Town of Yadkinville, North Carolina

Comprehensive Pedestrian Master Plan

Division of Bicycle & Pedestrian Transportation

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Prepared for the Town of Yadkinville

February 2010

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A Town in Progress

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EXECUTIVE SUMMARY

VISION STATEMENT

"It is the Vision of Yadkinville to promote and create an attractive and comprehensive network of pedestrian facilities through improved on-street and off-street pedestrian paths that are safe, accessible, equitable, and efficient. It is the continuing goal of the Town of Yadkinville to provide facilities that are not only affordable and maintainable, but also strive to actively benefit and enrich the quality of life of its residents."

Pedestrian facilities can contribute to and reinforce the character and history of a town. *Photo Credit: D. Burden*

With the help of a $25,000 Bicycle and Pedestrian Planning Grant Initiative from the North Carolina Department of Transportation (NCDOT), the Town of Yadkinville is making their vision a reality by developing a Comprehensive Pedestrian Master Plan. Through the help of a steering committee comprised of community members and local business owners the Pedestrian Plan began to take shape. Two Public meetings were also held to gain valuable public input from the community.

DEMOGRAPHICS

The Town of Yadkinville is located in Yadkin County, North Carolina between the cities of Winston-Salem and North Wilkesboro to the east and west respectively, along the US 421 Hwy corridor. The Town of Mocksville is located to the immediate south of Yadkinville and Boonville to the north, following US 601 Hwy. The project study area consists of the Town of Yadkinville town limits and Yadkinville's Extra-Territorial Jurisdiction (ETJ).

Yadkin County, like much of the Western Piedmont, is characterized as rural in nature and located in the rolling foothills of the Appalachian Mountains. This area is experiencing moderate growth which will impact Yadkinville's population, traffic, and public facilities. The 2000 US Census Bureau reports that Yadkinville, occupying a land area of 2.72 sq. miles, is home to 2,818 people. By 2010 Yadkinville is projected to grow from 2,818 people to 3,240, experiencing an 8% growth rate over 10 years. New residential developments are planned for the Town, as well as new commercial and industrial centers. Due to this projected increase, a clear and defined pedestrian environment should be developed simultaneously with growth to safely connect residents to destinations and points of interest.

Walking is the primary mode of transportation for some portions of the population as 9.4% of the Yadkinville population either have no car or choose to walk to work.

Yadkinville Educational Attainment	
Educational Attainment	Percent
Less than 9th Grade	25.70%
9th-12th Grade, No Diploma	13.50%
High School graduate or equivalent	31.80%
Some College, No Degree	14.30%
Associates Degree	4.70%
Bachelors Degree	7.90%
Graduate or Professional Degree	2.10%

Source of 2000 US Census

Children aged 15 years or younger also account for 19.7% of the Town's current population. It is important to provide safe and efficient facilities for these user groups as well as for those who walk for recreational and fitness purposes.

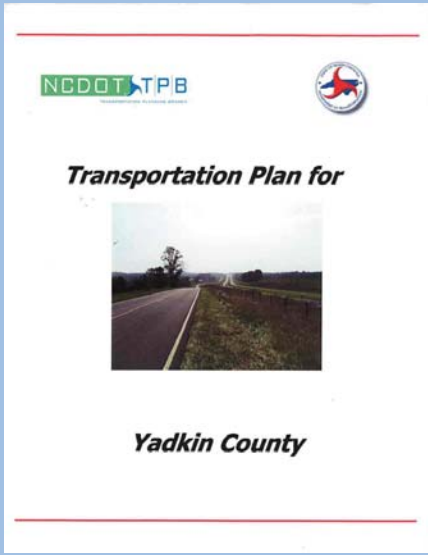
Yadkinville Age Distribution	Percent
Under 5	7%
5-9 years	6.70%
10-14 years	6.00%
15-19 years	5.50%
20-24 years	6.00%
25-34 years	13.90%
35-44 years	13.30%
45-54 years	10.90%
55-59 years	5.10%
60-64 years	4.30%
65-74 years	8.00%
75-84 years	7.40%
85 years and over	5.90%

Source of 2000 US Census

The Town of Yadkinville's Comprehensive Pedestrian Master Plan will help guide the improvement and development of pedestrian facilities and provide networks to help meet the future needs and desires of community residents and visitors, and is intended to reflect the Town's character as a quaint Western Piedmont community. *A map of the study area can be found in Chapter 8 of this document. Detailed demographic information can also be found in the appendix of this document.*

EXISTING PLANS/ POLICIES

Yadkinville's Comprehensive Pedestrian Master Plan is meant to compliment previous planning efforts and provide additional information to help expand existing pedestrian facilities. The Town of Yadkinville and Yadkin County have a variety of ongoing plans, programs, and policies which effect the safety and appearance of the pedestrian environment. These tools deal with open space development and pedestrian connectivity, address the goals of growth, development, zoning, transportation and the revitalization of downtown Yadkinville. The following public documents directly effect the future of Yadkinville's pedestrian system.



- North Carolina State Transportation Improvement Program Plan (July 2007)
- Transportation Plan for Yadkin County (July 2005)
- Northwest Piedmont Rural Planning Organization (RPO)5-Year Planning Calendar (2007-2012)
- Northwest Piedmont RPO Division 11 Priorities 2011-2017
- Yadkin County Transportation Advisory Committee Priorities (2009-2015)
- Yadkinville 2025 Land Development Plan
- Yadkinville Zoning Ordinance Sec. 9-3-35 Sidewalks
- Downtown Yadkinville Streetscape Master Plan (Nov. 5, 2007)
- Yadkinville Walkability Study (June 17, 2008)
- Yadkinville "Start with Your Heart" Guide Book

Refer to Chapter 3 of the Pedestrian Plan for a more detailed description of all the existing plans and policies listed above.

The Town and citizens of Yadkinville support the move towards a more pedestrian friendly community. This is apparent in the 2025 Yadkinville Land Development Plan where the desire for pedestrian friendly commercial areas, pedestrian scale buildings, and new sidewalks were noted. A commitment to implementing the Land Development Plan will help insure that the Town grows in a positive direction and will offer pedestrians once again an environment where walking is more commonplace. Furthermore, the Pedestrian Master Plan will provide conceptual facility standards and general design guidelines for future development, as well as conceptual retrofits of current facilities in need of improvement or repair. The Plan will also provide recommendations regarding new facilities and programs, as well as guidance in project prioritization. Finally, basic cost estimates will be provided as well as potential funding sources for pedestrian related projects.

EXISTING NETWORK

The existing pedestrian system in Yadkinville is comprised of inconsistent sidewalks and no greenways or other multi use trails except those that exist at Yadkin County Park. Currently, the downtown area is the most pedestrian friendly area in all of Yadkinville due to the original grid layout of the Town's streets. Sidewalks are present throughout this section of Yadkinville, however, many are in disrepair or lack adequate width to meet today's ADA standards. Clusters of commercial uses including the Post Office and grocery store are within close proximity to the core downtown area and can be accessed via a partial sidewalk network that contains gaps and sidewalk segments that alternate on either side of the street. Crosswalks and pedestrian signalization are also absent as are traffic calming devices in areas of high use and high traffic speed.

Outside the central core of Yadkinville, the rural nature becomes more evident. Newer subdivisions are not organized around a grid street system. Very few newer subdivisions contain sidewalks or other pedestrian facilities. Links between these neighborhoods are mostly in the form of roadways with narrow shoulders and no sidewalks. Some of the residential areas in Yadkinville are within walking distance of commercial areas, but the lack of sidewalks, crosswalks, and other safety measures impede and discourage pedestrian travel. The absence of a greenway connection to public facilities is also evident. Refer to the Town of Yadkinville Existing Conditions Map on p.17 of the Pedestrian Plan.

According to the Town of Yadkinville 2025 Land Development Plan, the community's major retail areas are located on US 601 Hwy/Main Street. Some of these retail centers and stores are not sufficiently connected to one another via sidewalks or crosswalks and most are not connected to areas of residential housing. Commercial areas should receive a higher intensity of pedestrian facilities such as wide sidewalks, crosswalks, pedestrian signalization, and other necessary amenities to protect and safeguard pedestrians in these areas. Additionally, routes to these areas need to be incorporated into the pedestrian plan for interconnectivity.

PUBLIC INVOLVEMENT

An important part of the planning process is public participation. The opinions, concerns and involvement of the public is a crucial element in developing a pedestrian plan which is consistent with the desires of the public. Public "buy-in" and support of the Pedestrian Master Plan is necessary for the Plan to be a useful amenity to the Town and no one knows the Town of Yadkinville better than its citizens. A variety of methods were used to integrate the public and citizens of Yadkinville into the analysis and design process for the Pedestrian Master Plan including the following:

- Formal public meetings
- Informal Public Meetings
- Mapping workshops
- Surveys

A total of 61 surveys were returned, representing roughly 2.5% of the total population. Survey results indicate that 87% of respondents felt the need for improved pedestrian facilities. Other concerns include bridges with no pedestrian access and inconsistencies in facilities such as dead-end sidewalks. The areas where most respondents frequently walk are those which currently have pedestrian amenities, such as sidewalks, or are located away from vehicular traffic such as parks, greenways, or schools. A large portion of respondents walk for recreation and exercise, however, some indicated that they walk for transportation. This was also observed during the inventory and analysis of existing conditions. Respondents indicated they would walk more if there were pedestrian facilities, specifically if sidewalks and bridges were safer for pedestrians and if there were better lighting for safety reasons. The locations respondents felt most unsafe were roads where there are either no sidewalks or insufficient lighting and areas where there is a high probability of vehicle-pedestrian conflict such as bridge underpasses and narrow busy roadways with little or no shoulder.

PEDESTRIAN PROJECT RECOMMENDATIONS

The new Pedestrian System Master Plan developed herein identifies existing corridors in immediate need of improvement as well as locations in need of spot improvements. These two groups of applications have been classified as Short Term projects or necessary Phase I priorities. Additionally, the Pedestrian System Master Plan includes corridors in need of future improvement that have been classified as Long Term priority development projects. The Short Term and Long Term project recommendations are discussed in further detail on the following page.

Areas in immediate need of improvement, which are incorporated into the larger Pedestrian Master Plan include:

ROADWAYS

- US 601 Hwy northbound
- US Hwy 601 southbound
- Lee Avenue/Shacktown Road
- Main Street
- Jackson Street
- Cherry Street
- Elm Street
- Hemlock Street

SPOT IMPROVEMENTS

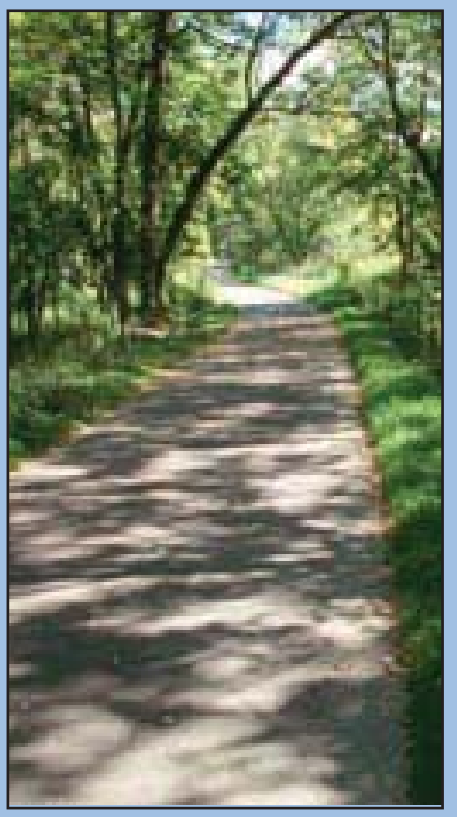
- Bridge Underpasses
- Crosswalks
- Intersection Improvements
- ADA Compliance
- Sidewalk repair
- Connect missing segments

Short Term Improvements

- ***Pedestrian Refuge Island:*** Intersection of US 601 Hwy and Hemlock Street
- ***Intersection Improvements/Mid-Block Crosswalk:*** Curb extensions and a mid-block crosswalk near the Yadkin Arts Council Building. Additional improvements include a crosswalk and ADA curb ramps on either side of E. Main Street.
- ***Intersection Improvements:*** Improve sight triangles and overall safety for pedestrians, cyclists, and motorists along Main Street, specifically at the intersection of Main Street and Jackson Street. Improvements would consist of traffic calming methods including the addition planted "bulb outs", or curb extensions, planted medians ADA compliant ramps on either side of the street, and striped crosswalks
- ***Sidewalk Construction:*** Complete minimum 5' wide concrete sidewalk along the Eastern side of US 601 Hwy beginning at US 421 Hwy by-pass continuing South
- ***Intersection Improvements:*** Installation of highly visible striped crosswalk and "Ped Heads" or Pedestrian Signals at the intersection of Pine Valley and US 601 Hwy
- ***Sidewalk Improvements:*** Complete sidewalks and improve traffic calming methods along E. Main Street to bring them to compliance with current ADA codes as well as more pedestrian friendly and safe.
- ***Sidewalk Construction:*** Improve or construct new 5' wide concrete sidewalk along W. Main Street in front of the Post Office to reduce curb cuts and grade issues resulting from the transition between concrete and asphalt.
- ***Sidewalk Construction:*** Utilize available road shoulder width to safely move pedestrians under the US 421 Hwy by-pass bridge. Improvements in this location may include the construction of ADA compliant ramps onto and off of the pedestrian refuge islands (monolithic concrete medians), possible safety lighting,and the addition of jersey barriers or other separation method to safely delineate the pedestrian and vehicular environments.
- ***Intersection Improvements:*** Intersection improvements at the intersection of Main Street and US 601 Hwy and the intersection of Elm Street and US 601 Hwy. Improvements include improved ADA access ramps at all four corners of both intersections, highly visible striped crosswalks to meet NCDOT guidelines and regulations, and planted "bulb outs."
- ***Sidewalk Construction:*** Construct minimum 5' wide concrete sidewalk along N. Lee Avenue
- ***Sidewalk Construction:*** Construct minimum 5' wide concrete sidewalk along northern side of Elm Street
- ***Sidewalk Construction:*** Construct minimum 5' wide concrete sidewalk along the North side of Hemlock Street
- **Sidewalk Construction:** Construct minimum 5' wide concrete sidewalk along East side of Van Buren Street
- ***Sidewalk Construction:*** Construct minimum 5' concrete sidewalk along Willow Street
- ***Sidewalk Construction:*** Construct minimum 5' concrete sidewalk along Monroe Street

Long Term Improvements

- ***Sidewalk Construction:*** As funding becomes available construct, at minimum, 5' wide concrete sidewalks throughout the project area to connect missing segments of sidewalk in an effort to create a continuous pedestrian system.
- ***Sidewalk Construction:*** Rehabilitate existing sidewalks throughout downtown to create a safer pedestrian environment. Improvements include addressing grade issues, installing ADA compliant ramps into businesses and at intersections, repairing broken concrete sidewalks in disrepair, and eliminating safety issues revolving around unsafe sight triangles caused by power poles, parked cars, and obstructions in the sidewalk.
- ***Sidewalk Construction***: Construct minimum 5' wide concrete sidewalk along the North side of Birch Street
- ***Sidewalk Construction:*** Construct minimum 5' wide concrete sidewalk along the South side of Cherry Street
- ***Trail Construction/Creation:*** Upper Yadkinville Multi-Use Trail-The Town should take advantage of Sewer and Water line easements North of downtown near the newly constructed Yadkinville Park, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.
- ***Trail Construction/Creation:*** Middle Yadkinville Multi-Use Trail-The Town should take advantage of Sewer and Water line easements throughout the core of Yadkinville as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.
- ***Trail Construction/ Creation:*** Lower Yadkinville Multi-Use Trail-The Town should take advantage of Sewer and Water line easements South of downtown Yadkinville and US Hwy 421 by-pass, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.
- ***Sidewalk Construction:*** Construct at minimum a 5' wide concrete sidewalk along the western side of US 601 Hwy from Town Limits to Town Limits to provide continuous access for pedestrians to walk through Yadkinville and provide regional access opportunities with adjacent municipalities.



GENERAL DESIGN GUIDELINES

Major Corridors:

-Planted medians where turning lanes are not necessary.
-Locate sidewalks min. 5' in width on both sides of the roadway with planted separation min. 5' in width (NCDOT only requires 3' width).
-Use crosswalks, pedestrian refuge islands when necessary, with pedestrian signalization at all crossings.
-Incorporate NCDOT Standards where appropriate.

Downtown Streets:

-Utilize ROW to bury utilities in immediate Downtown area.
-Plant trees in planting strips or planters.
-Install decorative paving between plantings.
-Use groundcover/plantings under trees to reduce maintenance.

Subdivisions:

-Road Diet: Where appropriate, reduce travel lanes to 11' or 10' wide (applies only to existing subdivisions).
-Sidewalks with a minimum 5' wide on one side of the street.
-Provide a min. 5' wide planted separation between sidewalk and roadway (NCDOT only requires 3' width).
-Incorporate NCDOT Standards where appropriate.

Proposed standards and guidelines for planning and developing pedestrian routes and facilities within the Town of Yadkinville are provided for future development guidance when implementing these recommended improvements as well as additional improvements not listed within this document. These guidelines will improve the Town's compliance with the Americans with Disabilities Act (ADA) and the North Carolina Department of Transportation (NCDOT) standards for pedestrian facilities. This chapter should act as guidelines for the Town

Pedestrian Refuge Island with at-grade crosswalk-Photo credit: www.saferoutes.org

Crosswalk with continental striping. Photo credit: www.smmirror.com

for implementation and future development purposes, and be considered as a resource and be referred to frequently. These guidelines and recommendations made in Chapter 5 should be included in the adopted Yadkinville Zoning Ordinance in order to have a consistent application of guidelines throughout the Town. With this inclusion, the Zoning code should include overall text changes that require new developments to install sidewalks along their property with public street frontages to include pedestrian facilities and amenities as determined by the Town. Each element listed below is discussed

- Sidewalks
- Planting Strips
- Paths/Greenways
- Wide Sidewalks/ Sidepaths
- Medians
- Crosswalks
- Pedestrian Symbols
- Curb Ramps/Curb Exetensions
- Lighting
- Signage
- School Zone Treatments
- Pedestrian Overpasses/Underpasses/Transit Stops/Bridges
- Traffic Calming Techniques

Refer to Chapter 5 for further description of these facilities and costs associated with each.

EDUCATION AND ENCOURAGEMENT PROGRAMS

Following the design and implementation process, it is imperative that education about pedestrian and bicyclist facilities as well as safety continue to be addressed. This may be done through advocacy groups, pedestrian citizen committees, schools and the media. This will ensure that new challenges are addressed and that opportunities are identified and capitalized. Below are just a few of the educational programs that address pedestrian and bicycle safety. *Funding sources are also available for both safety education and pedestrian facility construction. More information on funding sources can be found in section 7.3.*

School Zone Safety Program
Safe Routes to School Program (SRTS)
Pedestrian Safety Campaign
Share the Road Initiative
North Carolina School Crossing Guard Training Program and Manual
National Walk a Child to School Program
Walk a Child to School in North Carolina

MUTCD Pedestrian-Related Signage

Regulatory Signs

School, Warning, and Informational Signs

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, Info.
School Bus Stop Ahead	S3-1	7B.10	750x750 (30x30)	
Pedestrian Traffic	W11-2	2C.43	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.

Summary

Pedestrian and bicycle issues are increasingly gaining notice and many public agencies, special interest groups, and municipalities are moving to integrate pedestrians and bicyclists into their comprehensive transportation systems. The Town of Yadkinville Comprehensive Pedestrian Master Plan is an example of this growing awareness and provides an opportunity for the Town to plan for the future needs of its own present and future residents. A dedication to providing facilities and amenities for active lifestyles and access to destinations will positively contribute to the mental and physical health of residents as well as their overall quality of life. Pedestrian facilities not only make it easier and safer for people to walk to destinations or for recreation, these facilities also make life more enjoyable and pleasant. By planning now, the Town of Yadkinville can implement the improvement projects and new pedestrian facilities recommended in this Master Plan in a cost efficient and timely manner.

INTRODUCTION

1.1 PROJECT INTRODUCTION

The Town of Yadkinville Comprehensive Pedestrian Master Plan was made possible through a $25,000 Bicycle and Pedestrian Planning Grant Initiative from the North Carolina Department of Transportation (NCDOT). The purpose of this Pedestrian Master Plan is to improve the accessibility, connectivity, safety, and overall functionality of the pedestrian environment within the Town of Yadkinville. A dedication to providing facilities and amenities for active lifestyles and access to destinations will positively contribute to the mental and physical health of residents as well as their overall quality of life. Pedestrian facilities not only make it easier and safer for people to walk to destinations or for recreation, these facilities also make life more enjoyable and pleasant.

Pedestrian and bicycle issues are increasingly gaining notice and many public agencies, special interest groups, and municipalities are moving to integrate pedestrians and bicyclists into their comprehensive transportation systems. The Town of Yadkinville Comprehensive Pedestrian Master Plan is an example of this growing awareness and provides an opportunity for the Town to plan for the future needs of its own present and future residents.

The Town of Yadkinville is located in Yadkin County, North Carolina. Yadkin County, like much of the Western Piedmont, is characterized as rural in nature and located in the rolling foothills of the Appalachian Mountains. This area is experiencing moderate growth which will impact Yadkinville's population, traffic, and public facilities. This Pedestrian Master Plan will help guide the improvement and development of pedestrian facilities and provide networks to help meet the future needs and desires of community residents and visitors. By planning now, the Town of Yadkinville can implement the improvement projects and new pedestrian facilities recommended in this Master Plan in a cost efficient and timely manner. This Comprehensive Master Plan is meant to compliment previous planning efforts and provide additional information to help expand existing pedestrian facilities.

This Master Plan will provide conceptual facility standards and general design guidelines for future development, as well as conceptual retrofits of current facilities in need of improvement or repair. The Plan will also provide recommendations regarding new facilities and programs, as well as guidance in project prioritization. Finally, basic cost estimates will be provided as well as potential funding sources for pedestrian related projects.

1.2 VISION STATEMENT

The Town of Yadkinville's Comprehensive Pedestrian Master Plan is intended to reflect the Town's character as a quaint Western Piedmont community. Yadkinville has served as the County Seat of Yadkin County since 1851, and continues to successfully balance it's progressive nature while preserving it's historic charm.

"It is the Vision of Yadkinville to promote and create an attractive and comprehensive network of pedestrian facilities through improved on-street and off-street pedestrian paths that are safe, accessible, equitable, and efficient. It is the continuing goal of the Town of Yadkinville to provide facilities that are not only affordable and maintainable, but also strive to actively benefit and enrich the quality of life of its residents."

Existing Pedestrian Facilities in Residential Neighborhood

Existing Sidewalks in Downtown Yadkinville

1.3 SCOPE AND PURPOSE

The purpose of the Town of Yadkinville's Comprehensive Pedestrian Master Plan is to improve the quality and connectivity of Yadkinville's pedestrian environment by focusing on both on-street sidewalks and off-street pedestrian paths to create a safe, accessible, and functional pedestrian system that meets bicyclists needs as well. The physical, social, and economic benefits of a walkable community are described throughout the Pedestrian Master Plan. This document is divided up into sections to provide the following:

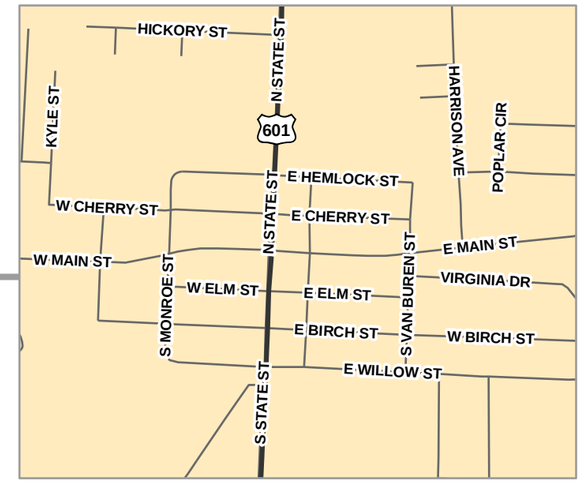
- **Existing Conditions:** evaluate any current programs, plans, and policies affecting the pedestrian environment. An existing sidewalk facility inventory and evaluation has also been conducted and incorporated into this Master Plan. A copy of this Existing Conditions Map is incorporated into Chapter 2.6 Inventory of Existing Conditions and Analysis.
- **Pedestrian routes, Barriers and Constraints**
- **Pedestrian facility standards and design guidelines**
- **Priorities**
- **Funding sources**
- **Project Recommendations**

The Town of Yadkinville is located between the cities of Winston-Salem and North Wilkesboro to the east and west respectively, along the US 421 Hwy corridor. The Town of Mocksville is located to the immediate south of Yadkinville and Boonville to the north, following US 601 Hwy. The project study area consists of the Town of Yadkinville town limits and Yadkinville's Extra-Territorial Jurisdiction (ETJ). The map on the following page illustrates the project scope of this Master Plan. The intent of this Pedestrian Master Plan is not to provide specific development design standards for the Town of Yadkinville, but to develop guidelines and recommendations that may be followed to create an integrated and cohesive town in functionality and aesthetic appearances only.

Development Standards and Code Regulations may be developed further as a result of the recommendations outlined in this Master Plan.

Yadkinville, NC

Site Map



Yadkinville

Yadkinville ETJ

Streets

Streams and Lakes

Open Space

WITHERS & RAVENEL
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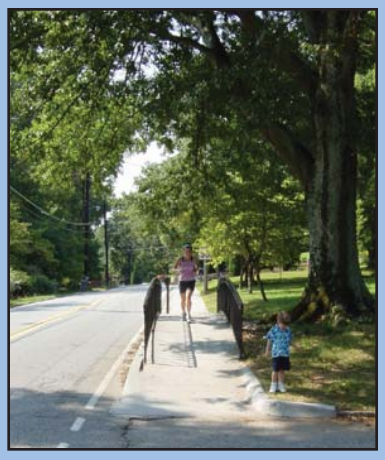
111 MacKenan Drive Cary, North Carolina
telephone: 919.469.3340 www.withersravenel.com

0 750 1,500 3,000 Feet

1 inch = 1,500 feet

1.4 HISTORY and BENEFITS OF PEDESTRIAN FACILITIES



Pedestrians using sidewalk for exercise. Photo Credit: D. Crites

Sidewalks provide a designated place for pedestrians to walk to their destinations.
Photo Credit: D. Burden

With increased pedestrian facilities and amenities, the Town of Yadkinville will gain many physical, social, and economic benefits for the Town as well as its community residents and visitors. For example, benefits of pedestrian facilities and pedestrian friendly communities include:

Physical:

- Reductions in automobile air and noise pollution
- Improved health of community residents
- Improved safety and accessibility

Social:

- Enhanced community environment, "livability" and quality of life
- Increased community interaction
- Creates a community identity

Economic:

- Attractive amenities for visitors
- Reductions in vehicular traffic
- Quality of life contributes to economic potential
- Pedestrian facilities and connectivity benefit businesses and increase accessibility

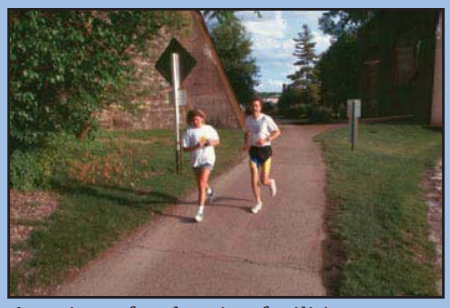
Reduction in air and noise pollution: Walking uses calories, not fossil fuels. Motor vehicle fossil fuel emissions create a substantial amount of air pollution and 60% of the pollution created occurs in the first few minutes of vehicular movement according to the web site: walkinginfo.org. The quality of the physical environment greatly contributes to the quality of life and health of residents. When air and noise pollution is low, the emotional and physical health of residents is heightened.

Improved health of community residents: Contaminated air quality, as well as inactivity and sedentary lifestyles, are becoming more and more common in our society. Regular physical activity can reduce the risk of heart disease, stroke, hypertension, cholesterol, and diabetes among other diseases. Regular exercise can also contribute to overall mental health by reducing anxiety and depression.

Walking is one form of exercise that not only allows people to reach their desired destination, but also improves health and quality of life. Many experts believe that increasing active transportation such as walking, cycling, running and skating is the most practical and effective way to improve public fitness. One major study concluded, "...regular walking and cycling are the only realistic way that the population as a whole can get the daily half hour of moderate exercise which is the minimum level needed to keep reasonably fit..." (Physical Activity Task Force, 1995).

Sidewalks provide a place to meet and interact with fellow community members. *Photo Credit: D. Burden*

Pedestrian facilities can contribute to and reinforce the character and history of a town. *Photo Credit: D. Burden*



A variety of pedestrian facilities are attractive amenities to residents and visitors. *Photo Credit: D. Burden*

Supporting pedestrians and bicyclists reduces the amount of vehicular traffic. *Photo Credit: R. Huegerich*

Enhanced community environment, "livability" and quality of life: The ability to reach a destination through walking rather than driving a motor vehicle has many social benefits for a community. Pedestrian facilities contribute to and encourage building social ties among members of the community. Walkable communities, including both sidewalks and greenways provide facilities which increase the amount of face to face interaction among community members. Additionally, walkable communities encourage increased time dedicated to exercise and recreation and visibility within communities. Increased visibility in turn increases safety. These benefits all contribute to the overall quality of life for residents as well as the "livability" of a place.

Increased community interaction: Residents living and working in walkable communities interact at a much higher rate due to their incidental contact with other residents. This interaction and visibility enhances the overall sense of community as well as the safety of an area. Pedestrian facilities that link destinations such as retail centers, parks, greenways, and schools also encourage interaction within a community.

Creates a community identity: Pedestrian facilities can be incorporated in a manner that reflect a particular history or geographic region of a community. Materials used for sidewalks, crosswalks, and pedestrian lighting can reinforce a community's identity. Additionally street trees can be native to the community and contribute to the overall identity of the community. Residents can take pride in how their community looks, but also in their safe and accessible pedestrian system.

Attractive amenities for visitors: Visitors are attracted to places that are easy and safe to get around. By providing a variety of pedestrian facilities such as formalized routes, greenways, multi-use paths, wide sidewalks, and vehicle separation, a community can diversify the pedestrian experience and satisfy the needs of all visitors and residents.

Reductions in vehicular traffic: Pedestrians require very little space in comparison to vehicles. Walking is a viable means of transportation over short distances and reduces the volume of traffic in addition to the need for infrastructure such as parking spaces and extra lanes. Reducing vehicular traffic increases the safety of the streets for pedestrians and bicyclists.

The Town of Yadkinville has completed sufficient planning and taken the proper steps to achieve the benefits described above. The Town has had many partners and advocates throughout the planning process including NCDOT, the Northwest Piedmont Council of Governments (NWPCOG), the Northwest Piedmont Rural Planning Organization (NWPRPO), the Yadkin County Transportation Advisory Committee and many Town Staff. Local organizations and Citizen initiatives groups such as the "Start with Your Heart" health advocacy group and the Northwest

Piedmont Area Agency on Aging have also provided some documents to assist in initial data gathering. These documents will be discussed in further detail in Chapter-3, Current Plans, Programs, and Policies.

1.5 GOALS AND OBJECTIVES

GOALS

The goal of this Master Plan is to make the Town of Yadkinville a safer and more accessible pedestrian environment while also improving its aesthetic and historical characteristics and assets. The goals of this Comprehensive Pedestrian Master Plan are based on the social, environmental, and economic benefits of walkable communities. The objectives below were developed by the Steering Committee with the help of planning consultants from Withers & Ravenel and NCDOT. It is not the intent of this Pedestrian Master Plan to develop Standards and Design Guidelines for the Town of Yadkinville, however, this Master Plan will guide and direct these development policies as needed. These goals and objectives will guide the development and implementation of this Master Plan.

In an effort to achieve the goal of creating a more walkable and pedestrian friendly community, these objectives of the Yadkinville Pedestrian Master Plan include the following:

OBJECTIVES

- Develop an attractive and comprehensive network of pedestrian facilities that are affordable and maintainable.
- Identify gaps within the existing pedestrian system, as well as develop possible updated guidelines for new development.
- Provide solutions for safe crossings and sidewalk connections at schools, commercial centers, parks and recreation facilities, and at major barriers including underpasses and major thoroughfares.
- Provide methods for the Town to increase public awareness of pedestrian routes through means such as maps and mileage.
- Provide methods to improve safe accessibility for people of all ages and abilities.
- Enable the Town to ensure that existing and new pedestrian facilities such as street crossings, sidewalks, etc., are safe and meet minimum ADA standards.
- Implement traffic calming measures and pedestrian facilities in conjunction with roadway expansion projects, particularly in areas near schools and neighborhoods.
- Provide ways to enhance vehicle and pedestrian separation with the use of planting strips.

EXISTING CONDITIONS

Rural character outside downtown area

Commercial and Retail area along US 601 Hwy

Pedestrian Facilities at Yadkin County Park

Decorative crosswalks at the intersection of Elm Street and Jackson Street

2.1 OVERVIEW

The Town of Yadkinville is located in Yadkin County, North Carolina and serves as the County's Seat. The natural environment and scenic topography in and around Yadkinville provides both aesthetic character and outdoor recreational opportunities to residents as well as visitors. The Town was settled in close proximity to the Yadkin River and was later influenced by the introduction of rail in 1881. The farming and textile industry played a large role in shaping the Town. Tobacco and other cash crops were cured and shipped out on freight. Today, Yadkinville is home to the textile and manufacturing industries as well as health care and education, but its rich history is still evident at the core of downtown where some original houses are still standing from the late 19th Century. There is a small commercial business district in the center of Town as well as clusters of retail near the US 421 Hwy bypass just south of downtown Yadkinville.

The current downtown area is the most pedestrian friendly area in all of Yadkinville due to the original grid layout of the Town's streets. The courthouse is located at the center of downtown and serves as a landmark and the nucleus. Sidewalks are present throughout this section of Yadkinville, however, many are in disrepair or lack adequate width to meet today's ADA standards. Historically, residents of Yadkinville relied on walking daily as a means of transportation and interaction within their community. Clusters of commercial uses including the Post Office and grocery store are within close proximity to the core downtown area and can be accessed via a partial sidewalk network that contains gaps and sidewalk segments that alternate on either side of the street.

Outside the central core of Yadkinville, the rural nature becomes more evident. Housing density in neighborhoods just outside the Town radiate from the core in a trend that is representative of practical small town growth; the older neighborhoods have a careful balance of residential amenities while still having the luxury of being close to the downtown. However, on the contrary, newer subdivisions are not organized around a grid street system. Very few newer subdivisions contain sidewalks or other pedestrian facilities. Links between these neighborhoods are mostly in the form of roadways with narrow shoulders and no sidewalks. As a result, these neighborhoods are isolated from one another and there is no safe alternative to vehicular travel. Some of the residential areas in Yadkinville are within walking distance of commercial areas, but the lack of sidewalks, crosswalks, and other safety measures impede and discourage pedestrian travel. The absence of a greenway connection to public facilities is also evident.

Large tracts of agricultural farmland extend from the Town limits alongside narrow road shoulders, inhibiting pedestrian travel both locally and regionally.

Fortunately, the Town and citizens of Yadkinville support the move towards a more pedestrian friendly community. This is apparent in the 2025 Yadkinville Land Development Plan where the desire for pedestrian friendly commercial areas, pedestrian scale buildings, and new sidewalks were noted. A commitment to implementing the Land Development Plan will help insure that the Town grows in a positive direction and will offer pedestrians once again an environment where walking is more commonplace. Other documents also outline and emphasize the re-institution of pedestrian facilities including the Downtown Streetscape Master Plan, the Yadkinville Walkability study, and the Northwest Piedmont RPO's Division 11 Priority List for 2011-2017.

2.2 COMMUNITY DEMOGRAPHICS

The Town of Yadkinville is currently experiencing an increase in its population base. The 2000 US Census Bureau reports that Yadkinville, occupying a land area of 2.72 sq. miles, is home to 2,818 people. By 2010 Yadkinville is projected to grow from 2,818 people to 3,240, experiencing an 8% growth rate over 10 years. New residential developments are planned for the Town, as well as new commercial and industrial centers. This increase in population will affect the pedestrian environment. A clear and defined pedestrian environment should be developed simultaneously with this growth in order to safely connect residents to destinations and points of interest.

Race:

Of the town's 2,818 residents, 85.84% are White, 6.53% African American, 0.04% Native American, 0.18% are Asian, 6.32% from other races, and 1.10% from two or more races. Hispanic or Latino of any race include 18.81% of the population.

Walking is the primary mode of transportation for some portions of the aforementioned population. It is important to provide safe and efficient facilities for this user group as well as for those who walk for recreational and fitness purposes. Some people who rely heavily on walking include children, the elderly, and households that own one vehicle or no vehicle at all.

Income and Poverty Status:

Of the town's 959 occupied housing units, 88 or 9.4%, either have no car or choose to walk to work. It is probable that those who fall below the poverty level have the least access to vehicles on a regular basis, and must rely on alternate modes of transportation. According to the U.S. Census, 68, or 10.6%, of Yadkinville residents live in poverty.

Educational Attainment:

Yadkinville Educational Attainment	
Educational Attainment	Percent
Less than 9th Grade	25.70%
9th-12th Grade, No Diploma	13.50%
High School graduate or equivalent	31.80%
Some College, No Degree	14.30%
Associates Degree	4.70%
Bachelors Degree	7.90%
Graduate or Professional Degree	2.10%

Source of 2000 US Census

Children and adolescents:

Children and many adolescents do not have the ability to drive themselves and therefore rely on others for transportation. Children aged 15 years or younger account for 19.7% of the Town's current population. Safe, accessible, and efficient pedestrian facilities are essential to this portion of the population who do not and can not own and drive vehicles especially when destinations such as public parks, the library, and other destinations are not in immediate proximity to most residential neighborhoods. Pedestrian facilities allow for children and adolescents to walk to their destinations and it is essential that these facilities be safe for all who participate. Crosswalks, pedestrian refuge islands, and pedestrian signalization can help this user group cross streets by interacting with automobiles safely.

The elderly and people with disabilities:

Many people, including some elderly individuals, have disabilities that preclude driving. Twenty-one percent (21%) of the population is 65 years of age and older This population group also may rely heavily on others to get them where they need to go. Safe and accessible pedestrian facilities connecting destinations are necessary so this portion of the population feels safe and able to walk. Pedestrian facilities which are fully ADA compliant are essential for all communities. Crosswalks, pedestrian refuge islands, and pedestrian signalization can help this user group cross streets safely.

Yadkinville Age Distribution	Percent
Under 5	7%
5-9 years	6.70%
10-14 years	6.00%
15-19 years	5.50%
20-24 years	6.00%
25-34 years	13.90%
35-44 years	13.30%
45-54 years	10.90%
55-59 years	5.10%
60-64 years	4.30%
65-74 years	8.00%
75-84 years	7.40%
85 years and over	5.90%

Source of 2000 US Census

2.3 COMMUNITY PARTICIPATION AND PRIORITIES

Steering Committee Meeting

An important part of the planning process is public participation. The opinions, concerns and involvement of the public is a crucial element in developing a pedestrian plan which is consistent with the desires of the public. Public "buy-in" and support of the Pedestrian Master Plan is necessary for the Plan to be a useful amenity to the Town and no one knows the Town of Yadkinville better than its citizens. A variety of methods were used to integrate the citizens of Yadkinville into the analysis and design process for the Pedestrian Master Plan. The following elements were central to the public input process:

- Formal public meetings
- Surveys
- Mapping workshops
- Informal Public Meetings

Public Meetings

The first public meeting was held in Yadkinville on the 26th of March 2009 at the Allison Oaks Tasting Room in downtown Yadkinville from 5-8pm. Four-Teen (14) people were in attendance. Three additional "public" meetings were held to garner more support and feedback from the

Yadkinville Pedestrian Plan Public Meeting

Survey respondents indicated that the lack of vehicular and pedestrian separation inhibits walking

Even with proper separation from vehicles, sidewalks need to be free of obstructions for ADA accessibility

community. Withers & Ravenel staff attended the Yadkin Valley Bluegrass Convention on Saturday April 18, 2009 to talk with locals and visitors alike to get their perspective on the pedestrian network in Yadkinville. Over 200 musicians, spectators, residents and out of towners attended the Bluegrass Convention and assisted in gaining valuable insight on the current and proposed pedestrian system.

In an effort to reach as many citizens as possible, another meeting at Yadkinville Elementary took place to reach a younger demographic. An announcement and brief overview of the plan was presented at the Yadkinville Elementary School Monday April 20th at 7pm to receive community feedback and survey responses. A fourth public meeting was schedule at 5:30 pm on May 18th at the Yadkinville Volunteer Fire Station. Pizza and Drinks were provided to attract parents and children for a free dinner and education session via a power point presentation on the Master Plan's progress to date. Attendance at this meeting was high and some good discussion took place, unfortunately, attendance overall was less than optimum. A total of 61 surveys were returned and tabulated.

Public Survey

The public survey questionnaires were distributed through a variety of methods to reach as much of the public as possible. The survey consisted of a one page (front and back) handout with 20 questions including multiple choice, Yes or No, and open-ended questions. The most common and successful method of distribution occurred through face to face interaction. This method yielded a high return on surveys, however, other methods proved to be useful as well including:

- Email
- Adobe pdf. format on the Town website
- Leaving surveys behind with local business owners
- Distribution at public meetings

Approximately 200 hard copy surveys were distributed at public meetings and through the assistance of local business owners. Sixty-one (61) total surveys were returned by the deadline, representing 2.25% of Yadkinville's total population and 30.5% of the total number of surveys distributed. Results of the complete survey can be found in the Appendix, located at the end of this document.

Frequent areas to walk in Yadkinville: The areas where most respondents frequently walk are those which currently have pedestrian amenities, such as sidewalks, or are located away from vehicular traffic such as parks, greenways, or schools. Although the majority of residents drive to these places, they often walk once they arrive. Frequent destinations in Yadkinville by walking or biking include:

- Neighborhoods
- Downtown
- US 601 Hwy
- Yadkinville Elementary School
- W. Lee Avenue
- Yadkin County Park/YMCA

Decorative Sidewalk along US 601 Hwy

Survey Respondants indicated that they felt safe walking at Yadkin County Park

Respondents indicated they walked along several residential and neighborhood streets. A large portion of respondents walk for recreation and exercise, however, some indicated that they walk for transportation. This was also observed during the inventory and analysis of existing conditions Respondents indicated they would walk more if there were pedestrian facilities, specifically if sidewalks and bridges were safer for pedestrians and if there were better lighting for safety reasons.

Main Deterrents from walking: Results from the survey indicate there is support for pedestrian facilities in Yadkinville. The survey results indicate that 87% of respondents felt the need for improved pedestrian facilities. They emphasize the condition of existing pedestrian facilities such as uneven pavement and sidewalks being used for parking and storing items such as garbage cans as being deterrents. Other include: bridges with no pedestrian access, and inconsistencies in facilities (sidewalks dead-end). Main deterrents from walking and biking include:

- Gaps in Sidewalks
- Cars/Traffic
- Dogs
- Absence of marked crosswalks
- Unsafe separation from cars
- Obstructions in sidewalks
- Uneven pavement/sidewalks
- Lack of street lighting

Areas respondents feel most unsafe: The locations respondents felt most unsafe were roads where there are either no sidewalks or in poor condition, insufficient lighting, and areas where there is a high probability of vehicle-pedestrian conflict such as underpasses, bridges, and narrow and busy roads with no shoulder. Some of the respondents did not feel unsafe anywhere, while others called out specific locations of concern. These include areas along US 601 Hwy, W. Lee Avenue, the mobile home park, downtown after businesses close, and under the US 421 Hwy Bypass. Existing pedestrian amenities include some street lights and minor vehicle-pedestrian separation on certain roadways. Sidewalk maintenance appears necessary in many areas of the Town limits. Areas where survey respondents felt most unsafe while walking include:

- Downtown after dark
- Unlit areas
- Underpasses
- US 601 Hwy
- W. Lee Avenue
- Mobile home park
- Yadkin County Park

Areas respondents feel safest: The locations survey respondents feel safest include areas where there are sidewalks and low traffic volumes or low speed limits, such as in neighborhoods and in the downtown core. The streets in downtown Yadkinville, where there are sidewalks, appear to be perceived as the safest by most respondents. Other areas of comfort include parks and schools. Areas where survey respondents feel safest include:

- "Nice Neighborhoods"
- Yadkin County Park
- Downtown Yadkinville
- Yadkinville Elementary School
- US 601 Hwy
- Cherry Street
- Main Street

US 601 Hwy looking South (south gateway into downtown Yadkinville)

Main Street in downtown Yadkinville

Grade changes on portions of Main Street make sidewalk ADA access difficult

2.4 YADKINVILLE TRANSPORTATION SYSTEM

Yadkinville's transportation system is composed of major thoroughfares, connectors, and neighborhood streets. The US 421 Hwy bypass is located just south of the downtown and is easily accessible by vehicle. Major thoroughfares handle most of the vehicular traffic in Yadkinville, as they provide connectivity in and out of the Town, as well as between destinations such as commercial areas and schools.

Important NCDOT thoroughfares within Yadkinville include:

- Main Street (Old US 421)
- US 601 Hwy
- W. Lee Avenue
- Jackson Street
- Cherry Street
- Elm Street

State Street (US 601 Hwy) and Main Street are the two major NCDOT classified thoroughfares within the Town of Yadkinville. They intersect creating a cruciform pattern. The other arterial and collector streets are arranged in a grid system and handle north/south and east/west connections between US 601 Hwy and Main Street. Most of the connector streets in downtown Yadkinville have outdated pedestrian facilities or sidewalks in need of repair. Most streets outside the Town limits that provide sidewalks and crosswalks do so inconsistently.

US 601 Hwy is considered to be one of the "gateways" into the downtown area of Yadkinville. It is a five (4) lane undivided highway from Pine Valley to Hemlock Street, with two (2) travel lanes in each direction. From Pine Valley South it narrows to a two lane thoroughfare with turn lanes where needed. From Hemlock Street travelling north to the Town Limits US 601 Hwy drops down to a three (3) lane undivided highway with one (1) travel lane in each direction and a center turn lane, narrowing to just two (2) lanes (one travel lane in each direction) just north of Yadkinville Elementary School. US 601 Hwy provides north - south access and dissects the downtown. It is a heavily traveled thoroughfare for trucking and freight transportation and provides access to US 421 Hwy bypass. The Average Daily Traffic (ADT) for this roadway between Pine Valley and US 421Hwy bypass is 7,700. From US 421Hwy bypass to Lee Avenue the ADT is 16,000 and from Lee Avenue to Main Street the ADT totals 10,000 automobiles. Further north, from Main Street to Hemlock Street the number equals 8,900. Lastly, 6,100 motorists use US 601 Hwy daily from Hemlock Street to the northern Town Limits. According to public opinion most motorists travel faster than the posted speed of 35 mph (25 mph during school hours) and in some cases 50 mph outside downtown. The increased speeds along US 601 Hwy most likely attributes to the negative perceptions of this roadway due to the immediate location of Yadkinville Elementary School along the busy US 601 Hwy corridor. Some of the comments documented in the surveys call for marked or signalized crosswalks to help alleviate pedestrians crossing multiple lanes of traffic at peak hours. The introduction of vegetation and pedestrian facilities would make US 601 Hwy southbound Yadkinville's

Sidewalks with Planting Strip along W. Lee Avenue

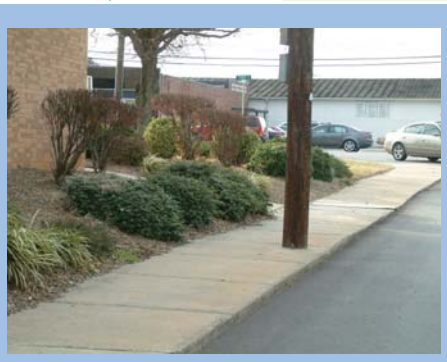
Intersection of Lee Avenue and US 601 Hwy

"unique gateway". The NCDOT Transportation Plan for Yadkin County and the Northwest Piedmont RPO's priorities list both propose widening the lanes on US 601 Hwy northbound from to the Surry County line

In addition, the Town of Yadkinville has submitted a request to NCDOT for grant funding to provide a safer method of crossing US 601 Hwy at the school. The solution would be creating a pedestrian refuge island to assist children and adults alike in crossing the busy thoroughfare. This route currently has sidewalks on one side, but lacks sidewalks along the school frontage and along the school side of US 601 Hwy in general. It currently lacks crosswalks, pedestrian signalization, pedestrian lighting and street trees. Because of its heavy use and high travel speeds US 601 Hwy is a very dangerous road for pedestrians.

Main Street is also considered a "gateway" or entrance into the Town of Yadkinville from the east and west. Main Street dissects the downtown into halves, creating a Northern and Southern portion. Main Street is a 35 mph two (2) lane undivided highway with one (1) travel lane in each direction, providing connectivity to neighborhoods, small commercial areas and an existing Senior Living facility and Hoots Memorial Hospital. It is also the main route from downtown to access the Post Office, Hinshaw Gardens, and the Unifi Industrial plant. The ADT counts for E. Main Street equal 6,100 automobiles coming in slightly under that of W. Main Street, totalling 6,200 motorists daily. Main Street is home to small restaurants, shops, and offices and provides access to the courthouse. As the town expanded, phone poles and power poles were placed within sidewalks creating obstructions to pedestrian movement and site triangles. There is little, if any, pedestrian lighting, pedestrian signalization, and ADA access on Main Street. This is of particular concern due to the close proximity of schools and the increasing numbers of the aging population.

Lee Avenue/Shacktown Road is a two lane, 35 mph residential roadway that provides a partial loop system around the north, west, and southern portions of downtown Yadkinville. Lee Avenue intersects with US 601 Hwy south of downtown and turns into Shacktown Road, east of Progress Lane. Shacktown provides another point of entry from US 421 Hwy into downtown Yadkinville, but is primarily the exit for Unifi Industrial Employees. The ADT for W. Lee Avenue from Main Street to Billy Reynolds Road is 4,500 and from Billy Reynolds Road south to US 601 Hwy the ADT equals 4,500 automobiles as well. E. Lee Avenue has an ADT count of 3,800 cars daily. There are small medical offices on E. Lee Avenue, however development along this road is mostly low density residential. Currently there are no crosswalks or signalization for pedestrians. Sidewalks exist along the majority of Lee Avenue but do not connect to other segments of sidewalk except those that exist at the intersection of Lee Avenue and US 601 Hwy.



Specific segments of sidewalk in downtown Yadkinville lack sufficient width for ADA access

The absence of sidewalks along this Commercial strip on US 601 Hwy creates dangerous conditions for Pedestrians

No crosswalks exist on US 601 Hwy to allow safe passage for children and parents accross multiple travel lanes

2.5 YADKINVILLE PEDESTRIAN SYSTEM

The existing pedestrian system in Yadkinville consists of inconsistent sidewalks and no greenways or other multi use trails except those that exist at Yadkin County Park. Currently there is little connectivity throughout the entire Town; the downtown is the most pedestrian-friendly area in Yadkinville, but all sidewalks within downtown are located at the top of curb without separation between sidewalk and roadway and few if any ADA accessible handicap ramps. Crosswalks and pedestrian signalization are also absent as are traffic calming devices in areas of high use and high traffic speed.

The future of Yadkinville's pedestrian environment is brighter due to new plans and policies set forth in the 2025 Yadkinville Land Development Plan, the Town of Yadkinville Zoning Ordinance Sec. 9-3-35 Sidewalks., the Downtown Yadkinville Streetscape Master Plan, and the Yadkinville Walkability Study. The map on the following page illustrates sidewalks and greenways that are present or proposed for the entire Yadkinville community.

There are numerous challenges and opportunities inherent in Yadkinville's pedestrian environment. By meeting the challenges facing the safety and accessibility of the pedestrian environment the Town can ensure a better future for residents as well as attract visitors to its walkable Town. Below is a summary of these challenges.

Pedestrian Facilities Challenges:

- Sidewalks are inconsistent and lack ADA accessibility.
- Lack of crosswalks and pedestrian signalization to aid in pedestrians safely crossing streets.
- Busy thoroughfares with many travel lanes to cross
- There is a lack of connectivity between neighborhoods due to insufficient pedestrian facilities and the US 421 Hwy bypass
- Most shoulders on roads do not have adequate space for pedestrians
- Bridge underpasses do not allow for pedestrian and vehicular separation or proper visibility for drivers, bicyclists, or pedestrians.

It is also important to recognize the positive and promising condition of Yadkinville's pedestrian environment and policies. A commitment to improving the pedestrian environment includes identifying opportunities.

Yadkinville, NC

Existing Conditions

NOTE: Pedestrian routes represent additional frequently traveled pedestrian corridors that currently lack sidewalks. These areas also represent proposed sidewalk routes.

- Sidewalks
- Pedestrian Routes
- Paths
- Destinations
- Barriers & Constraints
- Yadkinville
- Yadkinville ETJ
- Streets
- Streams and Lakes
- Open Space

Existing Destinations

Label	Name
1	Residential Neighborhood
2	Courthouse & Municipal Lot
3	Special Needs Home
4	Hinshaw Gardens
5	Hospital
6	Post Office
7	Yadkinville Elementary School
8	Police Station
9	Public Library
10	Yadkin Success Academy
11	Medical Offices
12	Grocery
13	Restaurants
14	Shopping Center
15	Residential Apartments

Barriers

Label	Name
1	Crossing Multiple Travel Lanes
2	421 Underpass
3	Grade Issues, Poor Site Triangles throughout Downtown & Obstacles in Sidewalk
4	Lack of Sidewalk
5	Lack of Lighting and Unkempt Vegetation infringing on sidewalk
6	Sidewalk on Opposite Side of Road from Businesses

WITHERS & RAVENEL
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0 750 1,500 3,000 Feet

1 inch = 1,500 feet

The presence of wide sidewalks in downtown creates opportunities for improving the pedestrian environment

The Town currently has programs and policies in place that encourage exercise and the implementation of pedestrian facilites

Below is a brief listing of possible opportunities present in Yadkinville.

Pedestrian Facilities Opportunities:

- Downtown Yadkinville currently has sidewalks in place and a street network conducive to pedestrian circulation.
- There is a zoning code in place requiring sidewalks on street frontage for all new development.
- There is wide public and governmental support for pedestrian facilities.
- There has been proactive planning resulting in increased pedestrian facilities for the Town of Yadkinville through the Yadkinville 2025 Land Development Plan and other planning documents.
- There is a rich history and commitment to improving the quality of life for Yadkinville residents, both existing and future.

2.6 EXISTING CONDITIONS and ANALYSIS

The public input survey respondents corroborated their commitment to improved walkability and to improve the pedestrian environment through the effort put forth in previous planning documents. Fortunately, the Town of Yadkinville has more pedestrian facilities planned for future development and growth than currently exist. According to the 2025 Yadkinville Land Development Plan and the Zoning Ordinance, pedestrian facilities are to be constructed in all areas of new development and those existing areas identified as priorities.

The existing condition for some of the Town's facilities is a challenge to overcome. Most roadways do not have pedestrian amenities and there are few facilities that meet ADA compliance guidelines as well. The downtown area is connected through existing sidewalks, however they are in fair to poor condition and do not consistently meet ADA regulations. Most of the major roads which provide connectivity throughout the Town have some pedestrian facilities, but these facilities are not by any means ideal. Refer to the Town of Yadkinville *Existing Sidewalk Inventory* Map on p.18 of this section.

According to the Town of Yadkinville 2025 Land Development Plan, the community's major retail areas are located on US 601 Hwy/Main Street. Some of these retail centers and stores are not sufficiently connected to each other via sidewalks or crosswalks and most are not connected to areas of residential housing. Commercial areas should receive a higher intensity of pedestrian facilities such as wide sidewalks, crosswalks, pedestrian signalization, and other necessary amenities to protect and safeguard pedestrians in these areas. Additionally, routes to these areas need to be incorporated into the pedestrian plan for interconnectivity.

Narrow road shoulders make walking between destination dangerous on US 601 Hwy South.

This bridge on US 601 Hwy has sufficient space outside the travel lanes for pedestrians and bicyclists to safely walk and ride

Installing curb-stops will prevent cars from potentially jumping the curb and will keep pedestrians safe

Improvement of existing facilities and the installation of new facilities, is of great importance due to the population growth in and around the Town of Yadkinville. As expressed by existing residents, walkability is a necessary essential component for a high quality of life and overall livability. Areas in immediate need of improvement, which are incorporated into the larger Pedestrian Master Plan include:

PEDESTRIAN CORRIDORS

- US 601 Hwy northbound
- N. Lee Avenue/Shacktown Road
- Jackson Street
- Elm Street
- US Hwy 601 southbound
- E. Main Street
- W. Main Street
- Hemlock Street

SPOT IMPROVEMENTS

- Bridge Underpasses
- Intersection Improvements
- Sidewalk repair
- Crosswalks
- ADA Compliance
- Connect missing segments

CURRENT PLANS, PROGRAMS, POLICIES

3.1 OVERVIEW

The Town of Yadkinville and Yadkin County have a variety of ongoing plans, programs, and policies which effect the safety and appearance of the pedestrian environment. These tools deal with open space development and pedestrian connectivity, address the goals of development and growth, zoning, transportation issues and challenges, and the revitalization of downtown Yadkinville.

The following public documents directly effect the future of Yadkinville's pedestrian system.

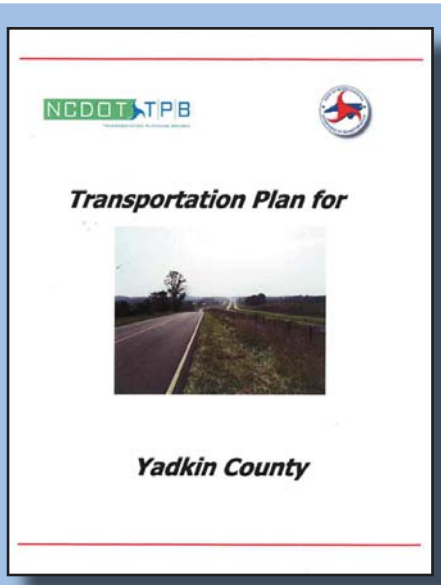
- North Carolina State Transportation Improvement Program Plan (July 2007)
- Transportation Plan for Yadkin County (July 2005)
- Northwest Piedmont Rural Planning Organization (RPO) 5-Year Planning Calendar (2007-2012)
- Northwest Piedmont RPO Division 11 Priorities 2011-2017
- Yadkin County Transportation Advisory Committee Priorities (2009-2015)
- Yadkinville 2025 Land Development Plan
- Yadkinville Zoning Ordinance Sec. 9-3-35 Sidewalks
- Downtown Yadkinville Streetscape Master Plan
- Yadkinville Walkability Study
- Yadkinville "Start with Your Heart" Guide Book
- Yadkin Arts Council Building Renovation and Upgrade
- Yadkinville Community Park

3.2 State Transportation Improvement Program (TIP)

The purpose of the State TIP is to improve the quality and interconnectivity of thoroughfares within the state. The TIP recommends and prioritizes projects based on need and cost. The Town of Yadkinville currently has no projects planned with the exception of the extension of Progress Lane. With the addition of new roadways comes the possible addition of sidewalks, planting strips, and road shoulders, all of which add to a safer pedestrian environment.

3.3 2004-2030 Yadkin County Transportation Plan

The previously developed Transportation Plan for Yadkin County, developed by NCDOT Transportation Planning Branch in cooperation with Yadkin County, Northwest Piedmont RPO, The Federal Highway



Administration, and the USDOT, recommends vehicular and pedestrian programs and projects for immediate improvements. These programs and projects are based on future travel conditions and existing safety concerns as well as land development and environmental issues. Below is a primary goal of the 2030 Transportation Plan which specifically addresses pedestrian and bicycle modes of transportation:

"...to ensure that the transportation system will be progressively developed, meeting the needs of the county. It will serve as an official guide to providing a well coordinated, efficient, and economical transportation system utilizing all modes of transportation."

- *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.*
- *Increase pedestrian and bicycle safety through public awareness programs.*
- *Provide linkages for pedestrians and bicyclists between neighborhoods, employment centers, services, cultural facilities, schools, parks, and businesses."*

**2004-2030 Transportation Plan developed cooperatively by the NCDOT Transportation Planning Branch, Yadkin County, Northwest Piedmont RPO, The Federal Highway Administration and USDOT*

Some of the projects recommended in the Transportation Plan directly impact the Town of Yadkinville and its pedestrian environment and are listed below:

- US 601 Hwy (widen lanes from 11 feet to 12 feet, install turn lanes and traffic signals; Davie County line north to southern Yadkinville planning boundary.

- US 601 Hwy (widen travel lanes to 12 feet with a 2 foot paved shoulder, install turn lanes at key intersections, install passing lanes where appropriate. Currently curb and gutter exists on both sides of US 601 Hwy from the US 421 Hwy bypass north to Hemlock Street. North of Hemlock Street curb and gutter exists only on the East side of US 601 Hwy and continues to the new park site. All other road edges within the project boundary lack curb and gutter)

- Main Street (Old US 421- possible need to widen to 12 foot travel lanes as traffic volume increases.

3.4 Northwest Piedmont RPO 5 Year Planning Calendar

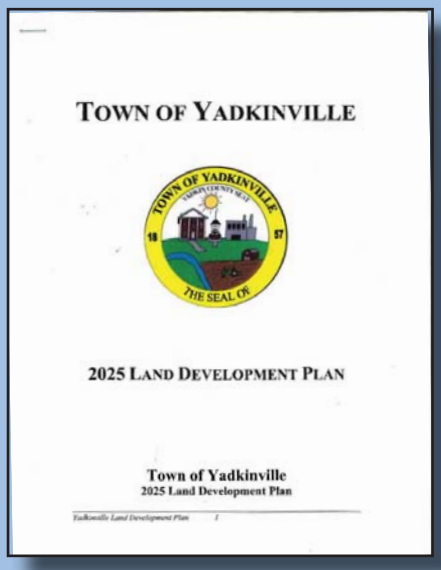
The Northwest Piedmont RPO's 5 year Planning Calendar outlines a variety of planning studies that will be conducted to better prepare the region for continued growth. No significant projects are planned that will affect pedestrian transportation within the project area.

3.5 NWPRPO Division 11 Priorities List & Yadkinville Transportation Advisory Committee Priorities

Much of the planning documents produced by the Northwest Piedmont RPO and NCDOT contain duplicate information and overlapping improvement recommendations. Yadkinville falls within Division 11 of the NCDOT divisions organization. The priorities list is a condensed list of recommended improvements produced by the Northwest Piedmont RPO that outlines both pedestrian and vehicular transportation projects and programs. The priorities for 2011-2017 that directly affect the pedestrian plan are listed below:

- US 601 Hwy Lane Widening with increased shoulder to Surry County Line (Currently curb and gutter exists on both sides of US 601 Hwy from the US 421 Hwy bypass north to Hemlock Street. North of Hemlock Street curb and gutter exists only on the East side of US 601 Hwy and continues to the new park site. All other road edges within the project boundary lack curb and gutter)
- US 421-US 601 Connector
- Extension of Progress Lane to Pine Street and US 601
- Main Street Widening from US 601 to Unifi Industrial Road
- Traffic Signal at Main Street & Unifi Intersection
- US 601 Hwy Sidewalks from Shacktown to US 421
- Sidewalks along 601 from Lowe's Shopping Center to Western Sizzler Restaurant
- N. Lee Avenue Sidewalks from W. Main Street to US 601 Hwy
- Shacktown Road Sidewalks: Extension to Unifi Industrial Rd.
- Main Street Sidewalks Rehabilitation from US 601 Hwy to Van Buren Street

Similar to the function of the Pedestrian Master Plan Steering Committee, the Yadkinville Transportation Advisory Committee serves as an advisory council to the NWPRPO and as a voice for the citizens of Yadkinville. Their priorities list coincides with those of the Northwest Piedmont RPO's priorities as well as some improvements mentioned in the Yadkin County Transportation Plan.


TOWN OF YADKINVILLE

2025 LAND DEVELOPMENT PLAN

Town of Yadkinville
2025 Land Development Plan

3.6 Yadkinville 2025 Land Development Plan

The adopted Town of Yadkinville Land Development Plan articulates the vision of the Town through the year 2025 The Land Development Plan was adopted in 2004 and replaces the 1974 Yadkinville Land Development Plan. The Plan primarily focuses on land use and development issues within Yadkinville. Land use and development patterns significantly affect the connectivity and safety of the pedestrian environment as well as the pedestrian experience. For a pedestrian plan to be successful it needs to be integrated into the larger organization and transportation network of a community. The ease in which pedestrian facilities can be effectively integrated depends heavily on land use and zoning. The 2025 Land Development Plan identifies development patterns that encourage pedestrian movement and facilities including:

- Greater housing densities which allow more residents to live near community destinations such as schools, commercial areas and downtown.

- Commercial Development as a viable alternative to strip development. Commercial development is both pedestrian and automobile friendly. Commercial development usually contains pedestrian scale buildings and interconnectivity between uses. Commercial Centers allow a diversity of services to be located closer to or within neighborhoods and therefore making them more convenient. These services include retail, office or professional buildings, as well as recreation and institutional services.

- Multiple-use zoning allows a diversity of uses to share one building. An example of this is a building which is used for a residence and retail sales. This type of zoning reduces travel time and increases safety.

- An interconnected road network, similar to downtown Yadkinville, provides more access and route choices, shorter distances, and all is more accessible for all modes of transportation. i.e.; vehicular, bicycle, walking

- Locating buildings close to the street and sidewalk allows for greater pedestrians usage and access.

- Open space development and conservation. By encouraging Open space development the Town can increase recreational opportunities for its residents, decrease the amount and cost of infrastructure and increase the attractiveness of the community

Yadkinville's Land Development Plan supports the utilization of Open space development in order to maintain the small Town atmosphere and protect environmentally sensitive areas and the surrounding rural landscape.

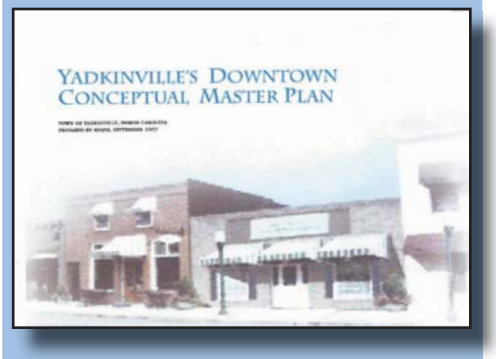
Land Development categories specified in the existing Yadkinville 2025 Land Development Plan have a higher intensity of pedestrian facilities and amenities including: areas within a "***Business District"*** that exists throughout existing portions of downtown and some areas that are being redeveloped as well as ***Neighborhood and Community Business (mixed use)***. This Plan establishes multi-use concentrations along Main Street, that radiate outward into the somewhat dense residential neighborhoods surrounding downtown.

Yadkinville has made a commitment to expanding this type of development within their boundaries. Open Space and Commercial Center Development is strongly recommended for use within this Pedestrian Master Plan due to the following list of characteristics:

- Emphasis on the public space - streets, plazas, parks, etc.
- Non-residential uses set adjacent or very close to the sidewalk
- Presence of street trees
- Incorporation of planting strips
- Locate utility equipment out of sight
- Locate utilities underground
- Presence of decorative street lighting
- Connecting network of streets
- Long blocks are to be discouraged
- Streets designed to be efficient for walking to destinations
- Sidewalks on both sides of the street
- Pedestrian facilities to meet safety, comfort, and interests
- Contain a mixture of uses and housing types
- Have at least one defined "Center"
- Encourage civic uses in the "Center"
- Incorporate formalized common open spaces

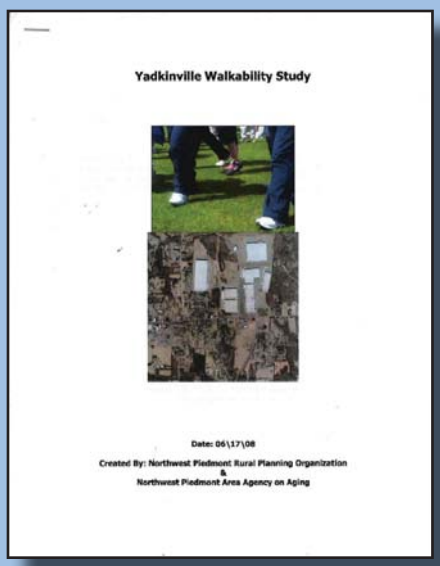
Fortunately, the Town of Yadkinville has emphasized the use of Open Space Development and the importance of sidewalks on road frontages for all new developments, per Sec. 9-3-35 Sidewalks, of the Zoning ordinance. With this designation in place the current and future residents of Yadkinville will enjoy and benefit from their increased connectivity, open spaces, and walkability.

The current Land Development Plan should be expanded upon to include recommendations outlined in this Pedestrian Master Plan. The existing Downtown Streetscape Master Plan includes recommendations for street trees and planting strip widths. A Tree Ordinance should be developed to incorporate a standard for street trees and when possible, a minimum width for standard planting strips. Refer to ***Chapter 5.2 Landscaping*** of this Town of Yadkinville Pedestrian Master Plan for recommendations.



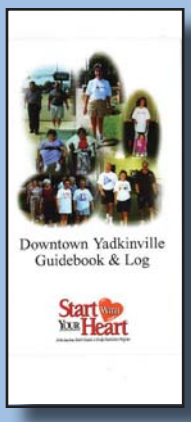
3.7 Yadkinville Downtown Streetscape Master Plan

The Streetscape Master Plan previously developed by HSMM (adopted Nov. 5, 2007) provides conceptual guidelines and graphics regarding crosswalks, sidewalks, planting strips, street trees and other pedestrian amenities needed to create the ideal pedestrian environment. There is some overlap in information with the Yadkinville 2025 Land Development Plan as well as the zoning ordinance referenced above. The recommendations outlined in the Streetscape Master Plan call for similar interconnectivity and redevelopment/adaptive reuse of buildings in downtown to conserve open space and create a lively urban core. Many of the same recommendations for sidewalks, crosswalks, ADA ramps and separation from vehicles are expressed in both the downtown master plan and the Pedestrian Master Plan.



3.8 Yadkinville Walkability Study

Previous planning efforts have been conducted by the Northwest Piedmont RPO in cooperation with The Northwest Piedmont area Agency on Aging regarding pedestrian transportation and walkability in Yadkinville. This document, adopted June 17, 2008, focussed on the most popular existing pedestrian facilities and identified key locations in need of improvements. Issues such as sight triangles, ADA ramps, debris in the sidewalk, and lack of lighting were mentioned as inhibitors to walking and using the existing sidewalk network. This document assisted in gathering information and prioritizing projects and recommendations with the existing system, but failed to give any insight as to where future pedestrian corridors should be located.



3.9 Yadkinville "Start with Your Heart" Guidebook

Developers of the Yadkinville "Start With Your Heart" guidebook produced through a grant from the North Carolina Heart and Disease Prevention Program, took it upon themselves to design pamphlets that mapped out designated walking loops within the downtown area and assigned mileage distances to each loop. The content of this document will be incorporated into the Pedestrian Master Plan. This Master Plan will expand upon this pamphlet by identifying additional destinations, pedestrian corridors, and walking loops.

3.10 Yadkin Arts Council Cultural Center Building Improvements and Upgrade

The opening of the Yadkin Arts Council Building, a project that has been in the works since, 2006, is certainly a long awaited day for residents of Yadkinville. The Yadkin Arts Building located downtown at 315 E. Main Street will add a much needed element to the downtown atmosphere and urban fabric of the Town. The opening of the Yadkin Arts Building will bring residents and visitors back to Main Street to enjoy concerts, theater performances, arts shows, and other performances." More than just bricks and mortar the Yadkin Valley Cultural Center, the YCAC, will be the focal point of the new countywide vitality that celebrates our state's rich cultural and artisitic heritage. It will be a living, breathing, roll-up-your sleeves, get involved, community center connecting people to the arts and to each other.

The Center will create a hub of activity for all members of the community, young and old, and become a destination for weekend travelers and international tourists en route to the award-winning wineries of the Yadkin Valley and the mountain regions of Boone and Blowing Rock. Culture builds community and social capital and profoundly impacts the economy." (*http://www.yadkinarts.org/YAC/index.cfm/hurl/idsPageID=187/Type=9/Cultural-Arts-Center)*

3.11 Yadkinville Community Park

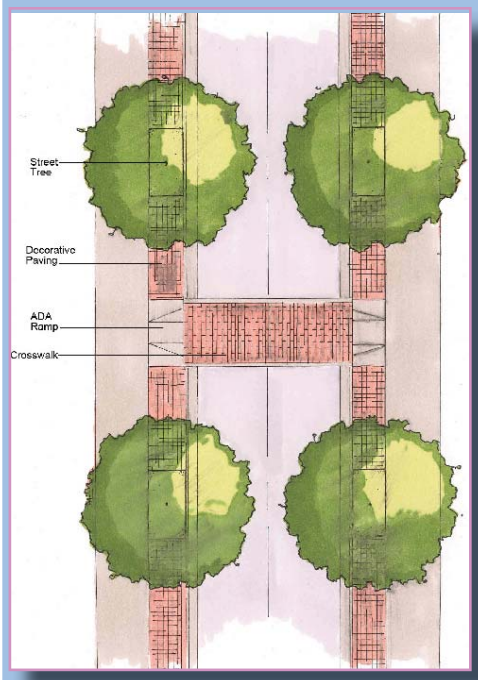
The Yadkinville Community Park construction project is nearing a completion date. The park, in close proximity to the school, will be a great place for children to release energy after school and on the weekends. The park is walking distance from the school and downtown Yadkinville, thus promoting a healthier lifestyle. The park will feature a full playground, walking trails, and picnic shelters among other things.

PEDESTRIAN SYSTEM PLAN

4.1 OVERVIEW

This proposed Pedestrian System Master Plan Chapter is based on the original vision statement, project goals, public input from the residents, and the existing plans, programs, and policies already in place which shape and impact the pedestrian system. Chapters 4 through 6 provide direction in the development and implementation of the specifics of this Pedestrian Master Plan as well as additional guidelines and resources to aid in future planning and development. The organization of the physical pedestrian system plan is based on the following street type classifications: Major Corridors, Downtown Streets, Existing Subdivisions, and New Subdivisions. The map on the following page provides an illustration of each type. In all cases, it is mandatory to provide for emergency vehicle access to streets and buildings.

The new Pedestrian System Master Plan developed herein identifies existing corridors in immediate need of improvement as well as locations in need of spot improvements. These two groups of applications have been classified as **"Short Term"** or necessary Phase I priorities. Additionally, the Pedestrian System Master Plan includes corridors in need of future improvement that have been classified as **"Long Term"** priority development projects. The Short term and Spot Improvements are listed and discussed on this and following pages. Long term projects follow in the text after the Spot Improvements section.



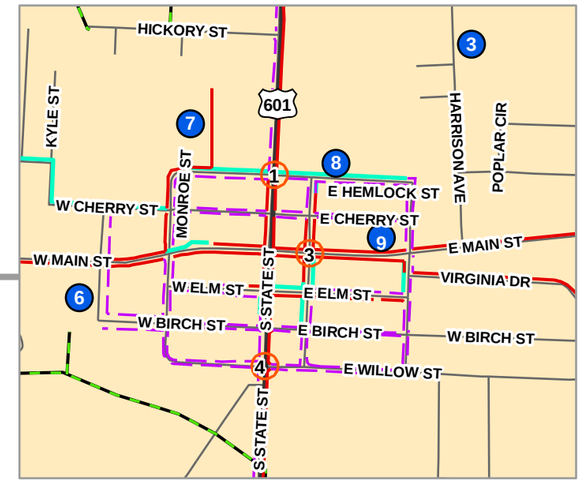
Decorative paving between plantings.

GENERAL DESIGN GUIDELINES

- ***Major Corridors***:
  - -Planted medians where turning lanes are not necessary.
  - -Locate sidewalks min. 5' in width on both sides of the roadway with planted separation min. 5' in width (NCDOT only requires 3' width).
  - -Use crosswalks, pedestrian refuge islands when necessary, with pedestrian signalization at all crossings.
  - -Incorporate NCDOT Standards where appropriate.
- ***Downtown Streets***:
  - -Utilize ROW to bury utilities in immediate Downtown area.
  - -Plant trees in planting strips or planters.
  - -Install decorative paving between plantings.
  - -Use groundcover/plantings under trees to reduce maintenance
- ***Subdivisions***:
  - -Road Diet: Where appropriate, reduce travel lanes to 11' or 10' wide (applies only to existing subdivisions).
  - -Sidewalks with a minimum 5' wide on one side of the street.
  - -Provide a min. 5' wide planted separation between sidewalk and roadway (NCDOT only requires 3' width).
  - -Incorporate NCDOT Standards where appropriate.

Yadkinville, NC

Existing & Proposed Conditions



- Existing Sidewalks
- Proposed Sidewalks
- Proposed Multi-Use Trail
- Existing Paths
- Existing Destinations
- Existing Barriers & Constraints
- Yadkinville
- Yadkinville ETJ
- Streets
- Streams and Lakes
- Open Space

Existing Destinations

Label	Name
1	Residential Neighborhood
2	Courthouse & Municipal Lot
3	Special Needs Home
4	Hinshaw Gardens
5	Hospital
6	Post Office
7	Yadkinville Elementary School
8	Police Station
9	Public Library
10	Yadkin Success Academy
11	Medical Offices
12	Grocery
13	Restaurants
14	Shopping Center
15	Residential Apartments

Barriers

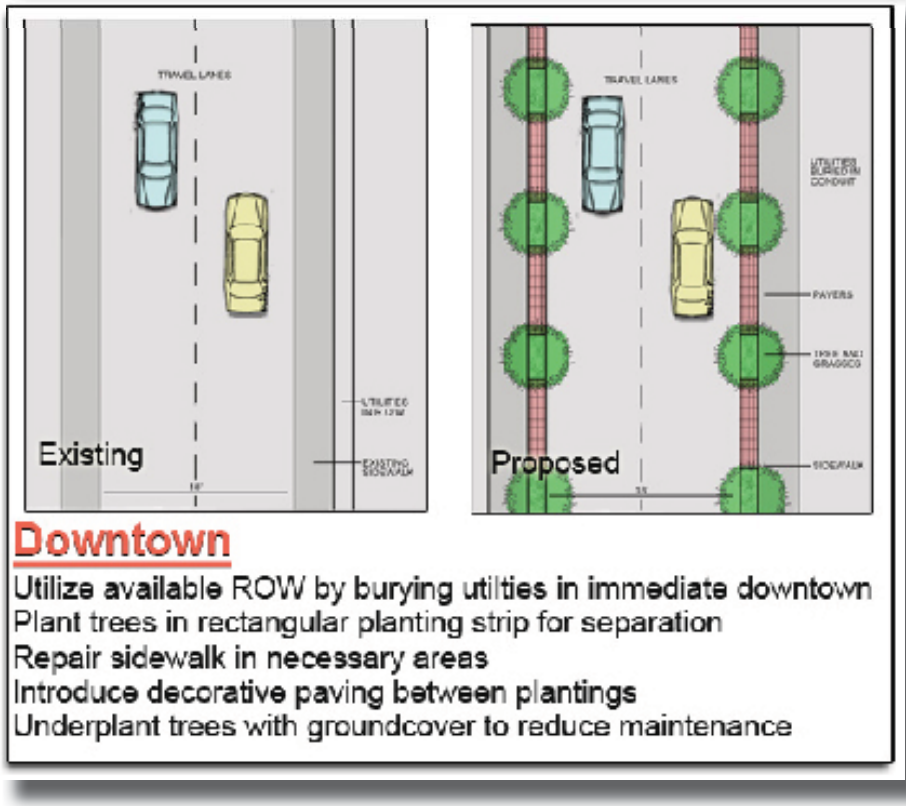
Label	Name
1	Crossing Multiple Travel Lanes
2	421 Underpass
3	Grade Issues, Poor Site Triangles throughout Downtown & Obstacles in Sidewalk
4	Lack of Sidewalk
5	Lack of Lighting and Unkempt Vegetation infringing on sidewalk
6	Sidewalk on Opposite Side of Road from Businesses

WITHERS & RAVENEL
ENGINEERS | PLANNERS | SURVEYORS
111 MacKenan Drive Cary, North Carolina
telephone: 919.469.3340 www.withersravenel.com

0 750 1,500 3,000 Feet

1 inch = 1,500 feet

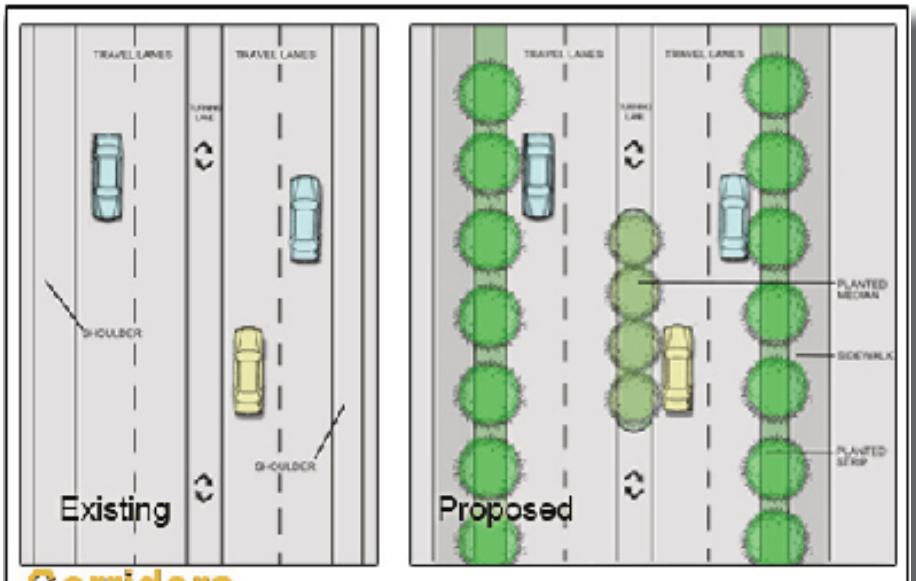
Typical Profile A- Downtown



Downtown

Utilize available ROW by burying utilties in immediate downtown
Plant trees in rectangular planting strip for separation
Repair sidewalk in necessary areas
Introduce decorative paving between plantings
Underplant trees with groundcover to reduce maintenance

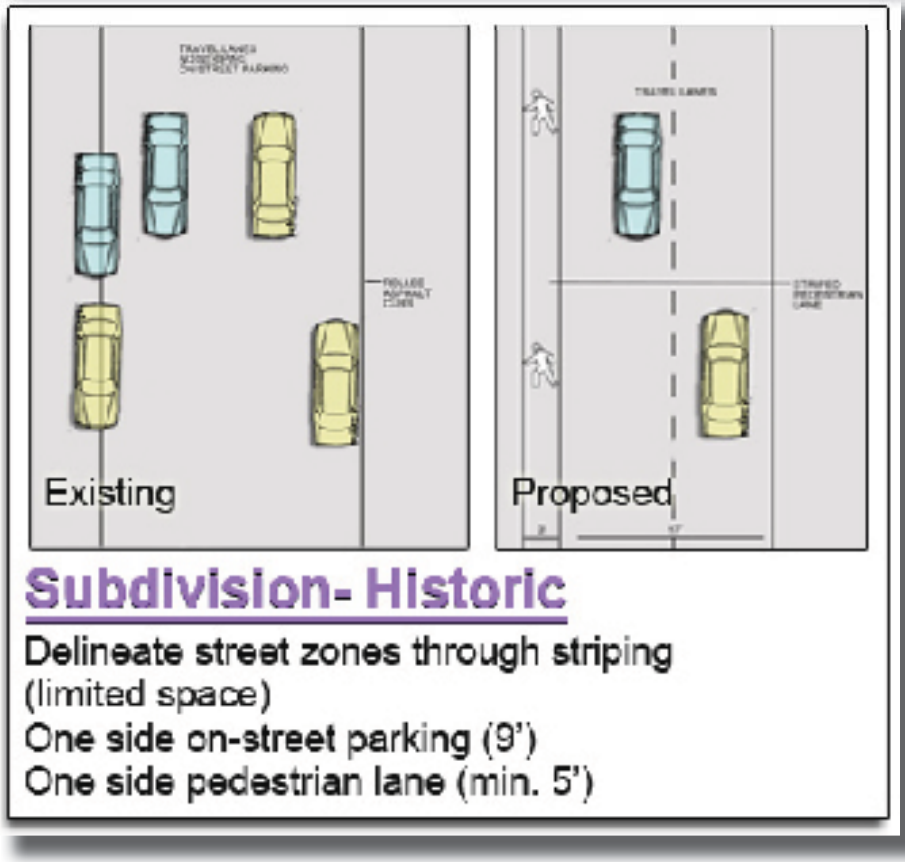
Typical Profile B- Corridors



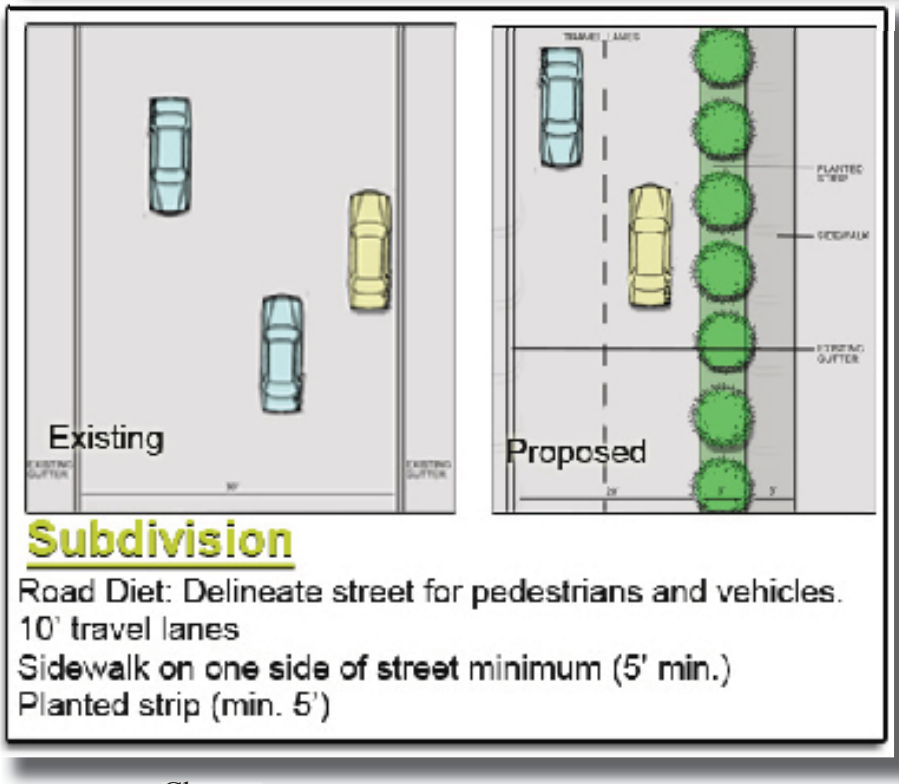
Corridors

Use planted median where turning lanes are not necessary.
Sidewalks both sides (min.5') with planted strip.
Crosswalks/Pedestrian Refuge Islands at crossings.

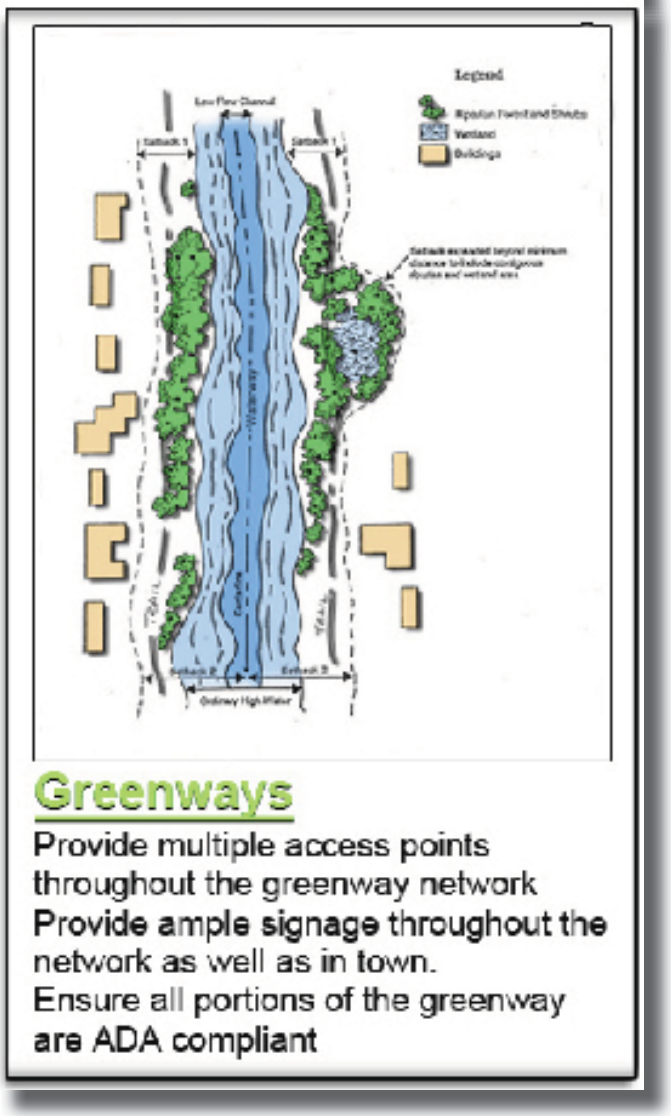
Typical Profile C- Subdivision/ Historic



Typical Profile D- Subdivision



Typical Profile E- Greenways



Greenway paths should be minimum 10' wide to accommodate both Pedestrians and Bicyclists

4.2 MAJOR PEDESTRIAN CORRIDOR IMPROVEMENTS

Short term improvement projects will improve connectivity and pedestrian access along roadways which are currently utilized by pedestrians. These corridors provide connectivity to destinations such as schools, commercial areas, neighborhoods, and downtown. It is recommended that these corridors receive first priority for improvement projects due to their ability to immediately impact the existing pedestrian infrastructure and access to various destinations. When undertaken, these projects will achieve critical connectivity throughout the Town of Yadkinville.

As funding becomes available, the areas identified in this section should become priorities for the Town. These areas were identified during site visits, but mostly through the public input process, and previous planning efforts. Since these areas were brought forth by public input, these "spot improvements" should be recognized as particularly hazardous areas most frequented by residents. These improvement areas are focused on intersections, bridge underpasses, and remedying the gaps in sidewalks to create a contiguous system.

Pedestrian Refuge Island: Intersection of US 601 Hwy and Hemlock Street. accompanied by a highly visible marked crosswalk. Pedestrian refuge islands should terminate at ADA compliant curb cuts and ramps. Crosswalk and school zone signs should also be more visible. This can be achieved by trimming vegetation that currently hides them from view. Extending sidewalk from the proposed handicapped ramp on the west side of US 601 Hwy to a sidewalk segment on Hemlock will also aid in pedestrian movement and accessibility across US 601 Hwy.

Intersection Improvement/Mid-Block Crosswalk: Provide traffic calming methods such as "bulb outs" or curb extensions in concert with narrow planted medians along E. Main Street in an effort to reduce high vehicular speeds. Incorporating a mid-block crossing near the entrance to the Yadkin Arts Council Building in combination with the curb extensions will increase pedestrian visibility and safety by reducing the crossing distance and slowing vehicles. The crosswalk should be highly visible and terminate at ADA compliant curb ramps. *(Note: There must be a demonstrated need for a crosswalk to be installed, ie: a significant number of pedestrian crossing at that location, in order to be considered by NCDOT)*

Destinations & Attractors

- **Yadkinville Elementary**
- **Post Office**
- **Hinshaw Gardens**
- **Cemetery**
- **Hospital**
- **Police Station**
- **Public Library**
- **Grocery Store**
- **Restaurants/Retail (US 601 Hwy)**
- **Neighborhoods & Apartments**
- **Special Needs Home**
- **Medical Offices**

Intersection of US 601 Hwy and Hemlock Street

Intersection of Pine Valley and US 601 Hwy

View of Main Street in the morning looking West towards US 601 Hwy

Sidewalk and curb cuts on W. Main in front of the Post Office

US 421 Hwy bypass exit ramp

Intersection Improvements: Improve sight triangles and overall safety for pedestrians, cyclists, and motorists along Main Street, specifically at the intersection of Main Street and Jackson Street. Improvements would consist of traffic calming methods including additional planted "bulb outs", or curb extensions, planted medians, ADA compliant ramps on either side of the street, and striped crosswalks. The intersection improvements include the installation of high visibility or decorative crosswalk. Crosswalks should terminate at ADA compliant ramps. Sight triangles are an issue with parked cars and telephone poles in the sidewalk. The town should consider removing 1 parking space to either side of the crosswalk or move telephone and power poles behind buildings on Main Street to regain sidewalks for the pedestrian. Ample signage and traffic calming methods to warn motorists of the crosswalk would also need to be assessed prior to implementation.

Sidewalk Construction: Complete minimum 5' wide concrete sidewalk along the Eastern side of US 601 Hwy beginning at US 421 Hwy by-pass continuing South to the Pine Valley intersection to create connections between segments of existing sidewalk to provide off-road facilities for pedestrians to use along the US 601 Hwy corridor from Town Limits to Town Limits.

Intersection Improvements: Installation of highly visible striped crosswalk and "Ped Heads" or Pedestrian Signals at the intersection of Pine Valley and US 601 Hwy to safely move pedestrians across US 602 Hwy between commercial centers.

Sidewalk Improvements: Complete and improve sidewalks along E. Main Street to bring them to compliance with current ADA codes as well as more pedestrian friendly and safe in an effort to reduce traffic speeds.

Sidewalk Construction: Improve or construct new 5' wide concrete sidewalk along W. Main Street in front of the Post Office to reduce curb cuts and grade issues resulting from the transition between concrete and asphalt creating issues with drainage and multiple curb cuts. It also inhibits the physically impaired populations by creating dangerous walking conditions as well as sudden changes in grade. Every attempt to minimize curb cuts should be taken. These improvements should then connect to existing segments of sidewalk along the southern side of W. Main Street to create a more contiguous system.

Sidewalk Construction: Utilize available road shoulder width to safely move pedestrians under the US 421 Hwy by-pass bridge. Improvements in this location may include the construction of ADA compliant ramps onto and off of the pedestrian refuge islands (monolithic concrete

No sidewalks exist along Hemlock

US 421 Hwy Bridge underpass

Grade issues on E. Main Street

Non-compliant ADA Curb and Gutter

medians), possible safety lighting and the addition of jersey barriers or other separation method to safely delineate the pedestrian and vehicular environments.

Intersection Improvements: Intersection improvements at the intersection of Main Street and US 601 Hwy and the intersection of Elm Street and US 601 Hwy. Improvements include improved ADA access ramps at all four corners of both intersections, highly visible striped crosswalks to meet NCDOT guidelines and regulations, and planted "bulb outs."

Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along N. Lee Avenue to create a more enclosed "loop" walking system.

Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along northern side of Elm Street to help service expected crowds from the Yadkin Arts Council Building.

Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along the North side of Hemlock Street

Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along East side of Van Buren Street

Sidewalk Construction: Construct minimum 5' concrete sidewalk along Willow Street

Sidewalk Construction: Construct minimum 5' concrete sidewalk along Monroe Street

A map illustrating the locations of the short term Spot Improvement Projects is located on p. 37.

LONG TERM IMPROVEMENTS

The Pedestrian System Plan also includes corridors in need of future improvement herein noted as Long Term Improvements. Following the Short Term Spot Improvement projects, roadway corridors on the Long Term improvements list should be improved and enhanced as recommended when funding becomes available. These future corridors offer roadways with a finer degree of interconnectivity and pedestrian linkages throughout Yadkinville and are not in as immediate need of improvement as the Major Pedestrian Corridors listed previously. Long Term projects are not as much a safety hazard as areas noted by public opinion such as those classified as short term improvement projects.

A map illustrating the locations of all Long Term Improvements is located on p. 37. Descriptions of these long term improvements can be found on the following page.

Multi- Use Trails at Yadkin County Park

Sidewalk Construction: As funding becomes available construct, at minimum, 5' wide concrete sidewalks throughout the project area to connect missing segments of sidewalk in an effort to create a continuous and fully ADA compliant pedestrian system.

Sidewalk Construction: Rehabilitate existing sidewalks throughout downtown to create a safer pedestrian environment. Improvements include addressing grade issues, installing ADA compliant ramps into businesses and at intersections, repairing broken concrete sidewalks in disrepair, and eliminating safety issues revolving around unsafe sight triangles caused by power poles, parked cars, and obstructions in the sidewalk. The addition of Pedestrian Lights will also add to the pedestrian environment, increasing user safety levels once the sun goes down.

Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along the North side of Birch Street.
Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along the South side of Cherry Street.

The proposed multi-use trails described below can be implemented fairly easily by developing the sewer and water line easements they already own.The cost incurred by developing these multi use trails is based largely on path material. Viable path material options include, wood mulch from clearing the easements, granite fines, wooden boardwalk, concrete, and asphalt. Keep in mind that only concrete, asphalt and granite fines are considered ADA compatible.

Off-street trails add diversity to the pedestrian experience and offer options to typical sidewalks as a means to get from one destination to another. These proposed trails are dispersed throughout the Town and will improve the overall connectivity between neighborhoods, schools, parks, and other destinations that is desperately needed in an off-street greenway system.

View looking of US 601 Hwy South towards southern Town Limit

Trail Construction/Creation: Upper Yadkinville Multi-Use Trail-The Town should take advantage of Sewer and Water line easements North of downtown near the newly constructed Yadkinville Park, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi-use trails to safely move pedestrians from their homes and neighborhoods to downtown, school and the park using off-street routes. *NOTE: Material Selection will greatly affect costs.*

Trail Construction/Creation: Middle Yadkinville Multi-Use Trail-The Town should take advantage of Sewer and Water line easements throughout the core of Yadkinville as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and

multi-use trails to safely move pedestrians from the West side of Yadkinville, across US 601 Hwy, to the East side of town using off-street routes. *NOTE: Material Selection will greatly affect costs.*

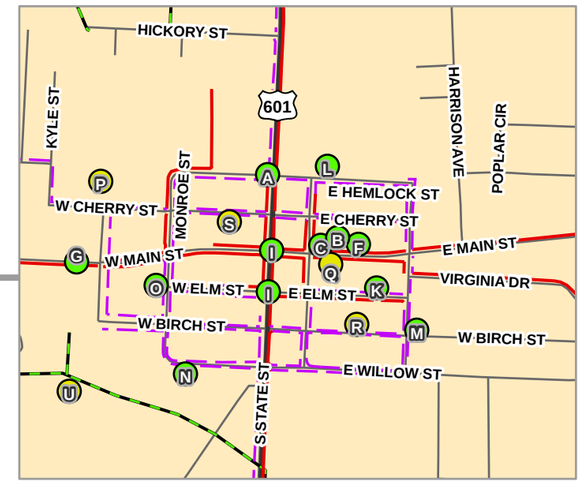
Trail Construction/ Creation: Lower Yadkinville Multi-Use Trail-The Town should take advantage of Sewer and Water line easements South of downtown Yadkinville and US Hwy 421 by-pass, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi-use trails to safely move pedestrians from residential areas to shopping centers and commercial businesses, restaurants, etc. *NOTE: Material Selection will greatly affect costs.*

Sidewalk Construction: Construct at minimum a 5' wide concrete sidewalk along the western side of US 601 Hwy from Town Limits to Town Limits to provide continuous access for pedestrians to walk through Yadkinville and service retail and commercial centers but also to provide regional access opportunities with adjacent municipalities.

Yadkinville, NC

Recommended Projects

Ramps and Striped Crosswalks at all Downtown Intersections



- Existing Sidewalks
- Proposed Sidewalks
- Proposed Multi-Use Trail
- Short Term Improvements
- Long Term Improvements
- Yadkinville
- Yadkinville ETJ
- Streets
- Streams and Lakes
- Open Space

Recommended Projects	
	Name
Short Term	
A	Pedestrian Refuge Island & Crosswalk Striping
B	Mid Block Crossing near Yadkin Arts Council Building
C	Intersection Improvements for Traffic Calming along Main Street
D	Sidewalk on East Side of US 601 HWY beginning at US 421 Hwy by-pass Continuing South
E	Intersection Improvements for Crosswalk Stripping Pine Valley and US 601 Hwy
F	Intersection Improvements for Traffic Calming along E. Main Street
G	Sidewalk Construction in front of the Post Office
H	Sidewalk Construction under US 421 Hwy By-pass bridge
I	Intersection Improvements for Crosswalk Stripping along US 601 Hwy at Main Street and Elm Street
J	Sidewalk Construction along N. Lee Avenue
K	Sidewalk Construction along the North Side of Elm Street
L	Sidewalk Construction along the North Side of Hemlock Street
M	Sidewalk Construction along the East Side of Van Buren Street
N	Sidewalk Construction along Willow Avenue
O	Sidewalk Construction along Monroe Avenue
Long Term	
P	Sidewalk Construction as funding becomes available to connect missing segments of sidewalk
Q	Rehabilitation and Construction of Sidewalks throughout Downtown Area
R	Sidewalk Construction along the North side of Birch Street
S	Sidewalk Construction along the South side of Cherry Street
T	Upper Yadkinville Multi-Use Trail along Sewer and Water Easements
U	Middle Yadkinville Multi-Use Trail along Sewer and Water Easements
V	Lower Yadkinville Multi-Use Trail along Sewer and Water Easements
W	Sidewalk Construction along West Side of US 601 Hwy from Town Limits to Town Limits

NOTE: Refer to table in xyz section for more detailed information on improvements

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0 750 1,500 3,000 Feet

1 inch = 1,500 feet

FACILITY STANDARDS & DESIGN GUIDELINES

5.1 OVERVIEW

The Bicycle and Pedestrian Transportation Division (BPTD) of the North Carolina Department of Transportation (NCDOT) created the following pedestrian guidelines to assist municipalities in planning and engineering a safe and comfortable walking environment for pedestrians. The guidelines presented are in accordance with standards set by the American Association of State Highway Transportation Officials (AASHTO), the Manual for Uniform Traffic Control Devices (MUTCD) and the Americans with Disabilities Act (ADA).

5.2 SIDEWALKS

Neighborhood Street with Planting Strip
Photo credit: www.pedbikeimages.org

Sidewalks 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. Sidewalks are spaces where children play, neighbors meet and talk, shoppers meander casually, parents push strollers, and commuters walk to transit stops or directly to work. Because of the social importance of these spaces, great attention should be paid to retrofit and renovate areas with disconnected, dangerous, or otherwise malfunctioning sidewalks.

The Federal Highway Administration (FHWA) defines sidewalks as "walkways that are parallel to a street or highway" and walkways as generally being "pedestrian paths, including plazas and courtyards."

Sidewalk 5 feet in width

Sidewalk Widths

BPTD recommends a minimum travel path width of 5 ft. for a sidewalk or walkway, in accordance with the American Association of State and Highway Transportation Officials (AASHTO), the Federal Highway Administration (FHWA), and the Institute of Transportation Engineers (ITE). A sidewalk width of 5 feet 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. Sidewalks are typically built with curb and gutter sections. The division recommends that areas with significant pedestrian traffic should feature eight- to ten-feet wide sidewalk. Where sidewalks align with the edge of an angled or 90-degree parking lot, a minimum of 30 inches of parked car overhang obstructing the sidewalk shall be taken into account in order to maintain the minimum travel path width.

AASHTO recommends the construction of sidewalks on all city or town streets, including those in rural areas. The Institute of Transportation Engineers (ITE) recommends sidewalk installation on both sides of the street whenever possible for new urban and suburban streets, especially in commercial areas, residential areas with 4 or more units per acre, or residential areas on major arterials and collectors. If sidewalks on both sides of the road are not possible, lower density rural residential or suburban areas might adequately serve its pedestrians with a sidewalk on only one side. Under certain low-traffic, low-density situations, a wide paved shoulder can serve as an adequate pedestrian path.

It is important to note the potential for conflict between pedestrians and bicyclists on paved shoulder. Both bicyclists and pedestrians must exercise caution in order to avoid potential crashes on paved shoulders.

Construction Materials and Methods

Improvements for new, retrofitted, and repair to sidewalks throughout the municipality should be constructed using the following methods and materials:

Materials — Sidewalks should be constructed of Portland Cement Concrete (PCC) with a 14-day flexural strength that is not less than 3,000 pounds per square inch (psi).

Subgrade Preparation — Subgrade should be thoroughly compacted and finished to a smooth, firm surface, and should be moist at the time the concrete is placed.

Subgrade Compaction — Except in areas where it is impractical to use standard type rollers, compaction should be by means of vibratory hand compactors.

Final Finish — Surface finish for sidewalks should be completed by brushing (with brooms) or by another approved method to provide a uniform non-skid surface.

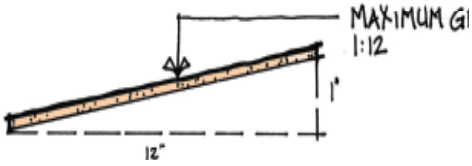
Inspections and Performance — Sidewalk forms should be inspected by municipal staff prior to the placement of concrete. Concrete that does not meet minimum mixture and strength standards or settles after placement should be removed and replaced by the installer.

Alternative Materials Usage — Use of materials for sidewalks other than concrete and the construction methods used therewith must be approved by the city or town engineer or designated representative on a case by case basis. There are some successful examples where other materials such as asphalt, crushed stone, granite fines, or other slip resistant material have

been used. Concrete is preferred surface, providing the longest service life and requiring the least maintenance.

Grade

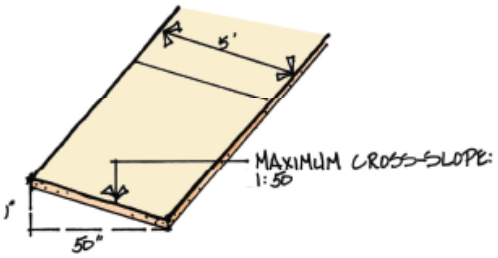
AASHTO recommends the following grades for sidewalks: Continuous sidewalk grades should not exceed 5% (1:20). However, in areas where the existing topography or the adjacent street cause grades of more than 5%, sidewalk grades of up to 8.33% (1:12) may be used for a rise of no more than 2.5 feet, provided that level landings (grades less than 0.5%) are provided at the end of such grades and are at least 5 feet long.



In cases where grades greater than 8.33% (1:12) must be negotiated, switchbacks or other approved ramping techniques must be provided and will conform to ADA requirements. Additional right-of-way and/or easements necessary to accommodate these features will be obtained by the applicant and legally dedicated to the city or town.

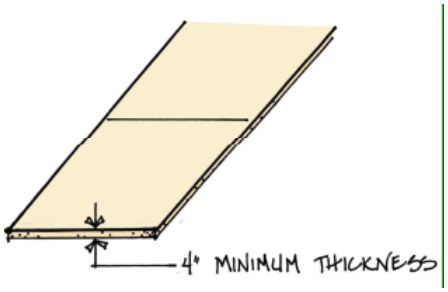
Cross-Slope

Sidewalks and walkways should be designed such that grades and cross slopes are minimized to allow those with mobility impairments to negotiate with greater ease. The maximum allowable cross-slope for sidewalks is 2% (1:50). At driveways, curb cuts, and both marked and unmarked crosswalks, the maximum allowable cross-slope must be maintained for a minimum width of 3 feet. Cross-slope should be oriented toward the adjacent roadway and sufficient to provide storm water runoff without creating standing water on the walkway.



Sidewalk Thickness

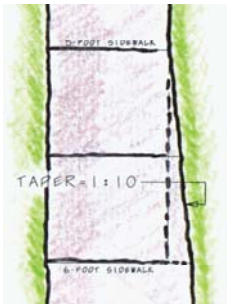
A minimum thickness (or depth) of 4 inches of concrete is required for all new sidewalks except as noted. To accommodate the additional loading caused by pedestrian density or by vehicles crossing a sidewalk, a thickness of 6 inches is required where sidewalks intersect at wheelchair/crosswalk ramps,



and at driveways that use a ramp or apron-type access to cross the sidewalk from the adjacent public street.

Transitions

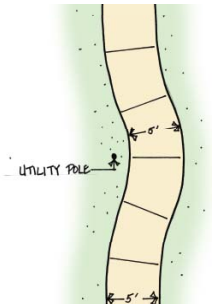
Wheelchair ramp and driveway transitions to or crossing sidewalks must conform to current ADA requirements.



Tapers

Transitional tapers to and from sidewalks of different widths are to be at a maximum rate of 1-foot of width per 10 feet of length (1:10) except as approved by the city or town.

Sidewalk Alignment



Sidewalks should parallel the roadway. Typical exceptions include:

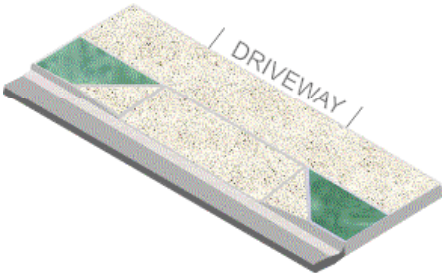
Horizontal Curve Sections on Roadways — In situations where a roadway curves at an angle greater than 60 degrees (and where right-of-way permits), the designer is permitted to adjust the curve of the sidewalk to more easily accommodate pedestrians.

Presence of Natural and Man made Features — The 5-foot minimum width of the travel path must be free of obstructions. The designer is permitted to alter the sidewalk path to avoid significant obstructions including but not limited to: transformers, utilities and utility poles, fire hydrants, and traffic signal hardware. Sidewalk path exceptions should be evaluated and approved on a case-by-case basis by the city or town. Care should also be used to ensure that the travel path does not interfere with the integrity of trees or of historic features.

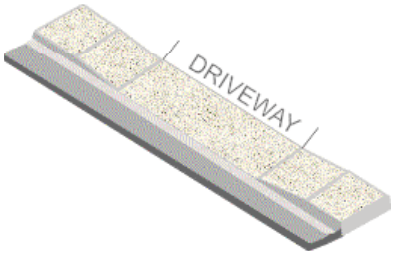
Meanders — Sidewalk meandering is strongly discouraged. People generally prefer to walk in a straight line, particularly when walking for utilitarian purposes. Meanders must meet minimum ADA requirements unless otherwise approved by the municipality.

ADA: Dealing with Cross-Slope from Driveways

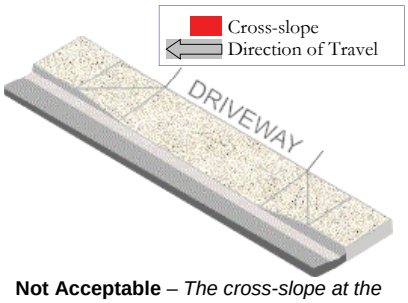
The figures at right indicate the preferred (top), conditionally acceptable (middle), and unacceptable (bottom) design solutions for new driveways as they interface with sidewalks. The intent is to make wheelchair travel safe along the sidewalk without directing the user into traffic through angled (cross) slope designs. Cross-slope on sidewalks should not exceed 2%, preferably not 1.5% where possible.



Preferred – *The sidewalk is set behind the driveway apron and planting strip.*



Conditionally Acceptable – *The "dip" at the driveway apron allows for safer passage with no cross-slope.*



Not Acceptable – *The cross-slope at the driveway apron provides a difficult challenge for a person using a wheelchair or cane.*

Sidewalk Buffers

Buffer zones between pedestrian paths and vehicular traffic provide a sense of security to those on foot or in wheelchairs and give the path a comfortable scale and clear definition. Buffers can also provide other benefits to pedestrians depending on the type used. Buffer zones may either be paved, providing space between the pedestrian and traffic, or they may involve a planting strip with trees and shrubs, but is not recommended for high-traffic pedestrian areas. Much like the sidewalk itself, the form and topography of a buffer may vary greatly. AASHTO recommends a buffer width of two to four feet for local or collector streets, and a buffer width of five to six feet for arterial or major streets, whether for a paved buffer zone or a planting strip.

Sidewalk buffer along Cameron Village Shopping Center in Raleigh

5.3 PLANTING STRIPS

Continuous zones of landscape, located between the sidewalk and the street curb or the edge of road pavement, perform a multitude of essential tasks. Planting strips contribute to the walkability of a street by providing shade. In addition to providing shade, street trees - along with turf and other plantings - help reduce urban temperatures, improve water quality, lower stormwater management costs, and add beauty to the street for the pedestrian, the driver, and the adjacent land use. The recommended planting width to permit healthy tree growth is 4 to 10 feet measured from the back of curb. Planting strips, or tree lawns, are the preferred means of providing a buffer, but are not feasible or appropriate in all pedestrian situations.

The width of the planting strip shall increase with a greater plant density and potential as the intensity of development increases. This separation from motorized traffic decreases road noise while increasing a pedestrian's sense of security and comfort. Added benefits of this separation include space for signage, utilities (fire hydrants), and vegetation.

Paved buffer zones

In some situations, continuous planting strips are not feasible, particularly where there is a high degree of foot traffic between the sidewalk and the street. As such, these planting strips are typically used in downtown or commercial areas. In these cases, a paved buffer zone should be provided between the travel path of the sidewalk and the curb. Though a constant width is preferred for this buffer zone, the width may vary as long as the buffer does not interrupt the pedestrian travel path. Items located in the buffer zone can include street furniture, planters, trees planted with tree grates, streetlights, street signs, fire hydrants, etc. Such items are placed in the buffer zones so as not to restrict pedestrian flow in the travel path.

Sidewalk with a paved buffer zone and planting zone

Street tree plantings in tree pits (with grates and guards, have historically proven to work successfully within these buffer zones. They regulate micro-climate, create a desirable sense of enclosure, promote a local ecological identity and connection to place, and can act as a pleasant integration of nature into an urban environment. For healthy trees, attention should be given to amending the soil and providing drainage within the tree pits. In the event that a paved or vegetative buffer zone is not possible, a row of parked cars or a bike lane can be used to create this buffer.


Buffer paving option and Tree Pits
Photo credit: www.gatech.edu

Buffer Paving Options

A different type of paving from the sidewalk paving could be considered for the buffer zone for various reasons. Textured pavements -- pavers or pervious pavement -- can be used to add significant aesthetic value and help define a unique place. Using pervious materials for parking, sidewalk furniture areas, and for frontage zones could reduce environmental concerns. A change in paving type can help distinguish the pedestrian buffer zone from the pedestrian travel path. Sand-set pavers are recommended in the buffer zone for ease of utility maintenance. In designing sidewalk buffers, it is important to provide adequate clearance from potential obstructions.

Type	Sidewalk Width	Planting Strips/ Buffer	
		With Street Tree	No Street Tree
Local residential	5 ft.	4 - 6 ft.	3 - 5 ft.
Thoroughfares/ Collectors	6 - 8 ft.	6 – 10 ft.	5 - 6 ft.
Downtown or business districts	*10 - 15 ft.	n/a	n/a

* Planting strip or tree pit would be located within sidewalk width.

Additional Considerations

Though the buffers described above each provide some sort of physical barrier from moving vehicular traffic, it is vital for pedestrians on the sidewalk to have a clear view of drivers and vice-versa. This is a particularly important consideration in designing and maintaining planting strips. It is important to eliminate both high and low contact points with tree branches, mast-arm signs, overhanging edges of amenities or furniture. In addition, it is necessary to provide two feet of clear space from store fronts to accommodate shy distance from walls and the opening and closing of doors.

5.4 PATHS/GREENWAYS

Multi-Use Paths

Multi-use paths are paved road-like facilities designed to be used by pedestrians and bicyclists as well as others, including those on roller blade, skateboards and other alternative modes of transportation. Paths can be paved or unpaved, can be along creeks or streams, and can be designed to accommodate a variety of path users.

Pedestrian sidewalk on bridge with separation.
Photo credit: www.fhwa.dot.gov

The alignment of these corridors should avoid road right-of-way whenever possible to minimize intersection and driveway crossings. Because these paths typically do not cross roads at signalized intersections, they should include pedestrian crosswalks, underpasses, culverts, or overpasses at each road crossing for safety.

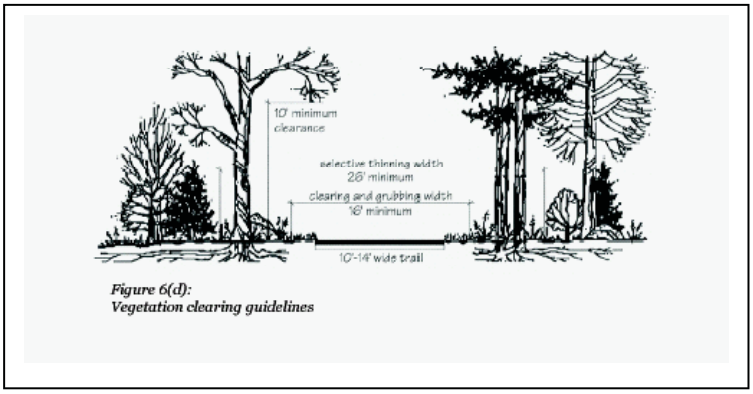
Design Criteria

Multi-use paths shall be designed with clearance requirements, minimum radii, stopping sight distance requirements, and other criteria — similar to the criteria for roadway design. High standards should be observed when designing these paths.

Multiple-use paths shall be a minimum of 10 feet wide; with minimum 2 foot wide graded shoulders on each side (AASHTO recommends 5 foot shoulders) to protect users from grade differences. These shoulders can be grass, sand, finely crushed rock or gravel, natural groundcover, or other material. Sections of the path where shoulders cannot be provided because of stream crossings or other elevated grade issues should have protection such as rails, fences, or hedges.

Paths of 12'-14' in width are preferred for areas where high volumes of users are expected. If it is not possible to increase the width, including a divider line down the center for bi-directional traffic can be helpful as a means of increasing safety for path users. Width of a path may be reduced to 8 feet, depending upon physical, environmental or right-of-way constraints and topography.

These paths should keep the contour of the land for aesthetic and environmental reasons, but for practicality reasons should not be unnecessarily curved. The minimum radii or curvature recommended by AASHTO is 30-50 feet, and the cross slope should typically be less than 2%. The grade should not be more than 5%, but could reach 11% for short distances according to ADA and AASHTO guidelines. Right angles should be avoided for safety reasons, especially when considering bridge and road crossings.



Vegetation clearing guidelines for path

Vertical and Horizontal Clearance

Selective thinning of vegetation along a path increases sight lines and distances and enhances the safety of the path 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. A total of 8 to 10 feet of vertical clearance should be provided.

Pavement Types

Each path is unique in terms of its location, design, environment, and intended use. For each segment of the path, care should be given to selecting the most appropriate pavement type, considering cost-effectiveness, environmental benefit, and aesthetics.

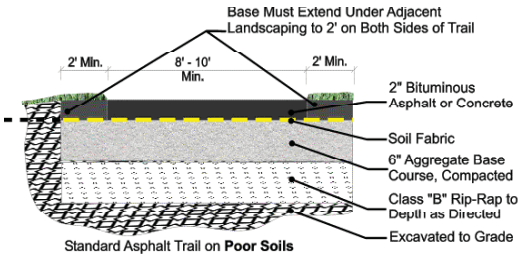
Typical pavement design for a paved, off-road, multi-use paths and greenway paths should be based upon the specific loading and soil conditions for each project. These paths should be designed to withstand the loading requirements of occasional maintenance and emergency vehicles. Pavement types may vary between conventional or pervious concrete, asphalt, crusher fines, dirt or boardwalk.

Paved Greenway Trail
Photo credit: D.Burden

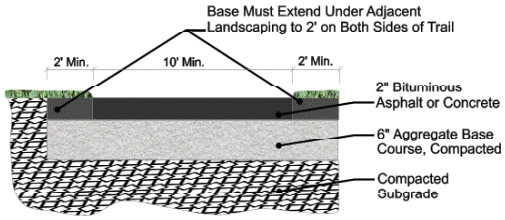
Conventional Concrete – In areas prone to frequent flooding, it is recommended that concrete be used because of its excellent durability. Concrete surfaces are capable of holding up well against the erosive action of water, root intrusion and subgrade deficiencies such as soft soils. Of all surface types, it is the strongest and has the lowest maintenance requirement, if it is properly installed. Installation of concrete is the most costly of all surface types, but, when properly installed, requires less periodic maintenance than asphalt or crusher fines. It is recommended to install 4-inch thickness on compacted 4-inch aggregate base course.

Pervious Concrete – This concrete is a recent invention which allows storm water to percolate, reducing pollutants included in the stormwater runoff, when used over permeable soils, superior traction, unfavorable to roller blading and skateboarding, higher installation cost.

Asphalt – Asphalt is a flexible pavement and can be installed on virtually any slope. Asphalt is smooth, joint free and softer than concrete, preferred by runners, roller bladers, cyclists, handicap users, and parents pushing baby buggies. In most cases, construction costs significantly less. Standard installation calls for a minimum of 2-inch I-2 asphalt thickness with 4-inch aggregate base course. Installation of a geotextile fabric beneath a layer of aggregate base course (ABC) can help to maintain the edge of a path. Asphalt pavement is also helpful in supporting a path in poor soils. Asphalt pavement can last up to 20 years with periodic maintenance. One important concern for asphalt paths is the deterioration of path edges. It is important to provide a 2' wide graded shoulder to prevent path edges from crumbling.



Standard Asphalt Trail on **Poor Soils**



Standard Asphalt Trail

Crusher fines – Excellent for running paths, as well as walking, mountain bike and equestrian use. Can be constructed to meet ADA requirements. Paths must be smoothed out and graded several times per year. Constructed of small, irregular and angular particles of rock, crushed into an interlocking tight matrix. Does require additional maintenance.

Dirt – Recommended for hiking trails, mountain bike tracks, and equestrian uses. It is important to grade swells on steep slopes to avoid erosion.

Boardwalk – A structure made of wooden planks constructed for pedestrians or cyclists along beaches or through wetlands, coastal dunes and other sensitive environments.

Photo credit: D. Burden

Environmental Issues

Environmental protection should be a priority with the planning and construction of a path. Path design, construction type, and construction schedule should all reflect environmental considerations. For example, a path offers some leniency with its alignment compared to a sidewalk, offering opportunities for selective clearing of vegetation. Also, asphalt may not be considered a good surface material in wet areas because of its petroleum base and its tendency to float when flooded.

Greenway paths improve water quality by establishing buffers along creeks and streams. These buffers provide habitat for a diversity of plant and animal species. They serve as natural filters, trapping pollutants from urban runoff, eroding areas and agricultural lands. Stream buffers also reduce the severity of flooding by releasing storm water more gradually, giving the water time to evaporate, or percolate into the ground and recharge aquifers, or be absorbed and transpired by plants. In addition, paths provide more transportation choices for people who wish to walk or bicycle. By doing so, they help to decrease dependence upon automobiles and thus contribute to improved air quality. All proposed paths and other improvements should be designed, constructed and maintained with their ecological value in mind. Any disturbance of natural features should be kept to a minimum and conform to all jurisdictional environmental policy and ordinances.

The protection of streams by easement and the creation of paths along this greenway easement can help to ensure that no dumping occurs in the waterway, as users of this facility would report dumping to authorities. There is a need to help preserve these resources by ensuring that there is sufficient space between the greenway path and the waterway, by avoiding building adjacent to trees, and by avoiding constructing on rock features, such as escarpments.

A water fountain located next to a bench provides a functional rest area.

Photo credit: A. Lux

Path Amenities and Accessibility

Though paths should be thought of as roadways for geometric and operational design purposes, they require much more consideration for amenities than do roadways. Shade and rest areas with benches and water sources should be designed along multi-use paths. Where possible, vistas should be preserved. Way finding signs (e.g., how far to the library or the next rest area, or directions to restrooms) are important for non-motorized users.

Path amenities should be just as accessible as the paths themselves. Periodic rest areas off to the side of accessible paths are important features as well, and should be level and placed after a long ascent.

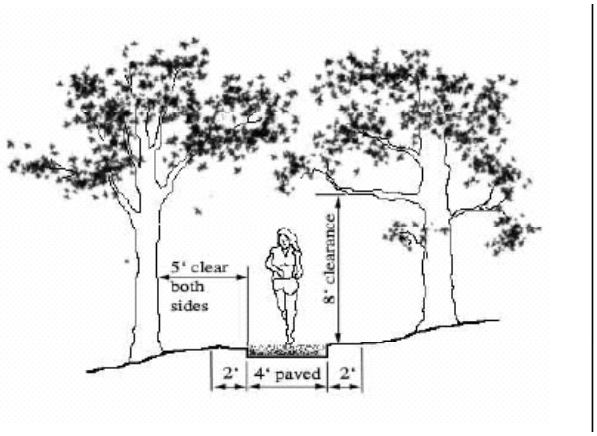
5.5 SIDEPATH/WIDE SIDEWALK

Sidepaths/Wide Sidewalks

A sidepath is essentially a multi-use path that is oriented alongside a road. The AASHTO bike guide and North Carolina Design Guidelines strongly caution those communities contemplating the construction of a sidepath (or wide sidewalk) facility to investigate various elements of the roadway corridor environment and right-of-way before committing to its construction.

Foot Path

In environmentally sensitive areas, such as stream banks and lowlands, a 4 ft. wide soft surface should be used (crusher fines recommended), with 2 ft. improved shoulders. Maintain a vertical clearance minimum of 8 ft. All paths should be maintained with a 5 ft. cleared area from the edge of the path on each side. Pitch paths to drain with a 2% minimum grade. Paving materials may vary in specific locations.



5.6 MEDIANS

Medians are barriers in the center portion of a street or roadway. Medians allow for less interaction between cars and bicycle and pedestrians, and make more opportunities for bicycle lanes. A center turn lane can be converted into a raised or lowered median thus increasing motorist safety. Travel lanes may be narrowed to accommodate the placement of a median. Raised or lowered medians should provide ample cues for people with visual impairments to identify the boundary between the crossing island and the roadway. According to AASHTO guidelines, the length of a median should be a least 20 feet.

Raised Intersection
Photo credit: www.trans.ci.portland.or.us

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 discussed in this chapter. An alternative to the continuous median is to create a segmented median with left turn opportunities.

Sensitivity to large vehicles (buses, trucks and fire equipment) dictates some elements of the median design, curb style, and placement. Median-controlled roadways reduce the number of turning conflicts and are generally preferred for both pedestrians and cyclists over a two-way, left-turn lane (TWLTL) roadway.

Landscaping

Medians provide opportunities for landscaping that in turn can change the character of the street and help to slow traffic. Landscaping should not obstruct the visibility between motorists and pedestrians.

Median Pedestrian Refuge Islands

When used in conjunction with mid-block or intersection crossings, medians can be used as a crossing island to provide a place of refuge for pedestrians. Pedestrian refuge islands should be designed along roadways with fewer lanes and pedestrian signals that will allow the pedestrian enough time to cross the street.

Illustration of proposed Pedestrian Refuge Island at HWY 601 and Hemlock St.

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. 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.

The graphic below indicates the design and markings associated with refuge islands. Note that pavement markings delineate the approach to the islands and that the islands are "split" to allow for a level platform for wheelchair use. Median crossings should possess a minimum of a 4 foot square level landing to provide a rest point for wheelchair users. In cases where there are wide roads and high traffic volumes, a push-button pedestrian signal may be mounted in the refuge area to allow pedestrians to split their trip into two halves as they cross the street. Note that the crosswalk on the right side of the diagram is configured at a skewed angle as it crosses the median. This allows pedestrians to have a better angle of sight as they approach and cross each side of the street. In all cases, a minimum 10-foot travel lane is maintained for pedestrians.

Crosswalk ith decorative paving Photo credit: Dan Burden

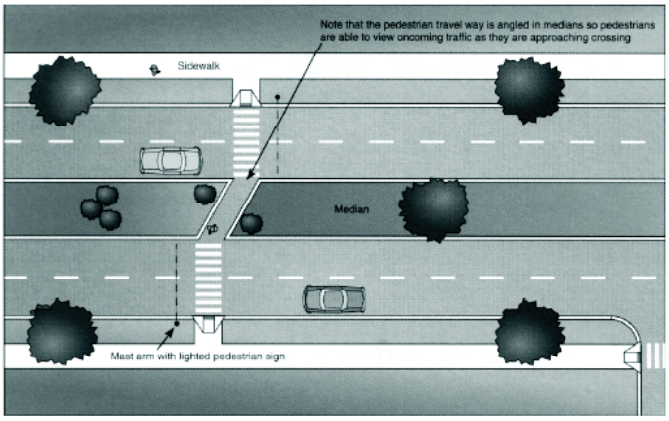


Figure (l):
A lowered median can be used to filter stormwater and provide a refuge for pedestrians crossing a roadway[3].

5.7 MARKED CROSSWALKS

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). A study should be completed prior to placing crosswalks to determine the need and the best type and location of that crosswalk.

North Carolina state law permits crossing at all intersections whether the intersection is marked with a crosswalk or not. Every attempt should be made to install crossings in places where pedestrians are most likely to cross. A well-designed traffic calming location is not effective if pedestrians are using other unmodified and potentially dangerous locations 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 not difficult to maneuver by any person including those with physical mobility or vision impairments. Although marked crosswalks provide strong visual clues to motorists that pedestrians are present, it is important to consider the use of these elements in conjunction with other traffic calming devices to fully recognize low traffic speeds and enhance pedestrian safety.

Width

Marked crosswalks should not be less than six feet in width. In downtown areas or other locations of high pedestrian traffic, a width of ten feet or greater should be considered. An engineering study may need to be performed to determine the appropriate width of a crosswalk at a given location.

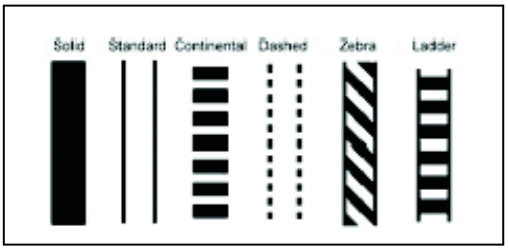


Illustration of all the variety of patterns possible in designating a crosswalk

Paint

Reflective paint is inexpensive but is considered more slippery than other devices such as inlay tape or thermoplastic. A variety of patterns may be employed as detailed in the figure above. Crosswalk markings should be white, per MUTCD. Crosswalk markings should extend the full length of the crossings. Crosswalk lines of 10-12 inches of width are the recommended minimum. Curb ramps and other sloped areas should be fully contained within the markings.

Raised intersection with decorative pavement.

Pavement Treatment

A variety of colors or textures may be used to designate crossings. These materials should be smooth, skid-resistant, and visible. Although attractive materials such as inlaid stone or certain types of brick may provide character and aesthetic value, the crosswalk can become slippery. Also, as it degrades from use or if it is improperly installed, it may become a hazard for the mobility or vision impaired.

Raised Crosswalk

Raised Crosswalk

In areas with a high volume of pedestrian traffic, particularly at mid-block crossings, a crosswalk can be raised to create both a physical impediment for automobiles and a reinforced visual clue to the motorist. Raised crosswalks are typical on two-lane streets with a speed limit of less than 35 mph. In conjunction with raised crosswalks, it is necessary to use detectable truncated dome warnings at the curb lines. Visible pavement markings are necessary for the roadway approach slopes.

Mid-Block Crossings

Mid-block crossings can help pedestrian access by supplementing crossing options. Mid-block crossings may be used in areas where there are substantial pedestrian generators or where intersections along a roadway are spaced far apart. Mid-block crossings pose special problems for many state and local departments of transportation, since pedestrians will often choose to cross at the location that is the most convenient for them to do so, not necessarily where it is the safest. As a result, engineers and planners have developed guidelines for mid-block crossings.

Below are some general guidelines on mid-block crossings:

- Provide only on roads with a speed limit of less than 45 MPH.
- Do not install within 300 feet from another signalized crossing point.
- Base installation of a mid-block crossing on an engineering study or pedestrian route placement.
- These crossings are recommended near schools, pedestrian routes, retail areas, recreation, and residential areas.
- Require advance auto-warning signs and good visibility for both the driver and the pedestrian.
- Providing a safe crossing point is necessary since pedestrians tend not to walk far for a signalized intersection.
- Provide an audible tone.
- Include a pedestrian refuge island on wide streets that:
  - -Have fast vehicle speeds, or with large vehicle or pedestrian traffic volumes.
  - -Where children, people with disabilities, or elderly people would cross.
  - -Have complex vehicle movements.

Advance Stop Bars

Vehicle and pedestrian visibility is increased by placing a vehicle advance stop bar 4 to 10 feet back from the pedestrian crosswalk at signalized crossings and mid-block crossings. In certain situations, a larger setback of the advance stop bar may be required. 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%.

Advance stop bar
Source: Pedestrian and Bicycle Information Center Image Library

Pedestrian 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, a longer crossing time may be necessary to accommodate 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.

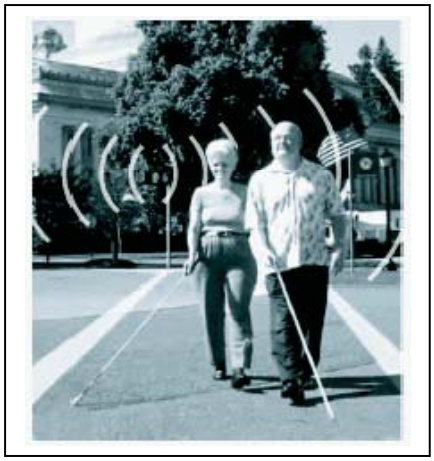
5.8 TYPES OF PEDESTRIAN SYMBOLS

International Pedestrian Symbols - According to the MUTCD, international pedestrian signal indication should be used at traffic signals whenever warranted. As opposed to early signalization that featured "WALK" and "DON'T WALK", international pedestrian signal symbols should be used on all new traffic signal installations. Existing "WALK" and "DON'T WALK" signals should be replaced with international symbols when they

reach the end of their useful life. Symbols should be of adequate size, and clearly visible to make crossing safe for all pedestrians.

Countdown signals - 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 signals - Audible cues can be used to pulse along with a countdown signal. The signals are used for visually and audibly impaired individuals. Consideration should be paid to the noise impact on the surrounding neighborhoods when deciding to use audible signals.


Audible Pedestrian Signal

Pedestrian signal timings - The timing of these or other pedestrian signals needs to be adapted to a given situation. 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.


Pedestrian Signalization
Photo credit: www.pedbikeimages.org

Concurrent signal timing refers to a situation where motorists running parallel to the crosswalk are allowed to turn into and through the crosswalk, left or right, after yielding to pedestrians. This condition is not considered as safe as some of the latter options, however this type of signal crossing generally allows for more pedestrian crossing opportunities and less wait time. In addition, traffic is allowed to flow a bit more freely. Concurrent signal timing is best used where lower volume turning movements exist.

Where there are high-volume turning situations that conflict with pedestrian movements, the exclusive pedestrian interval is the preferred solution. The exclusive pedestrian interval stops traffic in all directions. In order to keep traffic flowing regularly, there is often a greater pedestrian wait time associated with this system.

A proven enhancement that prevents many of the conflicts addressed under either of the former methods is Leading Pedestrian Signal (LPI). An LPI works in conjunction with a concurrent signal timing system and simply gives the pedestrian a few seconds head start on the parallel traffic. An advance walk signal is received prior to a green light for motorists.

This creates a situation where the pedestrian can better see traffic, and more importantly, the motorists can see and properly yield to pedestrians. As with the exclusive pedestrian interval, an audible cue will need to accompany the WALK signal for the visually impaired.

The use of infrared or microwave pedestrian detectors has increased in many cities worldwide. Theses devices replace the traditional push-button system. Although still experimental, they appear to be improving pedestrian signal compliance as well as reducing the number of pedestrian and vehicle conflicts. Perhaps the best use of these devices is when they are employed to extend crossing time for slower moving pedestrians. Whether these devices are used or the traditional push-button system is employed, it is best to provide instant feedback to pedestrians regarding the length of their wait. This is thought to increase and improve pedestrian signal compliance.

Passive pedestrian detection equipment is becoming more common, and can be recommended in high-volume locations where many pedestrians are crossing a five-lane (or greater) street cross-section.

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. Consider elimination on case by case basis and only where there are usually high pedestrian volumes.

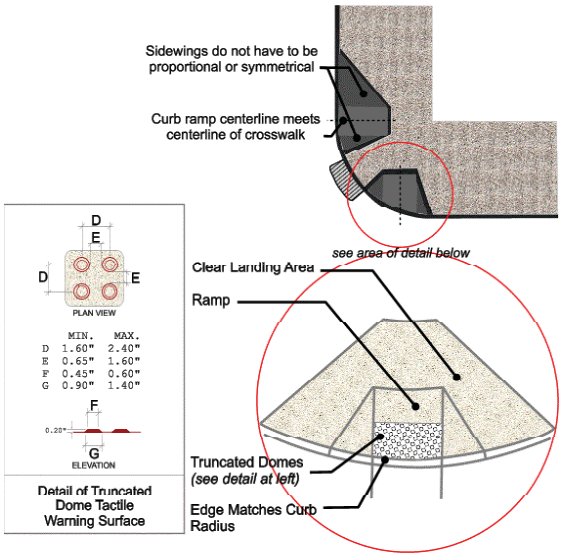
A low cost sign that restricts right-hand turns at a red light.
Source: Pedestrian and Bicycle Information Center

R10-11

R1-5

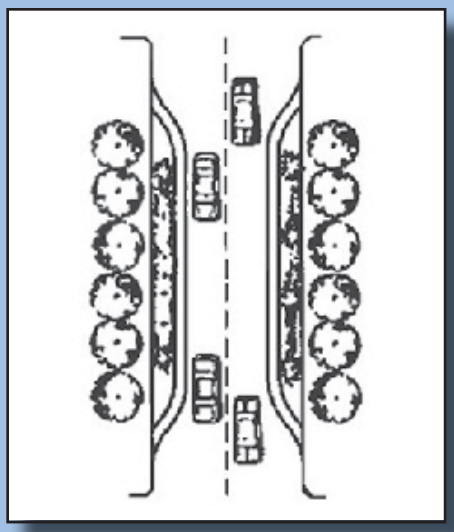
5.9 CURB RAMPS/CURB EXTENSIONS

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. In addition, these federal regulations require that all new constructed or altered roadways include curb ramps. Although the federally prescribed maximum slope for a curb ramp is 1:12 or 8.33% and the side flares (or "sidewings" as listed in the graphic) of the curb ramp must not exceed a maximum slope of 1:10 or 10.0%, it is recommended that much less steep slopes be used whenever possible.



It is also recommended that two separate curb ramps be provided at each intersection. The minimum width for the curb ramp is four feet. 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. To provide a tactile warning to the visually impaired, raised truncated domes with a color contrast to the background material (typically concrete) should be used. Two separate curb ramps, one for each crosswalk, should be provided at each corner of an intersection.

For additional information on curb ramps see the Federal Highway Administration and Designing Sidewalks and Trails for Access, Parts I and II, by the Federal Highway Administration.

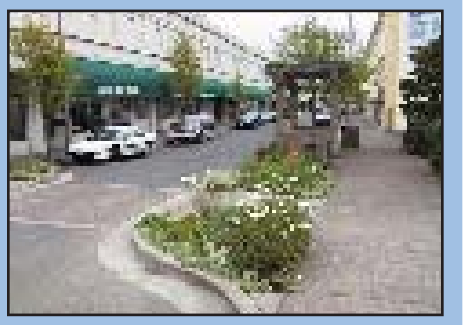


Choker with curb extensions.
Photo credit: Making Streets that Work

Curb Extensions ("Bulb Outs," "Chokers," "Neckdowns") and Curb Radii

A curb extension, or bulb out, is an extension of the sidewalk 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. In addition, curb extensions may encourage motorists to drive slower by narrowing the travel lane and reducing

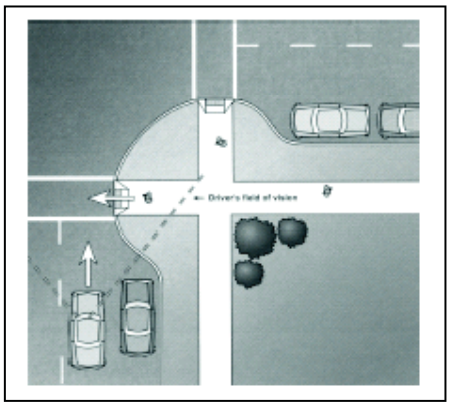
Choker in a Mixed Use Area
Photo credit: Michael Cynecki



Curb Extension with Vegetation
Photo credit: www.greatstreets.org

vehicular speeds during turning movements at intersections. Curb extensions can be placed either at mid-block crossings or at intersections. Curb extensions at mid-block locations are known as "chokers." Curb extensions at intersections can also be referred to as "neckdowns."

Sight lines 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, curb extensions preclude vehicle parking too close to a crosswalk. Also, curb extensions at intersections can greatly reduce turning speed, especially if curb radii are set as tight as possible. Finally, curb extensions also reduce travel speeds when used in mid-block crossings because of the reduced street width. Curb extensions should only be used where there is an existing on-street parking lane and should never encroach into travel lanes, bike lanes, or shoulders. The below table illustrates the relationship between posted speeds and the curb (often called "corner") radius .Motorists will travel more slowly around corners with smaller curb radii even without the use of curb extensions.



By reducing a pedestrian's crossing with a bulb out, less time is spent in the roadway, and pedestrian vehicle conflicts are reduced.

Curb Extensions (Bulb Outs)

Maximum Desired Speed and Curb Radii

Posted Speed Limit (mph)	Minimum Curb Radius (Feet)
Residential Street, 15-25 mph	5
Residential Street, 25-35 mph	10
Collector Street, 30-45 mph	20

5.10 LIGHTING

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. Attention should be paid to lighting walkways and crossings, so that there is sufficient ambience for motorists to see

pedestrians. Pedestrian lighting should be considered for areas of higher pedestrian volume, including downtown and key intersections. Lighting in commercial areas should be provided on both sides of the street.

Source: Pedestrian and Bicycle Information Center

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. Lighting for sidewalks and off-street paths should be provided where considerable pedestrian traffic is expected at night, where there is insufficient available light from the surrounding area, and at all designated road crossings.

Each lighting situation is unique and must be considered on a case-by-case basis. Average maintained horizontal illumination levels of 5 lux (0.5 foot candles) to 22 lux (2 foot candles) should be considered. Sometimes, higher levels are advisable in special areas where security problems might exist. Light poles should generally be 12 to 15 ft. high for lighting pedestrian areas. Luminaries and poles should be at a scale appropriate for pedestrian use.

Light fixtures, as well as other on-street facilities, like street furniture, can add a great deal in terms of street aesthetics and reinforce community identity. It is recommended that the community adopt a particular style of street lighting fixture appropriate for the municipality's identity and coordinate this choice with stylistic choices in other street facilities.

Sophisticated lighting needs to be directional and focused upon the street. A flat lens light is the best choice in lighting the street. Fixtures that produce glare should be avoided, as they produce diffused light, and sometimes make visibility difficult. The pedestrian-level lighting that is preferred includes mercury vapor, metal halide, or incandescent. Although low-pressure sodium lights may be energy-efficient, they are less desirable due to the color distortion they create. High-pressure sodium lights are preferable, as they create less color distortion.

Lighting should be sufficient so that pedestrians can see cars, and cars can see pedestrians. However, over lighting of an area can produce an environment that is unattractive to pedestrians, and the resulting glare becomes an environmental issue.

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." Whenever urban improvements are made where lighting is addressed, a qualified lighting expert should be consulted early in the process. This individual should not only create a safe and attractive ambiance, but will do so with the minimum of fixtures, an awareness of the importance of minimizing photo pollution, and with a focus on minimizing future energy use. A thoughtful plan of how and where to light will reap benefits not only in potential reduced infrastructure cost, but future energy costs as well.

5.11 SIGNAGE

Signage can be an effective tool to alert drivers to reduce speeds and allow pedestrians to exercise extra caution. It is important not to cause "clutter" when using a variety of signage. This can cause complacency and noncompliance with signs in general. Signs, and the sign text, should be large enough to be seen from a distance. It is imperative that all signs be properly located so as not to obstruct the pedestrian and visibility triangles of motorists.

Signage is governed by the MUTCD, which provides specifications on the design and placement of signage on the right-of-way. There are three types of signage: 1) Wayfinding signage 2) Regulatory and 3) Warning signs. Maintenance of signage is as important as walkway maintenance. Clean, graffiti free, and relevant signage enhances guidance, recognition, and safety for pedestrians.

Wayfinding or guide signs give notice of traffic laws or regulations that pedestrians, cyclists, and motorists are required by law to follow.

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. Regulations should also address the orientation, height, size, and sometimes even style of signage to comply with a desired local aesthetic. It is recommended that municipalities adopt consistent and descriptive graphics to identify pedestrian routes. This signage system would assure pedestrians that they are safe and will not encounter gaps in facilities along these routes. A map should be incorporated into each route illustrating the entire pedestrian system and their location. Bus stops, destinations, and mileage should also be identified on the signs.

Regulatory and Warning Signs

Regulatory signs give notice of traffic laws or regulations that pedestrians, cyclists and motorists are required by law to follow. Warning signs call attention to unexpected conditions on, or adjacent to, a roadway, bike or pedestrian facility that can be potentially hazardous to users.

Pedestrian-related signage serves primarily to notify motorists and others of the presence of pedestrians. The intended effect is to cause motorists drive more cautiously and reduce their speeds, thereby improving the safety for pedestrians in the given area. Signs can be used in a variety of places, including at crosswalks, at intersections, in-street, and near schools. National standards for sign placement and use can be found in the Manual for Uniform Traffic Control Devices (MUTCD). The MUTCD provides guidance for warning signs which can be used at both crosswalks, or along the roadway. The following are some recommended signs which municipalities should consider installing. For more signs and more detailed guidelines for sign installation and use, the municipality should consult the MUTCD. The S4-3/R1-6 as well as the W11-2 signs are regulatory, while the sign furthest to the right is a wayfinding signs. The remaining signs directly below are warning signs.

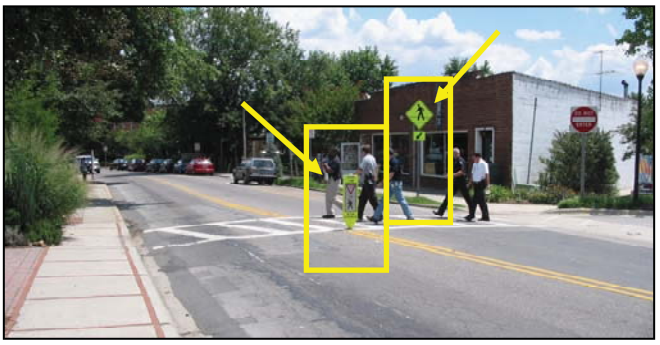
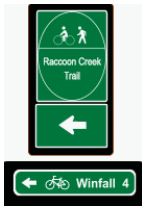


Figure 6-1. An example of two types of signs used to notify motorists of a pedestrian crossing.



The first sign is usually installed within the street to warn motorists to yield to pedestrians in a crosswalk. The "school" sign (MUTCD S4-3) is added to the in-street sign for placement near a school. The second and third signs are commonly used pedestrian warning signs, while the fourth and fifth signs notify motorists of specific instances to watch for pedestrians. The fourth sign, "Turning Traffic", is usually placed at intersections to warn motorists that are turning right or left to yield to pedestrians in crosswalks. The sign at the far right is an examples of typical wayfinding signage to help direct cyclists at major decision points along a route. For the fifth sign, the top sign can either be combined with the smaller "ahead" sign or the arrow symbol to indicate the presence of a crosswalk to motorists in a school zone.

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
School Bus Stop Ahead	S3-1	7B.10	750x750 (30x30)	
Pedestrian Traffic	W11-2	2C.43	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.

5.12 SCHOOL ZONE TREATMENTS AND SCHOOL ROUTE PLAN MAP

Section 7 of the MUTCD is entirely devoted to "Traffic Controls for School Areas" and is the dominant guidance available to municipalities for installing signs and markings in school zones. The section provides valuable additional guidance for school crossing treatments that can be utilized for the planning and design of schools that should be considered when making safety improvements.

Street Trees

Street trees enhance the landscape for pedestrians, creating an attractive and comfortable environment for walking. Street trees also act as a traffic calming device, encouraging drivers to drive more slowly. In addition, a large line of leafy street trees can absorb engine noise, providing enough of a buffer to block street traffic noise from reaching private yards and homes. Trees also improve air quality by consuming carbon dioxide and emitting oxygen. Street trees may also increase real estate values by increasing curb appeals of homes. This Plan strongly recommends that municipalities adopt a tree ordinance to give direction for tree installation and maintenance.

Source: Pedestrian and Bicycle Information Center

Street trees and other plantings provide comfort, a sense of place, and a more natural and inviting setting for pedestrians.

Planting requirements - All street trees should be selected according to the standards described in the American Standard for Nursery Stock of the American Nursery and Landscape Association. Install and maintain trees according to the International Society of Arboriculture (ISA) guidelines. A landscape architect should be consulted to select the proper tree and planting technique.

Visibility - Street trees should never be allowed to obscure the line of sight between pedestrians and drivers. A clear view should be maintained between 30" and 72" above street. This area must be free of limbs and foliage for safe cross visibility. Other plantings should also follow this rule within 50 ft. proximity of street corners and other designated crossing points. In order to maintain visibility, provide shade, and a comfortable pedestrian corridor, street trees should primarily be vase shaped, columnar, or oval in form (habit) with large spreading crowns.

Roots - Avoid trees with aggressively invasive roots adjacent to pavement or buildings.

Size - Large trees (growing over 35 ft. in height at maturity) are preferred as street trees except near overhead utility lines. Small trees (growing less than 35 feet in height at maturity) should be used in areas directly adjacent to or under utility lines.

Spacing – typically, large trees should be spaced approximately 40 – 50 feet on center when planted in a line, and small trees spaced at approximately 30 ft. The spacing of street trees in a planting strip will depend upon the size of the tree and upon the demand for sidewalk furniture and parking.

Tree Pits and Tree Grates - Street trees should generally be located in open planting strips. However, tree pits with tree grates may be a practical, although expensive, alternative in very high pedestrian traffic areas. Tree grates should generally not encroach upon the travel path. For optimal pedestrian safety and comfort, all tree grates used should meet the ADA standards for "accessible pathway".

Maintenance - Trees and landscaping require ongoing maintenance. Local municipalities typically take responsibility for maintenance of these amenities, although there are instances where local community groups have provided funding and volunteers for maintenance. In order to reduce the amount of maintenance necessary, it is helpful to use 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 causing a pedestrian obstruction.

Vanguard Company, accessed November, 2005
(http://www.vanguardonline.com/downloads.asp)

City of Durham Public Works "Reference Guide for Development," Table of Minimum Design Requirements for Public and Private Residential Streets. Rev. October, 2003. Page 154. (http://www.ci.durham.nc.us/departments/works/handbook/reference_guide.pdf)

5.13 PEDESTRIAN OVERPASS/UNDERPASS TRANSIT STOP TREATMENTS/BRIDGES

Pedestrian overpasses and underpasses efficiently allow for pedestrian movement across busy thoroughfares. These types of facilities typically feature very high construction costs. These facilities are problematic in many regards and should only be considered when no other solution is expected to be effective. Research shows that pedestrians will avoid using such a facility if they perceive the ability to cross at grade as taking about the same amount of time. ADA requirements for stairs, ramps, and elevators often require the construction of an enormous structure that is visually disruptive.

Pedestrian underpass with metal railing for pedestrian safety and separation.
Photo credit: ITE Pedestrian Bicycle Council

Overpasses and underpasses should only be considered with rail lines, high volume traffic areas such as freeways, and other high volume arteries.

In addition, they 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 these structures should follow the guidelines for sidewalk width. Underpasses should have a daytime illuminance minimum of 10 foot candles 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.

Attempting to separate pedestrians from the street is often problematic. As shown here, given the opportunity, many choose to cross at street level.

Transit Stop Treatments

To accommodate as many users as possible, a transit system must include well-planned routes and safe, accessible stops. Bus stops should be designed to accommodate the appropriate number of users and should be highly visible to pedestrians and motorists. Bus or other transit stops should be located in places that are most suitable for 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.

Pedestrian-friendly bus stop

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. It is good practice to construct a transit stop just beyond an intersection, which encourages riders to cross the intersection behind the bus and in full view of approaching motorists. The location also should be set back enough from the roadway to buffer users from traffic without impeding pedestrian activity.

Safety and comfort at a bus stop is determined by the amenities offered to users. Bus stop signage including route information, shelter with seating, trash cans, and bicycle parking encourage transit use. Pedestrian-level lighting improves the visibility of pedestrians to motorists and increases the level of safety for users. At a minimum, marked crosswalks (especially at mid-block stops), curb ramps, and proper sidewalk widths should be considered.

Bridges

Provisions should be made to include a walking facility as a part of vehicular bridges, if there is an indication that pedestrians would use the facility. It is important to consider the needs of pedestrians when planning for a bridge replacement or the construction of a new bridge. Sidewalks on bridges should be a minimum of 5 feet wide, with a minimum handrail height of 42.''

Source: Pedestrian Bicycle Information Center Image Library

Chicane with a center island and curb extensions
Photo credit: Dan Burden

5.14 TRAFFIC CALMING TECHNIQUES

Traffic Calming Devices (TCDs) are physical measures in street design that cue drivers to slow down. The effectiveness of TCDs does not depend upon a driver's compliance with traffic signs and signals, or police enforcement, though they may be used effectively in conjunction with them. In coordinated combinations, TCDs reduce speeds, alert drivers to pedestrians, and reduce the severity of collisions. TCDs listed below are generally recommended for consideration on a project-by-project basis. These include traffic circles, roundabouts, speed humps, speed tables, textured pavements and curb extensions (bulbouts). Curb extensions are discussed in detail earlier in this section.

Nieghborhood Traffic Circle in a Residential Area
Photo credit: www.alexandria.gov

Neighborhood Traffic Circles - a small, raised circular island positioned in the center of an intersection, designed to slow traffic by requiring traffic to maneuver around the island.

Roundabout –circular intersection with raised circular islands in the center, with "yield on entry" and deflecting islands on all approaches designed to slow traffic. Traffic proceeds in a counterclockwise direction. Roudabouts are highly engineered to accommodate specific traffic types, volumes and speeds.

Typical Modern Roundabout
Source: Reid Middleton, Inc.

Speed Humps - raised sections of a roadwa bump in their application, but a speed hump is wider and has a sloping side taper so they are easy to navigate at slower speeds. They are placed across residential streets to control chronic speeding problems where other methods of slowing traffic have not been effective. They are designed to calm traffic in residential areas, particularly near parks and schools. The physical impact on passing vehicles is less severe at slower speeds than at higher speeds. Studies indicate that speed humps reduce speeds by approximately six miles per hour. A standard speed hump has a length of approximately 22 feet and a height of 3 and 5/8 inches at its center.

Speed Tables – flat-topped speed humps typically long enough for the entire wheelbase of a passenger car to rest on the flat section. They often constructed with brick or other textured materials on the flat section.

Speed Hump
Source: PBIC Image Gallery

Speed Table
Source: PBIC Image Gallery

Textured pavements - stamped pavement or alternate paving materials to create an uneven surface for vehicles and pedestrians to traverse. Textured street pavement provides a visual and tactile cue for both drivers that they are driving in an area of high pedestrian usage. Similarly, they cue pedestrians that they are entering a vehicular zone, and are a particularly effective treatment to warn visually impaired pedestrians. Textured street pavements should be used in areas of substantial pedestrian activity and where noise is not a major concern.

Curb Extensions –rounded extensions of the curb which slow vehicles by alerting drivers to potential pedestrians, visually tightening the vehicular path, and physically reduces turning radii, thereby encouraging a decrease in vehicle speeds. Curb extensions also increase safety for pedestrians by shortening the road crossing distance. Curb extensions are covered in more detail earlier in this section.

5.15 TEMPORARY WORK

Temporary work should be accessible. Where construction blocks a public sidewalk for more than a short time, an alternate accessible route should be provided that is cane-detectable. Sidewalk barriers should be continuous and cane-detectable as well. Temporary events and facilities should also meet accessibility criteria.

ANCILLARY FACILITIES AND PROGRAMS

6.1 ADDITIONAL SIGNAGE AND MAPPING

Interpretative Signage.
Photo credit: www.aucklandcity.govt.nz

Wayfinding systems are a means for any municipality to increase directional clarity, visibility, and mobility within their jurisdiction, helping corporate and private individuals as well as visitors maneuver about their municipality with ease and certainty. Continuity of color, shape, size, and text aid in providing clarity within the town and the Town of Yadkinville should engage a design professional for their assistance in developing these standards. There are many publications to research this topic prior to engaging any outside professional. The following types of signs are part of a town's wayfinding system.

Directional Signage OR Pedestrian Related Signage

Directional, referred to as **Pedestrian Related Signage** in the previous section, signage is effective in alerting motorists to reduced speeds and encourage pedestrians to exercise caution in certain conflict areas. It is important to not cause "visual clutter" when using a variety of signage. Signs and their text should be large enough to be seen from a viewing distance of around 50'. It is imperative that all signs are properly located so they do not obstruct pedestrians and visibility triangles of motorists. All signage for motorists and pedestrians must meet Department of Transportation and MUTCD signage standards.

Interpretative Signage

Interpretative signage is an effective means of displaying information other than traffic rules and regulations. Visually consistent signage about the history of Yadkinville and the larger region can help guide visitors to important sites, destinations, or to share interesting information. These signs may be effective in encouraging people to experience a particular place or engage in an activity such as visiting the historic areas of Yadkinville. This concept could be expanded to develop a self-guided walking tour of historic downtown and neighborhoods. The greenway system would also benefit from interpretative signage.

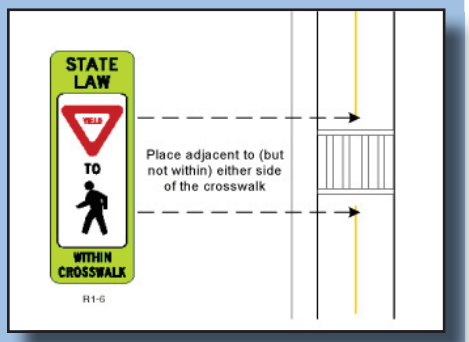
Sign Placement

Locate signs in prominent locations so they can be easily viewed. It is important to ensure they do not interfere with pedestrian and vehicular movement. For example, signs should not be placed within a sidewalk or reduce the clearance of a sidewalk to less than five feet.

Pedestrian Corridor Mapping

It is recommended that the Town of Yadkinville adopt consistent illustrative graphics to identify pedestrian routes in Yadkinville. Destinations such as schools, greenways, and the commercial development on Market Street should be identified so pedestrians are aware of distances and locations of these areas.

6.2 SCHOOL AREAS



Safe interconnectivity to schools from surrounding neighborhoods is a high priority and concern for everyone in any community. Safety programs should be developed and implemented at all schools within Yadkinville's planning jurisdiction. It is recommended that the Town of Yadkinville adopt a "Safe Routes to School" program to promote and support students walking and bicycling to school. This is a federal program to encourage and enable children to walk and bike to school safely and hopefully increase an opportunity to incorporate exercise into the children's daily schedule. These routes are usually patrolled by bicycle police officers. The National Center for Safe Routes to School is available to assist communities in developing and implementing programs and strategies to create successful results.

Safe Routes to School Programs help to reduce traffic congestion and traffic speeds around schools which allow children to experience a greater sense of independence and personal responsibility, as well as encourage them to learn important traffic safety skills. Schools should work with their communities to develop routes for children to take to and from school. These routes should include those with adult crossing guards, stop signs, traffic signals, and traffic calming measures. Involvement with the local police force is highly encouraged.

In addition to the **School Zone Treatments** outlined in the previous section, the following safety standards should be implemented at all school locations:

- Install sidewalks within a half mile radius of all schools
- Incorporate traffic calming measures such as decorative pavement and those discussed in Section 5 within a half mile radius of all schools
- Incorporate signage to alert motorists that they are in a school zone. Signs placed in the median or the middle of the street are effective
- Adopt a Safe Routes to School Program in all elementary and middle schools
- Provide educational programs or sessions on pedestrian and bicycle safety at all schools

School Speed Sign
Photo credit: ITE Pedestrian Bicycle Council

School Crossing Guard
Photo credit: Dan Burden

6.3 SAFETY EDUCATION PROGRAMS

Pedestrian safety and health programs can help target problem areas and educate the residents of Yadkinville about safety and accessibility issues. Below is a description of safety and health programs which should be implemented in the Town of Yadkinville planning jurisdiction.

School Zone Safety Program

Creating a School Zone Safety Program provides information to students, parents, and community members of the safe routes to school and safe pedestrian behavior. It will also help identify areas in need of additional attention such as problem areas or locations in need of traffic calming devices. The School Zone Safety Program can be done in conjunction with a Safe Routes to School Program. The school, school district, and safety committee can develop a safety plan which consists of the following:

- Develop a school route plan
- Evaluate and configure the school site
- Consider other safety elements
- Distribute and maintain the plan

Safe Routes to School Program

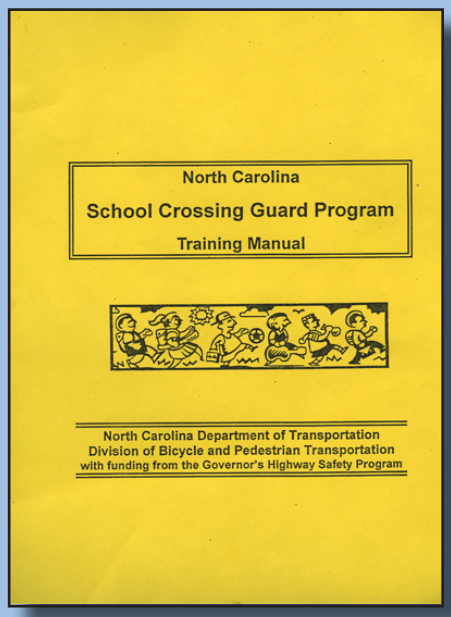
Safe Routes to School (SRTS) is a program focused on encouraging and enabling children to walk and bike to school safely. The program assists in the facilitation of planning, developing and implementing projects that improve safety for pedestrians and bicyclists and helps make these an appealing mode of transportation for children and adults alike. SRTS encourages infrastructure improvements, education programs, and funding to provide safe and comfortable pedestrian environments and instill active lifestyles at an early age. For more information please visit:

www.ncdot.org/transit/bicycle/safety/programs_initiatives/Safe_Routes.html

Pedestrian Safety Campaign

The Pedestrian Safety Campaign is available to municipalities and communities within North Carolina. States and communities are eligible to receive a free Pedestrian Safety Campaign Planner from the Federal Highway Administration which is a tool kit for municipalities to customize and apply within their communities. The materials provided in the Campaign Planner are available in multiple medias: television, radio, cinema, and print advertising. A Step by Step Guide is also available to assist in implementing the campaign at the local level. The purposes of the campaign are as follows:

North Carolina DOT Share the Road warning sign



- Educate motorists that pedestrians and bicyclists are legitimate road users and they should expect them on or near roadways.
- Educate pedestrians on how to minimize risks to their safety
- Develop program materials which explain pedestrian facilities such as sidewalks, crosswalks, pedestrian refuge islands, etc., and their purpose and function

For more information please visit:
safety.fhwa.dot.gov/local_program/pedcampaign/index.htm

Share the Road Initiative

The North Carolina Department of Transportation (NCDOT) Division of Bicycle and Pedestrian Transportation is dedicated to educating the general public of pedestrian and bicycle rights and responsibilities. The Share the Road Initiative is an example of NCDOT's efforts to educate motorists of the presence of pedestrians and bicyclists in traffic areas. Additionally, the Division of Bicycle and Pedestrian Transportation assisted in the development of the North Carolina Driver's Handbook which includes sections devoted to pedestrian and bicycle rights and responsibilities.

For more information please refer to:
www.ncdot.org/transit/bicycle/safety/programs_initiatives/share.html

North Carolina School Crossing Guard Training Program and Manual

In 1998 NCDOT Division of Bicycle and Pedestrian Transportation developed a program to train law enforcement officers who in turn trained school crossing guards. The purpose of the course is to standardize procedures and instruction of school crossing guards, as well as educate children on how to cross streets safely. In 1999 the program was updated and is currently training law enforcement officers in 42 jurisdictions. **Currently the Town of Yadkinville is not included on this list and the law enforcement department should contact the Division of Bicycle and Pedestrian Transportation to participate in the program.**

For the NC School Crossing Guard Training Manual and more information please visit:
www.ncdot.org/transit/bicycle/safety/programs_initiatives/crossing.html

National Walk a Child to School Program

Together the Partnership for a Walkable America, the US Department of Transportation, and the Pedestrian & Bicycle Information Center sponsor the National Walk a Child to School Program. The purpose of the program is to increase the number of children who walk to school. The NCDOT Division of Bicycle and Pedestrian Transportation supports this program.

Typically the program is held in October with the following objectives:

- Encourage adults including teachers, parents, staff, community members to teach children safe pedestrian behavior
- Encourage adults to help children identify and use safe routes to school
- Remind everyone in the community of the health benefits of walking on a daily basis

For more information please visit: www.ncdot.org/transit/bicycle/safety/programs_initiatives/walk2school_national.html

Walk a Child to School in North Carolina

To encourage North Carolina residents to walk to school, the State of North Carolina has its own initiative. Support from the NC Governor's Highway Safety Program has helped make this a growing and successful program. To view a list of schools participating visit: www.ncdot.org/transit/bicycle/safety.programs_initiatives/walk2school_NC2001.html

School Crossing Guard. *Photo credit: Dan Burden*

Walk to School Day Event *Photo credit: Dan Burden*

6.4 ENCOURAGEMENT AND PROMOTION

The Town of Yadkinville is committed to improving the pedestrian environment and overall walkability of the Town. This section deals with how the Town and its residents can encourage and promote walking as a viable mode of transportation as well as improving community interaction.

Education about pedestrian facilities and routes are an important component of the Town of Yadkinville Pedestrian Master Plan's success. Following the design and implementation process, it is imperative that education about pedestrian and bicyclist facilities as well as safety continue to be addressed. This may be done through advocacy groups, pedestrian citizen committees, schools and the media. This will ensure that new challenges are addressed and that opportunities are identified and capitalized.

Maintenance Policies and Enforcement

Maintaining an accessible, functional, and clean pedestrian environments is essential to a walkable community. Regular upkeep and maintenance insuring sidewalks, greenways and other pathways are clear of debris and other obstructions demonstrates a municipal commitment to a walkable environment. In order to meet the needs of maintenance and enforcement, the Town of Yadkinville should evaluate current maintenance policies to determine if they are adequate to include implement of the recommendations in this Pedestrian Master Plan.

Incorporate Pedestrian Improvements Early in the NCDOT Planning Process

To insure pedestrian improvements are accepted, they must be incorporated early in the NCDOT planning process for streets under consideration. Promoting pedestrian facilities and their ongoing maintenance into the forefront of roadway design increases the possibility that they will be included in annual improvements. It is very difficult and costly to attempt to incorporate pedestrian facilities into a roadway improvement project after it has been accepted for NCDOT maintenance.

Identify Funding Sources

Identifying sources of funding which support pedestrian facilities and their construction helps ease the burden of expensive pedestrian facility projects. There are a variety of funding programs and sources from the Federal, State, and local level. For a complete list of funding sources please see Section 7.3.

Education Programs and Events

Pedestrian and bicycle education programs aimed at all residents of Yadkinville regardless of age or ability encourage people to walk and bike safely. These types of programs can easily be organized through the Parks and Recreation Department and public school systems. For example, the Safe Routes to School Program is an excellent example for how a school program can educate children about safe pedestrian behaviors and pedestrian routes. The Town has the opportunity to team with schools, senior centers, and other groups to educate all residents about safe pedestrian behavior and routes.

Tourism and Local Events

Events such as "Walk-to-School" days and "Walk-for-Health" days can help spark interest, attract visitors, and bring the community together.

Children Walking and Biking to School. *Photo credit: Dan Burden*

PROJECT DEVELOPMENT AND COSTS

7.1 PRIORITIES

Priorities for implementation of the Pedestrian Master Plan are the corridors in Tier 1 or Short Term Improvements category. These areas represent the most heavily used pedestrian corridors and those which provide links between destinations such as schools and commercial areas. The priorities within these two categories are outlined below:

Short Term - Phase 1

Project Type	Project Description
Pedestrian Refuge Island	Intersection of US 601 Hwy and Hemlock Street
Intersection Improvement/ Mid-Block Crossing	Provide traffic calming methods such as "bulb outs" or curb extensions in concert with narrow planted medians along E. Main Street in an effort to reduce vehicular speeds. Incorporating a mid block crossing near the entrance to the Yadkin Arts Council Building in combination with curb extensions will increase pedestrian visibility and safety by reducing the crossing distance and slowing vehicles. (*Note: There must be a demonstrated need for a crosswalk to be installed, ie: a significant number of pedestrians crossing at that location, in order to be considered by NCDOT)*
Intersection Improvements	Improve sight triangles and overall safety for pedestrians, cyclists, and motorists along Main Street, specifically at the intersection of Main Street and Jackson Street. Improvements would consist of traffic calming methods including the addition planted "bulb outs", or curb extensions, planted medians ADA compliant ramps on either side of the street, and striped crosswalks
Sidewalk Construction	**C**omplete minimum 5' wide concrete sidewalk along the Eastern side of US 601 Hwy beginning at US 421 Hwy by-pass continuing South
Intersection Improvements	nstallation of highly visible striped crosswalk and "Ped Heads" or Pedestrian Signals at the intersection of Pine Valley and US 601 Hwy
Sidewalk Improvements	Complete sidewalks and improve traffic calming methods along E. Main Street to bring them to compliance with current ADA codes as well as more pedestrian friendly and safe.
Sidewalk Construction	Improve or construct new 5' wide concrete sidewalk along W. Main Street in front of the Post Office to reduce curb cuts and grade issues resulting from the transition between concrete and asphalt.

Sidewalk Construction	Utilize available road shoulder width to safely move pedestrians under the US 421 Hwy by-pass bridge. Improvements in this location may include the construction of ADA compliant ramps onto and off of the pedestrian refuge islands (monolithic concrete medians), possible safety lighting,and the addition of jersey barriers or other separation method to safely delineate the pedestrian and vehicular environments.
Intersection Improvements	Intersection improvements at the intersection of Main Street and US 601 Hwy and the intersection of Elm Street and US 601 Hwy. Improvements include improved ADA access ramps at all four corners of both intersections, highly visible striped crosswalks to meet NCDOT guidelines and regulations, and planted "bulb outs."
Sidewalk Construction	Construct minimum 5' wide concrete sidewalk along N. Lee Avenue
Sidewalk Construction	Construct minimum 5' wide concrete sidewalk along northern side of Elm Street
Sidewalk Construction	Construct minimum 5' wide concrete sidewalk along the North side of Hemlock Street
Sidewalk Construction	Construct minimum 5' wide concrete sidewalk along East side of Van Buren Street
Sidewalk Construction	Construct minimum 5' concrete sidewalk along Willow Street
Sidewalk Construction	Construct minimum 5' concrete sidewalk along Monroe Street

Long Term - Phase 2

Sidewalk Construction	As funding becomes available construct, at minimum, 5' wide concrete sidewalks throughout the project area to connect missing segments of sidewalk in an effort to create a continuous pedestrian system.
Sidewalk Construction	Rehabilitate existing sidewalks throughout downtown to create a safer pedestrian environment. Improvements include addressing grade issues, installing ADA compliant ramps into businesses and at intersections, repairing broken concrete sidewalks in disrepair, and eliminating safety issues revolving around unsafe sight triangles caused by power poles, parked cars, and obstructions in the sidewalk.

Sidewalk Construction	Construct minimum 5' wide concrete sidewalk along the North side of Birch Street
Sidewalk Construction	Construct minimum 5' wide concrete sidewalk along the South side of Cherry Street
Trail Construction/ Creation	Upper Yadkinville Multi-Use Trail-The Town should take advantage of Sewer and Water line easements North of downtown near the newly constructed Yadkinville Park, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.
Trail Construction/ Creation	Middle Yadkinville Multi-Use Trail-The Town should take advantage of Sewer and Water line easements throughout the core of Yadkinville as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.
Trail Construction/ Creation	Lower Yadkinville Multi-Use Trail-The Town should take advantage of Sewer and Water line easements South of downtown Yadkinville and US Hwy 421 by-pass, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.
Sidewalk Construction	Construct at minimum a 5' wide concrete sidewalk along the western side of US 601 Hwy from Town Limits to Town Limits to provide continuous access for pedestrians to walk through Yadkinville and provide regional access opportunities with adjacent municipalities.

Following the improvements of the above, the Long Term Projects should take place as soon as funding sources or capital expenditures become available. These corridors will provide a finer degree of connectivity throughout Yadkinville and are not in immediate need of improvement.

7.2 Costs

7.2 COSTS

The Pedestrian Master Plan provides numerous recommendations for the integration and locations for pedestrian facilities. Below is a list of sample costs for recommended pedestrian facilities. Other factors and cost fluctuations can increase actual costs, these estimates are intended to serve only as a rough guide.

Item	Cost
Sidewalks (5' wide concrete)	*$25 per linear yard**
Concrete Curb and Gutter	*$15-$20 per linear foot**
Standard Handicap Ramp	*$500-$800 per corner**
Simple Crosswalk (Signs and Pavement markings)	*$500-$1,500 each**
Decorative Crosswalk	*$5,000-$15,000 each**
Pedestrian Refuge Island (Signage and Markings)	*$7,500-$40,000 each**
Pedestrian Signal	*$40,000-$75,000 each**
Pedestrian Sign	*$250 each**
Speed Hump (Signage and Markings)	*$1,500-$2,500 each**
Curb Extensions	*$5,000-$25,000 per corner*
Chokers	*$10,000-$30,000*
Raised Intersections	*$35,000-$80,000*
Roundabouts	*$50,000-$550,000*
Chicane	*$20,000-$40,000*

The following list provides suggestions to reduce the total costs of pedestrian facilities:

- Include pedestrian facilities such as sidewalks in all road construction projects (water/sewer lines, underground utility projects, roadway widening, etc.).

- Combine pedestrian facility projects. Rather than constructing sidewalks along one side of a street, combine it with several other smaller sidewalk projects to help reduce costs.

- Combine pedestrian facility projects with other compatible uses, such as School Bonds.

- Advanced land and right of way acquisition can help disperse the total costs of pedestrian facility projects. Growth and development trends indicate where future pedestrian facilities may be necessary.

- Utilize funding sources such as Tax Incremental Financing Bonds to offset costs through incremental payment.

7.3 Funding

Below is a list of sample costs for recommended facilities for greenways and off-road trails. As other factors and cost fluctuations can increase actual costs, these estimates are intended to serve as a rough guide.

Item	Cost*
Boardwalk	*$160 per linear foot*
Information Sign	*$250 each*
Simple Crosswalk (Signs and Pavement markings	*$500-$1,500 each*
Decorative Crosswalk	*$5,000-$15,000 each*
Pedestrian Refuge Island (Signage and Markings)	*$7,500-$40,000 each*
Pedestrian Signal	*$40,000-$75,000 each*
*Multi-Purpose Path (8-10' wide asphalt) Clearing, Grading and Drainage***	*$40-$60 per linear foot $100 per linear foot***
Benches	*$600 each*
Trash Receptacles	*$200-$800 each*
Restrooms	*$40,000 each*

The following list provides suggestions to reduce the total construction costs for greenways and off-road trails:

- Upon Investigation, collecting *Impact Fees* can be from developers to help pay for improvements and necessary facilities to serve new growth. These fees are charged to all new development and alleviate the burden on existing residents to pay for new growth. These fees can be used for greenways and obtaining the land necessary to serve a growing community.
- *In-Lieu-Of Fees* allow a developer to pay up front the cost of greenways rather than construct the section within their development. This allows a municipality to use the funds for the appropriation of optimum land for conservation and greenway as well as park development rather than accepting less than optimum parcels that meet the minimum standards for greenways.
- *Volunteers* have the potential to significantly contribute to the maintenance and development of greenways. The Parks and Recreation Department can organize a volunteer work day for participants, as well as encourage other groups such as scouts, churches, and schools to contribute to fund-raising and maintenance. This not only alleviates the burden of maintenance and fund-raising, it can also increase the awareness of the greenway system and bring the community together.

7.3 FUNDING

Pedestrian projects like the Yadkinville Pedestrian Master Plan are eligible for funding from many of the major Federal-aid highway, transit, safety, State, and private programs. This section will focus on potential funding sources for the implementation of the Yadkinville Pedestrian Master Plan.

Local, state, federal, and private funding is available to support the planning, construction, right of way acquisition and maintenance of bicycle and pedestrian facilities. Available funding sources are related to a variety of purposes including transportation, water quality, hazard mitigation, recreation, air quality, wildlife protection, community health, and economic development. This appendix identifies a list of some of the bicycle and pedestrian facility funding opportunities available through federal, state, nonprofit and corporate sources. An important key to obtaining funding is for local governments to have adopted plans for greenway, bicycle, pedestrian or trail systems in place prior to making an application for funding.

FUNDING ALLOCATED BY STATE AGENCIES

Funding Opportunities Through NCDOT:

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.

The division has an annual budget of $6 million. 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. Another $500,000 of the division's funding is available for miscellaneous projects.

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 allocates $100,000 annually from each division's budget 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 nonattainment 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 nonattainment 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 2009. 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 Sarah O'Brien, Interim Safe Routes to School Coordinator for the NCDOT Division of Transportation Mobility and Safety Program (919)-515-8898.

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

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

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

NC Adopt-A-Trail Grant Program
This program, operated by the Trails Section of the NC Division of State Parks, offers annual grants to local governments to build, renovate, maintain, sign and map and create brochures for pedestrian trails. Grants are generally capped at about $5,000 per project and do not require a match. A total of $108,000 in Adopt-A-Trail money is awarded annually to government agencies. Applications are due during the month of February. For more information, visit : http://ils.unc.edu/parkproject/trails/grant.html.

Recreational Trails Program

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

The grant application is available and instruction handbook is available through the State Trails Program website at http://www.fhwa.dot.gov/environment/rectrails/. Applications are due during the month of February. For more information, call (919) 715-8699.

North Carolina Parks and Recreation Trust Fund (PARTF)

The fund was established in 1994 by the North Carolina General Assembly and is administered by the Parks and Recreation Authority. Through this program, several million dollars each year are available to local governments to fund the acquisition, development and renovation of recreational areas. 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

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 town-maintained streets. For more information, visit http://www.ncdot.org/programs/Powell_Bill/.

Clean Water Management Trust Fund

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

Natural Heritage Trust Fund

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

North Carolina Conservation Tax Credit Program

North Carolina has a unique incentive program to assist land-owners to protect the environment and the quality of life. A credit is allowed against individual and corporate income taxes when real property is donated for conservation purposes. Interests in property that promote specific public benefits may be donated to a qualified recipient. Such conservation donations qualify for a substantial tax credit. For more information, visit: www.enr.state.nc.us/conservationtaxcredit/.

Urban and Community Forestry Assistance Program

This program offers small grants that can be used to plant urban trees, establish a community arboretum, or other programs that promote tree canopy in urban areas. The program operates as a cooperative partnership between the NC Division of Forest Resources and the USDA Forest Service, Southern Region. To qualify for this program, a community must

pledge to develop a street-tree inventory, a municipal tree ordinance, a tree commission, and an urban forestry-management plan. All of these can be funded through the program. For more information, contact the NC Division of Forest Resources. For more information and a grant application, contact the NC Division of Forest Resources and/or visit http://www.dfr.state.nc.us/urban/urban_grantprogram.htm.

Ecosystem Enhancement Program

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

Conservation Reserve Enhancement Program (CREP)

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

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

The program is managed by the NC Division of Soil and Water Conservation. For more information, visit www.enr.state.nc.us/dswc/pages/crep.html

Agriculture Cost Share Program

Established in 1984, this program assists farmers with the cost of installing best management practices (BMPs) that benefit water quality. The program covers as much as 75 percent of the costs to implement BMPs. The NC Division of Soil and Water Conservation within the NC Department of Environment and Natural

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

Water Resources Development Grant Program

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

Small Cities Community Development Block Grants

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

North Carolina Health and Wellness Trust Fund

The NC Health and Wellness Trust Fund was created by the General Assembly as one of 3 entities to invest North Carolina's portion of the Tobacco Master 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.For more information, visit: www.healthwellnc.com/

The North Carolina Division of Forest Resources
Urban and Community Forestry Grant can provide funding for a variety of projects that will help toward planning and establishing street trees as well as trees for urban open space. See: http://www.dfr.state.nc.us/urban/urban_ideas.htm

Funding Allocated by Federal Agencies

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

The Community Development Block Grant (HUD-CDBG)
The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic

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

USDA Rural Business Enterprise Grants

Public and private nonprofit groups in communities with populations under 50,000 are eligible to apply for grant assistance to help their local small business environment. $1 million is available for North Carolina on an annual basis and may be used for sidewalk and other community facilities. 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

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.

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.

Installment Purchase Financing

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

Taxes

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

Sales Tax

In North Carolina, the state has authorized a sales tax at the state and county levels. Local governments that choose to exercise the local option sales tax (all counties currently do), use the tax revenues to provide funding for a wide variety of projects and activities. Any increase in the sales tax, even if applying to a single county, must gain approval of the state legislature. 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 a municipality's activities. However, the revenues from property taxes can also be used to pay debt service on general obligation bonds issued to finance greenway system acquisitions. Because of limits imposed on tax rates, use of property taxes to fund greenways could limit the municipality's ability to raise funds for other activities. Property taxes can provide a steady stream of financing while broadly distributing the tax burden. In other parts of the country, this mechanism has been popular with voters as long as the increase is restricted to parks and open space. Note, other public agencies compete vigorously for these funds, and taxpayers are generally concerned about high property tax rates.

Excise Taxes

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

Occupancy Tax

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

Fees

Three fee options that have been used by local governments to assist in funding pedestrian and bicycle facilities are listed here:

Stormwater Utility Fees

Greenway sections may be purchased with stormwater fees, if the property in question is used to mitigate floodwater or filter pollutants.

Stormwater charges are typically based on an estimate of the amount of impervious surface on a user's property. Impervious surfaces (such as rooftops and paved areas) increase both the amount and rate of stormwater runoff compared to natural conditions. Such surfaces cause runoff that directly or indirectly 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.

Streetscape Utility Fees

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

Impact Fees

Developers can be required to provide greenway impact fees through local enabling legislation. Impact fees, which are also known as capital contributions, facilities fees, or system development charges, are typically collected from developers or property owners at the time of building permit issuance to pay for capital improvements that provide capacity to serve new growth. The intent of these fees is to avoid burdening existing customers with the costs of providing capacity to serve new growth ("growth pays its own way"). Greenway impact fees are designed to reflect the costs incurred to provide sufficient capacity in the system to meet the additional needs of a growing community. These charges are set in a fee schedule applied uniformly to all new development. Communities that institute impact fees must develop a sound financial model that enables policy makers to justify fee levels for different user groups, and to ensure that revenues generated meet (but do not exceed) the needs of development. Factors used to determine an appropriate impact fee amount can include: lot size, number of occupants, and types of subdivision improvements. If Holly Springs is interested in pursuing open space impact fees, it will require enabling legislation to authorize the collection of the fees.

Exactions

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

In-Lieu-Of Fees

As an alternative to requiring developers to dedicate on-site greenway sections that would serve their development, some communities provide a choice of paying a front-end charge for off-site protection of pieces of the larger system. Payment is generally a condition of development approval and recovers the cost of the off-site land acquisition or the development's proportionate share of the cost of a regional facility serving a larger area. Some communities prefer 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.

Bonds and Loans

Bonds have been a very popular way for communities across the country to finance their pedestrian and greenway projects. A number of bond options are listed below. Contracting with a private consultant to assist with this program may be advisable. Since bonds rely on the support of the voting population, an education and awareness program should be implemented prior to any vote. Billings, Montana used the issuance of a bond in the

amount of $599,000 to provide the matching funds for several of their TEA-21 enhancement dollars. Austin, Texas has also used bond issues to fund a portion of their bicycle and trail system.

Revenue Bonds

Revenue bonds are bonds that are secured by a pledge of the revenues from a certain local government activity. The entity issuing bonds, pledges to generate sufficient revenue annually to cover the program's operating costs, plus meet the annual debt service requirements (principal and interest payment). Revenue bonds are not constrained by the debt ceilings of general obligation bonds, but they are generally more expensive than general obligation bonds.

General Obligation Bonds

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

Special Assessment Bonds

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

State Revolving Fund (SRF) Loans

Initially funded with federal and state money, and continued by funds generated by repayment of earlier loans, State Revolving Funds (SRFs) provide low interest loans for local governments to fund water pollution control and water supply 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).

Other Local Options

Facility Maintenance Districts

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

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

Partnerships

Another 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 that make critical connections to place of business would be targeted for private partners’ monetary support following a successful master planning effort. Potential partners include major employers which are located along or accessible to pedestrian facilities such as multi-use paths or greenways. Name recognition for corporate partnerships 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.

Local Trail Sponsors

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished

through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

Volunteer Work

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

Private Foundations and Organizations

Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are a few examples of private funding opportunities available in North Carolina.

Land for Tomorrow Campaign

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

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 & 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/.

Z. Smith Reynolds Foundation

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

North Carolina Community Foundation

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

National Trails Fund

In 1998, the American Hiking Society created the National Trails Fund, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. Each year, 73 million people enjoy foot trails, yet many of our favorite
trails need major repairs due to a $200 million in badly needed maintenance. National Trails Fund grants give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. For 2005, American Hiking distributed over $40,000 in grants thanks to the generous support of Cascade Designs and L.L.Bean, the program's Charter Sponsors. To date, American Hiking has granted more than $240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from $500 to $10,000 per project.

What types of projects will American Hiking Society consider? 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 Safe, Accountable, Flexible, Efficient, Transporation Equity Act (SAFETEA-LU)

SAFETEA-LU is the primary source of Federal funding for pedestrian and bicycle transportation projects. SAFETEA-LU is divided into sections which provide funding for greenways, sidewalks, and pedestrian corridors. The sections which apply to the recommendations provided in the Yadkinville Pedestrian Master Plan include:

Surface Transporation Program (STP) Funds

These funds may be used for the construction of pedestrian facilities such as walkways and non-construction projects such as route maps, brochures, and public service announcements which deal with safety. In order for the projects to be eligible they must be related to pedestrian transportation and be part of a Long Range Transportation Plan.

National Recreational Trails Fund Act (NRTFA)

These funds may be used for the development of non-motorized and motorized trails. Typically these funds are spent on the acquisition of easements, trail development, construction and maintenance.

State Construction Funds

Funds from North Carolina roadway construction may be used for the construction of sidewalks which are part of roadway improvement projects. NCDOT will pay one hundred percent of the costs required to replace sidewalks which are removed due to the widening of a roadway.

American Greenways DuPont Awards

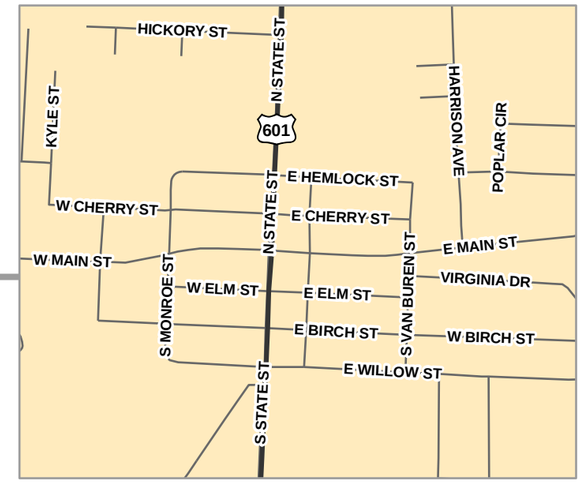
These are small grants that range from $250-$2,000 which are used to stimulate the planning, design, and development of greenways. These funds may be used for a variety of purposes such as mapping, ecological assessments, surveying, brochures, interpretative signs and displays, and trail construction.

SYSTEM MAPS

8.1 Project Maps

Yadkinville, NC

Site Map



Yadkinville

Yadkinville ETJ

Streets

Streams and Lakes

Open Space

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0 750 1,500 3,000 Feet

1 inch = 1,500 feet

Yadkinville, NC

Existing Conditions

NOTE: Pedestrian routes represent additional frequently traveled pedestrian corridors that currently lack sidewalks. These areas also represent proposed sidewalk routes.

- Sidewalks
- Pedestrian Routes
- Paths
- Destinations
- Barriers & Constraints
- Yadkinville
- Yadkinville ETJ
- Streets
- Streams and Lakes
- Open Space

Existing Destinations

Label	Name
1	Residential Neighborhood
2	Courthouse & Municipal Lot
3	Special Needs Home
4	Hinshaw Gardens
5	Hospital
6	Post Office
7	Yadkinville Elementary School
8	Police Station
9	Public Library
10	Yadkin Success Academy
11	Medical Offices
12	Grocery
13	Restaurants
14	Shopping Center
15	Residential Apartments

Barriers

Label	Name
1	Crossing Multiple Travel Lanes
2	421 Underpass
3	Grade Issues, Poor Site Triangles throughout Downtown & Obstacles in Sidewalk
4	Lack of Sidewalk
5	Lack of Lighting and Unkempt Vegetation infringing on sidewalk
6	Sidewalk on Opposite Side of Road from Businesses

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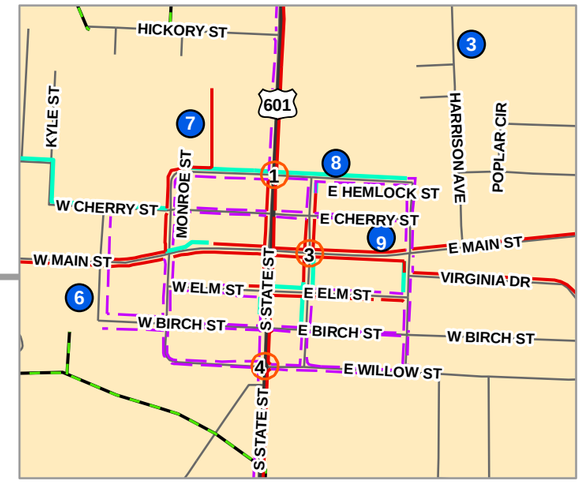
Yadkinville, NC

Existing & Proposed Conditions



- Existing Sidewalks
- Proposed Sidewalks
- Proposed Multi-Use Trail
- Existing Paths
- Existing Destinations
- Existing Barriers & Constraints
- Yadkinville
- Yadkinville ETJ
- Streets
- Streams and Lakes
- Open Space

Existing Destinations

Label	Name
1	Residential Neighborhood
2	Courthouse & Municipal Lot
3	Special Needs Home
4	Hinshaw Gardens
5	Hospital
6	Post Office
7	Yadkinville Elementary School
8	Police Station
9	Public Library
10	Yadkin Success Academy
11	Medical Offices
12	Grocery
13	Restaurants
14	Shopping Center
15	Residential Apartments

Barriers

Label	Name
1	Crossing Multiple Travel Lanes
2	421 Underpass
3	Grade Issues, Poor Site Triangles throughout Downtown & Obstacles in Sidewalk
4	Lack of Sidewalk
5	Lack of Lighting and Unkempt Vegetation infringing on sidewalk
6	Sidewalk on Opposite Side of Road from Businesses

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0 750 1,500 3,000 Feet

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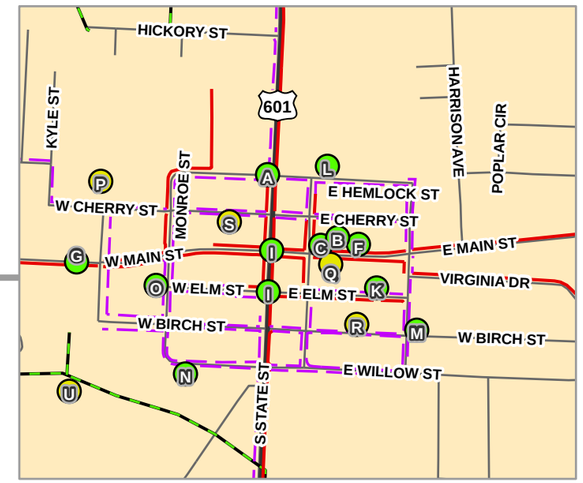
Yadkinville, NC

Recommended Projects

Ramps and Striped Crosswalks at all Downtown Intersections



- Existing Sidewalks
- Proposed Sidewalks
- Proposed Multi-Use Trail
- Short Term Improvements
- Long Term Improvements
- Yadkinville
- Yadkinville ETJ
- Streets
- Streams and Lakes
- Open Space

Recommended Projects	
	Name
Short Term	
A	Pedestrian Refuge Island & Crosswalk Striping
B	Mid Block Crossing near Yadkin Arts Council Building
C	Intersection Improvements for Traffic Calming along Main Street
D	Sidewalk on East Side of US 601 HWY beginning at US 421 Hwy by-pass Continuing South
E	Intersection Improvements for Crosswalk Stripping Pine Valley and US 601 Hwy
F	Intersection Improvements for Traffic Calming along E. Main Street
G	Sidewalk Construction in front of the Post Office
H	Sidewalk Construction under US 421 Hwy By-pass bridge
I	Intersection Improvements for Crosswalk Stripping along US 601 Hwy at Main Street and Elm Street
J	Sidewalk Construction along N. Lee Avenue
K	Sidewalk Construction along the North Side of Elm Street
L	Sidewalk Construction along the North Side of Hemlock Street
M	Sidewalk Construction along the East Side of Van Buren Street
N	Sidewalk Construction along Willow Avenue
O	Sidewalk Construction along Monroe Avenue
Long Term	
P	Sidewalk Construction as funding becomes available to connect missing segments of sidewalk
Q	Rehabilitation and Construction of Sidewalks throughout Downtown Area
R	Sidewalk Construction along the North side of Birch Street
S	Sidewalk Construction along the South side of Cherry Street
T	Upper Yadkinville Multi-Use Trail along Sewer and Water Easements
U	Middle Yadkinville Multi-Use Trail along Sewer and Water Easements
V	Lower Yadkinville Multi-Use Trail along Sewer and Water Easements
W	Sidewalk Construction along West Side of US 601 Hwy from Town Limits to Town Limits

NOTE: Refer to table in xyz section for more detailed information on improvements

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0 750 1,500 3,000 Feet

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PROJECT RECOMMENDATIONS

9.1 Short Term/Long Improvements

	Sidewalk Construction/Improvement Projects	SHORT TERM IMPROVEMENTS				
Rank	**Location**	**From**	**To**	**Distance**	**Estimated Cost**	**Federal and State Funding Sources (for more information and additional funding sources please refer to Chapter 7, section 7.3)**
1	Sidewalk Construction: Complete minimum 5' wide concrete sidewalk along the Eastern side of US 601 Hwy beginning at US 421 Hwy by-pass continuing South	US 421 Hwy by-pass	Pine Valley	1,000 LF	$17,900	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
2	Sidewalk Improvements: Complete and improve sidewalks along E. Main Street to bring them to compliance with current ADA codes as well as more pedestrian friendly and safe	Van Buren	US 601 Hwy	2,000 LF	$325,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
3	Sidewalk Construction: Improve or construct new 5' wide concrete sidewalk along W. Main Street in front of the Post Office to reduce curb cuts and grade issues resulting from the transition between concrete and asphalt.	Monroe St.	Madison St.	500 LF	$7,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
4	Sidewalk Construction: Utilize available road shoulder width to safely move pedestrians under the US 421 Hwy by-pass bridge. Improvements in this location may include the construction of ADA compliant ramps onto and off of the pedestrian refuge islands (monolithic concrete medians), possible safety lighting, and the addition of jersey barriers or other separation method to safely delineate the pedestrian and vehicular environments.	421 By-pass North entrance Ramp	421 By-pass South entrance ramp	n/a	$8,500-$10,500	NCDOT TIP Funding, NCDOT Incidental Projects Funding, NCDOT Incidental Project Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants,
5	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along N. Lee Avenue	W. Main St.	US 601 Hwy	3,750 LF	$52,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants, National Scenic Byway Federal Funds
6	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along northern side of Elm Street	Van Buren	US 601 Hwy	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
7	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along the North side of Hemlock Street	Van Buren	US 601 Hwy	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
8	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along East side of Van Buren Street	Willow Street	Hemlock St.	1,300 LF	$18,055	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
9	Sidewalk Construction: Construct minimum 5' concrete sidewalk along Willow Street	Monroe St.	Van Buren	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
10	Sidewalk Construction: Construct minimum 5' concrete sidewalk along Monroe Street	Cherry St.	Willow St	1,300 LF	$18,055	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants

	Intersection Improvement Projects	SHORT TERM IMPROVEMENTS				
Rank	Location	From	To	Distance	Estimated Cost	Federal and State Funding Sources (for more information and additional funding sources please refer to Chapter 7, section 7.3)
1	Pedestrian Refuge Island: Intersection of US 601 Hwy and Hemlock Street	n/a	n/a	n/a	$30,654	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, USDA Rural Business Enterprise Grants,
2	Intersection Improvement/Mid Block Crosswalk: Provide traffic calming methods such as “bulb outs” or curb extensions in concert with narrow planted medians along E. Main Street in an effort to reduce high vehicular speeds. Incorporating a mid-block crossing near the entrance to the Yadkin Arts Council Building in combination with the curb extensions will increase pedestrian visibility and safety by reducing the crossing distance and slowing vehicles. The crosswalk should be highly visible and terminate at ADA compliant curb ramps. (Note: There must be a demonstrated need for a crosswalk to be installed, ie: a significant number of pedestrian crossing at that location, in order to be considered by NCDOT)	n/a	n/a	n/a	$9,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, Powell Bill Program, Urban and Community Forestry Assistance Program, USDA Rural Business Enterprise Grants
3	Intersection Improvements: Improve sight triangles and overall safety for pedestrians, cyclists, and motorists along Main Street, specifically at the intersection of Main Street and Jackson Street. Improvements would consist of traffic calming methods including the addition of planted "bulb outs", or curb extensions, planted medians ADA compliant ramps on either side of the street, and striped crosswalks	n/a	n/a	n/a	$7,500	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, Powell Bill Program, Urban and Community Forestry Assistance Program, USDA Rural Business Enterprise Grants
4	Intersection Improvements: Installation of highly visible striped crosswalk and "Ped Heads" or Pedestrian Signals at the intersection of Pine Valley and US 601 Hwy	n/a	n/a	n/a	$2,500-$75,000	NCDOT TIP Funding, NCDOT Incidental Projects Funding, NCDOT Incidental Project Funding, Powell Bill Program, USDA Rural Business Enterprise Grants,
5	Intersection Improvements: Intersection improvements at the intersection of Main Street and US 601 Hwy and the intersection of Elm Street and US 601 Hwy. Improvements include improved ADA access ramps at all four corners of both intersections, highly visible striped crosswalks to meet NCDOT guidelines and regulations, and planted "bulb outs."	n/a	n/a	n/a	$10,800	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, Powell Bill Program, USDA Rural Business Enterprise Grants, USDA Rural Business Enterprise Grants

	Sidewalk Construction/Improvement Projects	LONG TERM IMPROVEMENTS				
Rank	**Location**	**From**	**To**	**Distance**	**Estimated Cost**	**Federal and State Funding Sources (for more information and additional funding sources please refer to Chapter 7, section 7.3)**
1	Sidewalk Construction: As funding becomes available construct, at minimum, 5' wide concrete sidewalks throughout the project area to connect missing segments of sidewalk in an effort to create a continuous pedestrian system.	To be Determined	To be Determined	To be Determined		Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
2	Sidewalk Construction: Rehabilitate existing sidewalks throughout downtown to create a safer pedestrian environment. Improvements include addressing grade issues, installing ADA compliant ramps into businesses and at intersections, repairing broken concrete sidewalks in disrepair, and eliminating safety issues revolving around unsafe sight triangles caused by power poles, parked cars, and obstructions in the sidewalk.	To be Determined	To be Determined	To be Determined		Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
3	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along the North side of Birch Street	Van Buren	US 601 Hwy	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
4	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along the South side of Cherry Street	Van Buren	US 601 Hwy	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
5	Sidewalk Construction: Construct at minimum a 5' wide concrete sidewalk along the western side of US 601 Hwy from Town Limits to Town Limits to provide continuous access for pedestrians to walk through Yadkinville and provide regional access opportunities with adjacent municipalities.	Northern Town Limit	Southern Town Limit	9,750 LF	$150,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants

	Multi Use Trail Construction Projects	LONG TERM IMPROVEMENTS				
Rank	Location	From	To	Distance	Estimated Cost	Federal and State Funding Sources (for more information and additional funding sources please refer to Chapter 7, section 7.3)
1	Trail Construction/Creation: **Upper Yadkinville Multi-Use Trail-**The Town should take advantage of Sewer and Water line easements North of downtown near the newly constructed Yadkinville Park, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.	Segments North of Downtown Yadkinville as illustrated and proposed on the Recommended Projects Map		8,400 LF (1.59Miles)	$1.1 Million	Safe Routes to School Infrastructure Grant PARTF Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, LWCF, NC Adopt-a-Trail Grant Program, Recreational Trails Program, CWMTF grant, CDBG Grants, HUD-CDBG, USDA Rural Business Enterprise Grants
2	Trail Construction/Creation: **Middle Yadkinville Multi-Use Trail-**The Town should take advantage of Sewer and Water line easements throughout the core of Yadkinville as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.	Segments traversing through the center of Yadkinville including Downtown as illustrated and proposed on the Recommended Projects Map		18,600 LF (3.52Miles)	$2.47 Million	Safe Routes to School Infrastructure Grant PARTF Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, LWCF, NC Adopt-a-Trail Grant Program, Recreational Trails Program, CWMTF grant, CDBG Grants, HUD-CDBG, USDA Rural Business Enterprise Grants
3	Trail Construction/ Creation: **Lower Yadkinville Multi-Use Trail**-The Town should take advantage of Sewer and Water line easements South of downtown Yadkinville and US Hwy 421 by-pass, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.	Easements South of downtown Yadkinville and US Hwy 421 by-pass as illustrated on the Recommended Projects Map		TBD	TBD	Safe Routes to School Infrastructure Grant PARTF Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, LWCF, NC Adopt-a-Trail Grant Program, Recreational Trails Program, CWMTF grant, CDBG Grants, HUD-CDBG, USDA Rural Business Enterprise Grants

	Recommended Projects	CUMULATIVE SHORT TERM IMPROVEMENTS LIST				
Rank	Location	From	To	Distance	Estimated Cost	Federal and State Funding Sources (for more information and additional funding sources please refer to Chapter 7, section 7.3)
1	Pedestrian Refuge Island: Intersection of US 601 Hwy and Hemlock Street	n/a	n/a	n/a	$30,654	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, USDA Rural Business Enterprise Grants,
2	Intersection Improvement/Mid Block Crosswalk: Provide traffic calming methods such as “bulb outs” or curb extensions in concert with narrow planted medians along E. Main Street in an effort to reduce high vehicular speeds. Incorporating a mid-block crossing near the entrance to the Yadkin Arts Council Building in combination with the curb extensions will increase pedestrian visibility and safety by reducing the crossing distance and slowing vehicles. The crosswalk should be highly visible and terminate at ADA compliant curb ramps. (Note: There must be a demonstrated need for a crosswalk to be installed, ie: a significant number of pedestrian crossing at that location, in order to be considered by NCDOT)	n/a	n/a	n/a	$9,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, Powell Bill Program, Urban and Community Forestry Assistance Program, USDA Rural Business Enterprise Grants
3	Intersection Improvements: Improve sight triangles and overall safety for pedestrians, cyclists, and motorists along Main Street, specifically at the intersection of Main Street and Jackson Street. Improvements would consist of traffic calming methods including the addition planted "bulb outs", or curb extensions, planted medians ADA compliant ramps on either side of the street, and striped crosswalks	n/a	n/a	n/a	$7,500	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, Powell Bill Program, Urban and Community Forestry Assistance Program, USDA Rural Business Enterprise Grants
4	Sidewalk Construction: Complete minimum 5' wide concrete sidewalk along the Eastern side of US 601 Hwy beginning at US 421 Hwy by-pass continuing South	US 421 Hwy by-pass	Pine Valley	1,00LF	$17,900	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
5	Intersection Improvements: Installation of highly visible striped crosswalk and "Ped Heads" or Pedestrian Signals at the intersection of Pine Valley and US 601 Hwy	n/a	n/a	n/a	$2,500-$75,000	NCDOT TIP Funding, NCDOT Incidental Projects Funding, NCDOT Incidental Project Funding, Powell Bill Program, USDA Rural Business Enterprise Grants,
6	Sidewalk Improvements: Complete and improve sidewalks along E. Main Street to bring them to compliance with current ADA codes as well as more pedestrian friendly and safe	Van Buren	US 601 Hwy	1,000 LF	$325,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
7	Sidewalk Construction: Improve or construct new 5' wide concrete sidewalk along W. Main Street in front of the Post Office to reduce curb cuts and grade issues resulting from the transition between concrete and asphalt.	Monroe St.	Madison St.	500 LF	$7,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
8	Sidewalk Construction: Utilize available road shoulder width to safely move pedestrians under the US 421 Hwy by-pass bridge. Improvements in this location may include the construction of ADA compliant ramps onto and off of the pedestrian refuge islands (monolithic concrete medians), possible safety lighting, and the addition of jersey barriers or other separation method to safely delineate the pedestrian and vehicular environments.	421 By-pass North entrance Ramp	421 By-pass South entrance ramp	n/a	$8,500-$10,500	NCDOT TIP Funding, NCDOT Incidental Projects Funding, NCDOT Incidental Project Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants,
9	Intersection Improvements: Intersection improvements at the intersection of Main Street and US 601 Hwy and the intersection of Elm Street and US 601 Hwy. Improvements include improved ADA access ramps at all four corners of both intersections, highly visible striped crosswalks to meet NCDOT guidelines and regulations, and planted "bulb outs."	n/a	n/a	n/a	$10,800	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, Powell Bill Program, USDA Rural Business Enterprise Grants, USDA Rural Business Enterprise Grants

10	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along N. Lee Avenue	W. Main St.	US 601 Hwy	3,750 LF	$52,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants, National Scenic Byway Federal Funds
11	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along northern side of Elm Street	Van Buren	US 601 Hwy	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
12	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along the North side of Hemlock Street	Van Buren	US 601 Hwy	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
13	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along East side of Van Buren Street	Willow Street	Hemlock St.	1,300 LF	$18,055	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
14	Sidewalk Construction: Construct minimum 5' concrete sidewalk along Willow Street	Monroe St.	Van Buren	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
15	Sidewalk Construction: Construct minimum 5' concrete sidewalk along Monroe Street	Cherry St.	Willow St	1,300 LF	$18,055	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants

	Recommended Projects	CUMULATIVE LONG TERM IMPROVEMENTS LIST				
Rank	Location	From	To	Distance	Estimated Cost	Federal and State Funding Sources (for more information and additional funding sources please refer to Chapter 7, section 7.3)
1	Sidewalk Construction: As funding becomes available construct, at minimum, 5' wide concrete sidewalks throughout the project area to connect missing segments of sidewalk in an effort to create a continuous pedestrian system.	To be Determined	To be Determined	To be Determined		Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
2	Sidewalk Construction: Rehabilitate existing sidewalks throughout downtown to create a safer pedestrian environment. Improvements include addressing grade issues, installing ADA compliant ramps into businesses and at intersections, repairing broken concrete sidewalks in disrepair, and eliminating safety issues revolving around unsafe sight triangles caused by power poles, parked cars, and obstructions in the sidewalk.	To be Determined	To be Determined	To be Determined		Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
3	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along the North side of Birch Street	Van Buren	US 601 Hwy	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
4	Sidewalk Construction: Construct minimum 5' wide concrete sidewalk along the South side of Cherry Street	Van Buren	US 601 Hwy	1,000 LF	$13,888	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants
5	Trail Construction/Creation: **Upper Yadkinville Multi-Use Trail-**The Town should take advantage of Sewer and Water line easements North of downtown near the newly constructed Yadkinville Park, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.	Segments North of Downtown Yadkinville as illustrated and proposed on the Recommended Projects Map		8,400 LF (1.59Miles)	$1.1 Million	Safe Routes to School Infrastructure Grant PARTF Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, LWCF, NC Adopt-a-Trail Grant Program, Recreational Trails Program, CWMTF grant, CDBG Grants, HUD-CDBG, USDA Rural Business Enterprise Grants
6	Trail Construction/Creation: **Middle Yadkinville Multi-Use Trail-**The Town should take advantage of Sewer and Water line easements throughout the core of Yadkinville as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.	Segments traversing through the center of Yadkinville including Downtown as illustrated and proposed on the Recommended Projects Map		18,600 LF (3.52Miles)	$2.47 Million	Safe Routes to School Infrastructure Grant PARTF Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, LWCF, NC Adopt-a-Trail Grant Program, Recreational Trails Program, CWMTF grant, CDBG Grants, HUD-CDBG, USDA Rural Business Enterprise Grants
7	Trail Construction/ Creation: **Lower Yadkinville Multi-Use Trail**-The Town should take advantage of Sewer and Water line easements South of downtown Yadkinville and US Hwy 421 by-pass, as shown on the Recommended Projects Map. These easements create opportunities for recreational greenways and multi use trails to safely move pedestrians from destination to destination using off-street routes. NOTE: Material Selection will greatly affect costs.	Segments South of downtown Yadkinville and US Hwy 421 by-pass as illustrated and proposed on the Recommended Projects Map		4,200 LF	$556,800	Safe Routes to School Infrastructure Grant PARTF Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, LWCF, NC Adopt-a-Trail Grant Program, Recreational Trails Program, CWMTF grant, CDBG Grants, HUD-CDBG, USDA Rural Business Enterprise Grants
8	Sidewalk Construction: Construct at minimum a 5' wide concrete sidewalk along the western side of US 601 Hwy from Town Limits to Town Limits to provide continuous access for pedestrians to walk through Yadkinville and provide regional access opportunities with adjacent municipalities.	Northern Town Limit	Southern Town Limit	9,750 LF	$150,000	Safe Routes to School Infrastructure Grant, NCDOT TIP Funding, NCDOT Incidental Projects Funding, CMAQ fund, Powell Bill Program, HUD-CDBG, USDA Rural Business Enterprise Grants

YADKINVILLE'S COMPREHENSIVE PEDESTRIAN MASTER PLAN

SURVEY/QUESTIONNAIRE

The Town of Yadkinville is initiating a comprehensive pedestrian planning process to help make Yadkinville a more livable and walk-able Town that is safer for pedestrians. This project is funded through a North Carolina Department of Transportation Division of Bicycle and Pedestrian Transportation Grant. We would like for you to share your thoughts and opinions about how the pedestrian environment in Yadkinville can be enhanced to improve safety, create a more enjoyable community and provide more connectivity to various destinations within the Town and surrounding region.

Please take a few minutes to fill out this questionnaire. Questionnaires must be returned to by Friday, March 13th, 2009 to Yadkinville Town Hall located @ 213 Van Buren Street, Yadkinville, NC 27055. Additional comments can be written in the space provided or on an attached piece of paper. The results of this survey and additional information about the Comprehensive Pedestrian Plan will be announced at future public meetings and in the Yadkin Ripple.

1. Where do you frequently walk in Yadkinville?

_____

_____

a. What park, greenway, boardwalk, sidewalk, path or public open space did you most recently use?

_____

b. How did you get there?

_____

2. List the most frequent destinations in Yadkinville where you walk or bike …

_____

_____

3. The main deterrents or barriers to walking and biking to destinations include… *(check all that apply)*
   - o Gaps in sidewalk or missing segments
   - o Uneven or broken surfaces
   - o Unsafe separation from vehicles
   - o Lack of lighting
   - o Absence of marked crosswalks
   - o Inadequate sidewalk width
   - o Tree branches, Trash-cans, or other obstructions
   - o Stray dogs
   - o Other_____

4. Areas I feel most unsafe while walking and biking include…

_____

_____

5. Areas I feel safest while walking and biking include…

_____

_____

6. I would walk and bike more places in Yadkinville if…

_____

_____

7. Do you have access to walking facilities from your home?
a) Yes ___ b) No___ From work? a) Yes ___ b) No___

9. If you have children, how do they get to school?
a) Car ___ b) Bus___ c) Walk___ d) Bike ____

10. Is there a safe route for your children to walk or bike to school? a) Yes ___ b) No___
If no- If there was a safe route, would you let your children walk or bike to school? a) Yes ___ b) No___

11. Do you currently use existing greenways? a) Yes ___ b) No___

12. How do you get to work?
a) Car ___ b) Bus___ c) Walk___ d) Bike ____

13. Would you bike or walk to work if you could?
a) Yes ___ b) No___ c) Maybe___

14. Getting around Yadkinville by car is easy and safe.
a) Agree ___ b) Disagree___ c) No Opinion___

15. Getting around Yadkinville on foot is easy and safe.
a) Agree ___ b) Disagree___ c) No Opinion___

16. Generally speaking, I feel safe and comfortable walking to and from places in Yadkinville.
a) Agree ___ b) Disagree___ c) No Opinion ___

17. Yadkinville needs improved pedestrian facilities (trails, greenways, multi-use trails).
a) Agree ___ b) Disagree___ c) No Opinion___

18. Yadkinville should promote and expand pedestrian connections.
a) Agree ___ b) Disagree___ c) No Opinion___

19. New and Future development in and around Yadkinville should be incorporated into the Town's public pedestrian system.
a) Agree ___ b) Disagree___ c) No Opinion___

20. Would you be willing to pay additional taxes (ie: $0.005) for improved sidewalks and other pedestrian / bicycle amenities?
a) Yes ___ b) No___

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1. Where do you frequently walk in Yadkinville?
Everywhere(2), Suntrust Bank(1), Downtown(15), YMCA(4), Park(3), Nowhere(1), Around the block(1), Around Town(4), Hwy 601 Sidewalk(4), Yadkinville Elementary School(7), I'm not from Yadkinville(1), Yadkin County Park(2), Yadkinville Park(1), Food Lion(1), Jackson Street(1), County Offices(1), Elm Street(1), Main Street(9), Hemlock(1), W. Lee Avenue(4), Post Office(3), Hoots Hospital(1), Downtown Businesses/Restaurants(2), Methodist Church(2), Cherry Street(1), Baptist Church(1), Police Dept.(1), Courthouse(3), Library(1)

a. What park, greenway, boardwalk, sidewalk, path or public open space did you most recently use?
Downtown(6), Main Street(7), Sidewalks Downtown(13), YMCA(4), Road(1), None(1), Yadkin County Park(9), Elkin Park(1), Park(2), Yadkinville Elementary School(4), Open Space(1), Flip & Flip Gymnastics(1), Hwy 601 Sidewalk(2), W. Lee Avenue(1), Elm Street(2), Harding property(1), Around Courthouse(1)

b. How did you get there?
Drive & Park(30)
Walked(12)
N/A (2)
Roadway(1)
Sidewalk(1)
Hwy 601(1)

2. List the most frequent destinations in Yadkinville where you walk or bike …
Chamber of Commerce(1), No Destinations(1), The bank downtown(7), Park(9), YMCA(6), Road(3), N/A(1), Restaurants(3), Hwy 601(2), Yadkinville Elementary School(5), Hoots Memorial Hospital(1), Downtown(7), Curves, in Yadkin Plaza(2), Holes in Parking Lot(1), KFC(1), Food Lion(1), W. Lee Avenue(1), First Baptist Church(1), Main Street/Old US 421(2), Post Office(5), Businesses(3), Park between Yadkin Vision and Post Office(1), Cemetery(1),

Attourney's Chambers(1), Human Resources(1), Courhouse(1), Library(2), County Offices(2), Everywhere(2), Papas Pizza(3), El Sarape(1), Ace's(1), Town Hall(2), Allison Oaks(1), Yadkin Arts Council(2), 421 by-pass(1)

3. **The main deterrents or barriers to walking and biking to destinations include…** ***(check all that apply)***
   - **Gaps in sidewalk or missing segments** (30)
   - **Uneven or broken surfaces** (25)
   - **Unsafe separation from vehicles** (22)
   - **Lack of lighting** (24)
   - **Absence of marked crosswalks** (23)
   - **Inadequate sidewalk width** (14)
   - **Tree branches, Trash-cans, or other obstructions** (16)
   - **Stray dogs** (8)
   - **Other** : N/A(3), Unsafe for Children(1), People(1), Dirt Roads(1), Not enough Sidewalk area to ride a Bike(1), No ADA compliance(1), Sidewalks through questionable neighborhoods(1)

4. **Areas I feel most unsafe while walking and biking include…**
Trailer Park(1), N/A, I walk during the day, Streets/Sidewalks(1), Highway(8), Downtown(3), Apartments(1), Park at night(4), Side of Road(2), Cherry Street(1), N. Main Street and Elm Street(1), Sidewalk between Papas Pizza and Food Lion (1), Around Town(1), School(1), Gymnastics, across from Tammy's Grill(1), Health Dept.(1), All Sidewalks(1), Crossing Hwy 601(4), None(3), N. Lee Avenue(2), Yadkin County Park(1), Downtown after businesses close(1), Behind Town Hall on Lee Avenue(1), From School to Methodist Church(1), Side Streets(1), Anywhere without lights(1)

5. **Areas I feel safest while walking and biking include…**
Nice neighborhoods(2), Downtown Area(9), N/A(7), Near home(3), Neighborhood(2), Park(3), Yadkin Park(2), School(2), None(1), Main Street(5), Designated Trails(1), Courthouse(2), Pine Valley(1), Everywhere(2), Cherry Street(1), Lee Avenue(1), Hwy 601(1)

6. **I would walk and bike more places in Yadkinville if…**
More sidewalks(7), Better Lighting(11), It was safer(7), I didn't have a license(2), They were nicer(1), N/A(1), If Hwy 601 were safer (2), There were safer places to ride bikes(2), I visited more often(1), Designated Trail(3), there were more places(1), Better Trails(2), repaired sidewalks(2), better landscaping(1), Better/more connections(2), Group walks(1), Wider sidewalks(1), more crosswalks(1), Enforcement of crosswalk laws(1), more motivate(1)

7. **Do you have access to walking facilities from your home?**
a) Yes 20 **b) No** 28 **From work? a) Yes** 6 **b) No**7

9. **If you have children, how do they get to school?**
a) Car 20 **b) Bus** 4 **c) Walk** 2 **d) Bike** 0 **N/A** 9

10. **Is there a safe route for your children to walk or bike to school? a) Yes** 3 **b) No** 21 **N/A** 6
If no- If there was a safe route, would you let your children walk or bike to school? a) Yes 8 **b) No** 7 **N/A** 2

11. **Do you currently use existing greenways? a) Yes** 6 **b) No** 32 **Don't know what one is** 2

12. **How do you get to work?**
a) Car 38 **b) Bus** 0 **c) Walk** 1 **d) Bike** 0 **N/A** 5

13. **Would you bike or walk to work if you could?**
a) Yes 15 **b) No** 14 **c) Maybe** 14 **N/A** 2

14. **Getting around Yadkinville by car is easy and safe.**
a) Agree 30 **b) Disagree** 9 **c) No Opinion** 12 **Sometimes** 1

15. Getting around Yadkinville on foot is easy and safe.
a) Agree 17 **b) Disagree** 20 **c) No Opinion** 13

16. Generally speaking, I feel safe and comfortable walking to and from places in Yadkinville.
a) Agree 33 **b) Disagree** 16 **c) No Opinion** 6

17. Yadkinville needs improved pedestrian facilities (trails, greenways, multi-use trails).
a) Agree 47 **b) Disagree** 4 **c) No Opinion** 3

18. Yadkinville should promote and expand pedestrian connections.
a) Agree 48 **b) Disagree** 3 **c) No Opinion** 3

19. New and Future development in and around Yadkinville should be incorporated into the Town's public pedestrian system.
a) Agree 50 **b) Disagree** 0 **c) No Opinion** 5

20. Would you be willing to pay additional taxes (ie: $0.005) for improved sidewalks and other pedestrian / bicycle amenities?
a) Yes 36 **b) No** 15 **N/A** 1

-Every County Needs Paved Shoulders on their highways for walking and biking
-Already a Tax increase this year
-Please consider a safe area for skateboarders

Table DP-1. Profile of General Demographic Characteristics: 2000

Geographic area: Yadkinville town, North Carolina

[For information on confidentiality protection, nonsampling error, and definitions, see text]

Subject	Number	Percent
Total population	**2,818**	**100.0**
SEX AND AGE		
Male	1,349	47.9
Female	1,469	52.1
Under 5 years	196	7.0
5 to 9 years	189	6.7
10 to 14 years	168	6.0
15 to 19 years	154	5.5
20 to 24 years	169	6.0
25 to 34 years	392	13.9
35 to 44 years	376	13.3
45 to 54 years	308	10.9
55 to 59 years	145	5.1
60 to 64 years	122	4.3
65 to 74 years	225	8.0
75 to 84 years	209	7.4
85 years and over	165	5.9
Median age (years)	38.7	(X)
18 years and over	2,171	77.0
Male	1,001	35.5
Female	1,170	41.5
21 years and over	2,074	73.6
62 years and over	683	24.2
65 years and over	599	21.3
Male	201	7.1
Female	398	14.1
RACE		
One race	2,787	98.9
White	2,419	85.8
Black or African American	184	6.5
American Indian and Alaska Native	1	-
Asian	5	0.2
Asian Indian	-	-
Chinese	-	-
Filipino	2	0.1
Japanese	1	-
Korean	1	-
Vietnamese	1	-
Other Asian [1]	-	-
Native Hawaiian and Other Pacific Islander	-	-
Native Hawaiian	-	-
Guamanian or Chamorro	-	-
Samoan	-	-
Other Pacific Islander [2]	-	-
Some other race	178	6.3
Two or more races	31	1.1
Race alone or in combination with one or more other races: [3]		
White	2,445	86.8
Black or African American	187	6.6
American Indian and Alaska Native	4	0.1
Asian	11	0.4
Native Hawaiian and Other Pacific Islander	-	-
Some other race	202	7.2

Subject	Number	Percent
HISPANIC OR LATINO AND RACE		
Total population	**2,818**	**100.0**
Hispanic or Latino (of any race)	530	18.8
Mexican	452	16.0
Puerto Rican	13	0.5
Cuban	1	-
Other Hispanic or Latino	64	2.3
Not Hispanic or Latino	2,288	81.2
White alone	2,094	74.3
RELATIONSHIP		
Total population	**2,818**	**100.0**
In households	2,405	85.3
Householder	959	34.0
Spouse	478	17.0
Child	702	24.9
Own child under 18 years	557	19.8
Other relatives	168	6.0
Under 18 years	76	2.7
Nonrelatives	98	3.5
Unmarried partner	41	1.5
In group quarters	413	14.7
Institutionalized population	306	10.9
Noninstitutionalized population	107	3.8
HOUSEHOLD BY TYPE		
Total households	**959**	**100.0**
Family households (families)	642	66.9
With own children under 18 years	292	30.4
Married-couple family	478	49.8
With own children under 18 years	206	21.5
Female householder, no husband present	111	11.6
With own children under 18 years	59	6.2
Nonfamily households	317	33.1
Householder living alone	290	30.2
Householder 65 years and over	137	14.3
Households with individuals under 18 years	330	34.4
Households with individuals 65 years and over	254	26.5
Average household size	2.51	(X)
Average family size	3.10	(X)
HOUSING OCCUPANCY		
Total housing units	**1,026**	**100.0**
Occupied housing units	959	93.5
Vacant housing units	67	6.5
For seasonal, recreational, or occasional use	11	1.1
Homeowner vacancy rate (percent)	2.5	(X)
Rental vacancy rate (percent)	5.2	(X)
HOUSING TENURE		
Occupied housing units	**959**	**100.0**
Owner-occupied housing units	650	67.8
Renter-occupied housing units	309	32.2
Average household size of owner-occupied units	2.46	(X)
Average household size of renter-occupied units	2.61	(X)

- Represents zero or rounds to zero. (X) Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] In combination with one or more of the other races listed. The six numbers may add to more than the total population and the six percentages may add to more than 100 percent because individuals may report more than one race.

Source: U.S. Census Bureau, Census 2000.

Table DP-2. Profile of Selected Social Characteristics: 2000

Geographic area: Yadkinville town, North Carolina

[Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see text]

Subject	Number	Percent
SCHOOL ENROLLMENT		
Population 3 years and over enrolled in school	**560**	**100.0**
Nursery school, preschool	28	5.0
Kindergarten	54	9.6
Elementary school (grades 1-8)	271	48.4
High school (grades 9-12)	159	28.4
College or graduate school	48	8.6
EDUCATIONAL ATTAINMENT		
Population 25 years and over	**1,940**	**100.0**
Less than 9th grade	498	25.7
9th to 12th grade, no diploma	262	13.5
High school graduate (includes equivalency)	617	31.8
Some college, no degree	278	14.3
Associate degree	92	4.7
Bachelor's degree	153	7.9
Graduate or professional degree	40	2.1
Percent high school graduate or higher	60.8	(X)
Percent bachelor's degree or higher	9.9	(X)
MARITAL STATUS		
Population 15 years and over	**2,242**	**100.0**
Never married	463	20.7
Now married, except separated	1,264	56.4
Separated	45	2.0
Widowed	263	11.7
Female	205	9.1
Divorced	207	9.2
Female	144	6.4
GRANDPARENTS AS CAREGIVERS		
Grandparent living in household with one or more own grandchildren under 18 years	**52**	**100.0**
Grandparent responsible for grandchildren	30	57.7
VETERAN STATUS		
Civilian population 18 years and over	**2,148**	**100.0**
Civilian veterans	189	8.8
DISABILITY STATUS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION		
Population 5 to 20 years	**535**	**100.0**
With a disability	58	10.8
Population 21 to 64 years	**1,366**	**100.0**
With a disability	488	35.7
Percent employed	56.6	(X)
No disability	878	64.3
Percent employed	80.4	(X)
Population 65 years and over	**404**	**100.0**
With a disability	238	58.9
RESIDENCE IN 1995		
Population 5 years and over	**2,588**	**100.0**
Same house in 1995	1,598	61.7
Different house in the U.S. in 1995	857	33.1
Same county	504	19.5
Different county	353	13.6
Same state	254	9.8
Different state	99	3.8
Elsewhere in 1995	133	5.1

Subject	Number	Percent
NATIVITY AND PLACE OF BIRTH		
Total population	**2,784**	**100.0**
Native	2,363	84.9
Born in United States	2,357	84.7
State of residence	1,966	70.6
Different state	391	14.0
Born outside United States	6	0.2
Foreign born	421	15.1
Entered 1990 to March 2000	332	11.9
Naturalized citizen	23	0.8
Not a citizen	398	14.3
REGION OF BIRTH OF FOREIGN BORN		
Total (excluding born at sea)	**421**	**100.0**
Europe	3	0.7
Asia	-	-
Africa	-	-
Oceania	-	-
Latin America	418	99.3
Northern America	-	-
LANGUAGE SPOKEN AT HOME		
Population 5 years and over	**2,588**	**100.0**
English only	2,089	80.7
Language other than English	499	19.3
Speak English less than "very well"	385	14.9
Spanish	489	18.9
Speak English less than "very well"	381	14.7
Other Indo-European languages	10	0.4
Speak English less than "very well"	4	0.2
Asian and Pacific Island languages	-	-
Speak English less than "very well"	-	-
ANCESTRY (single or multiple)		
Total population	**2,784**	**100.0**
Total ancestries reported	*1,961*	*70.4*
Arab	-	-
Czech[1]	-	-
Danish	-	-
Dutch	16	0.6
English	195	7.0
French (except Basque)[1]	23	0.8
French Canadian[1]	14	0.5
German	187	6.7
Greek	-	-
Hungarian	6	0.2
Irish[1]	116	4.2
Italian	33	1.2
Lithuanian	-	-
Norwegian	-	-
Polish	-	-
Portuguese	-	-
Russian	-	-
Scotch-Irish	46	1.7
Scottish	29	1.0
Slovak	-	-
Subsaharan African	-	-
Swedish	4	0.1
Swiss	-	-
Ukrainian	-	-
United States or American	559	20.1
Welsh	5	0.2
West Indian (excluding Hispanic groups)	-	-
Other ancestries	728	26.1

-Represents zero or rounds to zero. (X) Not applicable.

[1]The data represent a combination of two ancestries shown separately in Summary File 3. Czech includes Czechoslovakian. French includes Alsatian. French Canadian includes Acadian/Cajun. Irish includes Celtic.

Table DP-3. Profile of Selected Economic Characteristics: 2000

Geographic area: Yadkinville town, North Carolina

[Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see text]

Subject	Number	Percent
EMPLOYMENT STATUS		
Population 16 years and over	**2,203**	**100.0**
In labor force	1,192	54.1
Civilian labor force	1,192	54.1
Employed	1,099	49.9
Unemployed	93	4.2
Percent of civilian labor force	7.8	(X)
Armed Forces	-	-
Not in labor force	1,011	45.9
Females 16 years and over	**1,124**	**100.0**
In labor force	531	47.2
Civilian labor force	531	47.2
Employed	517	46.0
Own children under 6 years	**193**	**100.0**
All parents in family in labor force	138	71.5
COMMUTING TO WORK		
Workers 16 years and over	**1,059**	**100.0**
Car, truck, or van - - drove alone	733	69.2
Car, truck, or van - - carpooled	297	28.0
Public transportation (including taxicab)	-	-
Walked	7	0.7
Other means	10	0.9
Worked at home	12	1.1
Mean travel time to work (minutes)[1]	26.6	(X)
Employed civilian population 16 years and over	**1,099**	**100.0**
OCCUPATION		
Management, professional, and related occupations	263	23.9
Service occupations	120	10.9
Sales and office occupations	225	20.5
Farming, fishing, and forestry occupations	9	0.8
Construction, extraction, and maintenance occupations	154	14.0
Production, transportation, and material moving occupations	328	29.8
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	6	0.5
Construction	111	10.1
Manufacturing	373	33.9
Wholesale trade	27	2.5
Retail trade	125	11.4
Transportation and warehousing, and utilities	46	4.2
Information	16	1.5
Finance, insurance, real estate, and rental and leasing	35	3.2
Professional, scientific, management, adminis-trative, and waste management services	41	3.7
Educational, health and social services	208	18.9
Arts, entertainment, recreation, accommodation and food services	43	3.9
Other services (except public administration)	32	2.9
Public administration	36	3.3
CLASS OF WORKER		
Private wage and salary workers	955	86.9
Government workers	97	8.8
Self-employed workers in own not incorporated business	45	4.1
Unpaid family workers	2	0.2

Subject	Number	Percent
INCOME IN 1999		
Households	**937**	**100.0**
Less than $10,000	135	14.4
$10,000 to $14,999	63	6.7
$15,000 to $24,999	183	19.5
$25,000 to $34,999	133	14.2
$35,000 to $49,999	138	14.7
$50,000 to $74,999	183	19.5
$75,000 to $99,999	66	7.0
$100,000 to $149,999	31	3.3
$150,000 to $199,999	3	0.3
$200,000 or more	2	0.2
Median household income (dollars)	31,250	(X)
With earnings	664	70.9
Mean earnings (dollars)[1]	43,310	(X)
With Social Security income	324	34.6
Mean Social Security income (dollars)[1]	8,966	(X)
With Supplemental Security Income	26	2.8
Mean Supplemental Security Income (dollars)[1]	4,042	(X)
With public assistance income	16	1.7
Mean public assistance income (dollars)[1]	4,300	(X)
With retirement income	148	15.8
Mean retirement income (dollars)[1]	14,641	(X)
Families	**640**	**100.0**
Less than $10,000	51	8.0
$10,000 to $14,999	23	3.6
$15,000 to $24,999	100	15.6
$25,000 to $34,999	93	14.5
$35,000 to $49,999	109	17.0
$50,000 to $74,999	173	27.0
$75,000 to $99,999	57	8.9
$100,000 to $149,999	29	4.5
$150,000 to $199,999	3	0.5
$200,000 or more	2	0.3
Median family income (dollars)	45,000	(X)
Per capita income (dollars)[1]	14,792	(X)
Median earnings (dollars):		
Male full-time, year-round workers	25,172	(X)
Female full-time, year-round workers	25,273	(X)

Subject	Number below poverty level	Percent below poverty level
POVERTY STATUS IN 1999		
Families	**68**	**10.6**
With related children under 18 years	62	18.2
With related children under 5 years	46	34.3
Families with female householder, no husband present	**20**	**14.6**
With related children under 18 years	20	24.4
With related children under 5 years	13	56.5
Individuals	**360**	**14.4**
18 years and over	241	12.9
65 years and over	56	13.9
Related children under 18 years	119	19.1
Related children 5 to 17 years	53	12.1
Unrelated individuals 15 years and over	129	25.6

-Represents zero or rounds to zero. (X) Not applicable.

[1]If the denominator of a mean value or per capita value is less than 30, then that value is calculated using a rounded aggregate in the numerator. See text.

Table DP-4. Profile of Selected Housing Characteristics: 2000

Geographic area: Yadkinville town, North Carolina

[Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see text]

Subject	Number	Percent	Subject	Number	Percent
Total housing units	**998**	**100.0**	**OCCUPANTS PER ROOM**		
UNITS IN STRUCTURE			**Occupied housing units**	**956**	**100.0**
1-unit, detached	752	75.4	1.00 or less	861	90.1
1-unit, attached	28	2.8	1.01 to 1.50	67	7.0
2 units	28	2.8	1.51 or more	28	2.9
3 or 4 units	28	2.8			
5 to 9 units	16	1.6	**Specified owner-occupied units**	**538**	**100.0**
10 to 19 units	4	0.4	**VALUE**		
20 or more units	4	0.4	Less than $50,000	44	8.2
Mobile home	138	13.8	$50,000 to $99,999	310	57.6
Boat, RV, van, etc	-	-	$100,000 to $149,999	134	24.9
			$150,000 to $199,999	26	4.8
YEAR STRUCTURE BUILT			$200,000 to $299,999	24	4.5
1999 to March 2000	11	1.1	$300,000 to $499,999	-	-
1995 to 1998	80	8.0	$500,000 to $999,999	-	-
1990 to 1994	60	6.0	$1,000,000 or more	-	-
1980 to 1989	117	11.7	Median (dollars)	86,100	(X)
1970 to 1979	197	19.7			
1960 to 1969	140	14.0	**MORTGAGE STATUS AND SELECTED MONTHLY OWNER COSTS**		
1940 to 1959	286	28.7	With a mortgage	319	59.3
1939 or earlier	107	10.7	Less than $300	4	0.7
			$300 to $499	29	5.4
ROOMS			$500 to $699	75	13.9
1 room	10	1.0	$700 to $999	101	18.8
2 rooms	34	3.4	$1,000 to $1,499	98	18.2
3 rooms	48	4.8	$1,500 to $1,999	12	2.2
4 rooms	242	24.2	$2,000 or more	-	-
5 rooms	336	33.7	Median (dollars)	852	(X)
6 rooms	141	14.1	Not mortgaged	219	40.7
7 rooms	68	6.8	Median (dollars)	217	(X)
8 rooms	60	6.0			
9 or more rooms	59	5.9	**SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME IN 1999**		
Median (rooms)	5.0	(X)	Less than 15.0 percent	214	39.8
			15.0 to 19.9 percent	82	15.2
Occupied housing units	**956**	**100.0**	20.0 to 24.9 percent	98	18.2
YEAR HOUSEHOLDER MOVED INTO UNIT			25.0 to 29.9 percent	43	8.0
1999 to March 2000	147	15.4	30.0 to 34.9 percent	29	5.4
1995 to 1998	262	27.4	35.0 percent or more	72	13.4
1990 to 1994	89	9.3	Not computed	-	-
1980 to 1989	162	16.9			
1970 to 1979	121	12.7	**Specified renter-occupied units**	**316**	**100.0**
1969 or earlier	175	18.3	**GROSS RENT**		
			Less than $200	15	4.7
VEHICLES AVAILABLE			$200 to $299	23	7.3
None	81	8.5	$300 to $499	127	40.2
1	335	35.0	$500 to $749	110	34.8
2	356	37.2	$750 to $999	5	1.6
3 or more	184	19.2	$1,000 to $1,499	4	1.3
			$1,500 or more	-	-
HOUSE HEATING FUEL			No cash rent	32	10.1
Utility gas	8	0.8	Median (dollars)	460	(X)
Bottled, tank, or LP gas	47	4.9			
Electricity	528	55.2	**GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME IN 1999**		
Fuel oil, kerosene, etc	348	36.4	Less than 15.0 percent	89	28.2
Coal or coke	-	-	15.0 to 19.9 percent	7	2.2
Wood	12	1.3	20.0 to 24.9 percent	48	15.2
Solar energy	-	-	25.0 to 29.9 percent	26	8.2
Other fuel	-	-	30.0 to 34.9 percent	25	7.9
No fuel used	13	1.4	35.0 percent or more	75	23.7
			Not computed	46	14.6
SELECTED CHARACTERISTICS					
Lacking complete plumbing facilities	5	0.5			
Lacking complete kitchen facilities	9	0.9			
No telephone service	49	5.1			

-Represents zero or rounds to zero. (X) Not applicable.

Source: U.S. Bureau of the Census, Census 2000.

Sample Sidewalk Project Cost Estimate

SRTS Infrastructure Cost Estimate
Prepared by:

General Earthwork	Unit Cost	Line Item Units	Line Item Cost
Basic Excavation	3.50/cubic yard	750 cubic yards	2,625.00
Silt Fence/Tree Fence	3.50/l.f.	11,537 l.f.	40,380.00
Materials			
Concrete Sidewalk (11,537l.f. x 5' width)	25.00/sq. yd.	6,410 sq. yd.	160,237.00
Wheelchair ramp (double)	1,000.00 each	4	4,000.00
Wheelchair ramp (single)	700.00 each	32	22,400.00
Signage	6.00/sq. ft.	54 sq. ft.	324.00
Thermoplastic 24" stripes	7.50/l.f.	166 l.f.	1245.00
Thermoplastic 8" stripes	2.20/l.f.	968 l.f.	2,130.00
Thermoplastic lettering	25.00/letter	36 letters (at crosswalks)	900.00
Seed/Mulch	2,500.00/acre	1.00 acres	2,500.00
Extending drainage pipes 18" (@ driveways)	23.00/l.f.	48 l.f.	1,100.00
Bike Racks (@ school)	500.00 each	2	1,000.00
		Subtotal	**238,841.00**
Miscellaneous			
Preliminary Design/Engineering	10% of total cost		23,884.10
Mobilization	5% of total cost		11,942.05
Contigency	10% of total cost		23,884.10
		Total Cost Estimate	298,551.25

The information provided in this report is a good faith estimate based on recent construction costs encountered by the landscape architect.

I certify that I have reviewed and approved the cost estimate above

Appendix A