtaxcredit/.

FEDERAL FUNDING SOURCES

Most federal programs provide block grants directly to states through funding formulas. For example, if a North Carolina community wants funding to support a transportation initiative, they would contact the North Carolina Department of Transportation and not the US Department of Transportation to obtain a grant. Despite the fact that it is rare for a local community to obtain a funding grant directly from a federal agency, it is relevant to list some additional federal programs below.

COMMUNITY BLOCK DEVELOPMENT GRANT PROGRAM (HUD-CBDG)

The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic development, and improvements to community facilities and services, especially in low and moderate-income areas. Several communities have used HUD funds to develop greenways, including the Boulding Branch Greenway in High Point, North Carolina. Grants from this program range from $50,000 to $200,000 and are either made to municipalities or non-profits. There is no formal application process. For more information, visit: www.hud.gov/offices/cpd/communitydevelopment/programs/.

WETLANDS RESERVE PROGRAM

This federal funding source is a voluntary program offering technical and financial assistance to landowners who want to restore and protect wetland areas for water quality and wildlife habitat. The US Department of Agriculture's Natural Resource Conservation Service (USDA-NRCS) administers the program and provides direct payments to private landowners who agree to place sensitive wetlands under permanent easements. This program can be used to fund the protection of open space and greenways within riparian corridors. For more information on all SAFETEA-LU programs, visit http://www.fhwa.dot.gov/safetealu/.

THE NATIONAL ENDOWMENT OF THE ARTS

Many organizations seek ways to incorporate more of their community into their pedestrian, and greenway planning. One way to do this is to celebrate the cultural and historic uniqueness of communities. There are some funding opportunities for these types of projects. The National Endowment of the Arts funds arts-related programs through the Design Arts Program

Assistance, and provides many links to other federal departments and agencies that offer funding opportunities for arts and cultural programs.

USDA RURAL BUSINESS ENTERPRISE GRANTS

Public and private nonprofit groups in communities with populations under 50,000 are eligible to apply for grant assistance to help their local small business environment. $1 million is available for North Carolina on an annual basis and may be used for sidewalk and other community facilities. For more information from the local USDA Service Center, visit: http://www.rurdev.usda.gov/rbs/busp/rbeg.htm

RIVERS TRAILS AND CONSERVATION ASSISTANCE PROGRAM (RTCA)

The Rivers, Trails, and Conservation Assistance Program, also known as the Rivers & Trails Program or RTCA, is the community assistance arm of the National Park Service. RTCA staff provide technical assistance to community groups and local, State, and federal government agencies so they can conserve rivers, preserve open space, and develop trails and greenways. The RTCA program implements the natural resource conservation and outdoor recreation mission of the National Park Service in communities across America

Although the program does not provide funding for projects, it does provide valuable on-the-ground technical assistance, from strategic consultation and partnership development to serving as liaison with other government agencies. Communities must apply for assistance. For more information, visit: www.nps.gov/ncrc/programs/rtca/ or call Chris Abbett, Program Leader, at 404-562-3175 ext. 522.

PUBLIC LANDS HIGHWAYS DISCRETIONARY FUND

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

LOCAL FUNDING SOURCES

The City of Belmont will need to create independent, local funding sources to be used to match federal and state grants for pedestrian facility and greenway development. Local support and funding is the most integral component of successful pedestrian facility implementation. This section provides a list of funding options that each of the local governments should consider for future greenway development, sidewalk development, and open space protection.

Municipalities often plan for the funding of pedestrian facilities or improvements through development of Capital Improvement Programs (CIP). In Raleigh, for example, the greenways system has been developed over many years through a dedicated source of annual funding that has ranged from $100,000 to $500,000, administered through the Recreation and Parks Department. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows municipal decision-makers to balance all capital needs. Typical capital funding mechanisms include the following: capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each of these categories are described below.

CAPITAL RESERVE FUND

Municipalities have statutory authority to create capital reserve funds for any capital purpose, including pedestrian facilities. The reserve fund must be created through ordinance or resolution that states the purpose of the fund, the duration of the fund, the approximate amount of the fund, and the source of revenue for the fund. Sources of revenue can include general fund allocations, fund balance allocations, grants and donations for the specified use.

CAPITAL PROJECT ORDINANCES

Municipalities can pass Capital Project Ordinances that are project specific. The ordinance identifies and makes appropriations for the project.

MUNICIPAL SERVICE DISTRICT

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

BONDS/LOANS

Bonds have been a very popular way for communities across the country to finance their open space and greenway projects. A number of bond options are listed below. If local government decides to pursue a bond issue, consideration should be given to combining the needs of Roxboro into a single bond proposal. Contracting with a private consultant to assist with this program may be advisable. Since bonds rely on the support of the voting population, an education and awareness program should be implemented prior to any vote.

Revenue Bonds - Revenue bonds are bonds that are secured by a pledge of the revenues from a certain local government activity. The entity issuing bonds, pledges to generate sufficient revenue an-

nually to cover the program's operating costs, plus meet the annual debt service requirements (principal and interest payment). Revenue bonds are not constrained by the debt ceilings of general obligation bonds, but they are generally more expensive than general obligation bonds.

General Obligation Bonds - Local governments generally are able to issue general obligation (G.O.) bonds that are secured by the full faith and credit of the entity. In this case, the local government issuing the bonds pledges to raise its property taxes, or use any other sources of revenue, to generate sufficient revenues to make the debt service payments on the bonds. A general obligation pledge is stronger than a revenue pledge, and thus may carry a lower interest rate than a revenue bond. Frequently, when local governments issue G.O. bonds for public enterprise improvements, the public enterprise will make the debt service payments on the G.O. bonds with revenues generated through the public entity's rates and charges. However, if those rate revenues are insufficient to make the debt payment, the local government is obligated to raise taxes or use other sources of revenue to make the payments. G.O. bonds distribute the costs of open space acquisition and make funds available for immediate purchases. Voter approval is required.

Special Assessment Bonds - Special assessment bonds are secured by a lien on the property that benefits by the improvements funded with the special assessment bond proceeds. Debt service payments on these bonds are funded through annual assessments to the property owners in the assessment area.

State Revolving Fund (SRF) Loans- Initially funded with federal and state money, and continued by funds generated by repayment of earlier loans, State Revolving Funds (SRFs) provide low-interest loans for local governments to fund water pollution control and water supply-related projects including many watershed management activities. These loans typically require a revenue pledge, like a revenue bond, but carry a below market interest rate and limited term for debt repayment (20 years).

TAXES

Many communities have raised money through self-imposed increases in taxes and bonds. For example, Pinellas County residents in Florida voted to adopt a one-cent sales tax increase, which provided an additional $5 million for the development of the overwhelmingly popular Pinellas Trail. Sales taxes have also been used in Allegheny County, Pennsylvania, and in Boulder, Colorado to fund open space projects. A gas tax is another method used by some municipalities to fund public improvements. A number of taxes provide direct or indirect funding for the operations of local governments.

Some of them are:

Sales Tax - In North Carolina, the state has authorized a sales tax at the state and county levels. Local governments that choose to exercise the local option sales tax (all counties currently do), use the tax revenues to provide funding for a wide variety of projects and activities. Any increase in the sales tax, even if applying to a single county, must gain approval of the state legislature. In 1998, Mecklenburg County was granted authority to institute a one-half cent sales tax increase for mass transit.

Property Tax - Property taxes generally support a significant portion of local government activities. However, the revenues from property taxes can also be used to pay debt service on general obligation bonds issued to finance open space system acquisitions. Because of limits imposed on tax rates, use of property taxes to fund open space could limit the county's or a municipality's ability to raise funds for other activities. Property taxes can provide a steady stream of financing while broadly distributing the tax burden. In other parts of the country, this mechanism has been popular with voters as long as the increase is restricted to parks and open space. Note, other public agencies compete vigorously for these funds, and taxpayers are generally concerned about high property tax rates.

Excise Taxes - Excise taxes are taxes on specific goods and services. These taxes require special legislation and the use of the funds generated through the tax are limited to specific uses. Examples include lodging, food, and beverage taxes that generate funds for promotion of tourism, and the gas tax that generates revenues for transportation related activities.

Occupancy Tax - The NC General Assembly may grant municipalitiess the authority to levy occupancy tax on hotel and motel rooms. The act granting the taxing authority limits the use of the proceeds, usually for tourism-promotion purposes.

FEES AND SERVICE CHARGES

Several fee options that have been used by other local governments are listed here:

Impact Fees - Impact fees, which are also known as capital contributions, facilities fees, or system development charges, are typically collected from developers or property owners at the time of building permit issuance to pay for capital improvements that provide

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

Pursuing park and greenway impact fees will require enabling legislation to authorize the collection of the fees.

In-Lieu-Of Fees - As an alternative to requiring developers to dedicate on-site open space that would serve their development, some communities provide a choice of paying a front-end charge for off-site open space protection. Payment is generally a condition of development approval and recovers the cost of the off-site greenway or open space land acquisition or the development's proportionate share of the cost of a regional parcel serving a larger area. Some communities prefer in-lieu-of fees. This alternative allows community staff to purchase land worthy of protection rather than accept marginal land that meets the quantitative requirements of a developer dedication but falls a bit short of qualitative interests.

Exactions - Exactions are similar to impact fees in that they both provide facilities to growing communities. The difference is that through exactions it can be established that it is the responsibility of the developer to build the greenway or pedestrian facility that crosses through the property, or adjacent to the property being developed.

Streetscape Utility Fees - Streetscape Utility Fees could help support streetscape maintenance of the area between the curb and the property line through a flat monthly fee per residential dwelling unit. Discounts would be available for senior and disabled citizens. Non-residential customers would be charged a per foot fee based on the length of frontage on streetscape improvements. This amount could be capped for non-residential customers with extremely large amounts of street frontage. The revenues raised from Streetscape Utility fees would be limited by ordinance to maintenance (or construction and maintenance) activities in support of the streetscape.

Stormwater Utility Fees - Greenway sections may be purchased with stormwater fees, if the property in question is used to mitigate floodwater or filter pollutants. Stormwater charges are typically based on an estimate of the amount of impervious surface on a user's property. Impervious surfaces (such as rooftops and paved areas) increase both the amount and rate of stormwater runoff compared to natural conditions. Such surfaces cause runoff that directly or indirectly discharge into public storm drainage facilities and creates a need for stormwater management services. Thus, users with more impervious surface are charged more for stormwater service than users with less impervious surface. The rates, fees, and charges collected for stormwater management services may not exceed the costs incurred to provide these services. The costs that may be recovered through the stormwater rates, fees, and charges includes any costs necessary to assure that all aspects of stormwater quality and quantity are managed in accordance with federal and state laws, regulations, and rules.

INSTALLMENT PURCHASE FINANCING

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

TAX INCREMENT FINANCING

Tax increment financing is a tool to use future gains in taxes to finance the current improvements that will create those gains. When a public project, such as the construction of a greenway, is carried out, there is an increase in the value of surrounding real estate. Oftentimes, new investment in the area follows such a project. This increase sit value and investment creates more taxable property, which increases tax revenues. These increased revenues can be referred to as the "tax increment." Tax Increment Financing dedicates that increased revenue to finance debt issued to pay for the project. TIF is designed to channel funding toward improvements in distressed or

underdeveloped areas where development would not otherwise occur. TIF creates funding for public projects that may otherwise be unaffordable to localities. The large majority of states have enabling legislation for tax increment financing.

PARTNERSHIPS

Another, often overlooked, method of funding pedestrian systems and greenways is to partner with public agencies and private companies and organizations. Partnerships engender a spirit of cooperation, civic pride and community participation. The key to the involvement of private partners is to make a compelling argument for their participation.

Major employers and developers should be identified and provided with a "Benefits of Walking"-type handout for themselves and their employees. Very specific routes which make those critical connections to place of business would be targeted for private partners' monetary support, but only after a successful master planning effort. People rarely fund issues before they understand them and their immediate and direct impact. Potential partners include major employers which are located along or accessible to pedestrian facilities such as multi-use paths or greenways. Name recognition for corporate partnerships would be accomplished through signage trail heads or interpretive signage along greenway systems.

Utilities often make good partners and many trails now share corridors with them. Money raised from providing an easement to utilities can help defray the costs of maintenance. It is important to have a lawyer review the legal agreement and verify ownership of the subsurface, surface or air rights in order to enter into an agreement.

OTHER LOCAL OPTIONS

LOCAL CAPITAL IMPROVEMENTS PROGRAM

As discussed at the beginning of this appendix, a strong local Capital Improvements Program (CIP) commitment dedicated to sidewalk and greenway development, is critical for long-term implementation. The amount dedicated ranges from community to community. As an example from other communities, Black Mountain, NC allocated $15,000 for greenway development each year; In Raleigh, NC the greenways system has been developed over many years through a dedicated source of annual funding that has ranged from $100,000 to $500,000, administered through the Parks and Recreation Department; In Graham, NC, $100,000 is allocated towards sidewalk development each year. As noted in the Implementation Chapter, even if the City of Belmont only dedicates a small amount of funding, it is still important to have for matching grants and small projects,

like painting crosswalks, and key signage projects.

FACILITY MAINTENANCE DISTRICTS

Facility Maintenance Districts (FMDs) can be created to pay for the costs of on-going maintenance of public facilities and landscaping within the areas of the City where improvements have been concentrated and where their benefits most directly benefit business and institutional property owners. An FMD is needed in order to assure a sustainable maintenance program. Fees may be based upon the length of lot frontage along streets where improvements have been installed, or upon other factors such as the size of the parcel. The program supported by the FMD should include regular maintenance of streetscape of off road trail improvements. The municipality can initiate public outreach efforts to merchants, the Chamber of Commerce, and property owners. In these meetings, City staff will discuss the proposed apportionment and allocation methodology and will explore implementation strategies.

The municipality can manage maintenance responsibilities either through its own staff or through private contractors.

LOCAL TRAIL SPONSORS

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

VOLUNTEER WORK

It is expected that many citizens will be excited about the development of a greenway corridor or a new park or canoe access point. Individual volunteers from the community can be brought together with groups of volunteers form church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.

PRIVATE FOUNDATIONS AND CORPORATIONS

Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are several examples of private funding opportunities available.

LAND FOR TOMORROW CAMPAIGN

Land for Tomorrow is a diverse partnership of businesses, conservationists,

farmers, environmental groups, health professionals and community groups committed to securing support from the public and General Assembly for protecting land, water and historic places. The campaign is asking the North Carolina General Assembly to support issuance of a bond for $200 million a year for five years to preserve and protect its special land and water resources. Land for Tomorrow will enable North Carolina to reach a goal of ensuring that working farms and forests; sanctuaries for wildlife; land bordering streams, parks and greenways; land that helps strengthen communities and promotes job growth; historic downtowns and neighborhoods; and more, will be there to enhance the quality of life for generations to come. Website: http://www.landfortomorrow.org/

THE ROBERT WOOD JOHNSON FOUNDATION

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- To assure that all Americans have access to basic health care at a reasonable cost
- To improve care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

For more specific information about what types of projects are funded and how to apply, visit http://www.rwjf.org/applications/.

NORTH CAROLINA COMMUNITY FOUNDATION

The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for nonprofit organizations and institutions throughout the state. Based in Raleigh, North Carolina, the foundation also manages a number of community affiliates throughout North Carolina, that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. The foundation also manages various scholarship programs statewide. Web site: http://nccommunityfoundation.org/

Z. SMITH REYNOLDS FOUNDATION

This Winston-Salem-based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. They have two grant cycles per year and generally do not fund land

acquisition. However, they may be able to offer support in other areas of open space and greenways development. More information is available at www.zsr.org.

BANK OF AMERICA CHARITABLE FOUNDATION, INC.

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development. Visit the web site for more information: www.bankofamerica.com/foundation.

DUKE ENERGY FOUNDATION

Funded by Duke Energy shareholders, this non-profit organization makes charitable grants to selected non-profits or governmental subdivisions. Each annual grant must have:

- An internal Duke Energy business "sponsor"
- A clear business reason for making the contribution

The grant program has three focus areas: Environment and Energy Efficiency, Economic Development, and Community Vitality. Related to this project, the Foundation would support programs that support conservation, training and research around environmental and energy efficiency initiatives. Web site: http://www.duke-energy.com/community/foundation.asp.

AMERICAN GREENWAYS EASTMAN KODAK AWARDS

The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants ($250 to $2,000) to stimulate the planning, design and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying or political activities. For more information visit The Conservation Fund's website at: www.conservationfund.org.

NATIONAL TRAILS FUND

American Hiking Society created the National Trails Fund in 1998, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. 73 million people enjoy foot trails annually, yet many of our favorite trails need major repairs due to a $200 million backlog of badly needed maintenance. National Trails Fund grants help give local organizations

the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. To date, American Hiking has granted more than $240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from $500 to $10,000 per project.

Projects the American Hiking Society will consider include:

- Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements.

- Building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage.
- Constituency building surrounding specific trail projects - including volunteer recruitment and support.

Web site: www.americanhiking.org/alliance/fund.html.

THE CONSERVATION ALLIANCE

The Conservation Alliance is a non-profit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. One hundred percent of its member companies' dues go directly to diverse, local community groups across the nation - groups like Southern Utah Wilderness Alliance, Alliance for the Wild Rockies, The Greater Yellowstone Coalition, the South Yuba River Citizens' League, RESTORE: The North Woods and the Sinkyone Wilderness Council (a Native American-owned/operated wilderness park). For these groups, who seek to protect the last great wild lands and waterways from resource extraction and commercial development, the Alliance's grants are substantial in size (about $35,000 each), and have often made the difference between success and defeat. Since its inception in 1989, The Conservation Alliance has contributed $4,775,059 to grassroots environmental groups across the nation, and its member companies are proud of the results: To date the groups funded have saved over 34 million acres of wild lands and 14 dams have been either prevented or removed-all through grassroots community efforts.

The Conservation Alliance is a unique funding source for grassroots environmental groups. It is the only environmental grant maker whose funds come from a potent yet largely untapped constituency for protection of ecosystems - the non-motorized outdoor recreation industry and its customers. This industry has great incentive to protect the places in which people use the clothing, hiking boots, tents and backpacks it sells. The industry is also uniquely positioned to educate outdoor enthusiasts about threats to wild places, and engage them to take action. Finally, when it comes to decision-makers - especially those in the Forest Service, National Park Service, and Bureau of Land Management, this industry has clout - an

important tool that small advocacy groups can wield.

The Conservation Alliance Funding Criteria: The Project should be focused primarily on direct citizen action to protect and enhance our natural resources for recreation. We're not looking for mainstream education or scientific research projects, but rather for active campaigns. All projects should be quantifiable, with specific goals, objectives and action plans and should include a measure for evaluating success. The project should have a good chance for closure or significant measurable results over a fairly short term (one to two years). Funding emphasis may not be on general operating expenses or staff payroll.

Web site: www.conservationalliance.com/index.m.
E-mail: john@conservationalliance.com.

NATIONAL FISH AND WILDLIFE FOUNDATION (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, nonprofit, tax-exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes.

The Foundation awards matching grants under its Keystone Initiatives to achieve measurable outcomes in the conservation of fish, wildlife, plants and the habitats on which they depend. Awards are made on a competitive basis to eligible grant recipients, including federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Project proposals are received on a year-round, revolving basis with two decision cycles per year. Grants generally range from $50,000-$300,000 and typically require a minimum 2:1 non-federal match.

Funding priorities include bird, fish, marine/coastal, and wildlife and habitat conservation. Other projects that are considered include controlling invasive species, enhancing delivery of ecosystem services in agricultural systems, minimizing the impact on wildlife of emerging energy sources, and developing future conservation leaders and professionals. Website: http://www.nfwf.org/AM/Template.cfm?Section=Grants where additional grant programs are described.

THE TRUST FOR PUBLIC LAND

Land conservation is central to the mission of the Trust for Public Land (TPL).

Founded in 1972, the Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and well being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities. TPL's legal and real estate specialists work with landowners, government agencies, and community groups to:

- Create urban parks, gardens, greenways, and riverways
- Build livable communities by setting aside open space in the path of growth
- Conserve land for watershed protection, scenic beauty, and close-to home recreation safeguard the character of communities by preserving historic landmarks and landscapes.

The following are TPL's Conservation Services:

- Conservation Vision: TPL helps agencies and communities define conservation priorities, identify lands to be protected, and plan networks of conserved land that meet public need.
- Conservation Finance: TPL helps agencies and communities identify and raise funds for conservation from federal, state, local, and philanthropic sources.
- Conservation Transactions: TPL helps structure, negotiate, and complete land transactions that create parks, playgrounds, and protected natural areas.
- Research and Education: TPL acquires and shares knowledge of conservation issues and techniques to improve the practice of conservation and promote its public benefits.

Since 1972, TPL has worked with willing landowners, community groups, and national, state, and local agencies to complete more than 3,000 land conservation projects in 46 states, protecting more than 2 million acres. Since 1994, TPL has helped states and communities craft and pass over 330 ballot measures, generating almost $25 billion in new conservation-related funding. For more information, visit http://www.tpl.org/.

ACQUISITION STRATEGIES C

CHAPTER OUTLINE:

OVERVIEW

There are many different ways to secure trail right-of-way for greenway systems. It will be necessary to work with some landowners to secure trail right-of-way when it does not exist. The following text provides a list of options that should be considered. Funding sources for acquiring right-of-way and trail development are described and provided in Appendix B.

The following sections detail a list of specific strategies including the formation of partnerships and a toolbox of acquisition options.

PARTNERSHIPS

The City of Belmont should pursue partnerships with land trusts and land managers to make more effective use of their land acquisition funds and strategies. The following offers recommendations on how these partnerships could be strengthened

LAND TRUSTS

Land trust organizations, such as the Catawba Lands Conservancy, are valuable partners when it comes to acquiring land and rights-of-way for greenways. These groups can work directly with landowners and conduct their business in private so that sensitive land transactions are handled in an appropriate manner. Once the transaction has occurred, the land trust will usually convey the acquired land or easement to a public agency, such as a city or county for permanent stewardship and ownership.

PRIVATE LAND MANAGERS

Another possible partnership that could be strengthened would be with the utility companies that manage land throughout the region. Trails and greenways can be built on rights-of-ways that are either owned or leased by electric and natural gas companies. Electric utility companies have long recognized the value of partnering with local communities, non-profit trail organizations, and private land owners to permit their rights-of-ways to be used for trail development. This has occurred all over the United States and throughout North Carolina.

The City of Belmont should actively update and maintain relationships with private utility and land managers to ensure that community wide bicycle, pedestrian and greenway system can be accommodated within these rights-of-way. The respective municipalities will need to demonstrate to these companies that maintenance will be addressed, liability will be reduced and minimized and access to utility needs will be provided.

GREENWAY ACQUISITION TOOLS

The following menu of tools describe various methods of acquisition that can be used by landowners, land conservation organizations, the City of Belmont, Robeson County, and other surrounding municipalities to acquire greenway lands.

GOVERNMENT REGULATION

Regulation is defined as the government's ability to control the use and development of land through legislative powers. Regulatory methods help shape the use of land without transferring or selling the land. The following types of development ordinances are regulatory tools that can meet the challenges of projected suburban growth and development as well as conserve and protect greenway resources.

Exactions: An exaction is a condition of development approval that requires development to provide or contribute to the financing of public facilities at their own expense. For example, a developer may be required to build a greenway on-site as a condition of developing a certain number of units because the development will create the need for new parks or will harm existing parks due to overuse. This mechanism can be used to protect or preserve greenway lands, which are then donated to the City of Belmont. Consideration should be given to include greenway development in future exaction programs. Most commonly, exactions are in the form of mandatory dedications of lands for parks and infrastructure, fees in lieu of mandatory dedication, or impact fees.

MANDATORY DEDICATION

This is a type of exaction where subdivision regulations require a developer to dedicate or donate improved land to the public interest. A dedication may involve the fee simple title to the land, an easement, or some other property interest. Sometimes, the construction of an improvement itself is required such as a park or greenway.

FEE-IN-LIEU

An exaction can take the form of a fee-in-lieu of mandatory dedication. It can also complement negotiated dedications (described below). Based on the density of development, this program allows a developer the alternative of paying money for the development/protection of open space and

greenways in lieu of dedicating greenway and parklands. Payments are made representing the value of the site or improvement that would have been dedicated or provided. This allows local governments to pool fees from various subdivisions to finance facilities like parks and greenways. This money can be used to implement greenway management programs or acquire additional open space.

IMPACT FEE

A final type of exaction, an impact fee, can fund a broader range of facilities that serve the public interest. They are commonly imposed on a per unit rather than a build out basis, making them more flexible and keeping developers from having to pay large up front costs. These do not have to be directly tied to any requirements for improvements or dedications of land. They can be more easily applied to off-site improvements.

Growth Management Measures (Concurrency): Concurrency-based development approaches to growth management simply limit development to areas with adequate public infrastructure. This helps regulate urban sprawl, provides for quality of life in new development, and can help protect open space. In the famous case with the Town of Ramapo (1972), the Town initiated a zoning ordinance making the issue of a development permit contingent on the presence of public facilities such as utilities and parks. This was upheld in Court and initiated a wave of slow-growth management programs nationwide. This type of growth management can take the form of an adequate public facilities ordinance.

Performance Zoning: Performance zoning is zoning based on standards that establish minimum requirements or maximum limits on the effects or characteristics of a use. This is often used for the mixing of different uses to minimize incompatibility and improve the quality of development. For example, how a commercial use is designed and functions determines whether it could be allowed next to a residential area or connected to a greenway.

Incentive Zoning (Dedication/Density Transfers): Also known as incentive zoning, this mechanism allows greenways to be dedicated for density transfers on development of a property. The potential for improving or subdividing part or all of a parcel can be expressed in dwelling unit equivalents or other measures of development density or intensity. Known as density transfers, these dwelling unit equivalents may be relocated to other portions of the same parcel or to contiguous land that is part of a common development plan. Dedicated density transfers can also be conveyed to subsequent holders if properly noted as transfer deeds.

Conservation Zoning: This mechanism recognizes the problem of reconciling different, potentially incompatible land uses by preserving natural areas, open spaces, waterways, and/or greenways that function as buffers or transition zones. It can also be called buffer or transition zoning. This type of zoning, for example, can protect waterways by creating buffer zones where no development can take place. Care must be taken to ensure that the use of this mechanism is reasonable and will not destroy the value of a property.

Overlay Zoning: An overlay zone and its regulations are established in addition to the zoning classification and regulations already in place. These are commonly used to protect natural or cultural features such as historic areas, unique terrain features, scenic vistas, agricultural areas, wetlands, stream corridors, and wildlife areas.

Negotiated Dedications: This type of mechanism allows municipalities to negotiate with landowners for certain parcels of land that are deemed beneficial to the protection and preservation of specific stream corridors. This type of mechanism can also be exercised through dedication of greenway lands when a parcel is subdivided. Such dedications would be proportionate to the relationship between the impact of the subdivision on community services and the percentage of land required for dedication-as defined by the US Supreme Court in Dolan v Tigard.

Reservation of Land: This type of mechanism does not involve any transfer of property rights but simply constitutes an obligation to keep property free from development for a stated period of time. Reservations are normally subject to a specified period of time, such as 6 or 12 months. At the end of this period, if an agreement has not already been reached to transfer certain property rights, the reservation expires.

Planned Unit Development: A planned unit development allows a mixture of uses. It also allows for flexibility in density and dimensional requirements, making clustered housing and common open space along with addressing environmental conditions a possibility. It emphasizes more planning and can allow for open space and greenway development and connectivity.

Cluster Development: Cluster development refers to a type of development with generally smaller lots and homes close to one another. Clustering can allow for more units on smaller acreages of land, allowing for larger percentages of the property to be used for open space and greenways.

LAND MANAGEMENT

Management is a method of conserving the resources of a specific greenway parcel by an established set of policies called management plans for publicly owned greenway land or through easements with private property owners. Property owners who grant easements retain all rights to the property except those which have been described in the terms of the easement. The property owner is responsible for all taxes associated with the property, less the value of the easement granted. Easements are generally restricted to certain portions of the property, although in certain cases an easement can be applied to an entire parcel of land. Easements are transferable through title transactions, thus the easement remains in effect perpetually.

Management Plans: The purpose of a management plan is to establish legally binding contracts which define the specific use, treatment, and protection for publicly owned greenway lands. Management plans should identify valuable resources; determine compatible uses for the parcel; determine administrative needs of the parcel, such as maintenance, security, and funding requirements; and recommend short-term and long-term action plans for the treatment and protection of greenway lands.

Conservation Easement: This type of easement generally establishes permanent limits on the use and development of land to protect the natural resources of that land. When public access to the easement is desired, a clause defining the conditions of public access can be added to the terms of the easement. Dedicated conservation easements can qualify for both federal income tax deductions and state tax credits. Tax deductions are allowed by the Federal government for donations of certain conservation easements. The donation may reduce the donor's taxable income.

Preservation Easement: This type of easement is intended to protect the historical integrity of a structure or important elements in the landscape by sound management practices. When public access to the easement is desired, a clause defining the conditions of public access can be added to the terms of the easement. Preservation easements may qualify for the same federal income tax deductions and state tax credits as conservation easements.

Public Access Easements: This type of easement grants public access to a specific parcel of property when a conservation or preservation easement is not necessary. The conditions of use are defined in the terms of the public access easement.

ACQUISITION

Acquisition requires land to be donated or purchased by a government body, public agency, greenway manager, or qualified conservation organization.

Donation or Tax Incentives: In this type of acquisition, a government body, public agency, or qualified conservation organization agrees to receive the full title or a conservation easement to a parcel of land at no cost or at a "bargain sale" rate. The donor is then eligible to receive a federal tax deduction of up to 30 to 50 percent of their adjusted gross income. Additionally, North Carolina offers a tax credit of up to 25 percent of the property's fair market value (up to $5000). Any portion of the fair market value not used for tax credits may be deducted as a charitable contribution. Also, property owners may be able to avoid any inheritance taxes, capital gains taxes, and recurring property taxes.

Fee Simple Purchase: This is a common method of acquisition where a local government agency or private greenway manager purchases property outright. Fee simple ownership conveys full title to the land and the entire "bundle" of property rights including the right to possess land, to exclude others, to use land, and to alienate or sell land.

Easement Purchase: This type of acquisition is the fee simple purchase of an easement. Full title to the land is not purchased, only those rights granted in the easement agreement. Therefore the easement purchase price is less that the full title value.

Purchase / Lease Back: A local government agency or private greenway organization can purchase a piece of land and then lease it back to the seller for a specified period of time. This lease may contain restrictions regarding the development and use of the property.

Bargain Sale: A property owner can sell property at a price less than the appraised fair market value of the land. Sometimes the seller can derive the same benefits as if the property were donated. Bargain Sale is attractive to sellers when the seller wants cash for the property, the seller paid a low cash price and thus is not liable for high capital gains tax, and/or the seller has a fairly high current income and could benefit from the donation of the property as an income tax deduction.

Installment Sale: An installment sale is a sale of property at a gain where at least one payment is to be received after the tax year in which the sale occurs. These are valuable tools to help sellers defer capital gains tax. This provides a potentially attractive option when purchasing land for open space from a possible seller.

Option / First Right of Refusal: A local government agency or private organization establishes an agreement with a public agency or private property owner to provide the right of first refusal on a parcel of land that is scheduled to be sold. This form of agreement can be used in conjunction with other techniques, such as an easement to protect the land in the short-term. An option would provide the agency with sufficient time to obtain capital to purchase the property or successfully negotiate some other means of conserving the greenway resource.

Purchase of Development Rights: A voluntary purchase of development rights involves purchasing the development rights from a private property owner at a fair market value. The landowner retains all ownership rights under current use, but exchanges the rights to develop the property for cash payment.

Land Banking: Land banking involves land acquisition in advance of expanding urbanization. The price of an open space parcel prior to development pressures is more affordable to a jurisdiction seeking to preserve open space. A municipality or county might use this technique to develop a greenbelt or preserve key open space or agricultural tracts. The jurisdiction should have a definite public purpose for a land banking project.

Condemnation: The practice of condemning private land for use as a greenway is viewed as a last resort policy. Using condemnation to acquire property or property rights can be avoided if private and public support for the greenway program is present. Condemnation is seldom used for the purpose of dealing with an unwilling property owner. In most cases, condemnation has been exercised when there has been an absentee property ownership, when the title of the property is not clear, or when it becomes apparent that obtaining the consent for purchase would be difficult because there are numerous heirs located in other parts of the United States or different countries.

Eminent Domain: The right of exercising eminent domain should be done so with caution by the community and only if the following conditions exist: 1) the property is valued by the community as an environmentally sensitive parcel of land, significant natural resource, or critical parcel of land, and as such has been defined by the community as irreplaceable property; 2) written scientific justification for the community's claim about the property's value has been prepared and offered to the property owner; 3) all efforts to negotiate with the property owner for the management, regulation, and acquisition of the property have been exhausted and that the property owner has been given reasonable and fair offers of compensation and has rejected all offers; and 4) due to the ownership of the property, the timeframe for negotiating the acquisition of the property will be unreasonable, and in the interest of pursuing a cost effective method for acquiring the property, the community has deemed it necessary to exercise eminent domain.

EXAMPLE SEWER/GREENWAY EASEMENT

Instrument Prepared By: City Attorney's Office
Brief Description for Index: Sewer/Greenway Easement
Parcel Identifier: _____
Mail After Recording To: City Clerk's Office
P. O. Box 590
Raleigh, N.C. 27602

STATE OF NORTH CAROLINA

COUNTY OF WAKE

GENERAL WARRANTY DEED
EASEMENT FOR SANITARY SEWER AND GREENWAY PURPOSES

THIS DEED OF EASEMENT, made and executed this _____ day of _____, 19_____, by _____, hereinafter referred to as the "Grantors", to the City of Raleigh, a municipal corporation of the State of North Carolina, hereinafter referred to as the "City";

W I T N E S S E T H:

WHEREAS, the Grantors are the Owners of the land hereinafter described and have agreed to convey to the City, according to the terms set forth below, the easement hereinafter described;

The designation "Grantors" as used herein shall include the singular and plural, as required, and the masculine, feminine and neuter gender as appropriate.

NOW, THEREFORE, in consideration of Ten Dollars ($10.00) and other valuable consideration paid to the Grantors, receipt of which is hereby acknowledged, the Grantors, do hereby grant unto the City, its successors and assigns, the right, privilege and easement in perpetuity to: establish upon and maintain the land, hereinafter described, specifically as a greenway with facilities or improvements which may include trails, litter receptacles, boat launches, gates, trail markers, trail bridges, shelters, and other facilities necessary or convenient thereto and including the right of ingress and egress to the City and members of the general public for greenway maintenance and use; to construct, install, improve, remove, replace, inspect, repair, maintain, and use a system of pipelines or mains for sanitary sewer purposes, together with all the appurtenant facilities and equipment necessary or convenient thereto; subject to the laws and ordinances of the city, in, upon, and across the property of the Grantors described in a deed recorded in Deed Book _____, Page _____, Wake County Registry, which said easement is more particularly described in Exhibit A attached hereto and incorporated herein.

EXAMPLE SEWER/GREENWAY EASEMENT *(CONTINUED)*

TO HAVE AND TO HOLD the aforesaid easement interest and all privileges and rights thereunto belonging to the City of Raleigh, its successors and assigns forever.

THE FURTHER TERMS AND CONDITIONS of the easement interest herein conveyed are as follows:

1. The City is authorized hereunder to remove and keep removed from the easement all trees, shrubs, underbrush, and part thereof, or other obstructions as necessary to maintain, repair or protect said greenway and sanitary sewer lines and appurtenances or as necessary for the prevention or treatment of disease and for other good husbandry practices. Except as hereinabove allowed there shall be no other removal, destruction or cutting of trees, shrubs or other vegetation from the easement interest herein described and conveyed by any person or entity.

2. Nothing herein shall be construed to grant to the City of Raleigh or the general public any right of access through or over any property of the Grantors except that lying within the easement interest herein described and conveyed.

3. Following the installation of a sanitary sewer main and appurtenant facilities within the permanent easement hereinabove referenced and described, any and all temporary construction easement interest conveyed herein to the City shall terminate; and further, the City shall regrade, mulch, and reseed all damaged lands lying with the permanent and temporary easements, to the end that the same shall be restored to a condition as good as or better than that before construction.

4. Except as herein authorized, no building, fence, sign, or other structure nor any vehicular surface area shall be erected within the easement interest herein described and conveyed.

5. There shall be no dumping of ashes, garbage, waste, or other unsightly or offensive material on the easement interest herein described and conveyed.

6. There shall be no excavation, dredging, removal of loam, rock, sand, gravel or other material, nor any building of roads or other change in the natural topography of the easement interest herein described and conveyed, excepting for the construction and maintenance of the greenway and the sanitary sewer system undertaken by the City of Raleigh or its agents.

7. The City of Raleigh shall have the right and duty to maintain this Greenway Easement in a clean, natural, and undisturbed state, consistent with the City's master Greenway Plan.

EXAMPLE SEWER/GREENWAY EASEMENT *(CONTINUED)*

8. The City agrees to hold Grantors harmless from liability for personal injury or property damage arising out of the use of the easement for greenway purposes; provided Grantors shall not be held harmless from liability caused by the active conduct or instrumentalities of the Grantors, their agents, invitees, or contractors; or by acts of Grantors, their agents, invitees or contractors which violate the terms and conditions of this Deed of Easement.

The City does not waive or forfeit the right to take action to insure compliance with the terms, conditions and purposes of this easement by a prior failure to act.

The City reserves the right to enter the subject property at reasonable times in order to monitor compliance with the terms, conditions, restrictions, and purposes of this easement.

The Grantors expressly reserve the right to continue the use of the property for all purposes not inconsistent with this easement.

The Grantors agree that the terms, conditions and restrictions of this easement will be inserted by them in any subsequent deed or other legal instrument by which they divest themselves of either the fee simple title to, or of their possessory interest in, the subject property.

TO HAVE AND TO HOLD the said right, privilege and easement herein granted to the City of Raleigh, its successors and assigns forever. The covenants agreed to and the terms, conditions and restrictions imposed herein shall be binding upon the said Grantors and their agents, personal representatives, heirs and assigns, and all other successors to them in interest and shall continue as a servitude running in perpetuity with the above described land.

AND the said Grantors covenant that they are vested of the premises in fee and have the right to convey the same in fee simple; that the same are free from encumbrances except as hereinafter stated; and that they will warrant and defend title to the same against the claims of all persons whomsoever, subject only to the following exceptions:

IN WITNESS WHEREOF, the said Grantors have hereunto set their hand and seals the day and year first above written.

WITNESS:

_____ _____(SEAL)

_____(SEAL)

Approved as to Form:

_____(SEAL)

_____ _____(SEAL)

(Deputy) City Attorney

EXAMPLE SEWER/GREENWAY EASEMENT *(CONTINUED)*

STATE OF NORTH CAROLINA — INDIVIDUAL

COUNTY OF _____

I, _____, a Notary Public do hereby certify that _____, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

This the _____day of _____, 19_____.

(SEAL) _____ Notary Public

My Commission Expires:

STATE OF NORTH CAROLINA — PARTNERSHIP (INDIVIDUAL)

COUNTY OF _____

I, _____, a Notary Public do hereby certify that _____, general partner of_____, personally appeared before me this day and acknowledged the execution, with proper authorization, of the foregoing instrument, all in accordance with partnership instruments recorded in Book _____ Page _____ in the _____ County Registry and that the instrument is the act and deed of the partnership.

This the _____day of _____19____.

(SEAL) _____ Notary Public

My Commission Expires:

NORTH CAROLINA — CORPORATE

COUNTY OF _____

This is to certify that on the _____day of _____, 19_____, before me personally came _____, with whom I am personally acquainted, who, being by me duly sworn, says that (s)he is the (assistant) secretary, and _____ is the (vice) president of _____, the corporation described in and which executed the foregoing instrument; that (s)he knows the common seal of said corporation; that the seal affixed to the foregoing instrument is said common seal, and the name of the corporation was subscribed thereto by the said (assistant) secretary, and that the said (assistant) secretary and (vice) president subscribed their names thereto, and said common seal was affixed, all by order of the Board of Directors of said corporation, and that the said instrument is the act and deed of said corporation.

WITNESS my hand and official seal this the _____day of _____19_____.

(SEAL) _____ Notary Public

My Commission Expires:

STATE + FEDERAL POLICIES D

CHAPTER OUTLINE:

OVERVIEW

A number of federal and state pedestrian policies have been developed in recent years. This appendix covers a number of these policies that are intended to better integrate walking and bicycling into transportation infrastructure.

UNITED STATES DEPARTMENT OF TRANSPORTATION BICYCLE AND PEDESTRIAN POLICY

A United States Department of Transportation (US DOT) policy statement regarding the integration of bicycling and walking into transportation infrastructure recommends that, "bicycling and walking facilities will be incorporated into all transportation projects" unless exceptional circumstances exist. The Policy Statement was drafted by the U.S. Department of Transportation in response to Section 1202 (b) of the Transportation Equity Act for the 21st Century (TEA-21) with the input and assistance of public agencies, professional associations and advocacy groups. USDOT hopes that public agencies, professional associations, advocacy groups, and others adopt this approach as a way of committing themselves to integrating bicycling and walking into the transportation mainstream. The full statement reads as follows, with some minor adjustments for applicability in Belmont:

1. Bicycle and pedestrian ways shall be established in new construction and reconstruction projects in all urbanized areas unless one or more of three conditions are met:

- Bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, a greater effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right of way or within the same transportation corridor.
- The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project.

- Where sparsity of population or other factors indicate an absence of need. For example, on low volume, low speed residential streets, or streets with severe topographic or natural resource constraints.

2. In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to operate. Rumble strips are not recommended where shoulders are used by bicyclists unless there is a minimum clear path of four feet in which a bicycle may safely operate.

3. Sidewalks, shared use paths, street crossings (including over- and undercrossings), pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be designed, constructed, operated and maintained so that all pedestrians, including people with disabilities, can travel safely and independently.

4. The design and development of the transportation infrastructure shall improve conditions for bicycling and walking through the following additional steps:

- Planning projects for the long-term. Transportation facilities are long-term investments that remain in place for many years. The design and construction of new facilities that meet the criteria in item 1) above should anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements. For example, a bridge that is likely to remain in place for 50 years, might be built with sufficient width for safe bicycle and pedestrian use in anticipation that facilities will be available at either end of the bridge even if that is not currently the case.

- Addressing the need for bicyclists and pedestrians to cross corridors as well as travel along them. Even where bicyclists and pedestrians may not commonly use a particular travel corridor that is being improved or constructed, they will likely need to be able to cross that corridor safely and conveniently. Therefore, the design of intersections and interchanges shall accommodate bicyclists and pedestrians in a manner that is safe, accessible and convenient.

- Getting exceptions approved at a senior level. Exceptions for the non-inclusion of bikeways and walkways shall be approved by a senior manager and be documented with supporting data that indicates the basis for the decision.

- Designing facilities to the best currently available standards and guidelines. The design of facilities for bicyclists and pedestrians should follow design guidelines and standards that are commonly used, such as the AASHTO Guide for the Development of Bicycle Facilities, AASHTO's A Policy on Geometric Design of Highways and Streets, and the ITE Recommended Practice "Design and Safety of Pedestrian Facilities. (Many of these guidelines are summarized in Chapter 4: Bicycle Facility Standards)

(Retrieved from http://www.fhwa.dot.gov/environment/bikeped/design.htm on 5/6/2008)

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION COMPETE STREETS POLICY

In 2009, NCDOT unveiled its efforts to routinely provide for all users of the roads - pedestrians, bicyclists, public transportation users, and motorists of all ages and abilities. The new document:

- Explains the scope and applicability of the policy ("all transportation facilities within a growth area of a town or city funded by or through NCDOT, and planned, designed, or constructed on state maintained facilities, must adhere to this policy");
- Asserts the Department's role as a partner to local communities in transportation projects;
- Addresses the need for context-sensitivity;
- Sets exceptions (where specific travelers are prohibited and where there is a lack of current or future need) and a clear process for granting them (approval by the Chief Deputy Secretary); and
- Establishes a stakeholders group, including transportation professionals and interest groups, tasked to create comprehensive planning and design guidelines in support of the policy.

Visit www.ncdot.gov for the full document.

FHWA MEMORANDUM ON MAINSTREAMING BICYCLE AND PEDESTRIAN PROJECTS

(See pages D-4 through D-6)

U.S. Department of Transportation Federal Highway Administration

Memorandum

Subject: ACTION: Transmittal of Guidance on Bicycle and Pedestrian Provisions of the Federal-aid Program

Date: February 24, 1999

From: Kenneth R. Wykle
Federal Highway Administrator

In reply, refer to: HEPH-30

To:
Division Administrators
Federal Lands Highway Division Engineers

This memorandum transmits the Federal Highway Administration's (FHWA) Guidance on the Bicycle and Pedestrian Provisions of the Federal-aid Program and reaffirms our strong commitment to improving conditions for bicycling and walking. The nonmotorized modes are an integral part of the mission of FHWA and a critical element of the local, regional, and national transportation system. Bicycle and pedestrian projects and programs are eligible for but not guaranteed funding from almost all of the major Federal-aid funding programs. We expect every transportation agency to make accommodation for bicycling and walking a routine part of their planning, design, construction, operations and maintenance activities.

The Transportation Equity Act for the 21st Century (TEA-21) continues the call for the mainstreaming of bicycle and pedestrian projects into the planning, design, and operation of our Nation's transportation system. Under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Federal spending on bicycle and pedestrian improvements increased from $4 million annually to an average of $160 million annually. Nevertheless, the level of commitment to addressing the needs of bicyclists and pedestrians varies greatly from State to State.

The attached guidance explains how bicycle and pedestrian improvements can be routinely included in federally funded transportation projects and programs. I would ask each division office to pass along this guidance to the State DOT and to meet with them to discuss ways of expediting the implementation of bicycle and pedestrian projects. With the guidance as a basis for action, States can then decide the most appropriate ways of mainstreaming the inclusion of bicycle and pedestrian projects and programs.

Bicycling and walking contribute to many of the goals for our transportation system we have at FHWA and at the State and local levels. Increasing bicycling and walking offers the potential for cleaner air, healthier people, reduced congestion, more liveable communities, and more efficient use of precious road space and resources. That is why funds in programs such as Congestion Mitigation and Air Quality Improvement, Transportation Enhancements, and the National Highway System, are eligible to be used for bicycling and

walking improvements that will encourage use of the two modes.

We also have a responsibility to improve the safety of bicycling and walking as the two modes represent more than 14 percent of the 41,000 traffic fatalities the nation endures each year. Pedestrian and bicycle safety is one of FHWA's top priorities and this is reflected in our 1999 Safety Action Plan. As the attached guidance details, TEA-21 has opened up the Hazard Elimination Program to a broader array of bicycle, pedestrian, and traffic calming projects that will improve dangerous locations. The legislation also continues funding for critical safety education and enforcement activities under the leadership of the National Highway Traffic Safety Administration. If we are successful in improving the real and perceived safety of bicyclists and pedestrians, we will also increase use.

You will see from the attached guidance that the Federal-aid Program, as amended by TEA-21, offers an extraordinary range of opportunities to improve conditions for bicycling and walking. Initiatives such as the Transportation and Community and System Preservation Pilot Program and the Access to Jobs program offer exciting new avenues to explore.

Bicycling and walking ought to be accommodated, as an element of good planning, design, and operation, in all new transportation projects unless there are substantial safety or cost reasons for not doing so. Later this year (1999), FHWA will issue design guidance language on approaches to accommodating bicycling and pedestrian travel that will, with the cooperation of AASHTO, ITE, and other interested parties, spell out ways to build bicycle and pedestrian facilities into the fabric of our transportation infrastructure from the outset. We can no longer afford to treat the two modes as an afterthought or luxury.

The TEA-21 makes a great deal possible. However, in the area of bicycling and walking in particular, we must work hard to ensure good intentions and fine policies translate quickly and directly into better conditions for bicycling and walking. While FHWA has limited ability to mandate specific outcomes, I am committed to ensuring that we provide national leadership in three critical areas.

- The FHWA will encourage the development and implementation of bicycle and pedestrian plans as part of the overall transportation planning process. Every statewide and metropolitan transportation plan should address bicycling and walking as an integral part of the overall system, either through the development of a separate bicycle and pedestrian element or by incorporating bicycling and walking provisions throughout the plan. Further, I am instructing each FHWA division office to closely monitor the progress of projects from the long-range transportation plans to the STIPs and TIPs. In the coming months, FHWA will disseminate exemplary projects, programs, and plans, and we will conduct evaluations in selected States and MPOs to determine the effectiveness of the planning process.

- The FHWA will promote the availability and use of the full range of streamlining mechanisms to increase project delivery. The tools are in place for States and local government agencies to speed up the delivery of bicycle and pedestrian projects - it makes no sense to treat installation of a bicycle rack or curb cut the same way we treat a new Interstate highway project - and our division offices must take a lead in promoting and administering these procedures.

- The FHWA will help coordinate the efforts of Federal, State, metropolitan, and other relevant agencies to improve conditions for bicycling and walking. Once again, our division offices must ensure that those involved in implementing bicycle and pedestrian projects at the State and local level are given maximum opportunity to get their job done, unimpeded by regulations and red tape from the Federal level. I am asking each of our division offices to facilitate a dialogue among each State's bicycle and pedestrian coordinator, Transportation Enhancements program manager, Recreational Trails Program administrator, and their local and FHWA counterparts to identify and remove obstacles to the implementation of bicycle and pedestrian projects and programs.

In less than a decade, bicycling and walking have gone from being described by my predecessor Tom Larson as "the forgotten modes" to becoming a serious part of our national transportation system. The growing acceptance of bicycling and walking as modes to be included as part of the transportation mainstream started with passage of ISTEA in 1991 and was given a considerable boost by the Congressionally-mandated National Bicycling and Walking Study. That study, released in 1994, challenges the U.S. Department of Transportation to double the percentage of trips made by foot and bicycle while simultaneously reducing fatalities and injuries suffered by these modes by 10 percent - and we remain committed to achieving these goals.

The impetus of ISTEA and the National Bicycling and Walking Study is clearly reinforced by the bicycle and pedestrian provisions of the TEA-21. The legislation confirms the vital role bicycling and walking must play in creating a balanced, accessible, and safe transportation system for all Americans.

FHWA Guidance (1999) - Bicycle and Pedestrian Provisions of Federal Transportation Legislation

To provide Feedback, Suggestions, or Comments for this page contact Gabe Rousseau at gabe.rousseau@dot.gov.

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FHWA

United States Department of Transportation - **Federal Highway Administration**

NCDOT BOARD OF TRANSPORTATION RESOLUTION: BICYCLING AND WALKING IN NORTH CAROLINA: A CRITICAL PART OF THE TRANSPORTATION SYSTEM

(ADOPTED BY THE BOARD OF TRANSPORTATION ON SEPTEMBER 8, 2000)

The North Carolina Board of Transportation strongly reaffirms its commitment to improving conditions for bicycling and walking, and recognizes nonmotorized modes of transportation as critical elements of the local, regional, and national transportation system.

WHEREAS, increasing bicycling and walking offers the potential for cleaner air, healthier people, reduced congestion, more liveable communities, and more efficient use of road space and resources; and

WHEREAS, crashes involving bicyclists and pedestrians represent more than 14 percent of the nation's traffic fatalities; and

WHEREAS, the Federal Highway Administration (FHWA) in its policy statement "Guidance on the Bicycle and Pedestrian Provisions of the Federal-Aid Program" urges states to include bicycle and pedestrian accommodations in its programmed highway projects; and

WHEREAS, bicycle and pedestrian projects and programs are eligible for funding from almost all of the major Federal-aid funding programs; and

WHEREAS, the Transportation Equity Act for the 21st Century (TEA-21) calls for the mainstreaming of bicycle and pedestrian projects into the planning, design and operation of our Nation's transportation system;

NOW, THEREFORE, BE IT RESOLVED, the North Carolina Board of Transportation concurs that bicycling and walking accommodations shall be a routine part of the North Carolina Department of Transportation's planning, design, construction, and operations activities and supports the Department's study and consideration of methods of improving the inclusion of these modes into the everyday operations of North Carolina's transportation system; and

BE IT FURTHER RESOLVED, North Carolina cities and towns are encouraged to make bicycling and pedestrian improvements an integral part of their transportation planning and programming.

NCDOT ADMINISTRATIVE ACTION TO INCLUDE LOCAL ADOPTED GREENWAYS PLANS IN THE NCDOT HIGHWAY PLANNING PROCESS

(ADOPTED JANUARY 1994)

In 1994 the NCDOT adopted administrative guidelines to consider greenways and greenway crossings during the highway planning process. This policy was incorporated so that critical corridors which have been adopted by localities for future greenways will not be severed by highway construction. Following are the text for the Greenway Policy and Guidelines for implementing it.

In concurrence with the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and the Board of Transportation's Bicycle Policy of 1978 (updated in 1991) and Pedestrian Policy of 1993, the North Carolina Department of Transportation recognizes the importance of incorporating local greenways plans into its planning process for the development and improvement of highways throughout North Carolina.

NCDOT Responsibilities: The Department will incorporate locally adopted plans for greenways into the ongoing planning processes within the Statewide Planning (thoroughfare plans) and the Planning and Environmental (project plans) Branches of the Division of Highways. This incorporation of greenway plans will be consistent throughout the department. Consideration will be given to including the greenway access as a part of the highway improvement.

Where possible, within the policies of the Department, within the guidelines set forth in provisions for greenway crossings, or other greenway elements, will be made as a part of the highway project or undertaken as an allowable local expenditure.
Local Responsibilities: Localities must show the same commitment to building their adopted greenway plans as they are requesting when they ask the state to commit to providing for a certain segment of that plan. It is the responsibility of each locality to notify the Department of greenway planning activity and adopted greenway plans and to update the Department with all adopted additions and changes in existing plans.

It is also the responsibility of each locality to consider the adopted transportation plan in their greenways planning and include its adopted greenways planning activities within their local transportation planning process. Localities should place in priority their greenways construction activities and justify the transportation nature of each greenway segment. When there are several planned greenway crossings of a proposed highway improvement, the locality must provide justification of each and place the list of crossings in priority order. Where crossings are planned, transportation rights of way should be designated or acquired separately to avoid jeopardizing the future transportation improvements.

GUIDELINES FOR NCDOT TO COMPLY WITH ADMINISTRATIVE DECISION TO INCORPORATE LOCAL GREENWAYS INTO HIGHWAY PLANNING PROCESS

- Thoroughfare plans will address the existence of greenways planning activity, which has been submitted by local areas. Documentation of mutually agreed upon interface points between the thoroughfare plan and a greenway plan will be kept, and this information will become a part of project files.

- Project Planning Reports will address the existence of locally adopted greenways segment plans, which may affect the corridor being planned for a highway improvement. It is, however, the responsibility of the locality to notify the Department of the adopted greenways plans (or changes to its previous plans) through its current local transportation plan, as well as its implementation programs.

- Where local greenways plans have not been formally adopted or certain portions of the greenways plans have not been adopted, the Department may note this greenway planning activity but is not required to incorporate this information into its planning reports.

- Where the locality has included adopted greenways plans as a part of its local transportation plan and a segment (or segments) of these greenways fall within the corridor of new highway construction or a highway improvement project, the feasibility study and/or project planning report for this highway improvement will consider the effects of the proposed highway improvement upon the greenway in the same manner as it considers other planning characteristics of the project corridor, such as archeological features or land use.

- Where the locality has justified the transportation versus the leisure use importance of a greenway segment and there is no greenway alternative of equal importance nearby, the project planning report will suggest inclusion of the greenway crossing, or appropriate greenway element, as an incidental part of the highway expenditure.

- Where the locality has not justified the transportation importance of a greenway segment, the greenway crossing, or appropriate greenway element, may be included as a part of the highway improvement plan if the local government covers the cost.

- A locality may add any appropriate/acceptable greenway crossing or greenway element at their own expense to any highway improvement project as long as it meets the design standards of the NCDOT.

- The NCDOT will consider funding for greenway crossings, and other appropriate greenway elements only if the localities guarantee the construction of and/or connection with other greenway segments. This guarantee should be in the form of inclusion in the local capital improvements program or NCDOT/municipal agreement.

- If the state pays for the construction of a greenway incidental to a highway improvement and the locality either removes the connecting greenway segments from its adopted greenways plans or decides not to construct its agreed upon greenway segment, the locality will reimburse the state for the cost of the greenway incidental feature. These details will be handled through a municipal agreement.

- Locality must accept maintenance responsibilities for state-built greenways, or portions thereof. Details will be handled through a municipal agreement.

NCDOT PEDESTRIAN POLICY GUIDELINES

(See pages D-11 through G-12)

NCDOT ONLINE PEDESTRIAN PLANNING AND DESIGN RESOURCES LIST

(See pages D-13 through D-14)

DEPARTMENT OF TRANSPORTATION
PEDESTRIAN POLICY GUIDELINES
EFFECTIVE OCTOBER 1, 2000

These guidelines provide an updated procedure for implementing the Pedestrian Policy adopted by the Board of Transportation August 1993 and the Board of Transportation Resolution September 8, 2000. The resolution reaffirms the Department's commitment to improving conditions for bicycling and walking, and recognizes non-motorized modes of transportation as critical elements of the local, regional, and national transportation system. The resolution encourages North Carolina cities and towns to make bicycling and pedestrian improvements an integral part of their transportation planning and programming.

REQUIREMENTS FOR DOT FUNDING:

REPLACEMENT OF EXISTING SIDEWALKS:

The Department will pay 100% of the cost to replace an existing sidewalk that is removed to facilitate the widening of a road.

TIP INCIDENTAL PROJECTS:

DEFINED: Incidental pedestrian projects are defined as TIP projects where pedestrian facilities are included as part of the roadway project.

REQUIREMENTS:

1. The municipality and/or county notifies the Department in writing of its desire for the Department to incorporate pedestrian facilities into project planning and design. Notification states the party's commitment to participate in the cost of the facility as well as being responsible for all maintenance and liability. Responsibilities are defined by agreement. Execution is required prior to contract let.

   The municipality is responsible for evaluating the need for the facility (ie: generators, safety, continuity, integration, existing or projected traffic) and public involvement.

2. Written notification must be received by the **Project Final Field Inspection (FFI) date**. Notification should be sent to the Deputy Highway Administrator - Preconstruction with a copy to the Project Engineer and the Agreements Section of the Program Development Branch. Requests received after the project FFI date will be incorporated into the TIP project, if feasible, and only if the requesting party commits by agreement to pay 100% of the cost of the facility.

3. The Department will review the feasibility of including the facility in our project and will try to accommodate all requests where the Department has acquired appropriate right of way on curb and gutter sections and the facility can be installed in the current project berm width. The standard project section is a 10-ft berm (3.0-meter) that accommodates a 5-ft sidewalk. In accordance with

AASHTO standards, the Department will construct 5-ft sidewalks with wheelchair ramps. Betterment cost (ie: decorative pavers) will be a Municipal responsibility.

4. If the facility is not contained within the project berm width, the Municipality is responsible for providing the right of way and/or construction easements as well as utility relocations, at no cost to the Department. This provision is applicable to all pedestrian facilities including multi-use trails and greenways.

5. A cost sharing approach is used to demonstrate the Department's and the municipality's/county's commitment to pedestrian transportation (sidewalks, multi-use trails and greenways). The matching share is a sliding scale based on population as follows:

MUNICIPAL POPULATION	DOT PARTICIPATION	LOCAL PARTICIPATION
> 100,000	50%	50%
50,000 to 100,000	60%	40%
10,000 to 50,000	70%	30%
< 10,000	80%	20%

Note: The cost of bridges will not be included in the shared cost of the pedestrian installation if the Department is funding the installation under provision 6 - pedestrian facilities on bridges.

6. For bridges on streets with curb and gutter approaches, the Department will fund and construct sidewalks on both sides of the bridge facility if the bridge is less than 200 feet in length. If the bridge is greater than 200 feet in length, the Department will fund and construct a sidewalk on one side of the bridge structure. The bridge will also be studied to determine the costs and benefits of constructing sidewalks on both sides of the structure. If in the judgement of the Department sidewalks are justified, funding will be provided for installation. The above provision is also applicable to dual bridge structures. For dual bridges greater than 200 ft in length, a sidewalk will be constructed on the outside of one bridge structure. The bridges will also be studied to determine if sidewalks on the outside of both structures are justified.

7. FUNDING CAPS are no longer applicable.

8. This policy does not commit the Department to the installation of facilities in the Department's TIP projects where the pedestrian facility causes an unpractical design modification, is not in accordance with AASHTO standards, creates an unsafe situation, or in the judgement of the Department is not practical to program.

INDEPENDENT PROJECTS

DEFINED: The DOT has a separate category of funds for all independent pedestrian facility projects in North Carolina where installation is unrelated to a TIP roadway project. An independent pedestrian facility project will be administered in accordance with Enhancement Program Guidelines.

Useful On-Line Pedestrian Planning and Design Resources

NCDOT Division of Bicycle & Pedestrian Transportation	***http://www.ncdot.org/transit/bicycle/***
Board of Transportation Resolution on Mainstreaming	*http://www.ncdot.org/transit/bicycle/laws/laws_resolution.html*
NCDOT Pedestrian Policy Guidelines	*http://www.ncdot.org/transit/bicycle/laws/ped_guide.pdf*
NCDOT Greenways - Administrative Process	*http://www.ncdot.org/transit/bicycle/laws/laws_greenway_admin.html*
Funding	*http://www.ncdot.org/transit/bicycle/funding/funding_intro.html*
Project Types	*http://www.ncdot.org/transit/bicycle/projects/project_types/bpt_intro.html*
Crash Data	*http://www.ncdot.org/transit/bicycle/safety/safety_crashdata.html*
DBPT Long Range Plan	*http://www.ncdot.org/transit/bicycle/projects/intro/projects_long_range.html*
Safe Routes to School Program	*http://www.ncdot.org/transit/bicycle/saferoutes/SafeRoutes.html*
NCDOT Division of Highways	***http://www.ncdot.org/doh/***
Alternative Delivery Unit – Publications for Download	***http://www.ncdot.org/doh/preconstruct/altern/value/manuals/***
Bridge Policy 2000	*http://www.ncdot.org/doh/preconstruct/altern/value/manuals/bpe2000.doc*
Curb Cuts & Ramps for Disabled Persons	*http://www.ncdot.org/doh/preconstruct/altern/value/manuals/handi.pdf*
Traditional Neighborhood Development Manual	*http://www.ncdot.org/doh/preconstruct/altern/value/manuals/tnd.pdf*
ADA – Detectable Warnings	*http://www.ncdot.org/doh/preconstruct/ps/std_draw/06english/08/default.html*
Highway Design Branch – Design Manual	*http://www.ncdot.org/doh/preconstruct/altern/value/manuals/designmanual.html*
Policy and Procedure Manual (See Section 28)	*http://www.ncdot.org/doh/preconstruct/altern/value/manuals/ppm/*
Policy on Street & Driveway Access	*http://www.ncdot.org/doh/preconstruct/altern/value/manuals/pos.pdf*
Traffic Engineering and Safety Systems Branch	***http://www.ncdot.org/doh/preconstruct/traffic/***
NC Supplement to the Manual on Uniform Traffic Control Devices	*http://www.ncdot.org/doh/preconstruct/traffic/MUTCD/*
Crosswalks/Mid-Block Signing and Pavement Markings	*http://www.ncdot.org/doh/preconstruct/traffic/teppl/Topics/C-36/C-36.html*

UNC Highway Safety Research Center	***http://www.hsrc.unc.edu***
Pedestrian & Bicycle Information Center	***http://www.pedbikeinfo.org/index.htm***
Walking	*http://www.walkinginfo.org/*
Engineer Pedestrian Facilities	*http://www.walkinginfo.org/engineering*
Pedestrian Safety Guide & Countermeasure Selection System (PEDSAFE)	*http://www.walkinginfo.org/pedsafe/*
Develop Plans and Policies	*http://www.walkinginfo.org/develop*
National Center for Safe Routes to School	*http://www.saferoutesinfo.org*
Federal Highway Administration Bicycle & Pedestrian Program	***http://www.fhwa.dot.gov/environment/bikeped/***
Bicycle and Pedestrian Provisions of Federal Transportation Legislation	*http://www.fhwa.dot.gov/environment/bikeped/bp-guid.htm*
Bicycle & Pedestrian Programs	*http://www.fhwa.dot.gov/environment/bikeped/overview.htm*
Program & Design Guidance	*http://www.fhwa.dot.gov/environment/bikeped/guidance.htm*
Links to Other Resources	*http://www.fhwa.dot.gov/environment/bikeped/bipedlnk.htm*
Publications	*http://www.fhwa.dot.gov/environment/bikeped/publications.htm*
Pedestrian Safety	*http://safety.fhwa.dot.gov/ped_bike/ped/index.htm*
Pedestrian & Bicycle Safety Research Page	*http://www.tthrc.gov/safety/pedbike/index.htm*
National Highway Traffic Safety Administration – Traffic Safety: Pedestrians	***http://www.nhtsa.gov/portal/site/nhtsa/menuitem.dfedd570f698cabbbf30811060008a0c/***
National Center for Bicycling & Walking	***http://www.bikewalk.org/***