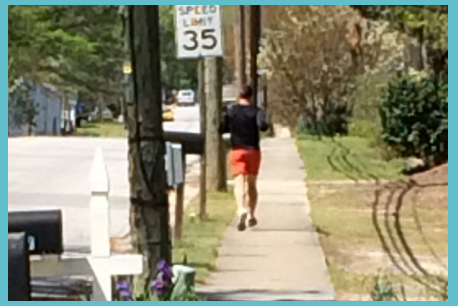
Town of Wendell
Comprehensive Pedestrian Plan







2017


SMALL TOWN
BIG CHARM
WENDELL
EST.1903

Acknowledgments

This project was made possible with a matching grant from the North Carolina Department of Transportation (NCDOT) Division of Bicycle and Pedestrian Transportation (DBPT).

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Table of Contents

Figures & Tables

Figure 1: Study Area 20
Figure 2: Sidewalk Inventory 24
Figure 3: Existing Pedestrian Facilities 28
Figure 4: Destinations 32
Figure 5; Crashes 34
Figure 6: Recommended Pedestrian Facilities 46
Figure 7: Recommended Pedestrian Facilities- Downtown Area 47
Figure 8: Recommended Intersection Recommendations 51
Figure 9: Short Term Sidewalk Recommendations 80
Figure 10: Mid Term Sidewalk Recommendations 81
Figure 11: Long Term Sidewalk Recommendations 82
Figure 12: Prioritized Intersection Improvements 86

Table 1: Main Corridor Inventory 23
Table 2: Demographic Overview 26
Table 3: Ramp Concern Locations 30
Table 4: Sidewalk/Trail Recommendations 48
Table 5: Crossing Improvements 50
Table 6: Short Term Sidewalk Improvements 78
Table 7: Mid Term Sidewalk Improvements 78
Table 8: Long Term Sidewalk Improvements 79
Table 9: Unimprovement Trail 79
Table 10: Crossing Recommendations 84

I. Introduction **9**
Background 9
Vision 10
Principles 11
Goals 12

II. Existing Conditions **17**
Demographic 25
Existing Analysis 27
Concerns & Needs 35
Policies & Plans 37

III. Recommendations **43**
Recommended Shared Use Path 52
Intersection/Crossing Improvements 53
Enhancement Areas 56

IV. Implementation **67**
Prioritization Factors 74
Cost Estimates 76
Best Practices 88
Program & Funding Recommendations 91
Design Guidance 99
Funding Sources 115

Executive Summary

Background

Wendell, a growing suburb of Raleigh, is focusing on opportunities to create more walkable opportunities for its residents. Many areas in Wendell, including the downtown core area, has an existing network of sidewalks, but further measures need to be taken to increase safety for town wide by creating more connection and ensuring accessibility for all users. The Plan was made possible by a join funding grant from the Town of Wendell and the North Carolina Department of Transportation.

Goals

- Ensure all citizens have access to trails and sidewalks.
- Improve the quality of future and existing pedestrian facilities.
- Eliminate pedestrian barriers and provide accessibility accommodations at all intersections.
- Assure that stakeholders assume pedestrian consideration when planning for transportation and land use options for Wendell.

Vision

The residents of Wendell envision a Town where people of all ages can walk safely within the community for transportation, exercise and enjoyment.

Introduction



The Planning process for the Wendell Comprehensive Pedestrian Plan began in the Spring of 2016 with the initial steering committee meeting and concluded with the Plan adoption in September 2017. The opportunities and constraints were identified in committee meetings, public feedback and an inventory of existing facilities and conditions town wide. An inventory of existing facilities as well as conditions are located in Chapter 2. Sidewalks are primarily located in the downtown area and within recent residential developments. Many destinations including local destinations, schools, public facilities and retail are located within a mile from the downtown core.

Recommendations

Recommendations were developed based on information received from agency officials, Steering Committee members, public comments and a review of existing plans and analysis. A mix of facilities including sidewalks, signs and crossing facilities were recommending in the Plan. Five small areas were considered for further study for needs to increase safety for pedestrians. The five small areas studied included:

- Wendell Blvd (near IGA store)
- Wendell Blvd at Hanor Ln
- Wendell Blvd at Wendell Elementary
- Hollybrook Rd at Lake Dr/2nd St

Each project in the Plan was prioritized by factors that deemed important to the Steering Committee and the local citizens. Criteria used to rank the projects included: traffic volumes, ease of constructions, locality to public facilities, schools, shopping, existing sidewalk and recent pedestrian crashes.

In all 67 sidewalk projects (9 miles) and 30 intersection projects were recommended to increase walkablity in Wendell. The grand total of the projects in the Comprehensive Plan is $4,426,703.00 (Sidewalk total: $3,837,221.00 and Intersection total: $589,482.00). The final concludes with a 20 year implementation plan and potential funding options.


WENDELL
SMALL TOWN
BIG CHARM
WENDELL
EST. 1903



Introduction

The Town of Wendell was awarded a grant in 2015 from the North Carolina Department of Transportation Bicycle and Pedestrian Planning Grant Initiative to prepare a comprehensive pedestrian plan. This initiative has assisted 183 communities across North Carolina to encourage the development of comprehensive Pedestrian and Bicycle Plans.

Walking is our oldest and most basic form of transportation. Improving walkability can result in improvements in public health, safety, and provide economic benefits to municipalities. In recent years, a large amount of research has been completed in regard to understanding the benefits of walking. The Center for Disease Control recommends adults engage in 150 minutes of physical activity per week. Walking can be incorporated into daily activities as a means of transportation in addition to being used for recreational purposes.

The Wendell Pedestrian Plan is intended to be a guide not only for future pedestrian facilities, but also policies and programs for pedestrians in Wendell. Previous plans, polices and design guidelines have made recommendations for pedestrian initiatives and infrastructure. The purpose of this Plan is to combine past efforts with new recommendations into a handbook that will drive future development for Wendell with pedestrian-friendly design. All the recommendations in the Plan should promote livability and enhance the safety and health of users.

Background

In 2010 the Town Board adopted the Unified Development Ordinance that includes the development of a Comprehensive Transportation Plan to “ensure local and regional transportation interconnectivity and options while also maintaining and enhancing Wendell as a walkable community”. Wendell is anticipating significant growth as a revived planned development could bring up to 10,000 new residents. The Town is working to ensure that the area is both pedestrian and bicycle friendly for new and established residents. The creation of the pedestrian plan is an important part of the Town’s objective to increase the use of alternative modes of transportation. A well used pedestrian system requires comprehensive planning and long term funding. Completing a Pedestrian Plan is the first step in developing a walkable community.

Vision

The vision statement provides direction for the Plan. Town staff, steering committee members and citizens expressed ideas and concerns early in the project development. These statements were molded into a vision statement to guide the Plan.

The residents of Wendell envision a Town where people of all ages can walk safely within the community for transportation, exercise and enjoyment.

Principles

The first Steering Committee meeting, held in April 2016, was conducted in part to capture the opinions of the local stakeholders about what are important guiding principles for the Plan. The following principles were expressed from the committee during the discussion.

- Provide a system of sidewalks that are useful and convenient to users.
- Provide a safe environment for pedestrians.
- Enhance the walking experience through the implementation of policies and design standards.
- Develop a plan to promote safety and benefits of active transportation through educational programs.
- Enhance economic vibrancy by creating a pleasant walking environment.



Front of Wendell Elementary on Wendell Boulevard

Goals

The **Wendell Pedestrian Plan** will guide the Town, the North Carolina Department of Transportation (NCDOT), and other local and regional partners with a guide for facility development to improve safety conditions for pedestrians in Wendell. This plan should be used by Town staff and the Town's external partners-such as NCDOT, Wake County Schools, and Capital Area Metropolitan Planning Organization when considering solutions to future transportation projects and development.

Goals of this Plan include:

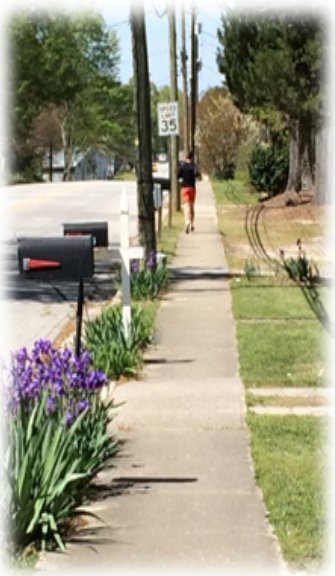
•Ensure all citizens have access to trails and sidewalks.

•Improve the quality of future and existing pedestrian facilities.

•Eliminate pedestrian barriers and provide accessibility accommodations at all intersections.

•Assure that stakeholders assume pedestrian consideration when planning for transportation and land use options for Wendell.





FACT

In 2013, 4,735 pedestrians were killed in traffic crashes in the U.S. (www.cdc.gov)



Steering Committee

The project Steering Committee, as listed in the Acknowledgments on page 3, included local residents, business owners, school administration, Town leadership, Town Police, NCDOT staff, and Capital Area Metropolitan Organization (CAMPO) staff. The Committee advised the project team on context and content of the Plan throughout the planning process. The Steering Committee met four times to discuss goals and objectives, issues, and recommendations.

Public Involvement

In April 2016 the public engagement period was opened at the onset of the Plan. A public survey was administered from April-August 2016. The survey gathered information on existing walking behavior, future needs for walking and the strengths and weaknesses of the existing pedestrian environment. The survey was offered online and in hardcopy. The survey was distributed by town staff, steering committee members and citizens. Informational handouts about the project and online survey were distributed at several local businesses, Senior Center, Library and Wendell Elementary. The project consultant team attended ArtWalk, a local festival, in May 2016 to offer information about the plan, answer questions and gather completed surveys to attendees. A public workshop was held in August 2016 at Wendell Elementary to invite locals to learn more about the project and provide comments. Survey results showed that most of the responders would be inclined to walk to more places if walking conditions improved along corridors and intersections. Specific problem areas were also mentioned such as Wendell Boulevard near Wendell Elementary and bus stop areas along Hollybrook Road.

In June 2017 the consultant team attended a Town sponsored event “Big Truck Day”. The project recommendations were displayed by prioritization terms for the public to view and offer feedback. The comments received supported more sidewalks for Wendell and all were pleased at the efforts Wendell was taking to provide safer facilities in the Town.



Public Outreach at “Big Truck Day” June 2017

Benefits of Walking

A pedestrian-friendly environment directly contributes to health, economic, environmental, and cultural benefits that impact all residents. When more people walk daily, benefits are gained by the individuals and the community where they live. Benefits of active transportation include health and economic benefits as well as reducing the ill effects of traffic congestion, including air pollution and noise.

Some benefits of walking include:

- Increased health benefits;
- Lower household transportation costs;
- Improved attention for schoolchildren;
- Sense of community and increased social contacts;
- Better air quality;
- Reduced traffic congestion; and
- Lower costs for roadway maintenance.



According to the North Carolina Statewide Pedestrian/Bicycle Plan, investments in infrastructure can significantly improve pedestrian safety. The Statewide Plan cites a 2008 Federal Highway Administration publication that suggests sidewalk installation can result in a 65%-89% reduction in pedestrian crashes.

Walking is the most affordable mode of transportation. The American Automobile Association reports the cost of operating one motor vehicle for one year is $13,677. Walking is free and can result in savings each year for one individual if walking opportunities are available.

Recent studies have been completed regarding economic benefits of improved walkability. Benefits include increase in property values, economic development, and job creation. The Pedestrian and Bicycle Information Center of the US Department of Transportation reports, “The 2012 Benchmarking Report on Bicycling and Walking in the U.S. found that bicycling and walking projects create 11-14 jobs per $1 million spent, compared to just 7 jobs created per $1 million spent on highway projects.” Walkable communities generally have active streets that promote business exchange while providing a safe and efficient way for citizens to travel by walking. Active streets are more attractive to businesses, therefore increasing the opportunity for economic development.

Schools and students also benefit from a more walkable community. Improved infrastructure and programs can improve the walking environment for students. Increased numbers of students walking can reduce the transportation costs for buses, while improving their average test scores and reducing the amount of time teachers spend managing student behavior. A large student population at Wendell Elementary currently walk to school. Improved conditions in the area would reduce transportation dollars for the area school system as less bus routes (buses and drivers) would be needed.

Area retail stores and restaurants in Wendell benefit from an increase in foot traffic. As pedestrians walk by businesses they are more likely to shop and/or dine therefore increasing revenues. The Town would become more competitive in the real estate market as it becomes more walkable. A defined pedestrian network is more attractive to entrepreneurs. Residential needs could increase for the area as people without vehicles and those that chose to live where they can lower their trips by car seek areas that fit their transportation needs. The more competitive Wendell is with surrounding areas in creating a comprehensive pedestrian network, the more likely owners will see property value increases and the Town will see more housing demand and a bigger tax base.






PURE
GASOLINE
ETHANOL FREE



Existing Conditions

Wendell is a small town located in Wake County just east of the Capital City of Raleigh. Wendell is located off the main interchange of US 64 and US 264. Neighboring communities include Knightdale and Zebulon. Wendell was settled in the 1850's by farmers seeking more fertile croplands, and was later incorporated in 1903. Today, Wendell is home to more than 6,300 residents.

The downtown area of Wendell is defined by a tight grid pattern and a mix of medium-density land uses. As Wendell has grown over the years the Town boundary has also expanded through annexation of surrounding properties that rely on municipal services provided by the Town. The boundary is scattered and disconnected by undeveloped land currently under Wake County jurisdiction. The disconnection of major sections of the Town presents barriers to walking, as well as a lack of community cohesion. Many areas inside the Town limits of Wendell remain rural and largely undeveloped, and therefore lack sidewalk facilities between these less dense areas and the newer subdivisions and commercial areas.

The largest and most recent development in the Town is the Wendell Falls multi-phase residential subdivision encompassing 1,110 acres and home to potentially 4,000 homes. Wendell Falls is located just off US 264 on Wendell Falls Parkway. The new development includes sidewalks on all streets and 10-foot wide multi-use paths (Town owned) both within the development and along the north side of Wendell Falls Parkway to Martin Pond Road. Many streets on the west side of Wendell Falls Parkway have been developed with sidewalks. The development on the east side of Wendell Falls Parkway is anticipated to start developing in the next year.

As the Wendell continues to grow, more walking facilities will be developed to help make Wendell an active and walkable community. However, some of these infill developments are not likely to occur within the next 10 years or longer; even when they do develop the sidewalk facilities that developers provide along individual frontages will result in a patchwork of disconnected walking facilities.

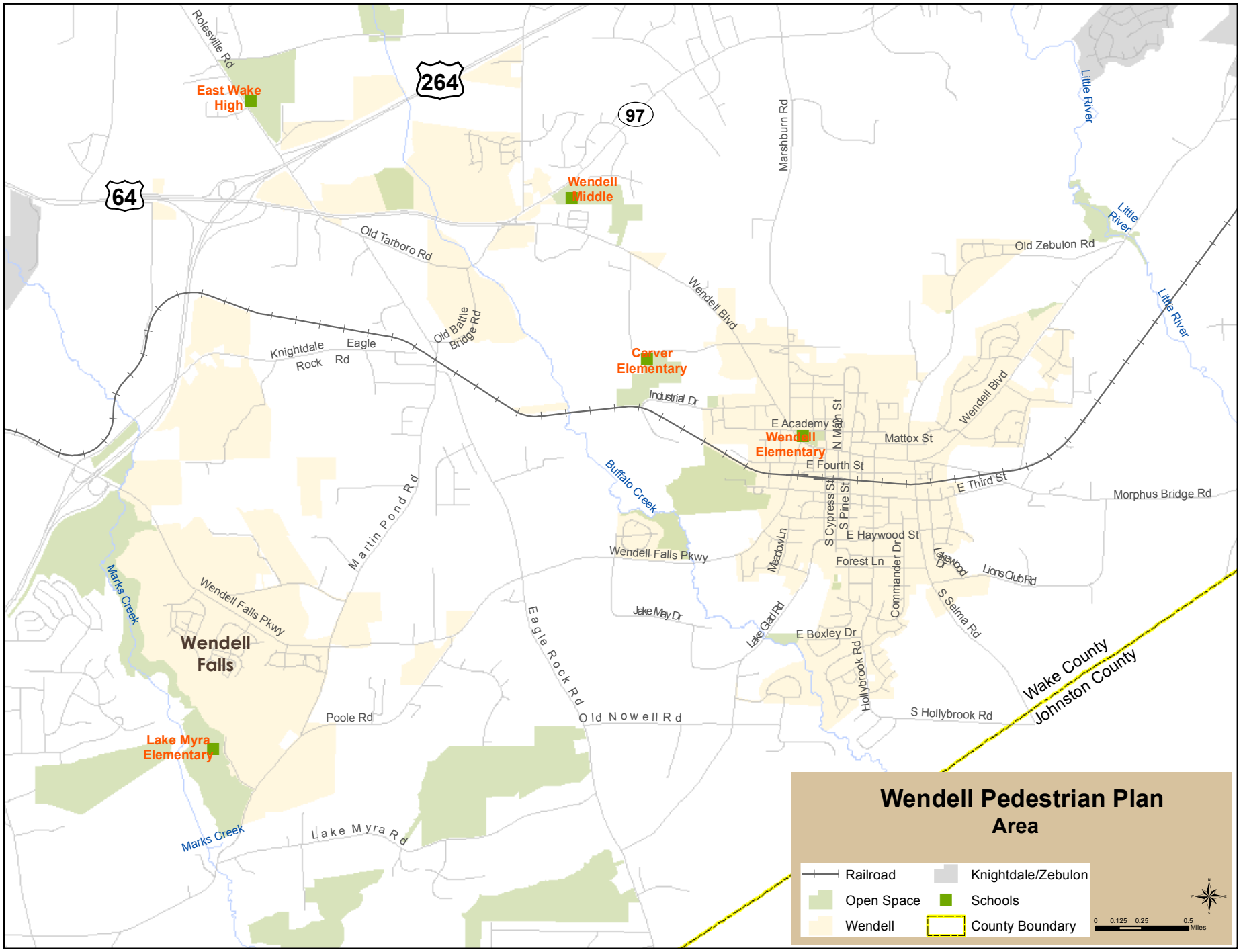


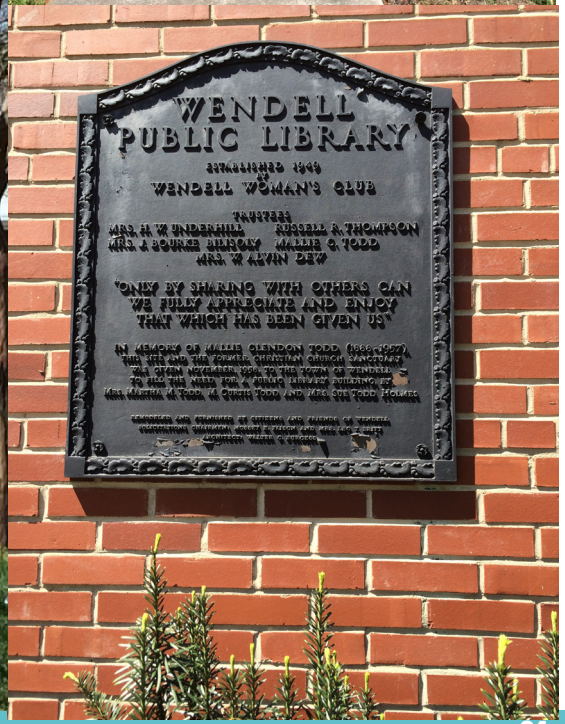
Figure 1. Study Area





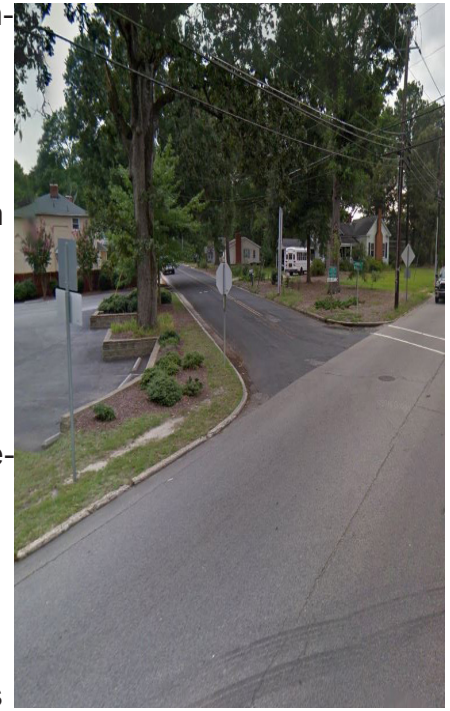



WENDELL DRUG
CORNER DRUG STORES
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PUBLIC LIBRARY
ERECTED 1949
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MRS. W. ALVIN DEW
RUSSELL A. THOMPSON
MILLER G. TODD
"ONLY BY SHARING WITH OTHERS CAN
WE FULLY APPRECIATE AND ENJOY
THAT WHICH HAS BEEN GIVEN US"

Wendell is located within eastern Wake County, approximately 12 miles from the City of Raleigh. Its proximity to US 64 and Interstate 540 provides easy access to surrounding communities. The Town's current extraterritorial jurisdiction (ETJ) is approximately 11 square miles. The topography of the area is generally flat as it lies within the area where the Piedmont and Coastal Plain meet and has little to no impacts on the development of transportation facilities. Development is directed into the immediate areas of the Town due to the surrounding wetlands and floodplains in the County's jurisdiction that prevent construction from occurring in those areas. Wendell's transportation network is largely made up of 2 and 3 lane roadways. Wendell Boulevard is the most traveled road in Wendell with upwards to 16,000 vehicles day. The lack of adequate crossings and accessibility ramps along the corridor create serious safety hazards for pedestrians along the busy corridor. Often times drivers will try to avoid Wendell Boulevard and take alternative routes south to avoid the traffic from Hollybrook Road to Magnolia Street. The avoidance causes additional traffic on roads that suffer from lack of pedestrian facilities posing additional risks to walkers in the area. In general the roads in Town have a posted 35 miles per hour speed limit. Slower posted speed limits have a positive impact on pedestrian safety, but when adequate facilities are present, incidents can occur.

Interviews with local stakeholders and recent field visits concluded that much of Wendell is frequented by pedestrians daily. Areas discussed as having high amounts of foot traffic are Wendell Boulevard near the retail shops at Hanor Lane, Hollybrook Road near the library area, as well as in and around Wendell Elementary. Both of these areas have some sidewalks but not an adequate network to get residents to where they need to go safely. Nearly 20 percent of Wendell Elementary's student population walk to school daily. The area could benefit from more sidewalks and better crossings on all the roads near the school. Other areas mentioned included downtown streets and Hollybrook Road.



Worn path at Wendell Blvd and Academy St

As reviewed in the existing plans and policies, Wendell Boulevard and Wendell Falls Parkway are planned for future widening. The small downtown street network is based on a grid network made up of Cypress Street, Main Street and Pine Street serving as the north and south connection and Second, Third and Fourth Streets serving connection for the east and west. Much of the roads in the downtown area currently do have sidewalks making it a walkable area in Town. This area has seen an increase in pedestrian and vehicle traffic in recent years as several restaurants and shops have recently opened. Town departments including Town Hall and the Police Department are also located in Downtown. Other public facilities such as the library and the Parks and Recreation Center are located just outside the Downtown. With the median household income of $38,000, Wendell is well below the County and State average. Low income families could benefit from a more comprehensive and improved network of sidewalks and greater connectivity to schools, shopping and municipal buildings and the Go Triangle Park and Ride Lot on Fourth Street. The Park and Ride lot is greatly used by area residents for daily commuting. The Zebulon-Wendell-Raleigh Express bus serves Wendell with three morning and afternoon stops on Fourth Street. Two stops are located on the east and west side of Fourth Street. Sidewalk was recently installed to the east side of Fourth Street providing accommodations for both stops as well as a crosswalk and accessible ramps at Fourth Street and Oakwood Avenue.

Table 1. Main Corridor Inventory

Road Name	Lane Width	Edge of Roadway Type	Volume	Speed Limit(mph)	Responsible Entity
Wendell Boulevard	12'	Curb	16,000	35	NCDOT
Hollybrook Road	12'	Shoulder	2,800	35	NCDOT
Wendell Falls Parkway -Wendell Boulevard to Cook Street	12'	Curb	2,800	35	NCDOT
Wendell Falls Parkway -Cook Street to Martin Pond Road	12'	Shoulder	2,800	35	NCDOT
Cypress Street	16' (on street parking)	Curb	2,400	35	NCDOT
Main Street	21' (on street parking)	Curb		35	Town
Pine Street	21' (on street parking)	Curb	790	35	Town
Second Street-First Street to Cypress Street	12'	Curb		35	NCDOT
Second Street - Cypress Street to Main Street	21' (on street parking)	Curb		35	NCDOT
Second Street -Main Street to Walnut Street	12'	Shoulder		35	NCDOT
Third Street-Wendell Falls Parkway to Hollybrook Road	20' (on street parking)	Curb	900	35	NCDOT
Third Street- Hollybrook Road to Morphus Bridge Road	14'	Shoulder	900	35	NCDOT
Fourth Street -Magnolia Street to Oakwood Avenue	21'	Curb		35	Town
Fourth Street - Oakwood Avenue to Old Wilson Road	16'	Shoulder		35	Town

The Town has 26 miles of existing sidewalks. Many intersections have lack of adequate crossing facilities and there is a widespread issue of accessibility issues at crossings and sidewalks. A sidewalk inventory completed in 2016. The existing sidewalks in Town were rated on a scale from A to D. Sidewalks that rated A are in excellent condition with no cracks, smooth condition and at least 5 feet wide, B rating showed few cracks, surface is mostly even and is at least 5 feet wide, C rating were those sidewalks that have some obstructions, lots of cracks, uneven surface and less than 5 foot wide, D rating are sidewalks that are difficult to navigate due to cracks, width issues, and extensive deterioration. The inventory indicated that nearly 30% of the Town's sidewalks were in fair to poor condition (C or D rating). A majority of the poorer rated sidewalks were located along Wendell Boulevard from Wendell Elementary to Selma Road. This corridor is a main arterial for cars and pedestrians as it serves students to the school and to the downtown area.



Figure 2. Sidewalk Inventory

Demographics

Wendell's growth is expected to continue as the area offers attractive amenities and close proximity to education and occupational opportunities in the Triangle region. The recent expansion of the Go Triangle Express Bus Route from Wendell to Raleigh offers residents access to the opportunities outside of Wendell. Over 20 percent of the population has reported living below the poverty line and without access to a vehicle, the express bus route may be the only opportunity to travel to school and work. It is important to ensure safe access to bus amenities are available to those that chose or need to use transit options.

Demographic analysis can help define the population characteristics within Wendell that use, or would like to use, the pedestrian system. Lack of car ownership, commuting patterns, and poverty status are indicators of community needs and can project demand for a well-connected walkway system. A demographic analysis was completed by the Town of Wendell using the 2010 US Census Bureau information as well as the American Community Survey (ACS). Key population facts include the following (refer also to Table 2).

- Population increased by 26% since 2000.
- 30% of the population is under 18.
- 14% of the population is living below the poverty level.
- Zero persons reported commuting by walking or biking.
- 7% of the population commutes less than 10 minutes daily to work.
- 23% of the population is enrolled in a local school (K-12).
- 8.6% of households reported not having a vehicle available for use.
- 23% of the population is over the age of 55.

Table 2. Demographic Overview

Wendell Demographics	Source	Estimate	% of Total
Total Population (Wendell)	2010 Census	5,845	100%
Minority Population (Wendell)		2,450	42%
Population (Wendell)	ACS 5-Year Estimate (2010-2014)	6,070	100%
Population Living Below Poverty Line			
Wendell		1,280	20.9%
Wake County		N/A	11.3%
North Carolina		N/A	17.6%
Median Household Income per Year			
Wendell		$45,304	N/A
Wake County		$66,579	N/A
North Carolina		$46,693	N/A

Existing Analysis

Part of the answer as to why many people walk in Wendell – and why more people don't walk – can be found in the level of accommodation for pedestrians. It is tempting to limit the observations of pedestrian accommodations to existing sidewalks or pathways alone, but the way that intersections are designed; the way that the shops, businesses and homes of Wendell are located and developed; and the policy environment that guides the development of the Town, County, and State are all important considerations as well.

Wendell's existing sidewalk inventory is fairly aged with the exception of recent neighborhood development such as Wendell Falls. Older sidewalks like the ones along Wendell Boulevard near the downtown area are narrow and often crumbling. The same situation can also be found in the downtown area. Older sidewalks in this area are in need of repair and additional sidewalks are needed within the grid system to complete a useful network for the redeveloping area. Figure 3, on the next page, includes an inventory of existing pedestrian facilities in Wendell. Wendell currently has over 12 miles of sidewalks. Many of the sidewalks near the downtown area are older and are in need of rehabilitation. Damage such as cracks, holes and uneven surfaces can be found throughout Town. Weather, age and vehicles driving over curbs are at fault for most of the damage seen at intersections. Table 3 identifies locations in where accessible ramps are either in need of repair or are missing all together. Many of the intersections don't comply with current ADA requirements, for example they lack ramps, level landing areas, or detectable warning strips. The newer sidewalks such as those in the Wendell Falls Community are more extensive, accessible, and in very good condition. The sidewalks in Wendell Falls are for public use and will be Town maintained. Although new sidewalks are in better repair than older sidewalks, regular maintenance and repair is needed to keep sidewalks in good condition. Currently maintenance is performed on facilities by the Public Works Department.

Pedestrian Destinations

The Town has a number of schools, a Parks and Recreation Community Center, and commercial centers that should be considered pedestrian generators and were given special attention when prioritizing pedestrian projects. The Community Center is located on Third Street west of Wendell's Downtown. The Center is equipped with athletic fields, disc golf course and the Hugh T. Moody Trail. The Moody Trail is a two-mile, off-road walking trail located near the Community Center. Important generators as these should be well served by better sidewalk connections.



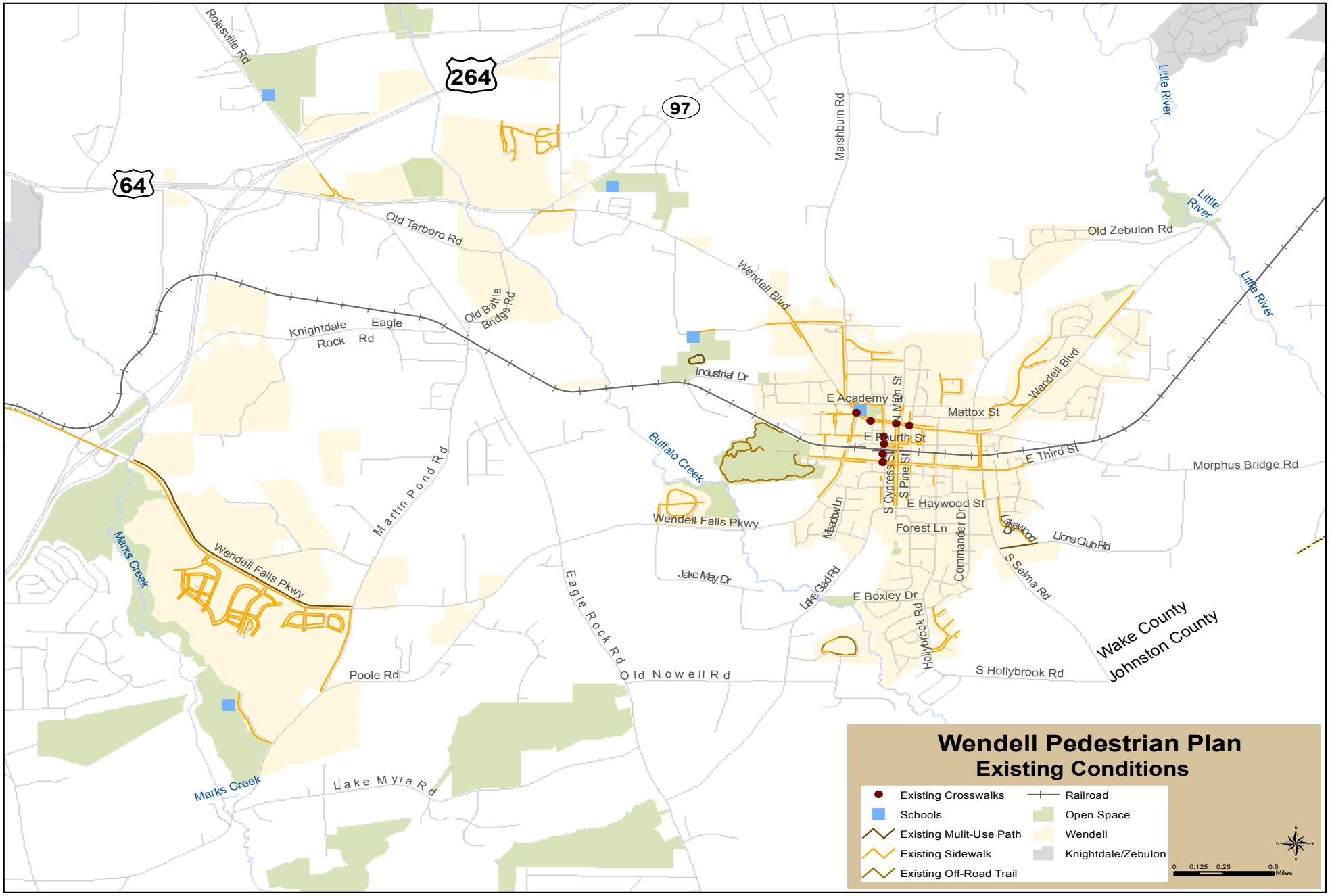


Figure 3. Existing Pedestrian Facilities

Wendell is served by the Wake County Public School system. There are five public schools within or near the Town limits. Many school trips could be taken by foot if connections around the schools were designed for pedestrians. Sidewalks are available in some areas around the local schools but do not offer a complete path to the schools nor connections to nearby neighborhoods. A lack of accessible ramps are a common theme around Town and near Wendell Elementary as are pedestrian crosswalks at all the schools. Currently there are no high visibility crosswalks or pedestrian signals in Town. Infrastructure improvements around schools can greatly improve the walking environment. Public Works addresses facility issues when the problem is severe and contingent upon available funding. The Town would benefit from a regular sidewalk maintenance program to prevent the severe issues that plague some of the older sidewalks from years of neglect.

Academy Street near Wendell Elementary - Obstruction in sidewalk





Lake Myra Elementary - Lack of crosswalk

Wendell Boulevard at Wendell Elementary - Crossing in need of upgrade and lack of accessible ramp



	Third Street	Wendell Boulevard	Second Street	Fourth Street	Hollybrook Road	First Street
Wendell Falls Park-way	●					
Cook Street						
Cypress Street	●	●		●		●
Main Street	●	●	●	●	●	●
Pine Street	●	●		●		
Selma Road	●	●		●		
Hollybrook Road	●	●				
Hanor Lane		●				
Academy Street		●				
Wall Street		●				
Magnolia Street		●				
Oakwood Avenue		●				

Table 3. Ramp Concern Locations



Cypress St &Third St- Lack of ramp access to sidewalk



Main St & Third St - Ramp access present to stairs



Wendell Blvd & Pine St - Lack of ramp access to crosswalk

Downtown Wendell is a popular destination. Several restaurants and retail shops occupy the majority of the space. Locals can be seen shopping and enjoying the evenings at local outdoor dining establishments and ice cream shops. Wendell Falls residents have many walking amenities including the pool, walking trails, parks, and the Grounds Cafe located in the Farmhouse. Retail and food establishments are located along Wendell Boulevard near the intersections of Hanor Lane and Liles Dean Road.

127 million

walking trips occur daily in the U.S.







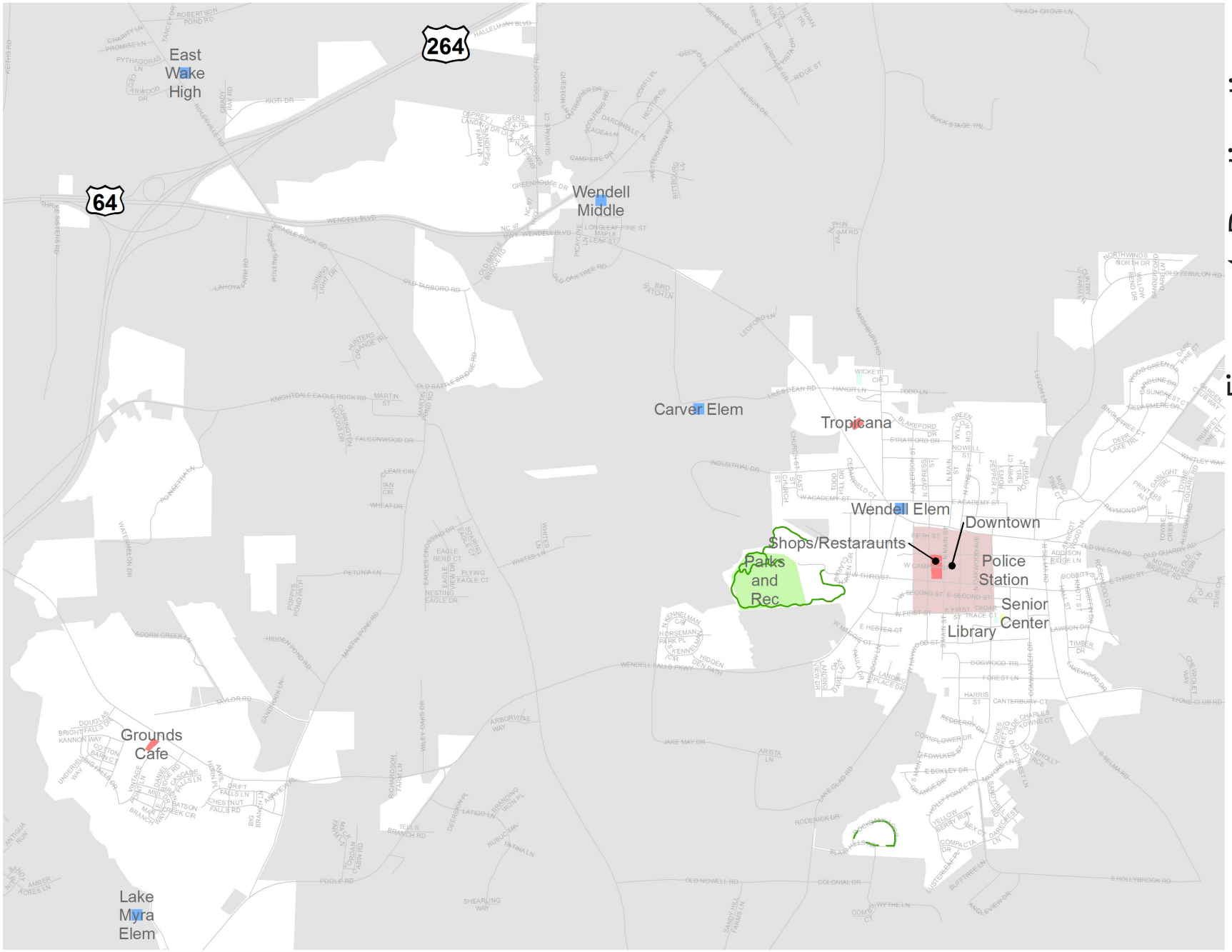


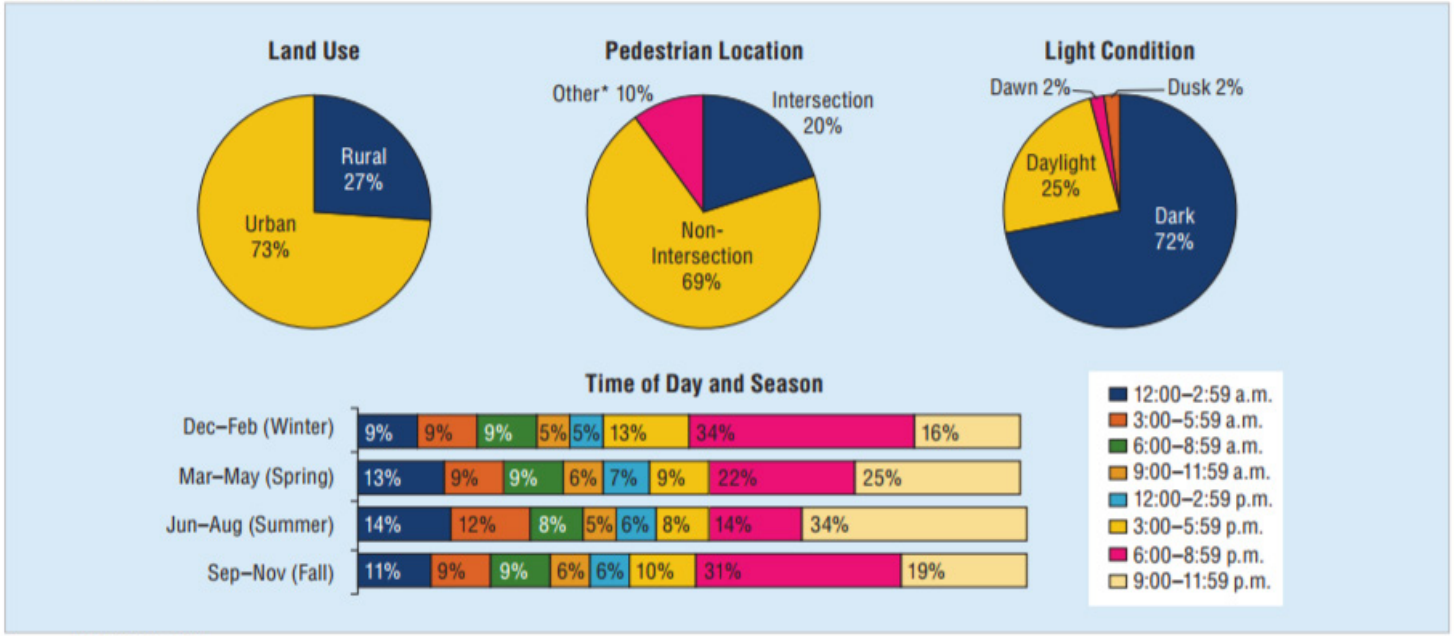
Figure 4. Destinations

A pedestrian crash analysis is useful because it can be an indicator of the pedestrian-friendliness of a community, and can also provide information on key locations or educational outreach areas where improvements could be made to enhance safety. A crash analysis can often indicate popular walking routes, and sometimes illustrate conflict areas between pedestrians and cyclists. The North Carolina Department of Transportation provided data for pedestrian crashes from 2004-2015. It is important to note that not all crashes are reported to the Police.

Figure 5 displays the locality of the reported crashes. Eleven crashes were reported in Wendell during the reviewed time period. Two of the crashes were reported as fatal, one in 2004 and the other in 2013. Three crashes were reported along Wendell Boulevard near the intersection of Liles Dean Road within close proximity to each other. This data reinforces the notion that pedestrian amenities are needed along and across major thoroughfares to improve the safety of pedestrians. A majority of the crashes were at intersections. These facts could indicate that one of Wendell's strongest needs is to make safety improvements at intersections, such as pedestrian signalization, crosswalk improvements, traffic calming and/or signage. The recommendations in this Plan take into account the locations and known details of the crashes.

In the United States

Percentage of Pedestrian Fatalities in Relation to Land Use, Pedestrian Location, Light Condition, and Time of Day and Season, 2013



Source: FARS 2013 ARF.
Note: Unknown values were removed before calculating percentages.
*Other includes parking lane/zone, bicycle lane, shoulder/roadside, sidewalk, median/crossing island, driveway access, shared-use path/trail, non-trafficway area, and other.

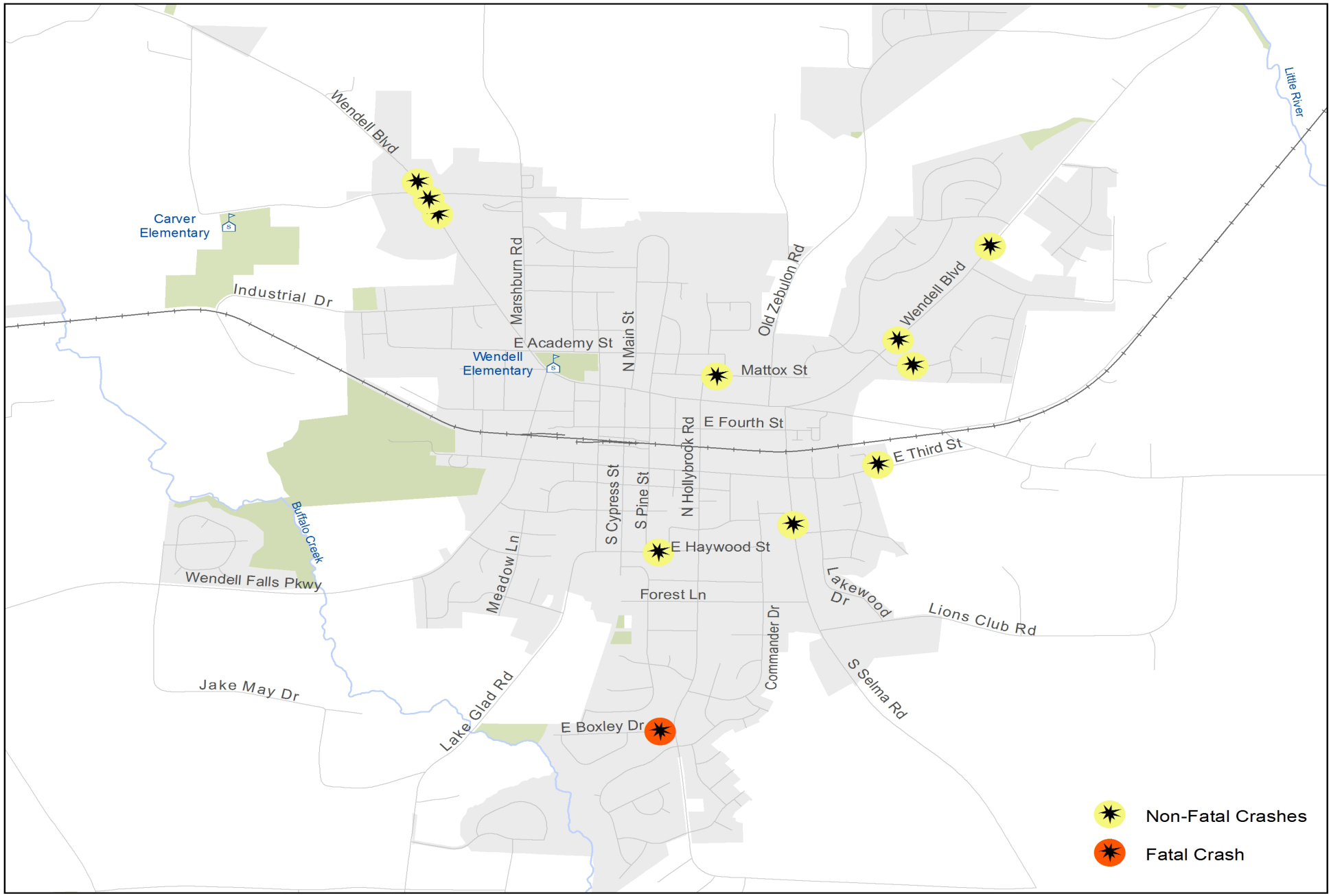


Figure 5. Crashes

Concerns and Needs

Public input has played a critical role in the development of the Wendell Pedestrian Plan. All the comments and feedback received during public outreach activities of the Plan will be used to develop the project, program, and policy recommendations outlined in the Plan. The Pedestrian Plan survey was distributed in hardcopy format by Steering Committee members and Town staff to local groups, the Elementary School staff, and at Town Hall. The survey was also available online. Informational handouts regarding the online survey were distributed by Town Hall at several business and Community Centers. Notification of the project and survey were also shared on the Town of Wendell's Facebook page. The survey was also available at the July 2016 Open House, as well as online from April 2016-August 2016. The survey had 132 total responses. Full results of the Pedestrian Plan survey can be found on the following pages.

The majority of survey participants indicated that they currently walk for recreation (72%) or other reasons (47%), compared to just 10% for transportation purposes. However, survey responses strongly indicate that a lack of sidewalks in Wendell contributes to the decision not to walk more, in addition to fear of traffic and concerns over distance or time. Based on survey responses, many Wendell residents are currently walking to visit family and friends living nearby (30% of survey respondents), with walking trips to local parks and recreation centers ranking second in favorite pedestrian destinations. Many survey respondents indicated that they would like to walk more for leisurely activities, such as to visit friends, local parks, the library, churches, and entertainment venues.

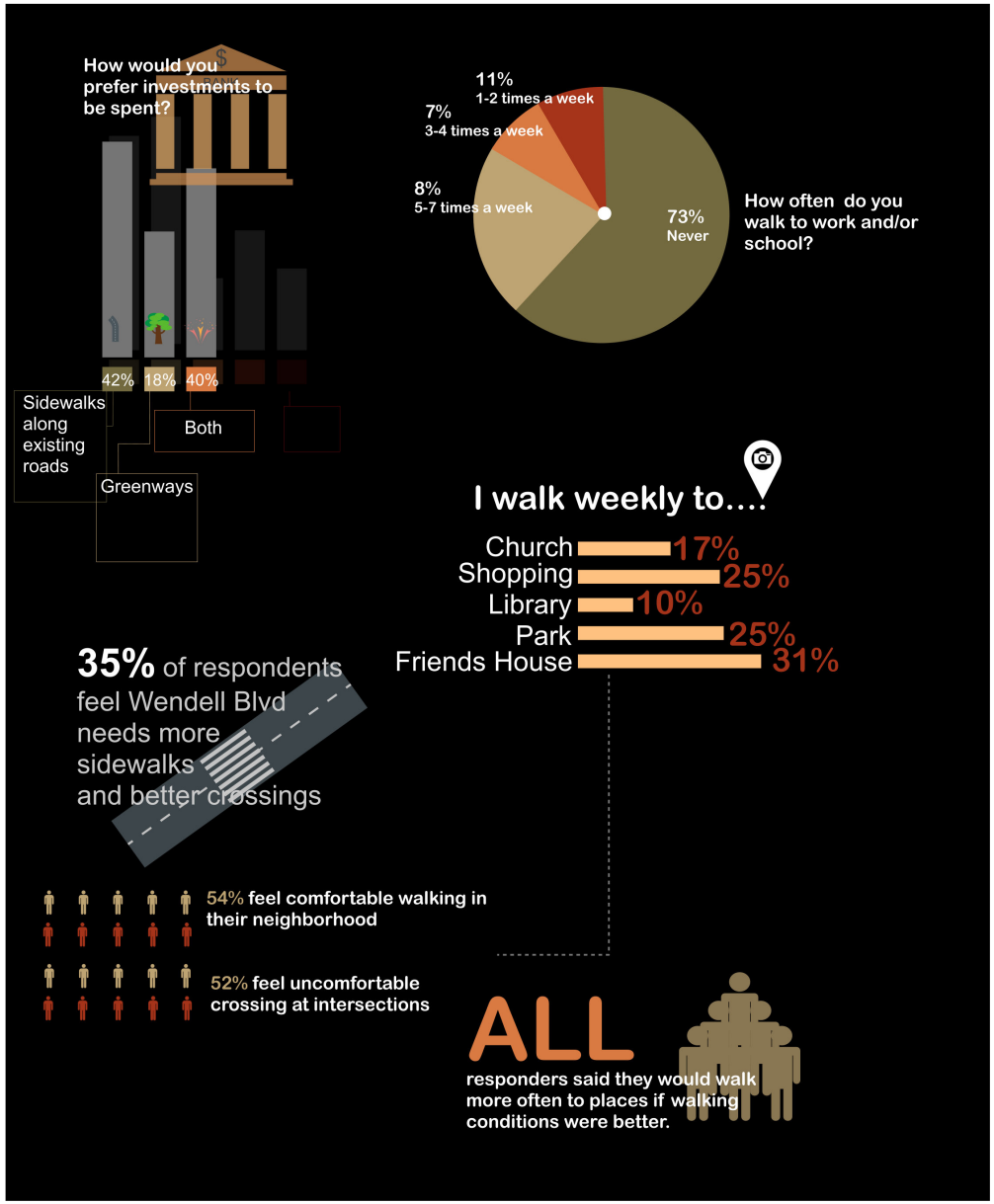
When asked about the level of comfort or security residents feel about walking in Wendell, most indicated that they felt most comfortable in their own neighborhoods (52%). Forty-eight percent (48%) of respondents feel comfortable walking downtown and 32% feel comfortable walking in the areas around their workplace, while local intersections were rated as the least comfortable pedestrian environment. In addition to information on these valuable indicators, survey respondents also recommended sidewalk and greenway projects, as well as intersection improvements, which have been incorporated into the project recommendation section of the Plan. Forty-four percent (44%) of respondents had the desire for funds to be directed toward sidewalk projects along existing roads rather than toward greenways along natural areas (18%). This response indicates the perceived public need and desire for more sidewalk connectivity throughout the Town.

The full survey report is located in Appendix A.

SURVEY SAYS.....

survey results

143 responses



Existing Policies & Plans

The Town as well as local agencies have undertaken numerous efforts to enhance transportation infrastructure and encourage walking. Local plans and polices related to pedestrian facilities and walking were reviewed. The following provides an overview of local plans and policies as it relates to the goals and objectives of this Plan.

Plans

NCDOT Complete Streets Guidelines (2012)

The Complete Street Guidelines directs NCDOT to consider and incorporate all modes of transportation to new and existing infrastructure. The policy encourages collaborations with local communities during the design phase to collaborate on needs of the area.

Wake County Transportation Plan (2003)

The Wake County Transportation Plan focused on improvements along thoroughfares in the County and developed recommendations for roadway, transit, bicycle and pedestrian needs. Sidewalks and planting strips are noted as important in creating a more desirable pedestrian space along a road. The Plan recommends sidewalks should be evaluated on a case by case basis for additional width (over 5'). Recommendations from the Plan include: Widening Eagle Rock Rd to four lanes and include a landscaped median and a 10' multi use path from Poole Rd to Wendell Blvd (one side) and sidewalks be installed as development occurs; Widen Poole Rd from Eagle Rock Rd to Barwell Rd to four lanes with landscaped median and a 10' multi use path on one side and sidewalks be installed as development occurs. The 10' path planned for Eagle Rock Rd would connect to the multi use path recommended for Wendell Falls Parkway. This would offer a great connection for pedestrians and cyclists into Wendell.

Wake County Greenway System Plan-Draft (2017)

The overall goal of the Greenway Plan is to connect Wake County with a network of trails. The trails will provide connection within and between communities. The plan proposes bridging the gap between the Wendell Falls Community along Wendell Falls Parkway to the downtown Wendell area. A connection from Lake Myra Park to Hugh T Moody Trail is also proposed. These planned facilities offer connections to different parts of Town as well as the Wendell Parks and Recreation Center. Further planned facilities would create a well defined network to access a popular area.

Wendell Comprehensive Plan (2007)

One of the guiding principles of the 2007 Comprehensive Plan is to “ensure local and regional interconnectivity and transportation options while also maintaining Wendell as a walkable community”. Recommendations in the plan include completing a Comprehensive Pedestrian Plan (in process), adopt new development standards for sidewalks (completed) providing pedestrian accommodations along connecting corridors making downtown Wendell within easy walking distance from many parts of the Town and implementing the 2007 Collector Plan to ensure the future network accommodates all users. Also included in the Comprehensive Plan are the identification of several greenway corridors (1. Little River to provide a major north-south greenway corridor, 2. Zebulon-Wendell greenway, 3. Marks Creek to connect Wendell with Knightdale and provide access to Carver Elementary School, 4. Buffalo Creek to connect Wendell with Knightdale and provide access to East Wake High School.

Wendell Transportation Plan (2016)

The 2016 Transportation Plan includes new roadways and well as upgrades to existing roadways. This Plan was adopted in November 2016 and provides citizens, the development community and Town staff with an easy-to-understand and rational document that guides arterial and collector street design.

Unified Development Ordinance

The Unified Development Ordinance includes form based standards by zoning districts. Within the standards are requirements for sidewalks and multi-use paths on one or both sides of the roads. Several of the Districts defined in the UDO such as Neighborhood Center, Community Center and Corridor Mixed-Use encourage pedestrian use by encouraging pedestrian connections and proximity notations of residential and commercial nodes to increase pedestrian trips. The UDO defines development context districts and the sidewalk requirements (various widths depending on area) for each.

CAMPO 2040 Long Range Transportation Plan (2015)

The Capital Area Metropolitan Planning Organization (CAMPO) developed a long-range transportation plan as a guiding document for future investments in roads, transit, bicycle and pedestrian facilities for the region. CAMPO is a federally mandated and federally funded transportation policy-making organization that is made up of representatives from local government and governmental transportation authorities. Wendell is located in the CAMPO planning area. Connectivity, access improvements, and safety enhancements are overall goals of many of the projects in the Plan. CAMPO is committed to working with communities to accommodate multi-modal uses.

Northeast Area Study Capital Area Metropolitan Planning Organization (2014)

The following study was conducted by CAMPO and relates to Wendell as it is in the area served by the MPO. CAMPO initiated the Northeast Area Study to identify transportation strategies for areas within the Northeast portion of Wake County, including Wendell. The study promotes the idea of accommodating roadways for all modes of travel. Design guidelines are included for on- and off-roadway paths for pedestrian connections. Many of the guidelines include a minimum width of 5’ for sidewalks and planting strip separating pedestrians from the roadway. The report identifies the following for Wendell area roads: 1. Wendell Falls Parkway -Widening to 4 lanes and include a multi use path along the corridor. 2. Wendell Boulevard from Highway 97 to Liles Dean Rd - Widen to 4 lanes and include sidewalks on both sides. 3 Wendell Boulevard from Liles Dean Rd to Wendell Falls Parkway - Widen to 3 lanes and include sidewalks on both sides.

Wendell Collector Street Plan (2007)

The Town of Wendell developed a Collector Street Plan to create a plan for the future transportation network. The Plan identified many new construction collector street opportunities. The Plan also included recommendations to amend ordinances to require sidewalks are built on both sides of new construction collector streets and be a minimum of 5’ wide with at least 4.5’ planting strip separate the sidewalk from the street. Recommendations from the Collector Street Plan were considered when finalziing recommendationsin this Plan.

Policies

Local policies and plans can heavily influence the walkability of a community, and often shape the pedestrian environment, sometimes even without the intent of doing so. Creating strong policies and plans that help to actively create good walking conditions will mean a more balanced future transportation network and a shared private/public burden for providing that benefit. Policy amendments and planning activities can often be achieved at a low-cost to a municipality while resulting in substantial outcomes, and could help Wendell make notable progress in developing a more walkable environment. During the development of the Pedestrian Plan, several pedestrian-friendly policy and program recommendations specific to Wendell were identified and discussed. Recommendations for policy modifications begin on page 86.



Street trees can offer valuable shade in hot weather and create a pleasant walking environment. Developing a street tree ordinance could help to enhance the quality of Wendell's streets.



Developing a Bike/Ped Advisory Committee would allow citizen perspective on walking and biking in town and help identify issues and areas for improvements.

The following section includes an assessment of the various policies, plans and regulations that directly or indirectly affect walking in Wendell:

- Wendell Code of Ordiances
- Unified Development Ordinance
- Standard Specifications and Design Manual
- Arterial and Collector Street Plan

Code of Ordinances

A town adopts and modifies its ordinances under the regulatory powers granted by the State of North Carolina to guide development, identify the appropriate uses for land in the municipal boundary and extra-territorial jurisdiction (ETJ), and provide guidance on appropriate actions for its citizens to protect their health and well-being. Important considerations for pedestrians in the Wendell Code of Ordinances include the following:

- New Construction: Sidewalks are required on one side of major and minor thoroughfares. The Town shall give full considerations to stated criteria in the ordinances if sidewalk construction is needed along a second side. (Sec 20-41)
- Sidewalk corridors shall be provided within the parking areas and/or along the perimeter to provide safe building access for pedestrians. (Sec 10-3)
- No bicycles, roller skating or skateboarding allowed on a sidewalk (Sec 20-2)
- No parking on a sidewalk (Sec 24-90)

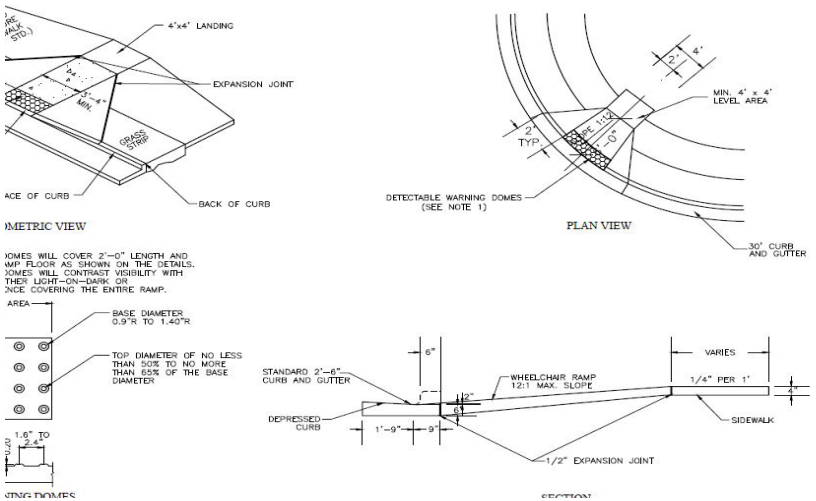
In 2017 the Town Board adopted an ordinance that can assist in generating funds for enhancing walkability in Wendell. Current land develop code allows developers to pay a fee in lieu of land dedication if a project meets certain criteria with the land development code and approved by the Board. The money collect is used to fund future sidewalk projects that can expand the network and help to eliminate the disconnection of facilities that occur during development. New regulations such as this, moves Wendell once step further in creating a more walkable community that attracts residents and businesses for years to come.

Unified Development Ordinance

- Inconsistencies between zoning classifications for pedestrian requirements sometimes create discontinuous sidewalks.
- Form based standards on sidewalk requirements by zoning districts defined (Chapter 2)
- Fee in lieu requirement to install sidewalk per the standards of the Wendell Unified Development Ordinance (UDO) may request to pay a fee in lieu of said physical improvements.
- Street trees are required to be planted on both sides of the road even when sidewalk is only required on one side. (Chapter 8)
- Tree protection provisions are included which protects the older larger trees that offer shade.

Standard Specifications and Design Manual
The Standard Specifications and Design Manual contain minimum design standards for all development and utility projects in Wendell. The manual defines items that directly relate to pedestrian needs and designs:

- Stop bars and crosswalks on all streets when required
- All pavement markings should be made with reflectorized thermoplastic striping in accordance to NCDOT standards
- Regulatory signs should meet the requirements of the Manual on Uniform Traffic Control Devices
- Pedestrian crossings, curb cuts and ramps shall be provided at all intersections in accordance with NCGS 136-44.14

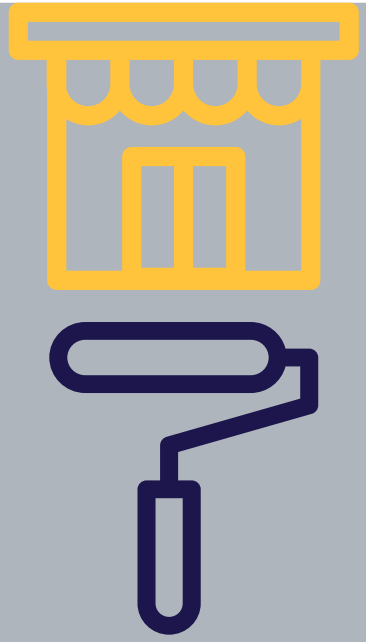


Standard Wheelchair Ramp Design from the Standard Specifications and Design Manual.

Considering a town to be walkable goes beyond having the right facilities to get people from place to place. The process of becoming more walkable should start and end with education and enforcement programs to teach children and adults benefits of walking and how it can be done safely. Currently Wendell is participating with Safe Routes to Schools (details in Chapter 3) to gather more information on programs that can be initiated at the four area schools. The Town sponsors a yearly Public Safety event to raise awareness of the functions of safety agencies. In 2016, the Town hosted its first bicycle safety clinic to train the Town's police officers and local children safe riding skills. Safety education, whether biking or walking is critical for children. Teaching safe moments while they are young is something each child will take with them through life. Encouraging and teaching the community the benefits of walking can effect the entire Town. Chapter 4 describes programs that can be initiated to set the framework for great walking.

Wendell Arterial and Collector Street Plan

Wendell Arterial and Collector Street Plan" which identifies future road connections and improvements, including full cross-sections. 6' sidewalk required for all collector and arterial road classifications.



Case Study: Let's Paint the Town

"The positive change in Greenville, KY, was neither an accident nor left to chance; rather, it was the result of a small community with a vision for how to build on its local assets and infrastructure, seek innovative financing, and cultivate partnerships in a challenging economic environment. This southwestern Kentucky town's revival can serve as a model for other small communities throughout the country working to revive their historic downtowns and Main Streets. By investing in downtown through streetscape improvements and increased pedestrian access, the city of Greenville, KY, (population: 4,000) an attractive place for entrepreneurs to open new businesses. The city and the Tourism Commission launched a "Let's Paint the Town" initiative which joined business owners and volunteer citizens to paint building façades and restore many to their original colors and designs. Around 15 buildings were given a facelift through painting and façade restoration, including one where mid-century hand painted signs were discovered and restored after vinyl siding was removed."

Source: https://www.nado.org/facades-festivals-and-footpaths-greenville-kentuckys-downtown-redevelopment/



Recommendations

This section identifies potential future projects that will improve pedestrian conditions in Wendell, and outlines a prioritization methodology (page 72) for these projects. The projects in this section were developed based upon input from Town staff, the Steering Committee, and public input through surveys and a project Open House held in July 2016.

Pedestrian facilities frequently include sidewalks, greenways, and intersection improvements. Such facilities can be built as part of a roadway construction project, or independently. The Wendell Comprehensive Pedestrian Plan identifies several proposed pedestrian facilities that can help make Wendell a more walkable community, building on a very accessible, historic core and new energy provided by recent and upcoming private developments.

Project recommendations for the Pedestrian Plan are broken out into three distinct categories: Sidewalks, Unimproved Trail and Crossing Improvements (table 4 and Figure 7) . These projects were identified through the public involvement process, survey results, discussions with staff and Steering Committee members, as well as field and data reviews by Stantec Consulting Services Inc. Each project recommendation is labeled with a number that corresponds with information in the recommendation table. Sidewalk recommendations were considered for either one or both sides of the roadway. Each project listed in the Plan is for one side of the road. In some cases, such as Hollybrook Road, two projects are recommended for the corridor, one on each side. Figure 5 and 6 and table 3 outline sidewalk, multi-use path and unimproved trail improvements that are recommended in the Plan. Figure 7 outlines intersection locations that are recommended for improvements and corresponds with table 4 which outlines the needs for each.

The following pages 44-65 provide the sidewalk and intersection improvement recommendations of this Plan.

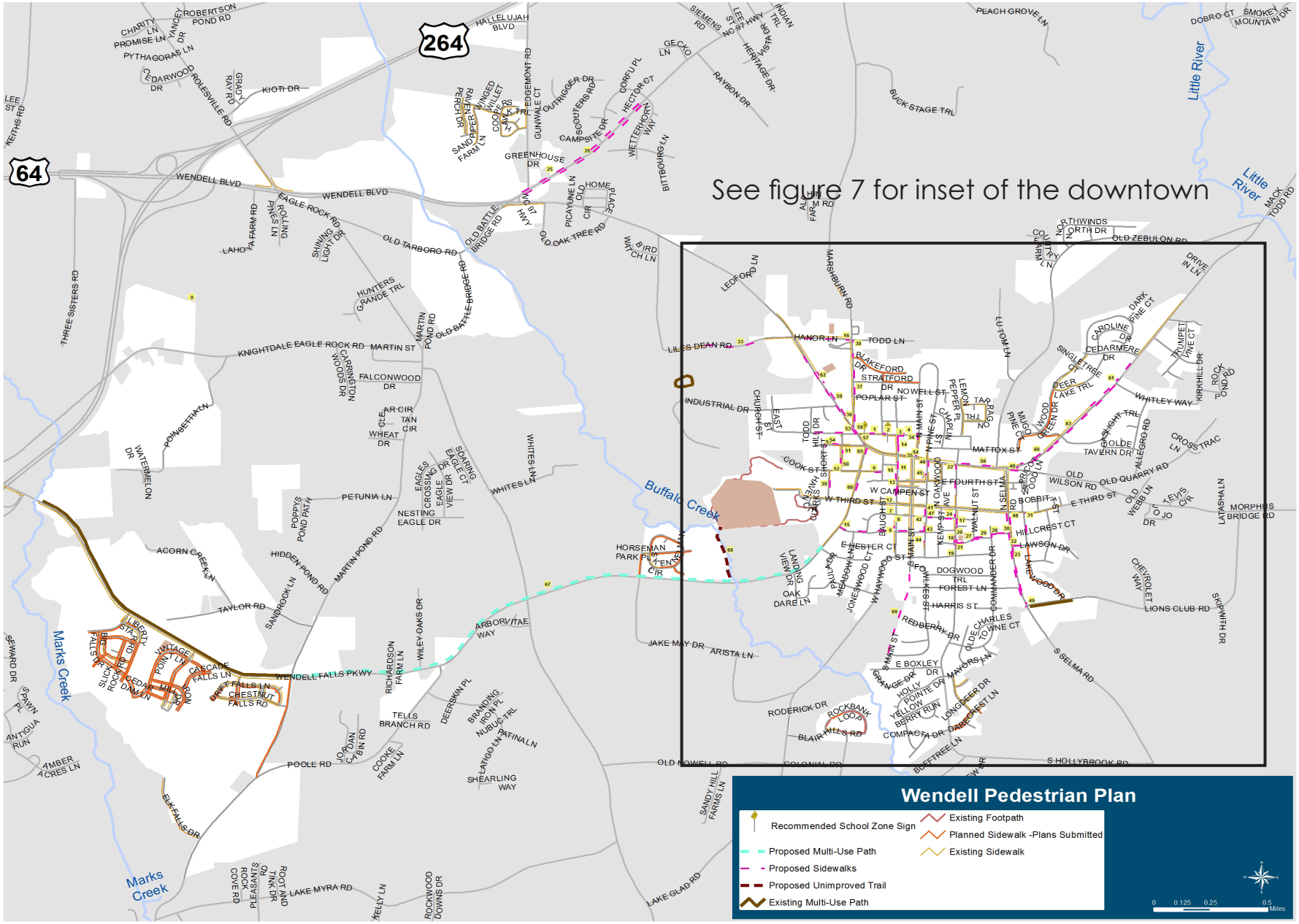


Figure 6. Recommended Pedestrian Facilities

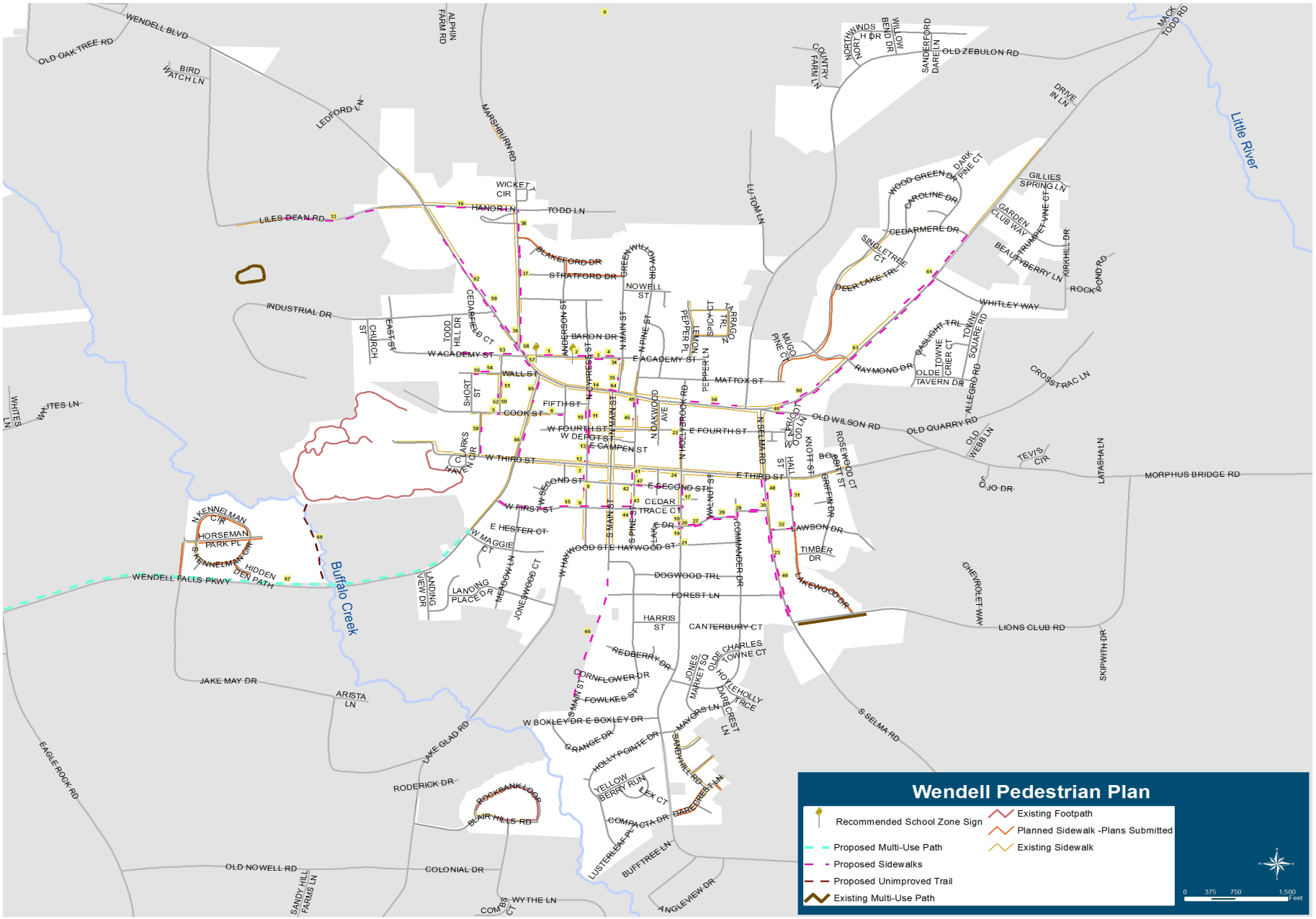


Figure 7. Recommended Pedestrian Facilities Downtown Area

Table 4. Sidewalk/Trail Recommendations

ID	Corridor	To Road	From Road	Length(ft)
1	Academy St	Existing Sidewalk-Anderson St	Existing Sidewalk-Wendell Blvd	129
2	Academy St	Anderson St	Cypress St	310
3	Academy St	N Cypress St	Main St	452
4	Academy St	N Cypress St	Main St	482
5	Cook St	Existing Sidewalk-Martin St	Existing Sidewalk-Wendell Falls Pkwy	107
6	Cook St	Existing Sidewalks-Wendell Falls Pkwy	Magnolia St	181
7	Cypress St	Existing Sidewalk-First St	Second St	132
8	Cypress St	Second St	Existing Sidewalk-First St	143
9	Cypress St	Third St	Second St	208
10	Cypress St	Existing Sidewalk-Fifth St	Fourth St	284
11	Cypress St	Academy St	Wendell Blvd	471
12	Cypress St	Existing Sidewalks-Third St	Fourth St	507
13	Cypress St	Wendell Blvd	Fourth St	527
14	Cypress St	Fourth St	Third St	542
15	First St	Wendell Falls Pkwy	Pine St	2,000
16	Hanor Ln	Wendell Blvd	Marshburn Rd	1,249
17	Hollybrook Rd	Second St	Southwood Ct	164
18	Hollybrook Rd	Second St	Third St	196
19	Hollybrook Rd	Lake Dr	Haywood St	255
20	Hollybrook Rd	Lake Dr	Haywood St	267
21	Hollybrook Rd	Cedar Trace Ct	Lake Dr	300
22	Hollybrook Rd	Southwood Ct	Lake Dr	411
23	Hollybrook Rd	Fourth St	Wendell Blvd	758
24	Selma Rd	Lions Club Rd	Third St	2,423
25	Hwy 97	Wetterhorn Way	Wendell Blvd	3,766
26	Hwy 97	Wetterhorn Way	Wendell Blvd	3823
27	Lake Dr	Commander Dr	Selma Rd	409
28	Lake Dr	Selma Rd	Commander Dr	509
29	Lake Dr	Hollybrook Rd	Commander Dr	800
30	Lake Dr	Hollybrook Rd	Commander Dr	824
31	Lakewood Dr	Lawson Dr	Third St	774
33	Liles Dean Rd	Existing Sidewalk-Liles Dean Rd	Existing Sidewalk-Wendell Blvd	1,415

ID	Corridor	To Road	From Road	Length(ft)
34	Main St	Academy St	Existing Sidewalk-Wendell Blvd	69
35	Main St	Existing Sidewalks -Poplar St	Wendell Blvd	225
36	Marshburn Rd	Todd Ln	Blakeford Dr	435
37	Marshburn Rd	Wendell Blvd	Existing Sidewalk-Poplar St	583
38	Marshburn Rd	Existing Sidwalk-Poplar St	Blakeford Dr	971
39	Martin St	Cook St	W Third St	461
41	Pine St	Second St	First St	112
42	Pine St	First	Second St	135
43	Pine St	Third St	Second St	219
44	Pine St	First St	Haywood St	247
45	Pine St	Wendell Blvd	Fourth St	271
46	Pine St	Wendell Blvd	Fourth St	350
47	Second St	Hollybrook Rd	Pine St	561
48	Selma Rd	Third St	Existing Sidewalk-Lake Dr	336
49	Selma Rd	Lawson Dr	Lions Club Rd	1,495
50	Todd St	Existing Sidewalk-Wall St	Existing Sidewalk-Cook St	89
51	Todd St	Existing Sidewalk-Wall St	Cook St	161
52	Todd St	Existing Sidewalk-Wall St	Cook St	294
53	Wall St	Existing Sidewalks-Todd St	Short St	183
54	Wall St	Existing Sidewalk-Short St	Todd St	272
55	Wall St	Wendell Blvd	Academy St	1,000
56	Wendell Blvd	Marshburn Rd	Academy St	115
57	Wendell Blvd	Existing Sidewalk	Academy St	134
58	Wendell Blvd	Existing Sidewalk-Selma Rd	Existing Sidewalk-Raymond Dr	634
59	Wendell Blvd	Existing Sidewalk-Academy St	Wall St	636
60	Wendell Blvd	Hollybrook Rd	Old Zebulon Rd	796
61	Wendell Blvd	Marshburn Rd	Existing Sidewalk-Liles Dean Rd	1,636
62	Wendell Blvd	Existing Sidewalk-Raymond Dr	Existing Sidewalk-Cedaremere Dr	1,701
63	Wendell Blvd	Liles Dean Rd	Industrial Dr - Existing Sidewalks	1,807
64	Wendell Blvd	Old Wilson Rd	Whitley Way	3,262
65	Wendell Falls Pkwy	Wendell Blvd	Existing Sidewalk-Cook St	414
66	Wendell Falls Pkwy	Third St	Existing Sidewalk-Cook St	515
67	Wendell Falls Pkwy	Wendell Falls Pkwy	Existing Sidewalk	1,329
68	Unimproved Trail -Horseman Path	Hugh T Moody Trail	Wendell Falls Parkway	900

Table 5. Crossing Improvements

Id	Type	Intersection
1	Addition of Crosswalks and Ramps	Cedar Trace Ct & Hollybrook Rd
2	Addition of Crosswalks and Ramps	Second St & Hollybrook Rd
3	Addition of Crosswalks and Ramps	Lake Dr & Hollybrook Rd
4	Addition of High Visibility Cross-walk	Academy St @ Wendell El-ementary
5	Addition of Crosswalks and Ramps	Wendell Blvd & Wall St
6	Addition of Crosswalks and Ramps	Academy St & Wendell Blvd
7	Addition of Crosswalks, Ramps and Pedestrian Signals	Liles Dean Rd & Hanor Rd
8	Addition of Crosswalks	Wendell Blvd & Old Battle Bridge Rd
9	Addition of Crosswalks, Ramps and Pedestrian Signals	Wendell Blvd & Selma Rd
10	Addition of Crosswalks and Ramps	Third St & Wendell Falls Pkwy
11	Addition of Crosswalks and Ramps	Wendell Middle & Hwy 97
12	Addition of Crosswalks, Ramps and Pedestrian Signals	Magnolia St & Wendell Blvd
13	Addition of Crosswalks, Ramps and Pedestrian Signals	Cypress St & Wendell Blvd
14	Addition of Crosswalks, Ramps and Pedestrian Signals	Main St & Wendell Blvd
15	Addition of Crosswalks, Ramps and Pedestrian Signals	Wendell Blvd & Pine St
17	Addition of Crosswalks, Ramps and Pedestrian Signals	Hollybrook Rd & Wendell Blvd
18	Addition of Crosswalks and Ramps	Fourth St & Pine St
19	Addition of Crosswalks and Ramps	Main St & Fourth St
20	Addition of Crosswalks and Ramps	Cypress St & Fourth St
21	Addition of Crosswalks and Ramps	Third St & Cypress St
22	Addition of Crosswalks and Ramps	Third St & Pine St
23	Addition of Crosswalks and Ramps	Fourth St & Third St
24	Crosswalks, Ramps, Signals	Wendell Falls Pkwy & Poole Rd
25	Addition of Crosswalks, Ramps and Pedestrian Signals	Wendell Falls Pkwy & Martin Pond Rd
26	Addition of Crosswalks and Ramps	Maggie Ct & Wendell Falls Pkwy
27	Addition of Crosswalks and Ramps	Landing View Dr & Wendell Falls Pkwy
28	Addition of Crosswalks and Ramps	First St & Wendell Falls Pkwy
29	Addition of Crosswalks and Ramps	Cook St & Wendell Falls Pkwy

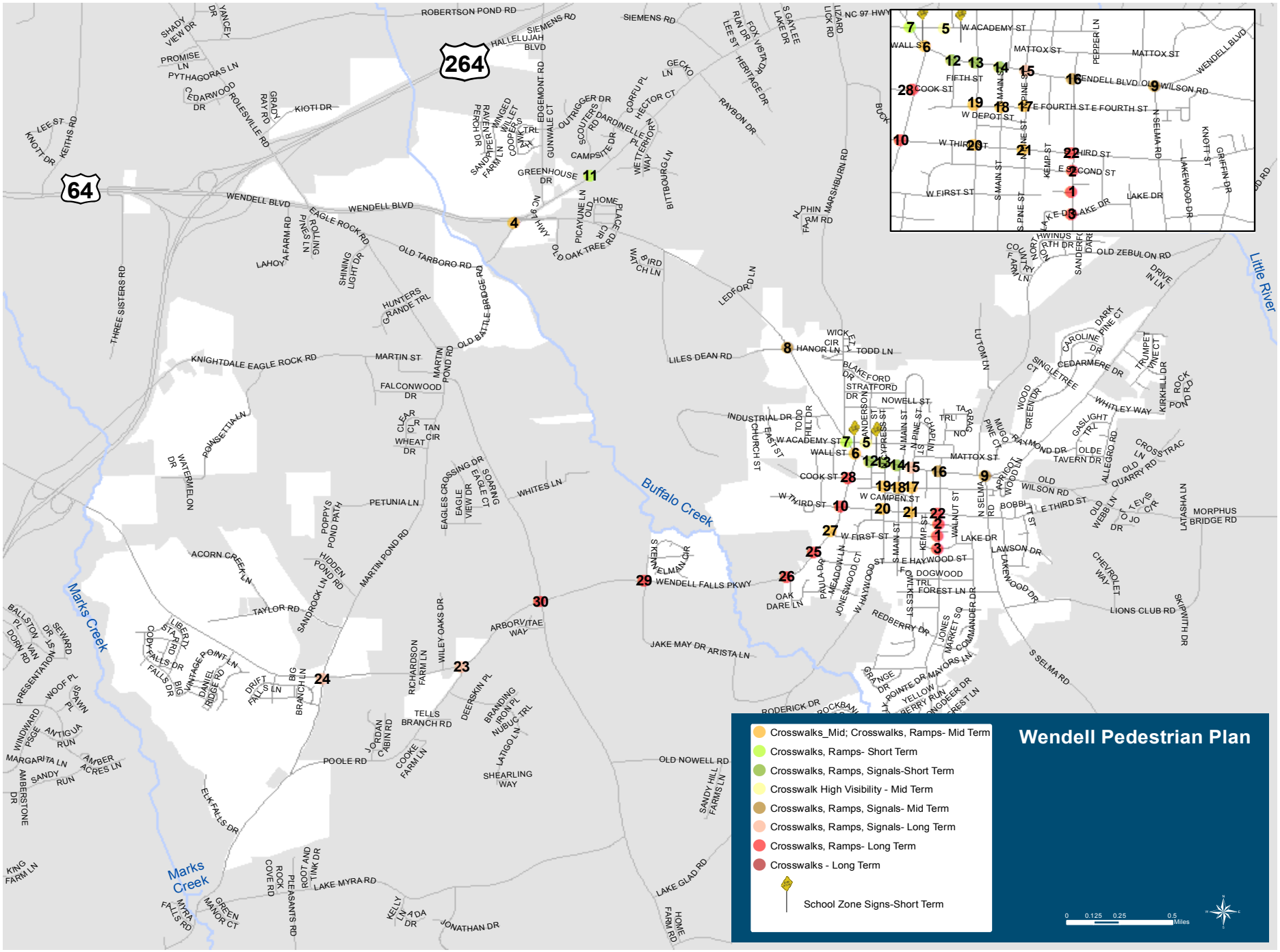
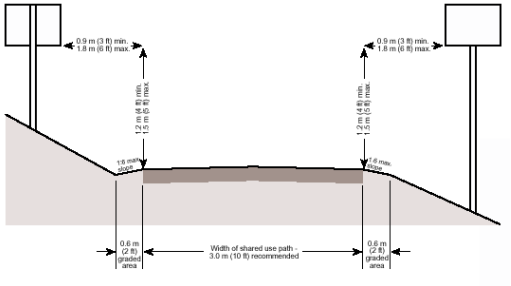


Figure 8. Recommended Intersection Projects

Recommended Shared Use Paths



Unimproved trail, shared-use paths, greenways and trails are among the terms used to describe off-road facilities for pedestrians, bicyclists, skaters and other non-motorized users. Such facilities are often along linear parks, stream buffers or green space corridors, and are favored by recreational and beginner cyclists for their scenic qualities. A unimproved trail is generally native soil, grass or rock. Clearing widths are kept free of brush,limbs, weeds and tall grass. Paths should include width for two-way travel that safely separates bicycle and pedestrian users of the facility.

Currently Wendell has two multi-use paths, the Hugh T Moody Nature Trail and the multi-use path adjacent to the Wendell Falls Community. The Hugh T. Moody Trail is a two-mile unpaved natutral surface trail near the Wendell Parks and Recreation Center. The trail offers an area for exercise as well as a location for nature enjoyment for walkers and trail cyclists.

The Wendell Falls Community has an extensive pedestrian network that includes multi-use paths in and between the residential communities as well as along Wendell Falls Parkway. Future expansion of the network is expected as more development occurs.

These facilities can be a worthwhile investment and valuable asset for any community; in addition to providing transportation and recreational options for residents, trails can be an economic development tool to attract tourists and newcomers, and have also been known to raise property values for adjacent landowners. The Town should also consider acquiring greenway easements for connections to existing developments within its core area.

One unimproved trail connection is recommended in the Wendell Pedestrian Plan. The “Horseman Path” connection would offer a connection from the Hugh T. Moody Trail to Foxborough Crossings neighborhood. This trail would provide access to the Moody trail and the Parks and Recreation Center from Wendell Falls Parkway.

Unimproved Trail/Off-Road Path Recommendations

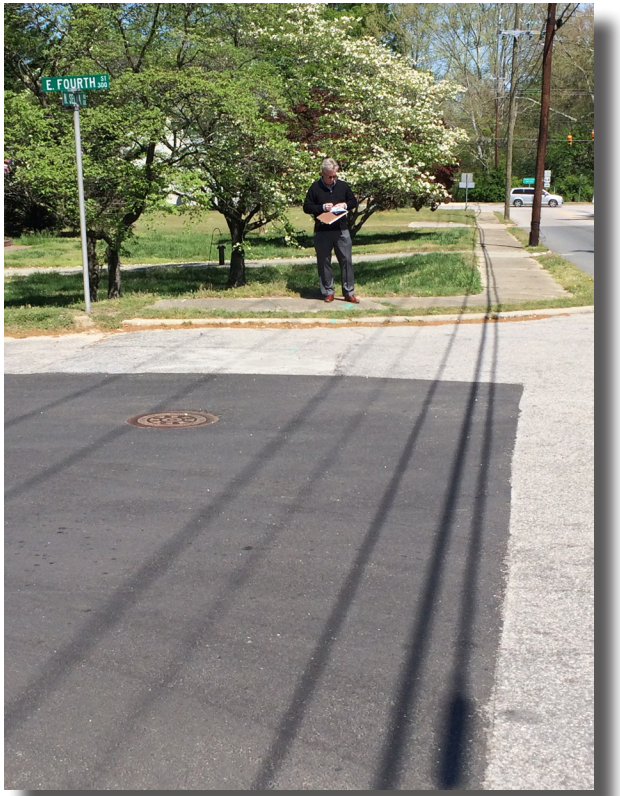
Unimproved Trail	Location	Length (ft)
Horseman Path (Id no. 68 on Figure 5)	Wendell Falls Parkway to Wendell Parks and Recreation Park	900

Intersection and Crossing Improvements

Throughout the planning process, many of Wendell's intersections have been highlighted by stakeholders as major barriers to pedestrian travel. Many intersections in Wendell can be greatly improved by adding crosswalks and, in the case of signalized intersections, countdown pedestrian signals (or "walk signals"). Other intersections may require crosswalks and pedestrian signals.

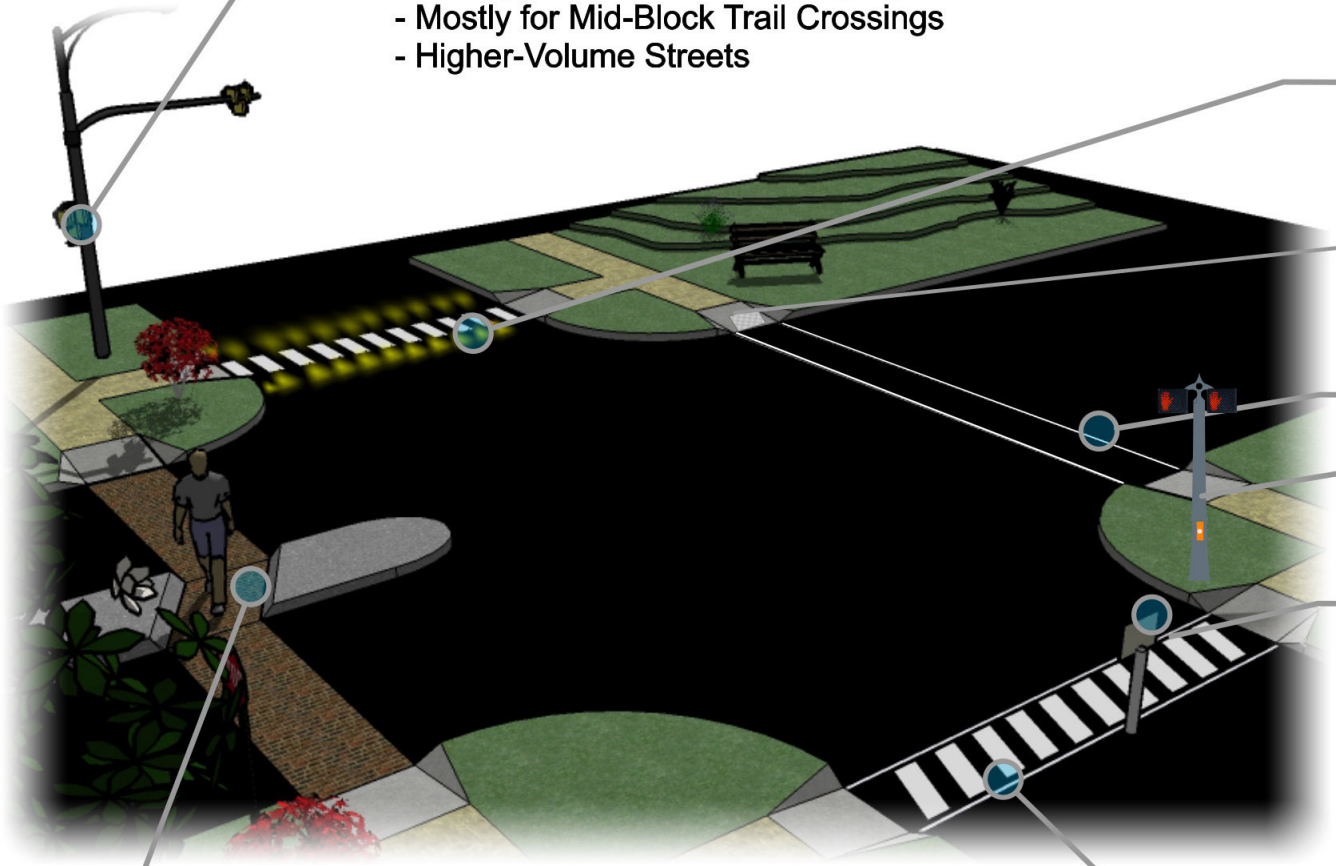
During a field review of the study area many intersections were identified as not being compliant with American with Disabilities Act (ADA). ADA standards are required for new construction and alternative projects. The overall goal of ADA standards in regards to transportation is to ensure accessible accommodations for all users. Curb ramps, detectable warning strips (truncated domes), and other improvements make sidewalks and street crossings accessible for all users to safely cross a street or multiple streets. Intersections that have sidewalks should have accessible ramps at each leg. The map on page 49 identifies the intersections that are in need of changes to improve walking in Wendell. The recommend projects were selected due to lack of accessible features and safe crossing features (i.e. crosswalks and/or crosswalks).





Lack of Accommodations and Accessibility issues including sidewalks, ramps and crossings can be found throughout Wendell. Current conditions impact the ability for all of Wendell residents to travel safely through town by walking. The goal of the Plan is to improve conditions and increase safety while traveling, regardless of the mode of travel.

Above: Wendell Boulevard at Wendell Falls Parkway. Lack of accessible ramp.
Right: fourth Street and Selma Road. Lack of accessible ramp to get off sidewalk.



HAWK Signal
- Consult Tucson Example and MUTCD
- Example has No Parallel Striping
- Mostly for Mid-Block Trail Crossings
- Higher-Volume Streets

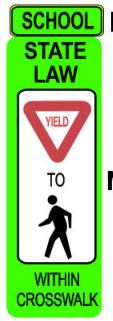
Lighted Crosswalk
- With Ladder Markings
- Pedestrian-Activated or Auotmated

ADA Ramps
- With ramp, level landing area, truncated domes/warning strips

Standard Crosswalk
- Low-Volume Intersections
- Stop- or Signal-Controlled Intersections

Signal
- Pedestrian Activated
- Stop- or Signal-Controlled Intersections

Embedded Signage
- Breakaway Mount
- MUTCD Standard



MUTCD S4-3

MUTCD R1-6

Offset Crosswalk
- Example has Textured Surface
- Level Surface for ADA Accessibility
- Median Required

Zebra Crosswalk
- With Parallel Striping

Examples of Crossing Improvements

Important Safety Reminders

For Pedestrians:

- Walk on a sidewalk or path when one is available.
- If no sidewalk or path is available, walk on the shoulder, facing traffic. Stay alert; don't be distracted by electronic devices, including smart phones, MP3 players, and other devices that take your eyes (and ears) off the road.
- Be cautious night and day when sharing the road with vehicles. Never assume a driver sees you (he or she could be distracted, under the influence of alcohol and/or drugs, or just not see you). Make eye contact with drivers as they approach.
- Be predictable. Cross streets at crosswalks or intersections when possible. This is where drivers expect pedestrians.
- If a crosswalk or intersection is not available, locate a well-lit area, wait for a gap in traffic that allows you enough time to cross safely, and continue to watch for traffic as you cross.
- Be visible. Wear bright clothing during the day, and wear reflective materials or use a flash light at night.
- Avoid alcohol and drugs when walking; they impair your judgment and coordination.

For Drivers:

- Look for pedestrians everywhere. Pedestrians may not be walking where they should be or may be hard to see—especially in poor lit conditions, including dusk/dawn/night and poor weather.
- Always stop for pedestrians in the crosswalk or where pedestrian crosswalk signs are posted.
- Never pass vehicles stopped at a crosswalk. They may be stopped to allow pedestrians to cross the street.
- Slowdown and look for pedestrians. Be prepared to stop when turning or otherwise entering a crosswalk.
- Never drive under the influence of alcohol and/or drugs.
- Follow the speed limit; slow down around pedestrians.
- Stay focused and slow down where children may be present, like school zones and neighborhoods.

— NHTSA's Safety Countermeasures Division

Enhancement Areas

The following areas were chosen by the Advisory Committee for additional evaluation. These areas were selected due to the concentration of destinations and presence of pedestrians. Renderings of the proposed recommendations have been included for visualization purposes. Typical amenities needed in these areas as well as town-wide are sidewalks, crossings, ramps, pedestrian signals and lighting.

- Wendell Blvd (near IGA store)
- Wendell Blvd at Hanor Ln
- Wendell Blvd at Wendell Elementary
- Hollybrook Rd at Lake Dr/2nd St
- Wendell Blvd at Old Wilson Rd /Selma Rd





The Advisory Committee felt Hollybrook Rd near the Library and Senior Citizen should have sidewalks due to the locality of community facilities and high presence of pedestrians seen daily.





BEFORE



AFTER

Key Improvements

- 6' sidewalks (both sides of roadway)
- Crosswalks
- Accessible ramps (ADA)
- Lighting
- Street Trees

Wendell Boulevard looking north. Tropicana store located on the right hand side.

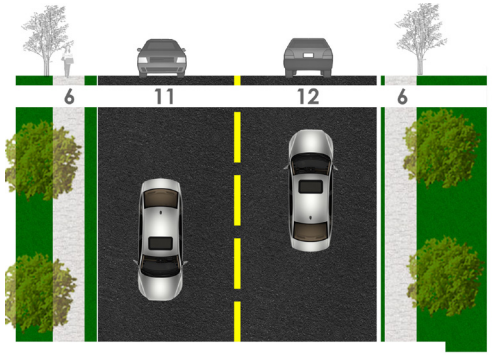
Wendell Boulevard (near Tropicana Store)

(Sidewalk map number 59 &62 (Figure 6))

Wendell Boulevard, in between Marshburn Road and Hanor Lane, is the most traveled section of roadway in Wendell's primary corporate limits with more than 12,000 vehicles daily. The area is congested due to commuter traffic, as well as destination trips to local restaurants, retail stores and offices. Carver Elementary is located less than a mile from the intersection of Wendell Boulevard and Hanor Lane. Stakeholder members as well as respondents to the survey noted a high amount of pedestrians can be seen daily walking along Wendell Boulevard. Some sidewalk facilities are available but are not interconnected, ending or jumping to opposite sides. This proposed project would fill in the missing segments of sidewalk to provide connections in the retail store area.

Page 50 displays a before and after photo of how the area could transform for pedestrians with sidewalks, lighting and the addition of landscaping trees near the Tropicana store. Sidewalk are recommended for both sides of the roadway where they currently lack. The width of the sidewalk should be no less than six feet to accommodate multiple walkers and mobility disable users. A drainage ditch on the west side of Wendell Boulevard across from the Tropicana could imposed construction problems. Further studies are recommended by stormwater engineers prior to construction.





Preliminary Engineering / Design Cost (Typically, 10%-20% of Construction Cost)	$50,362.11
Right-of-Way Cost	$60,061.22
Construction Cost	$72,107.32
Construction Engineering & Inspection Cost (Typically, 10%-15% of Construction Cost)	$8,859.65
Contingency (30%)	$21,632.20

Estimated Construction Costs : $223,673.62



BEFORE



AFTER

Wendell Boulevard and Hanor Lane intersection looking south.

Key Improvements

- 6' sidewalks
- Crosswalks
- Accessible ramps
- Pedestrian Signals
- Pavement Markings should include: Moving stop bars back to avoid conflict with pedestrians in crossings on all legs of the intersections
- Curb extensions or curb radius reduction.

Wendell Boulevard @ Hanor Lane

(Intersection map number 8 (Figure 8))

The intersection has higher traffic amounts in comparison to other areas in town (12,000 vpd), wide pavement widths and a lack of crossing facilities which presents a dangerous environment for pedestrians. Carver Elementary is located less than mile from the intersection along Liles Dean Road. Recommendations include : curb radius reductions to narrow the crossing distance across all legs of the intersection, pavement re-striping to narrow the travel lanes and direct turning movements. This project is recommended to be occur at the same time as the Wendell Boulevard sidewalks just south of the intersection. This would allow for safe connections and crossings for pedestrians in the area.



Preliminary Engineering / Design Cost (Typically, 10%-20% of Construction Cost)	$0.00
Right-of-Way Cost	$0.00
Construction Cost	$29,840.92
Construction Engineering & Inspection Cost (Typically, 10%-15% of Construction Cost)	$0.00
Contingency (30%)	$8,952.27
NCDOT Oversight Costs ($5000 or 5% whichever is greater)	$5,000.00

Estimated Construction Costs : $43,793.19



BEFORE



AFTER

Wendell Boulevard and Wendell Falls Parkway looking east.

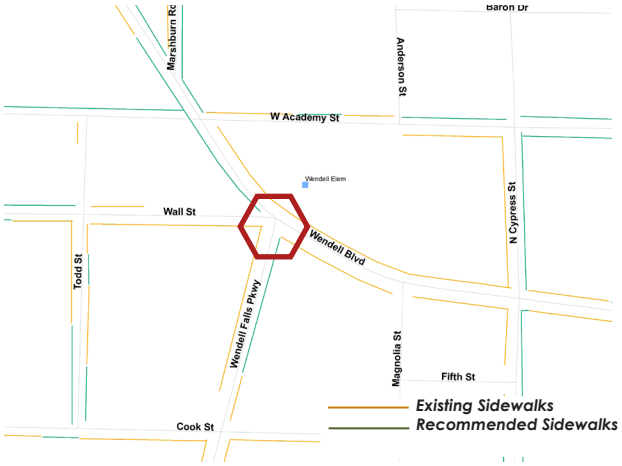
Key Improvements

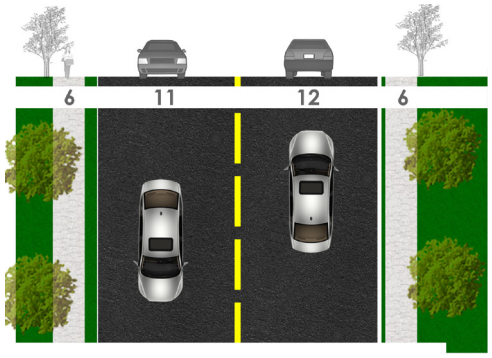
- 6' sidewalks (both sides of roadway)
- Widen existing side-walks
- Crosswalks
- Accessible ramps
- Lighting
- Traffic Signals
- Pedestrian Signals

Wendell Boulevard @ Wendell Falls Parkway

(Intersection map number 6 (Figure 8))

Protection at this intersection is critical due to the locality of Wendell Elementary. Vehicles and pedestrians experience heavy traffic along Wendell Boulevard due to normal through traffic as well as carpool at the school in the mornings and afternoons. Police guard the area during school drop off times to assist with pedestrian crossings, as well as, monitoring traffic speeds and backups. Currently there is one crosswalk from the sidewalk in front of the school across Wendell Boulevard. Both sides of the crossings lack ADA compliant ramps. Survey respondents mentioned that this area is not safe and does not feel safe to walk due to the lack of facilities protecting pedestrians with the large amount of fast moving vehicles. It is recommended that this intersection become signalized to regulate traffic speeds and flow and to allow for dedicated pedestrian crossing times. Additional crosswalks are needed on all legs of the intersections as well as school zone warning signs. In the past, the Town has also discussed closing off Wall Street, which would further improve pedestrian and vehicular safety.





Preliminary Engineering / Design Cost (Typically, 10%-20% of Construction Cost)	$0.00
Right-of-Way Cost	$0.00
Construction Cost* *Costs based on NCDOT completing the proposed action.	$22,826.57
Construction Engineering & Inspection Cost (Typically, 10%-15% of Construction Cost)	$0.00
Contingency (30%)	$6,847.97

Estimated Construction Costs : $34,674.54



BEFORE



AFTER

Hollybrook Road at Lake Drive looking north

Key Improvements

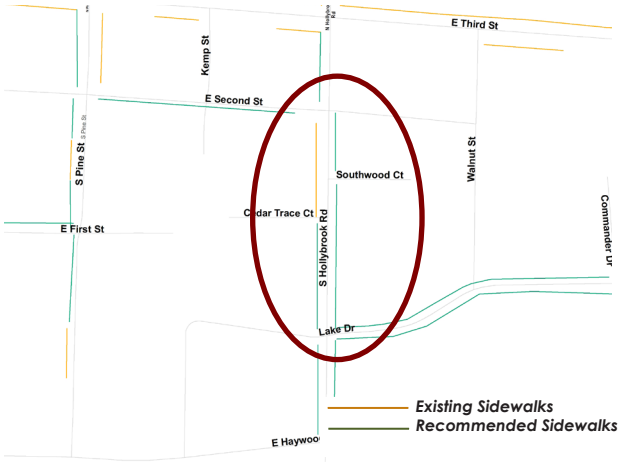
- 6' sidewalks (both sides of roadway)
- Installing curb and gutter
- Crosswalks
- Accessible ramps
- Lighting
- Street Trees

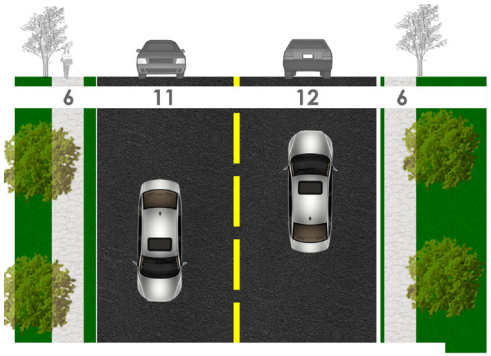
Hollybrook Road @ Lake Drive to Second Street

(Sidewalk map numbers 8 & 20 and intersection map number 20 (Figure 6 & 8))

The area of Hollybrook Road at Lake Drive is home to the Town Library, Senior Center and an assisted living center. Multiple field visits and survey respondents noted many pedestrians crossing needs from the library to close by facilities as well as near-by neighborhoods. This area would benefit significantly from additional pedestrian facilities to serve local residents young and elderly. Sidewalks are recommended for both sides of Hollybrook Road as well as crosswalks at Lake Drive. Pedestrian lighting would be beneficial in this area.

The projects in this area scored as mid term during the prioritization process. This was due mainly to the lack of business and connecting sidewalks in the area and low vehicle volume on the road. Though the scoring determine this project should be completed within five years, it is recommend that this project be considered for completion sooner. This is a project that would provide a great connection to community facilities as well as safe facilities for elderly and school age children.





Preliminary Engineering / Design Cost (Typically, 10%-20% of Construction Cost)	$12,798.97
Right-of-Way Cost	$15,263.89
Construction Cost* *Costs included installing curb and gutter	$50,736.08
Construction Engineering & Inspection Cost (Typically, 10%-15% of Construction Cost)	$2,251.58
Contingency (30%)	$15,220.83

Estimated Construction Costs : $101,271,35



BEFORE



- Stone Plaza / Walkway
- New Pavement
- ADA-Compliant Curb Ramp
- Pedestrian Push-Button Signal
- Decorative Fencing

AFTER

Key Improvements

- ¬ 6' sidewalks (Wendell Blvd and Selma Rd)
- ¬ Colored crosswalks
- ¬ Accessible ramps
- ¬ Colored plaza addition
- ¬ Reduce Curb Radius at Selma Rd Intersection
- ¬ Push button signals

Wendell Boulevard @ Old Wilson Road/Selma Road

The intersection of Wendell Boulevard/Selma Road/Old Wilson Road represents the eastern gateway into the historic center of Wendell. Lightly traveled, Old Wilson Road snakes eastward, transitioning from light industrial uses to farming and rural scenery. Selma Road (NC 231) creates part of the east boundary of north-south grid streets, linking the arterial of Wendell Boulevard to Archer Lodge. The acute angle of Old Wilson and the east leg of Wendell Boulevard create awkward truck turning movements, while the continuous flow intersection, which emerges from a sharp curve just to the east of the intersection, promotes high-speed through travel in a location where residents and pedestrians alike would prefer to see lower vehicular speeds.

Multiple alternatives for improving the intersection were broached in this project as well as in past studies. The proposal shown here realigns Wendell Boulevard to allow for a traditional four-way, signal-controlled intersection, and elimination of the acute entry point created by Old Wilson Road. The vacant area created by the realignment and removal of roadway would provide opportunities for a gateway treatment, such as the park shown here. New crosswalks and pedestrian signals would be necessary, as would new sidewalk on the north side of Wendell Boulevard. Slowing traffic, creation of a new gateway for the Town, additional urban parkland, and the prospect of enhanced safety make this option a strong consideration. The break in continuity of Business 64 (US 64 has long bypassed the center of town) that would be a fatal flaw elsewhere serves as a benefit in this location.



Preliminary Engineering / Design Cost (Typically, 10%-20% of Construction Cost)	$118,364
Right-of-Way Cost	$32,860
Construction Cost	$1,032,418
Construction Engineering & Inspection Cost (Typically, 10%-15% of Construction Cost)	$118,364
Contingency (30%)	$355,092

Estimated Construction Costs : $1,657,098


Cost
Effort
Risk
Policy
Opportunity
Process
Implementation
Complex
Strategy
Action
Planning
Terms
Priority
Data
Analysis

Implementation

Completion of the Wendell Pedestrian Plan is only the first step in creating a walkable community. The implementation of the Pedestrian Plan will require a coordinated effort amongst Town officials, leaders, and citizen volunteers. This section provides a series of actions steps for moving forward with the recommendations of the Plan.

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

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

3) Secure funding for the top priority projects. In order for Wendell to become a more pedestrian-friendly town, it must have the priorities and the funding available to proceed with implementation. The Town should work to secure funding for implementation of several high-priority projects (see Chapter 4 and develop a long-term funding strategy. This will help reinforce the commitment to the Pedestrian Plan and reaffirm to residents that the Plan is moving forward.

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

5) Adopt policy changes that support the goals of the Pedestrian Plan. Proposed ordinance changes that will be crucial to balancing the public/private burden of implementing this Pedestrian Plan are listed in funding section of the Plan.

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

7) Embark on complementary planning efforts. The Town should incorporate the recommendations of the Pedestrian Plan into future and existing Plans developed and updated at the local, regional and statewide level.

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5)Resurfacing Opportunities. The Town should coordination with NCDOT Division 5 office to implement any short term projects that could coincide during resurfacing projects. The BPAC, or the Town planning department, should review quarterly the three-year resurfacing/restriping schedule from Division 5 and talk to the Division Planning Engineer / O&M staff regularly to ensure there are no missed opportunities for project improvements to be made as this work proceeds.

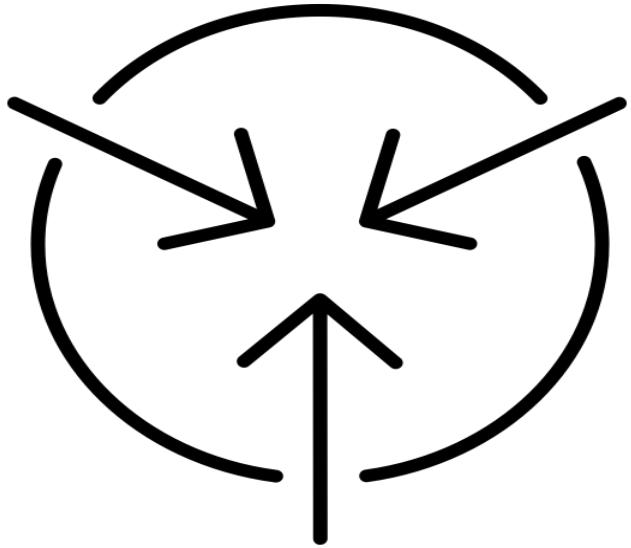
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8) Embark on complementary planning efforts. The Town should incorporate the recommendations of the Pedestrian Plan into future and existing Plans developed and updated at the local, regional and statewide level.

9) Capital Improvement Plan inclusion. Improvements recommended in this Plan should be included in the next update of the Town's Capital Improvement Plan.

10) Regional partner support. Various organizations including Triangle Land Conservancy and Triangle Greenways Councils are a great resource for the Town to partner with to preserve the natural environment while promoting walkability in terms of greenways and trails. The BPAC should meet with the non-profits to learn more about how the organizations could support Wendell.



Task	Lead	Support	Details	Phase
Existing BPAC should review and assist in implementing the Plan	BPAC	Town Staff and Council	The Wendell BPAC should focus on implementation of this Plan and coordinate with regional partners (i.e., Triangle Land Conservancy, Triangle Greenways Council to promote walkability in Wendell.	Short-term
Begin annual meeting with key project partners	Town Manager, BPAC	NCDOT, Local and Regional Stakeholders	Project partners discussed through out the implementation section of this Plan should meet on an annual bases with the Town to evaluate the implementation of the Plan.	Short-term/ ongoing
Monitor NCDOT bridge replacement projets, resurfacing and STIP allocations	Town Staff	NCDOT, CAMPO	The Division 5 road resurfacing schedule presents potential for opportunities to accomplish the projects that require pavement markings, such as intersection improvements. For implementation of pavement markings, it is essential that towns stay in close touch with the local highway Division operations and maintenance staff, to stay on top of the resurfacing schedule and keep closely abreast of any updates or changes to the schedule. It's easy with staff turnover and other factors to miss an opportunity for pavement restriping; talking and checking back with the Division at least once every quarter is not too often! Resurfacing is a very important part of implementing crossing facilities and comes at very little cost, so definitely indicate these actions and details in the table. The Town should not rely on the Division to inform the town of when resurfacing will be done; rather, the town needs to stay on top of this and initiate quarterly check-ins with Div O&M personnel.	

Task	Lead	Support	Details	Phase
Update Plan	Town Staff, Council, BPAC	NCDOT, CAMPO	This Plan should be updated every 5 years. If many projects and programs have been completed within that time frame and new list of priorities should be established.	Long-Term



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

Prioritization and Factors

The Town recommendations included in the Plan are extensive and would take a considerable amount of time and money to complete. To help the Town determine which projects to construct first, an analysis was performed to prioritize projects and create a recommended phasing schedule of short-term, mid-term, and long-term projects for construction.

Prioritization and scheduling were based on public input, including the Steering Committee and public, and project characteristics identified by the Steering Committee at their first meeting.

- Accessibility: Proximity to schools, parks, greenways, public facilities and commercial areas.
- Safety: Measured by the average daily traffic (ADT) on the roadway where the sidewalk is proposed
- Connectivity: Project's potential to complete a critical connection from one location to another, measured by the project's connection to existing sidewalks
- Constructability and Cost: Ease of constructing the project that is less than 500 feet in length.

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

1. Rate projects on key characteristics.
2. Projects were rated on accessibility, safety and connectivity.
3. A project received points for any of the following characteristics shown on the opposite page.

The projects were organized by rating to determine the appropriate phased implementation schedule. Projects which received high ratings were placed in the short-term project category, whereas projects with low ratings were placed in the long-term project category. Mid-term projects included those projects that fit in between the lower and higher ratings. By organizing projects in a short-term, mid-term, and long-term fashion, the Town has a list of projects that it can implement quickly in order to take immediate steps towards making Wendell more pedestrian-friendly in the interim before more intensive, long-term projects are undertaken.

The next section describes the project build-out schedule as well as the opinion of probable costs.

Accessibility

Accessibility represents considerations of how many places can be reached by walking.

School Located near

Yes, between .1-.2 miles = 5 points
Yes, between .2-.3 miles = 4 points
Yes, between .3-.4 miles = 3 points
Yes, between .4-.5 miles =2 points
Yes, greater than .5 miles =1 point

Commercial Use near

Yes, between .1-.2 miles = 5 points
Yes, between .2-.3 miles = 4 points
Yes, between .3-.4 miles = 3 points
Yes, between .4-.5 miles =2 points
Yes, greater than .5 miles =1 point

Public Facility near

Yes, between .1-.2 miles = 5 points
Yes, between .2-.3 miles = 4 points
Yes, between .3-.4 miles = 3 points
Yes, between .4-.5 miles =2 points
Yes, greater than .5 miles =1 point

Safety

In locations where past crash records or current poor geometry or maintenance levels suggest that personal safety is relevant, the Safety factors will improve walking conditions.

Average Daily Traffic

Greater than 15,000 = 5 points
9,000 - 15,000=4 points
6,000 - 9,000=3 points
3,000 - 6,000= 2 points
0 - 3,000 = 1 point

Crash Site near Project

Yes, between .1-.2 miles = 5 points
Yes, between .2-.3 miles = 4 points
Yes, between .3-.4 miles = 3 points
Yes, between .4-.5 miles = 2 points
Yes, greater than .5 miles = 1 point

Connectivity

Walking, even more than driving, depends heavily on a well-connected network to shorten travel distances and provide options.

Links to Destination

Yes, between .1-.2 miles = 5 points
Yes, between .2-.3 miles = 4 points
Yes, between .3-.4 miles = 3 points
Yes, between .4-.5 miles = 2 points
Yes, greater than .5 miles = 1 point

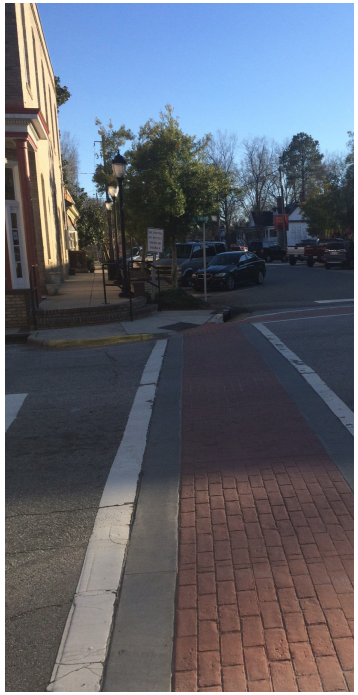
Constructability

Recognizing that funding is always scarce and subject to competing interests, Constructability factors help ensure that projects with high returns on investment are prioritized.

Project less than 500'

Less than 250' = 5 points
250'-500' = 4 points
500'-750' = 3 points
750'-1000' = 2 points
Greater than 1000' = 1 point

The following provides information on the location and basic cost estimates for recommended projects, and a prioritization scheme based on the goals of the Plan identified earlier. Prioritization is also based on factors that include safety, access, connectivity, proximity to schools and other major destinations, as well as public, staff, and stakeholder input. The recommendations include a thorough sidewalk network to be implemented over ten plus years. The results of the prioritization schedule should be used a guide to help develop a complete sidewalk network, but the users should allow and expect changes. Changes can occur in the community that impact factors used for prioritization. A project that scores long term may be completed much sooner if conditions are right for it to be built. Plans for a large development, school, and/or park could spark reason for a project that scored lower to be built sooner than planned. Projects that ranked short term should be considered as a higher priority if funding is available and the need is still there. As large changes occur in Wendell, the projects in this Plan should be reviewed to see if schedules change.



Cost Estimate Assumptions and Limitations

This plan assumes that all future roadway connections identified in the recently adopted Arterial and Collector Street Plan would include pedestrian facilities, to be constructed during initial construction of the road. These facilities would be largely initiated by future development and would further extend the Town's pedestrian network. Note that all cost estimates may increase or decrease depending on the cost of raw materials, labor, and inflation. Sidewalk costs include a five-foot-wide facility with curb and gutter. New greenway/multi-use trail construction estimates assume a 10-foot-wide, multi-purpose trail with minor earthwork and minimal structures to cross drainage features, and do not include costs associated with the purchase of right-of-way unless otherwise noted.


since 1904

Table 6. Short Term Sidewalk Cost Estimations

Project ID (Fig 9)	Corridor Road	Score	Total Construction Cost
Short (1-2 Years) Term Sidewalk Recommendations			
3	Academy St	31	$39,021.96
4	Academy St	30	$42,555.42
5	Cook St	30	$13,828.20
6	Cook St	30	$19,651.93
9	Cypress St	29	$20,037.97
11	Cypress ST	31	$41,799.02
15	First St	28	$152,894.61
16	Hanor Ln	27	$92,355.43
30	Lake Dr	22	$62,395.91
31	Lakewood Dr	22	$63,369.47
32	Lawson Dr	24	$27,326.83
42	Pine St	28	$15,753.56
43	Pine St	28	$20,059.07
44	Pine St	28	$24,925.57
45	Pine St	27	$25,840.59
46	Pine St	27	$29,067.01
47	Second St	27	$46,517.12
48	Selma Rd	26	$31,045.47
52	Todd St	28	$25,951.58
55	Wall St	26	$75,233.46
60	Wendell Blvd	23	$63,411.68
61	Wendell Blvd	20	$124,297.28
63	Wendell Blvd	22	$146,680.28
67	Wendell Falls Pkwy	21	$110,624.08

Table 7. Mid Term Sidewalk Cost Estimations

Project ID (Fig 10)	Corridor Road	Score	Total Construction Cost
Mid (3-5 years) Term Sidewalk Recommendations			
1	Academy St	28	$15,340.98
2	Academy St	31	$27,787.06
12	Cypress St	30	$41,333.36
13	Cypress St	30	$42,708.61
20	Hollybrook Rd	25	$23,359.69
21	Hollybrook Rd	23	$26,364.15
22	Hollybrook Rd	26	$36,937.97
29	Lake Dr	21	$62,951.45
33	Liles Dean Rd	25	$103,770.07
34	Main St	29	$9,470.63
35	Main St	30	$21,942.22
36	Marshburn Rd	29	$39,323.56
37	Marshburn Rd	27	$45,824.05
38	Marshburn Rd	26	$71,768.77
39	Martin St	27	$39,640.83
40	Old Wilson Rd	18	$39,730.70
41	Pine St	28	$13,436.73
49	Selma Rd	23	$117,977.17
54	Wall St	30	$24,438.79
57	Wendell Blvd	34	$16,420.08
65	Wendell Falls Pkwy	28	$37,879.54
66	Wendell Falls Pkwy	28	$46,177.60

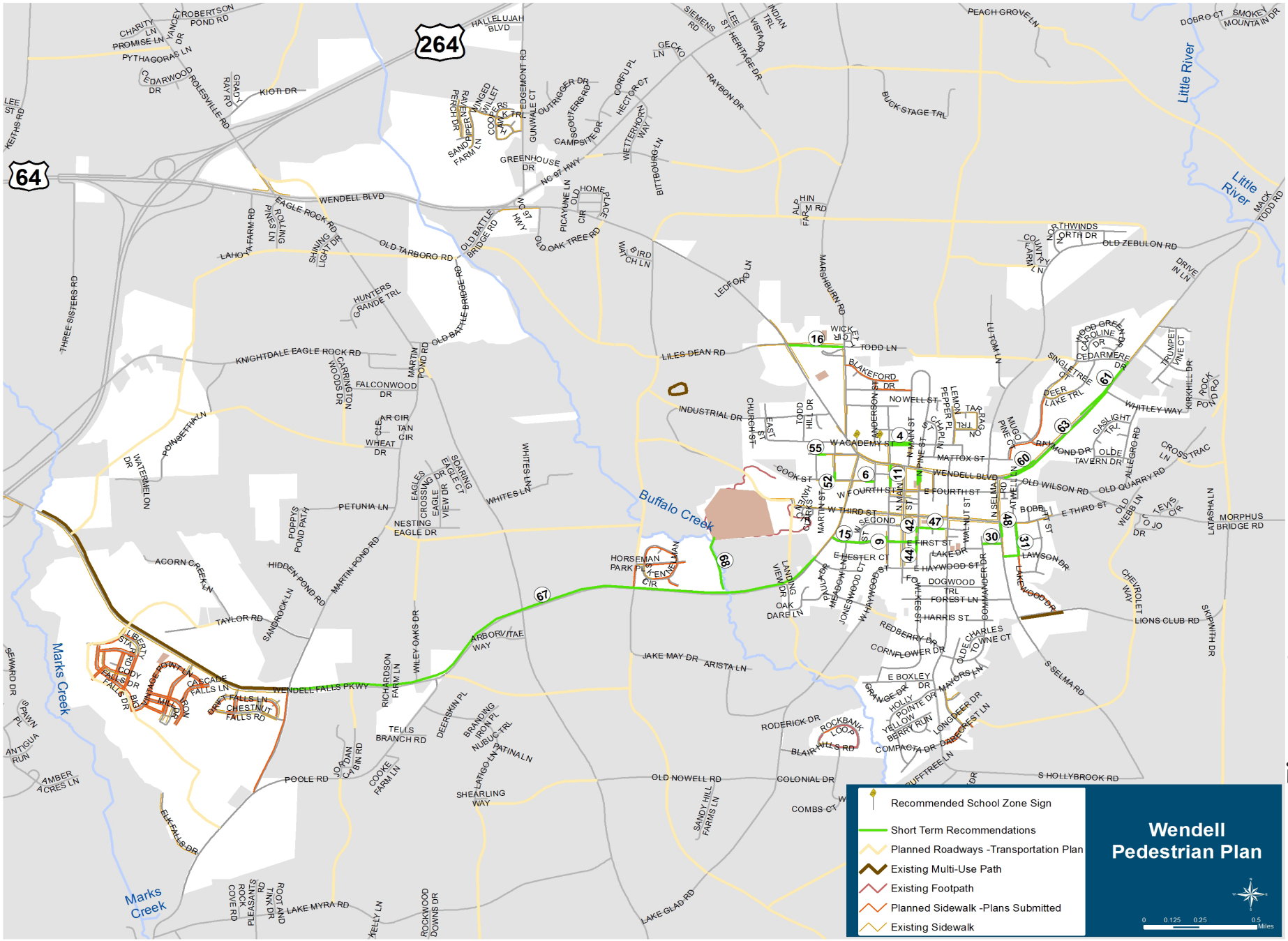
Table 8. Long Term Sidewalk Cost Estimations

Project ID (Fig 11)	Corridor Road	Score	Total Construction Cost
Long (10+ years) Term Sidewalk Recommendations			
7	Cypress St	30	$14,076.70
8	Cypress St	29	$14,833.09
10	Cypress St	31	$26,734.51
14	Cypress St	31	$45,945.91
17	Hollybrook Rd	23	$16,277.12
18	Hollybrook Rd	22	$19,212.81
19	Hollybrook Rd	23	$23,269.82
23	Hollybrook Rd	21	$69,622.09
24	Hollybrook Rd	20	$175,715.17
25	Hwy 97	16	$278,857.55
26	Hwy 97	17	$279,112.78
27	Lake Dr	25	$40,476.86
28	Lake Dr	23	$40,000.32
50	Todd St	29	$12,590.46
51	Todd St	29	$16,806.11
53	Wall St	35	$25,671.72
56	Wendell Blvd	32	$16,584.15
58	Wendell Blvd	32	$49,330.96
59	Wendell Blvd	36	$56,086.03
62	Wendell Blvd	32	$160,498.22
64	Wendell Blvd	33	$236,291.85

Table 9. Unimproved Trail Cost Estimations

Proposed Off-Road Path	Length(ft)	Term	Score	Total Construction Cost
Proposed Unimproved Trail				
Horseman Park Place to Park	887	Long*	25	$40,986.68

* The unimproved trail prioritized as a longer term project according to the factors used. Due to ease of construction (Town owns the land the trail would be located on), the need expressed by Parks and Recreation leaders for an alternative entry to the facility and low costs this project should be considered on the shorter term.


Recommended School Zone Sign
Short Term Recommendations
Planned Roadways -Transportation Plan
Existing Multi-Use Path
Existing Footpath
Planned Sidewalk -Plans Submitted
Existing Sidewalk
Wendell Pedestrian Plan
0 0.125 0.25 0.5 Miles
264
64
Little River
Buffalo Creek
Marks Creek
WENDELL BLVD
EAGLE ROCK RD
OLD TARBORO RD
KNIGHTDALE EAGLE ROCK RD
WENDELL FALLS PKWY
ARBORVITAE WAY
JAKE MAY DR
ARISTA LN
OLD NOWELL RD
COLONIAL DR
S HOLLYBROOK RD
LAKE GLAD RD
LAKE MYRA RD
POOLE RD
TELLS BRANCH RD
RODERICK DR
BLAIR HILLS RD
COMPACTA DR
OLD ZEBULON RD
LILES DEAN RD
INDUSTRIAL DR
W ACADEMY ST
MATTOX ST
WENDELL BLVD
OLD WILSON RD
OLD QUARRY RD
E FOURTH ST
W FOURTH ST
E THIRD ST
W THIRD ST
SECOND
E FIRST ST
W FIRST ST
E HAYWOOD ST
W HAYWOOD ST
E HESTER CT
W HARRIS ST
REDBERRY DR
CORNFLOWER DR
LIONS CLUB RD
MORPHUS BRIDGE RD
S SELMA RD
N SELMA RD
LAKEWOOD DR
LAWSON DR
RAYMOND DR
OLDE TAVERN DR
WHITLEY WAY
GASLIGHT TRL
DEER LAKE TRL
SINGLETREE CT
CEDARMERE DR
WOODGREEN CAROLINE DR
NORTHWINDS NORTH DR
COUNTRY FARM LN
DRIVE IN LN
ROCK POND RD
CROSS TRAC LN
OLDE WEBB LN
OLD ALLEGRO RD
LATASHA LN
SKIPWITH DR
CHEVROLET WAY
OLDE CHARLES TOWNE CT
MANORS LN
LONGBEER DR
HOLLY POINTE DR
YELLOW BERRY RUN
ORANGE DR
E BOXLEY DR
ROCKBANK LOOP
CLIFFTREE LN
COMBS CT
SANDY HILL FARMS LN
ROCKWOOD DOWNS DR
ROOT AND TINK DR
ROCK COVE RD
PLEASANTS RD
KELLY LN
ELK FALLS DR
AMBER ACRES LN
ANTIGUA RUN
SPAWN PL
SEWARD DR
LIBERTY STAR DR
MOODY FALLS DR
RIVERSIDE FALLS DR
CASCADE FALLS LN
DEEP FALLS LN
CHESTNUT FALLS RD
RICHARDSON FARM LN
WILEY OAKS DR
SANDROCK LN
TAYLOR RD
ACORN CREEK LN
HIDDEN POND RD
MARTIN POND RD
NESTING EAGLE DR
EAGLE VIEW DR
SOARING EAGLE CT
EAGLES CROSSING DR
WHITES LN
POPPYS POND PATH
PETUNIA LN
WATERMELON DR
POINSETTIA LN
CLEAR TAN CIR
WHEAT DR
FALCONWOOD DR
CARRINGTON WOODS DR
MARTIN POND RD
OLD BATTLE BRIDGE RD
HUNTERS GRANDE TRL
THREE SISTERS RD
LAHOMA FARM RD
ROLLING PINES LN
SHINING LIGHT DR
GRADY RAY RD
ROLESVILLE RD
KIOTI DR
CEDARWOOD DR
PROMISE LN
CHARITY LN
YANCEY DR
ROBERTSON POND RD
PYTHAGORAS LN
LEE ST
KEITHS RD
HALLELUJAH BLVD
SIEMENS RD
GECKO LN
CORFU PL
HECTOR CT
RAYBON DR
BUCK STAGE TRL
VISTA DR
INDIAN TRL
LEE ST
HERITAGE DR
PEACH GROVE LN
DOBRO CT
SMOKEY MOUNTAIN DR
MACK TODD RD
EDGEMONT RD
GUNWALE CT
OUTRIGGER DR
SCOUTERS RD
CAMPSITE DR
WETTERHORN WAY
BITTERBURG LN
GREENHOUSE DR
NC 97 HWY
OLD HOME PLACE CIR
PICAYUNE LN
OLD OAK TREE RD
BIRD WATCH LN
LEDFORD LN
MARSHBURN RD
ALDHIN FARM RD
TOM LN
TODD LN
WICKLET DR
BLAKEFORD DR
NOWELL ST
PEPPER PL
LEMON TREE CT
CHAPLIN TRL
MAGNOLIA PINE CT
CHURCH ST
EAST ST
TODD HILL DR
ANDERSON ST
N MAIN ST
N PINE ST
N WALNUT ST
MARTIN ST
CLARK ST
WHITE OAK DR
LANDING VIEW DR
OAK DARE LN
MEADOWLANE CT
JONESWOOD CT
PAUL DR
HORSEMAN PARK PL
TENNELMAN CIR
DOGWOOD TRL
FOREST LN
LAKE DR
LAKE ST
COMMANDER DR
BOBBITT ST
O JO DR
LEVIS CIR
OLD WEBB LN
OLD ALLEGRO RD
CROSS TRAC LN
LATASHA LN
MORPHUS BRIDGE RD

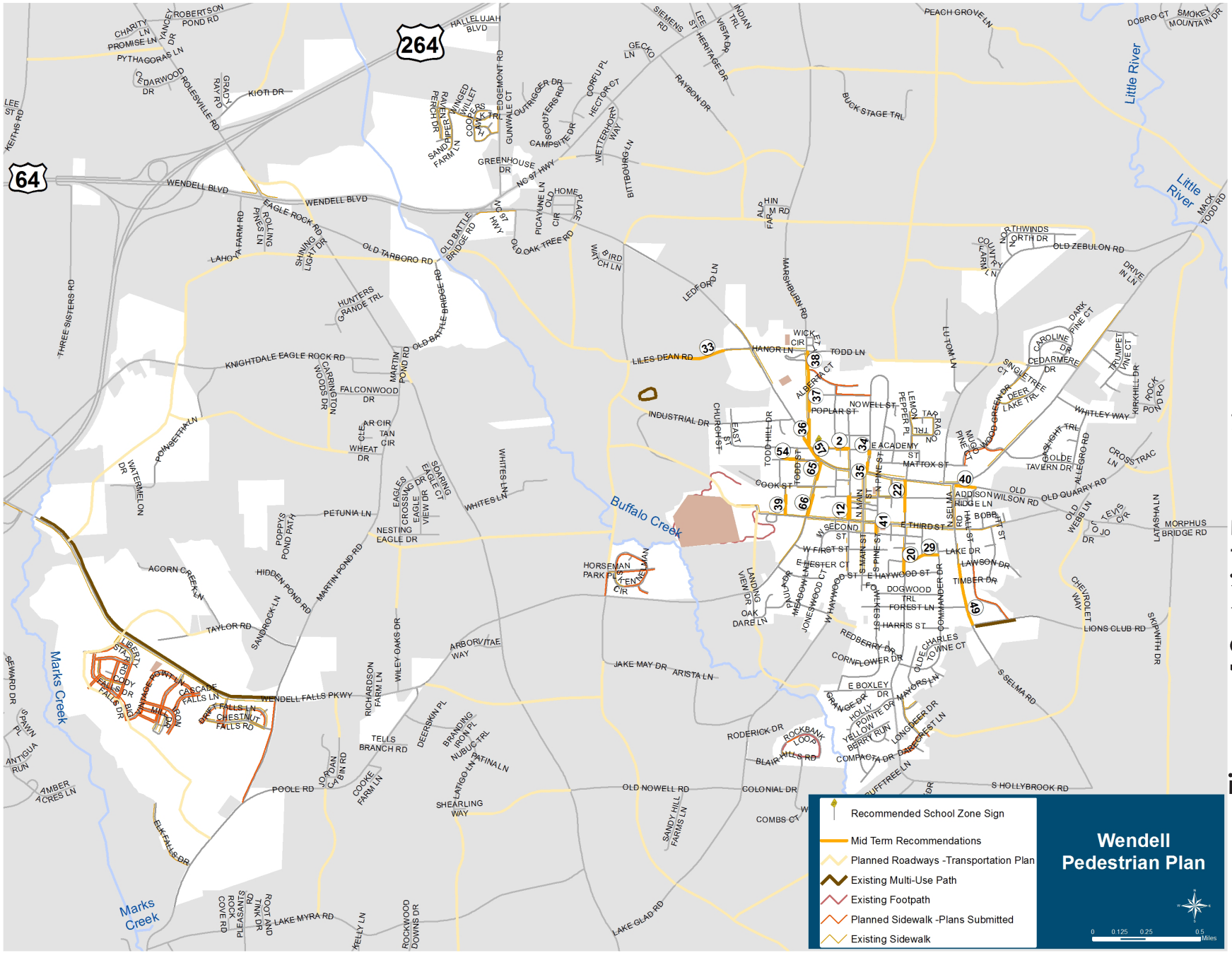


Figure 10. Mid Term Sidewalk Improvements

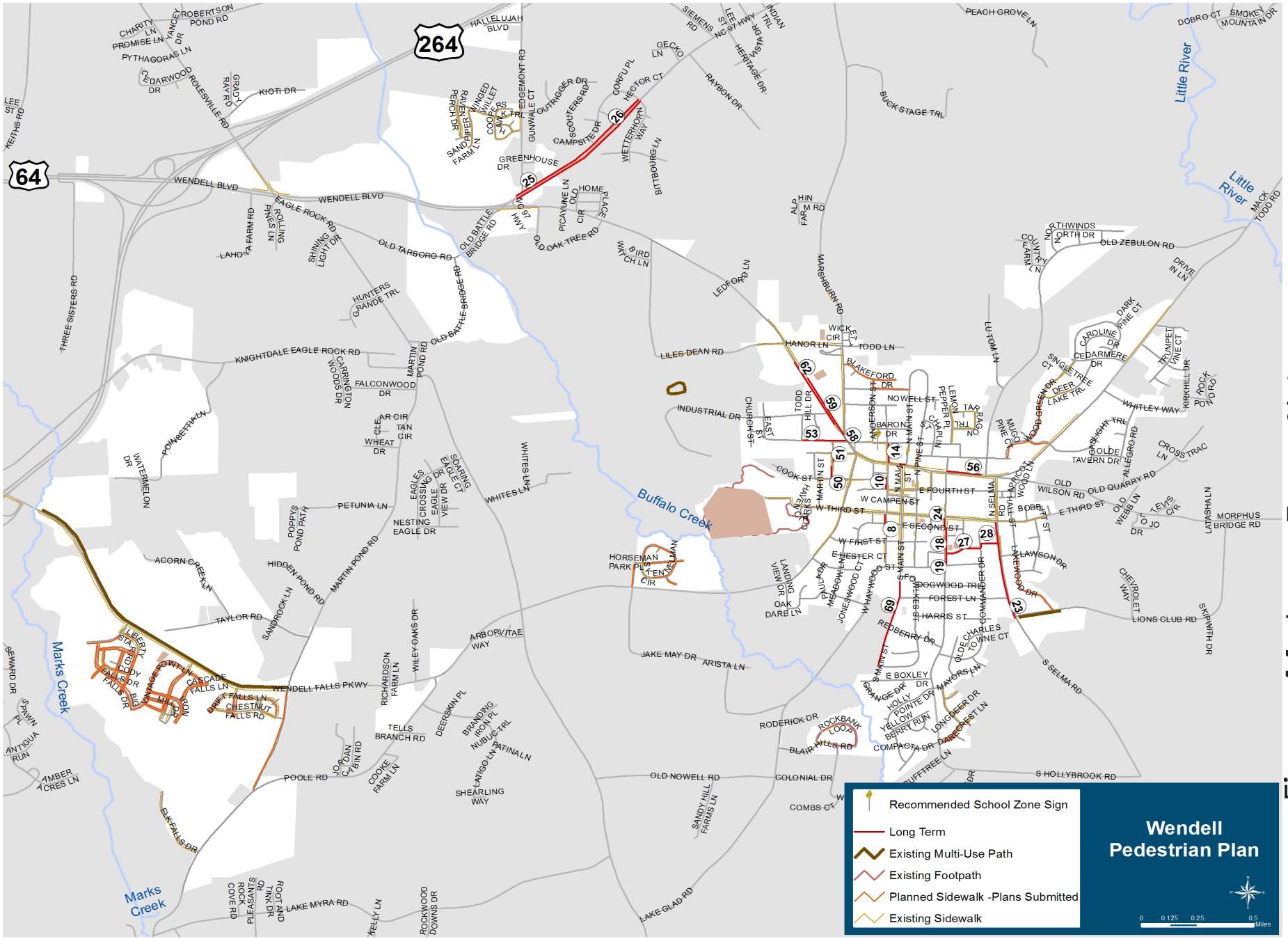


Figure 11. Long Term Sidewalk Improvements

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Table 10. Crossing Recommendation Cost Estimations

Id	Type of Recommendation	Intersection	Score	Cost
		Short (1-2 Years) Term Crossing Recommendations		
31	School Zone Sign	Academy St & Wendell Elementary	32	$700
12	Crosswalks, Ramps, Signals	Magnolia St & Wendell Blvd	31	$16,462.46
13	Crosswalks, Ramps, Signals	Cypress St & Wendell Blvd	31	$25,083.64
14	Crosswalks, Ramps, Signals	Main St & Wendell Blvd	31	$15,613.84
15	Crosswalks, Ramps, Signals	Wendell Blvd & Pine St	30	$11,035.10
		Mid (3-5 years) Term Crossing Recommendations		
5	Crosswalks, Ramps	Wendell Blvd & Wall St	28	$14,165.12
6	Crosswalks, Ramps	Academy St & Wendell Blvd	28	$14,165.12
7	Crosswalks, Ramps, Signals	Liles Dean Rd & Hanor Rd	27	$20,552.76
9	Crosswalks, Ramps, Signals	Wendell Blvd&Selma Rd	26	$25,163.39
10	Crosswalks, Ramps	Third St & Wendell Falls Pkwy	27	$20,520.86
17	Crosswalks, Ramps	Fourth St & Pine St	25	$20,520.86
18	Crosswalks, Ramps	Main St & Fourth St	25	$17,358.94
19	Crosswalks, Ramps	Cypress St & Fourth St	26	$20,520.86
20	Crosswalks, Ramps	Third St & Cypress Street	27	$20,520.86
21	Crosswalks, Ramps	Third St & Pine St	26	$20,520.86
22	Crosswalks, Ramps	Fourth St & Third St	26	$20,520.86
28	Crosswalks, Ramps	Cook St & Wendell Falls Pkwy	26	$17,358.94
8*	Crosswalks, Ramps	Wendell Blvd & Old Battle Bridge Rd	31	$33,264.23

* This project was moved into the Mid-Term list due to priorities expressed at the Public Hearing.

Table 10. Crossing Recommendations Cost Estimations *(cont'd)*

Id	*Type of Recommendation*	*Intersection*	*Score*	*Cost*
Long (10+ years) Term Crossing Recommendations				
1	Crosswalks, Ramps	Cedar Trace Ct & Hollybrook Rd	22	$17,327.04
2	Crosswalks, Ramps	Second St & Hollybrook Rd	22	$20,520.86
3	Crosswalks, Ramps	Lake Dr & Hollybrook Rd	22	$20,520.86
4	Crosswalk High Vis	Academy St & Wendell Elementary	19	$7,989.30
11	Crosswalks, Ramps	Wendell Middle School & Hwy 97	21	$17,327.04
16	Crosswalks, Ramps, Signals	Hollybrook Rd & Wendell Blvd	24	$25,115.54
23	Crosswalks, Ramps, Signals	Wendell Falls Pkwy & Poole Rd	9	$20,804.95
24	Crosswalks, Ramps, Signals	Wendell Falls Pkwy & Martin Pond Rd	18	$31,439.38
25	Crosswalks, Ramps	Maggie Ct & Wendell Falls Pkwy	21	$17,327.04
26	Crosswalks, Ramps	Landing View Dr & Wendell Falls Pkwy	16	$17,327.04
27	Crosswalks, Ramps	First St & Wendell Falls Pkwy	20	$17,327.04
29	Crosswalks, Ramps	Jake May Dr & Wendell Falls Pkwy	10	$20,520.86
30	Crosswalks, Ramps	Eagle Rock Rd & Wendell Falls Pkwy	9	$20,520.86

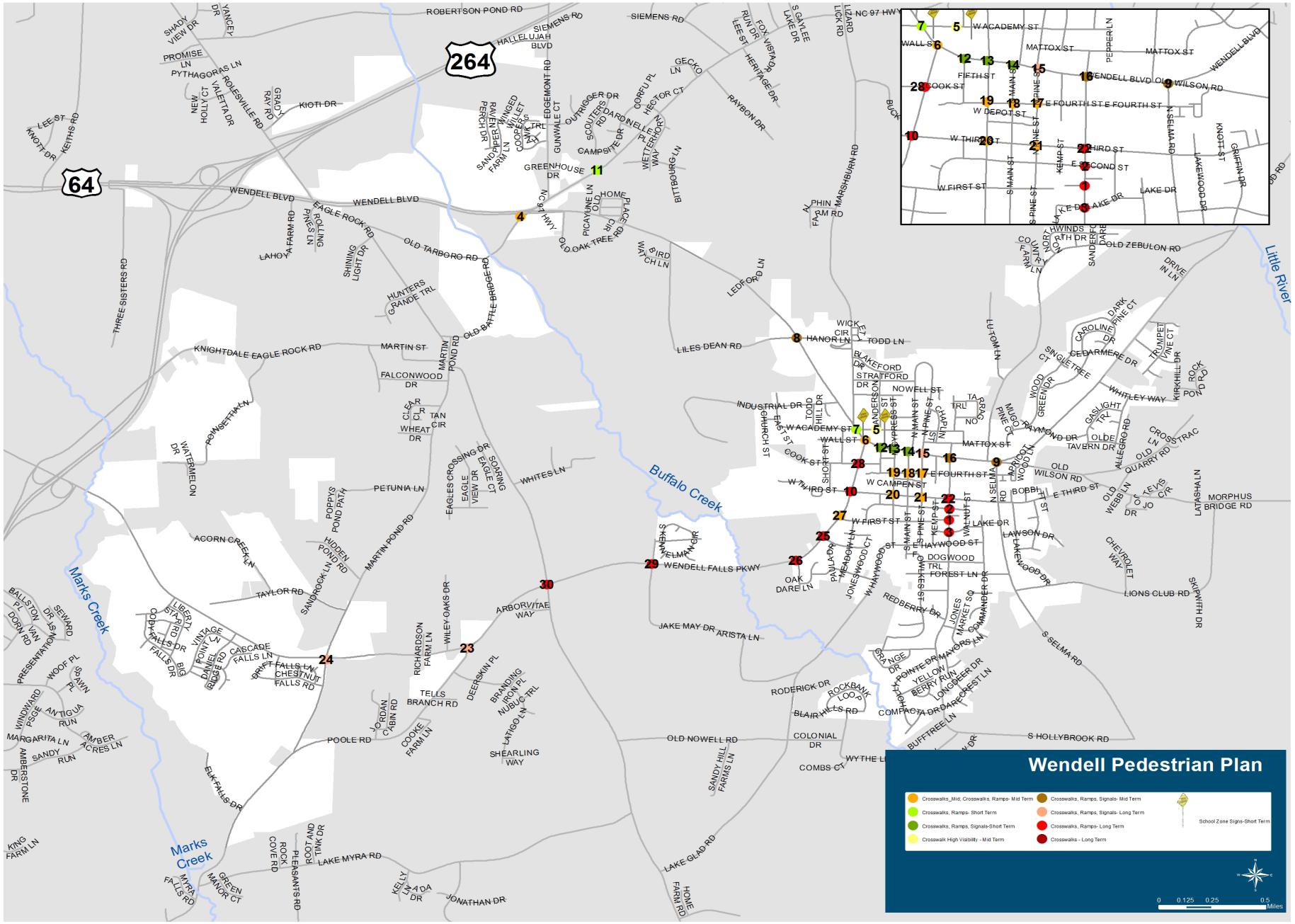


Figure 12. Prioritized Intersection Improvements

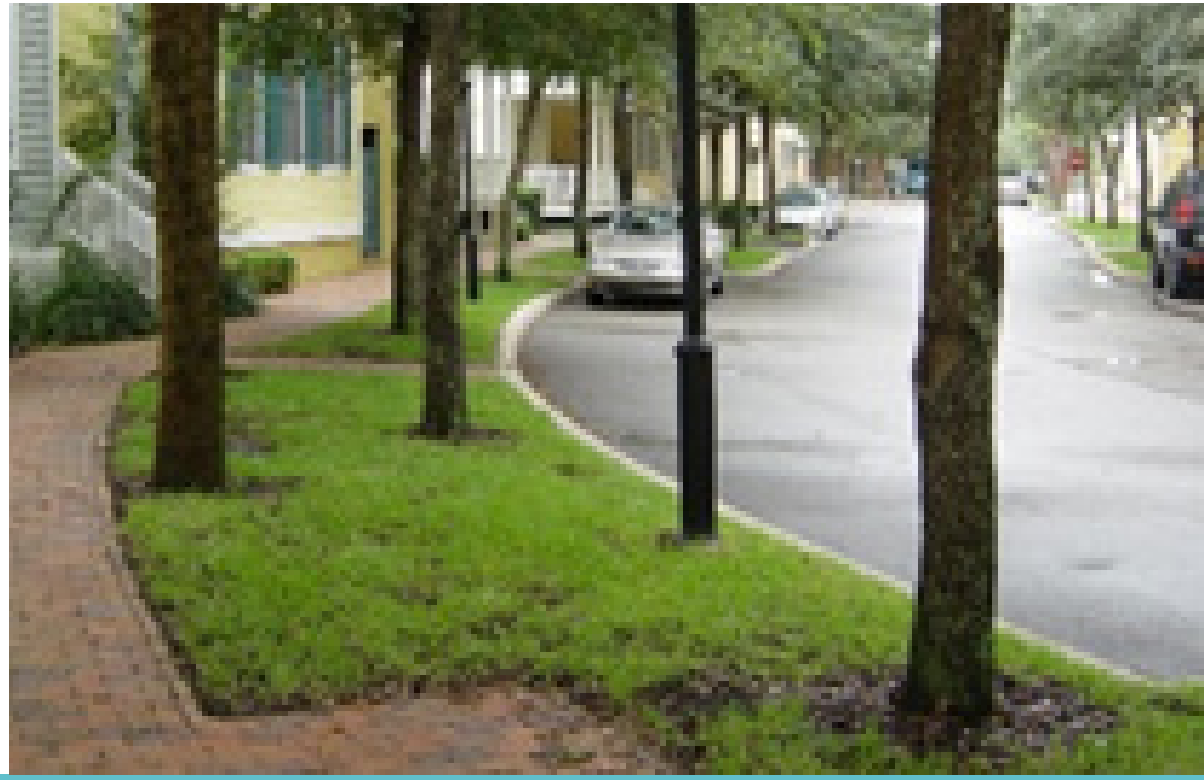

MUST
TURN RIGHT

Policy Recommendations

Best Practices Recommendations – Internal Policy	
Countdown Pedestrian Signals	Formalize a citywide policy of installing "countdown" pedestrian signal heads and crosswalks with the installation of all new signalized intersections. Provide pedestrian signals even in locations without sidewalk on one or both sides of an intersection.
School Zones	Create a policy that requires "safe zones" around schools (i.e. school zones) in which speeds are reduced by 10 mph within a quarter mile of the school and signs are posted warning of school and student presence. Typical school zones speeds are 25mph or 35mph. "School" crossing pavement markings are used to reinforce signage, and flashing beacons often accompany speed limit signage.
Signage	Restrict use of free-flowing turn lanes, utilizing "No Right Turn on Red" signage at signalized intersections with high pedestrian volumes. Provide appropriate treatments to warn both motorists and pedestrians of potential conflicts when free-flow turn lanes are used (e.g. "Yield to Pedestrians" signage).
Signal Timing	At intersections with protected right-on-red for automobiles, provide signal phases which specifically create protected crossing intervals for pedestrians.
Greenway	• Update the Wendell Zebulon Greenway Plan. • Update language in the UDO to require greenway connections/easements for all new development within a 1/4 mile of greenways included in the Zebulon Wendell Greenway Plan. • Update the Water Allocation Policy to give more points for building greenways on developing properties.
Sidewalk Petition Process	Develop a sidewalk petition process and budget allocation to handle "spot improvements," allowing citizens to make requests for short sidewalk connections that will quickly and easily fill gaps in the pedestrian network. Once program is implemented, promote the program to citizens and educate residents on details in order to ensure its success and utility.
Education	Create education programmes for the public about the benefits and the means to incorporate walking into their daily lives

Best Practices Recommendations – Internal Policy	
Crosswalk Installations	Create a policy of installing high-visibility (zebra-striped) crosswalks at all intersections within a school zone, as well as in the Central Business District (downtown). Though motorists are required by law to yield the right-of-way to pedestrians at marked and unmarked intersections, crosswalks can be an awareness-building treatment and their visibility is very important in key locations.
Sidewalk & Crosswalk Maintenance	Existing sidewalks that are cracked, uneven and impassable should be checked and repaired immediately. A regular maintenance schedule should then be established for periodic repairs of sidewalk cracking and restriping of crosswalks that fade with weather and wear.
Parks & Open Space Planning	Update the Town's Recreation, Park, and Open Space Plan to incorporate and expand upon the ultimate recommendations of this plan
Pedestrian Design Standards	Develop Engineering & Design Standards for pedestrian accommodations. Ensure that such guidelines explicitly state that all facilities must comply with the requirements outlined in the American Disabilities Act Accessibility Guidelines for Buildings and Facilities. These standards should generally follow those provided by this Plan, AASHTO, and MUTCD.
ROW dedication	Create a citywide policy to require right-of-way (ROW) dedication, instead of ROW "reservation"
Bridge Accommodations	All new and retrofitted roadway bridges should accommodate pedestrians through the inclusion of sidewalks on at least one side of the facility (preferably both) and pedestrian-safe railings (42ft minimum height).
Ordinance	Wendell should consider policy changes and new ordinance language that requires dedication of trail easements for future construction and/or construction of connector trails to proposed and existing greenways during all new development.
Improvement Plan	Improvements included in this Plan should be included in the next Capital Improvement Program update.
Ordinance Amendment	The Town should update its zoning development standards to make sidewalk installation more uniform across zoning categories by unlinking sidewalk requirements from zoning category and instead linking it to the planed pedestrian facilities map and requiring installation/in-lieu fees as part of subdivision and development permit approvals.





Program and Funding Recommendations

Overview

Pedestrian facilities alone do not make a town pedestrian-friendly. A variety of programs should also be implemented to create and support a pedestrian-friendly culture. A pedestrian-friendly culture has several different characteristics, including the behavior of people when they are walking, the attitude of motorists in the community towards pedestrians, and the role of police and other law officials to enforce pedestrian safety. To address all of these elements, programs are often created to fit within the “three E’s” of pedestrian planning: education, encouragement, and enforcement.

Education programs teach others about safe pedestrian behaviors, the benefits of walking, and can assist people in feeling more comfortable with their “new” mode of travel. Education programs can also be used to teach motorists how to interact safely with pedestrians. Encouragement programs, like education programs, can also teach about the benefits of walking, and serve to promote walking and pedestrian-friendly behavior through various activities and incentives. Finally, enforcement programs provide the “teeth” of a safe and legal pedestrian environment. When law enforcement officers and other officials protect pedestrians and encourage walking, this sends a clear message that the presence of pedestrians is a legitimate and permanent condition in the city’s transportation network. Additional resources for educational and enforcement resources are available at www.pedbikeinfo.org.

There are many sources of funding to draw from when considering possible funding sources for programs, planning, design, implementation and construction for the town of Wendell’s pedestrian projects. It is important to consider several different sources as not all planning, design or construction activities or programs will be accomplished with a single funding source. This section outlines potential sources of funding from the federal, state and local government sectors, as well as private and non-profit sources. The funding amounts, cycles, and the programs themselves change periodically, so it is advised to contact the funding source liaison.

Program Recommendations

This Plan will not attempt to create every program, but instead focus on those programs that most closely suit the interests, needs and environment found in the Town. Stakeholders and citizenry spoke often about walking issues near schools and bus stops. Programs were included in the recommendations that support further education to drivers as well as children to develop better walking behaviors. Education programs teach others about safe pedestrian behaviors, the benefits of walking, and can assist people in feeling more comfortable with their “new” mode of travel. Education programs can also be used to teach motorists how to interact safely with pedestrians. Encouragement programs, like education programs, can also teach about the benefits of walking, and serve to promote walking and pedestrian-friendly behavior through various activities and incentives. The following section discusses program recommendations for a well rounded pedestrian program in Wendell.

The Town started implementing programs in 2016 by sponsoring a **Bike Smart Grow Smart event** (recommended in this Plan). This event provided bicycle safety education clinic to Town Police Officers and local elementary school children. The more programs that are implemented the more the Town can successfully encourage healthier lifestyles and create the pedestrian friendly community that Wendell hopes to be.





Safe Routes to School

Safe Routes to School is a national and international movement to enable and encourage children, including those with disabilities, to walk and bicycle to school. Successful Safe Routes to School programs involve the whole community and take a comprehensive approach to improving safety, which benefits all pedestrians and bicyclists. Through a joint partnership between NCDOT's Safe Routes to School Program and NC Division of Public Health, Active Routes to School Regional Coordinators help to implement Safe Routes to School strategies in partnership with local communities across North Carolina. School safety audits should be conducted with the Active Routes to School Regional Coordinator for all Wendell area school. More information on NCDOT's SRTS Program is available at https://connect.ncdot.gov/projects/BikePed/Documents/NCDOT_SRTS_Description.pdf. Information on Active Routes to School is available at www.communityclinicalconnections.com/activeroutes.

Let's Go NC

Let's Go NC is a program that teaches children how to walk and bike safely. This program was developed for NCDOT and SRTS to provide a curriculum that offers children the skills to build safe habits while practicing an active lifestyle. More information regarding the program can be found at https://www.ncdot.gov/bikeped/safetyeducation/letsgonc/ .

Eat Smart Move More NC

Eat Smart Move More NC is a movement that promotes healthy lifestyles and active living. The initiative offers a variety of tools and programs for communities to promote health eating and physical activity. More information can be found here http://www.eatsmartmovemorenc.com/ProgramsNTools/ProgramsNTools.html .

BikeSmart-GrowSmart

BikeSmart-GrowSmart promotes bicycle safety to children and adults throughout Wake County. Volunteers, who have been trained by the League of American Bicyclists, conduct on-site safety clinics that work directly with children to learn hand signals, helmet use, basic bicycle safety checks, and practices that will help them enjoy a safe ride. More information can be found here http://www.bikesmart-growsmart.com/.

Speed Campaign Tool Kit

The NHTSA designed a toolkit providing tools and marketing ideas for supporting local speed management initiatives. Slowing drivers to enforced speed limits can reduce risks of pedestrian accidents and encourage more people to walk. Tools developed by the NHTSA include media materials, billboards, posters and logo ideas. More information on the initiative can be found at http://icsw.nhtsa.gov/newtsm/tk-speeding/ .

Weekend Walkabout Program

Programs such as the "Weekend Walkabout" are events that occur regularly and promote walking within communities. The Program highlights safe and inviting places to walk in Town. This program is suitable for families and the elderly. Themed walks could be incorporated in the program such a holiday decoration walk or historic buildings walk.

National Trails Day

Hosting a "National Trails Day" in Wendell can promote and encourage walking as well as support future trails for the area. More information can be found at http://nationaltrailsday.americanhiking.org/ .



Walk to School Day

As part of the local Safe Routes to School program, it is recommended that the City and County work with community members and local schools to promote an annual or bi-annual Walk to School Day. This event could be held on International Walk to School Day in October of each year and help to kick-off other Safe Routes to School programs by encouraging parents, teachers, students and community members to get involved. Info at: www.walktoschool.org.

Walk Friendly Community Designation

Walk Friendly Communities is a national recognition program developed to encourage towns and cities across the U.S. to establish or recommit to a high priority for supporting safer walking environments. The WFC program will recognize communities that are working to improve a wide range of conditions related to walking, including safety, mobility, access, and comfort. Application requirements can be found at http://www.walkfriendly.org/index.cfm .

Strive Not to Drive

Strive Not to Drive is a coalition that was formed in Buncombe County NC to encourage alternative forms of transportation. The overall goal of the program is to increase awareness about how alternative transportation modes affect health, air quality and traffic conditions. This program is a great example Wendell could use to try and establish a similar program in the community. More information about the program as well as other events that pertain to active lifestyle choices can be found at http://www.strivenottodrive.org/.

Earth Day

Every year on April 22 Earth Day occurs to focus on improvement the natural environment. Local efforts can be made to encourage citizens to choose to walk to a destination on Earth Day as a contributing part to helping the environment. Earth Day events can be used as an opportunity to educate people on how small changes can make big impacts on the environment.

Open Streets Events

The Open Street Initiative closes streets to traffic to provide an open area for physical activity including playing, walking and biking. This provides an area for the community to socialize and have fun while staying safe. Local communities such as Raleigh and Carrboro currently hold Open Streets Events. Raleigh closes several downtown streets for music and food events. Carrboro opens space in the streets for yoga, Zumba, craft activities and bike races.

Watch For Me NC

Watch for Me NC is a comprehensive program, run by NCDOT in partnership with local communities, aimed at reducing the number of pedestrians and bicyclists hit and injured in crashes with vehicles. The Watch for Me NC program involves two key elements: 1) safety and educational messages directed toward drivers, pedestrians and bicyclists, and 2) high visibility enforcement efforts by area police to reduce violations of traffic safety laws. The program invites communities across North Carolina to become partner communities. As part of that effort, partner communities receive additional support and training from NCDOT.More information can be found at http://www.watchformenc.org/

The Steering Committee discussed the programs recommended in the Plan and set priorities for the Town to consider when implementing the programs. Developing an action plan for the programs allows the Town to implement programs that have the greater opportunity for success. While all the programs are beneficial to the Town, it is important to introduce programs that are relevant to community needs. The members ranked each program by four factors : 1. Anticipated Costs (1=High Costs; 5= Low Costs), 2. Number of people reached by the program (1=Few;5=Many), 3. Ease of Implementation and Execution (1= Very Hard; 5=Very Easy), 4. Improvement to an existing program (1=None; 5= A lot). The total scores for each program and factor were totaled. The programs were ranked from highest to lowest median score. The following are the results of the program plan:

- **Speed Campaign**, 16
- **Open Streets Events**, 15
- **Walk to School Day**, 14
- **Earth Day**, 13.5
- **Walk Friendly Community Designation**, 13.5
- **Watch for Me NC**, 13
- **Strive Not to Drive**, 13
- **National Trails Day**, 12
- **Weekend Walkabout**, 12
- **Let's Go NC**, 12
- **Eat Smart Move More NC**, 12
- **Safe Routes to School**, 11.5



Open Streets Event - Bloomington Indiana. Source: http://indianapublicmedia.org/news/health-fitness-festival-closes-bloomington-streets-56076/

Eat Smart Move More NORTH CAROLINA™



Speed Campaign - San Francisco, Califirnia Source: https://www.sfmta.com/getting-around/walk/pedestrian-safety/safe-streets-sf



Design Guidance

This section provides guidance for the Town of Wendell as they, private developers, and the State Department of Transportation (NCDOT) construct new pedestrian facilities and reconstruct existing pedestrian facilities to meet better standards.

Currently, the Town has standards for pedestrian facilities – sidewalks, crosswalks, and other pedestrian-related amenities are constructed on an ad-hoc, as-needed basis. This section of the Plan is important because it provides a consistent set of guidelines within the Town to help create a uniform appearance to Wendell's sidewalks and a more connected system.

There are a variety of sources for design guidance for pedestrian facilities, including the following:

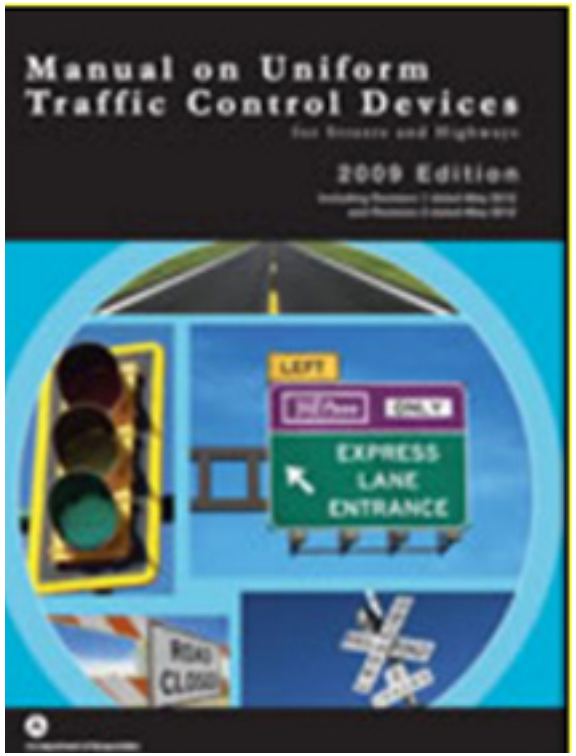
- The American Association of State Highway and Transportation Officials' Guide for the Planning, Design, and Operation of Pedestrian Facilities (AASHTO, 2004)
- Manual on Uniform Traffic Control Devices (MUTCD), 2009
- North Carolina Department of Transportation Complete Streets Planning and Design (2012)

The North Carolina Department of Transportation adheres to the design guidelines provided in the AASHTO and MUTCD guidebooks. In general, pedestrian facilities can be described in the following categories.

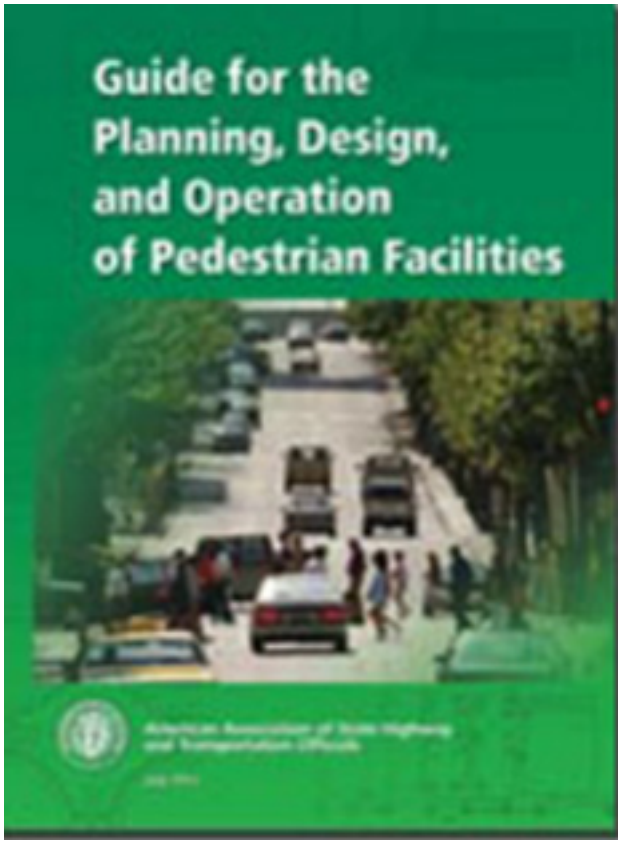
- sidewalks
- crossings
- greenways

Sidewalks provide an area for pedestrians to travel. Sidewalks can be incorporated into any type of area including residential, business and downtown areas. Standard sidewalks area usually is five feet minimum in width, concrete, and placed along roadways with curb and gutter. However, widths and other characteristics will vary depending on the context. For example, a downtown sidewalk should be much wider, generally a minimum of 12 feet, to accommodate all three functional zones: the storefront zone, passage zone, and curbside or utility zone. In general, the width of sidewalks should accommodate two persons walking past one another, a width generally perceived to be five feet, at a minimum. This width may be increased along higher classification roads, or within denser urban settings Often time planted strips are adjacent to the sidewalk to provide additional separation from vehicles on the roadways as well as an area for street trees and lighting. Well-designed sidewalks should be accessible to all users and built to include widths and features that provide a comfortable and safe place for travels.

The guidelines on the following pages are defined by American Association of State Highway (AASHTO), the American with Disabilities Act (ADA), the Federal Highway Administration (FHWA) and NCDOT. These guidelines serve as a reference of pedestrian design elements and treatments and provide guidance for development. The design guidelines are important as they meet minimum standards for creating an accessible and pedestrian friendly environment.



North Carolina DOT
completestreets



Sidewalks

Resources

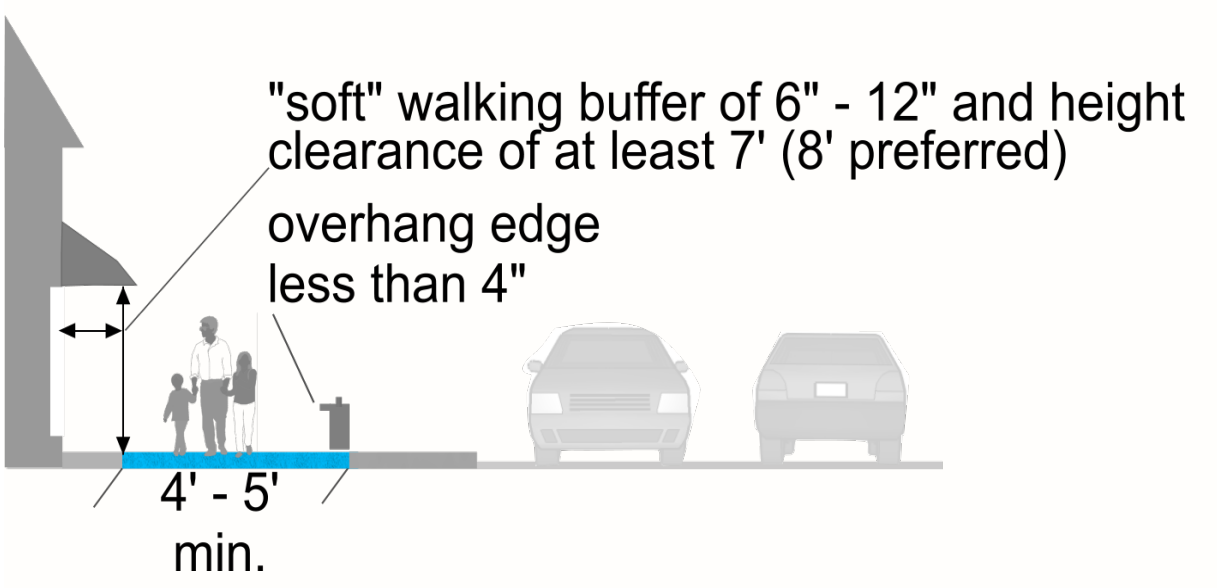
- NCDOT Complete Streets Planning and Design Guidelines. 2012
- Designing Sidewalks and Trails for Access. 2006
- NACTO Urban Street Design Guide
- Designing Sidewalks and Trails for Access, 2006
- Manual on Uniform Traffic Control Devices. 2009
- AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities
- FHWA - Small Town and Rural Multimodal Networks Guide.

All sidewalks shall be constructed in accordance with the standard detail found in the NCDOT Construction Manual, and or the NCDOT Complete Streets Guidelines. These resources will provide enhanced guidance including varying sidewalk and buffer widths. Sidewalks shall be constructed within the street right-of-way in accordance with NCDOT and Town standards.

Sidewalks are the primary routes that connect residential areas, commercial centers, and park areas. Sidewalks should offer an area to walk where one feels comfortable and safe from motor vehicles. When right-of-way is available a sidepath separation is recommended between the road the sidewalk. These separations provide more distance between a walker and vehicle offering a safer and more relaxed walking experience. Tree canopies along roadways provide shade from the sun to a pedestrian as well as an additional barrier from passing vehicles. Lighting is an additional amenity that provide a more pleasant and safe atmosphere for walkers. The idea that a pedestrian feels more comfortable whether from a safety aspect or overall well-being can increase pedestrian activity in areas. The sidewalk widths in Wendell vary. Older sidewalks, for example along Wendell Boulevard near the intersections of Pine Street and Oakwood Avenue, are less than five feet (3-4 feet). Sidewalks recently built in newer areas such as Wendell Falls are generally five feet in width with the exception of the 10 foot multi-use path along Wendell Falls Parkway. The context for walking in Wendell varies greatly, which also drives a degree of variation in appropriate pedestrian accommodations. High pedestrian volume areas such as the downtown may require wider sidewalks than one located in a more rural section of Town - although a greater degree of separation from traffic may be warranted in rural areas with people walking near high-speed automobile traffic.

Sidewalk Guidelines:

- ¬ Sidewalks should be a minimum of five feet wide (six feet wide along collector and arterial roads); sidewalks in high volume areas and commercial areas should be a minimum of eight feet wide (12-15 feet wide in front of retail stores).
- ¬ Be built flat as possible to accommodate all users; have a running grade of five percent or less; with a two percent maximum cross slope.
- ¬ Concrete material is the preferred surface.
- ¬ Minimum thickness of a sidewalk shall be 4 inches.
- ¬ Design and construction shall conform to ADA standards.
- ¬ Minimum sidewalk separation areas should be two to four feet along local streets, five to six feet on major streets and six to eight feet along busy streets and downtown area streets to include space for trees and light fixtures.


"soft" walking buffer of 6" - 12" and height clearance of at least 7' (8' preferred)
overhang edge
less than 4"
4' - 5'
min.



Crossings

Resources

- NCDOT Complete Streets Planning and Design Guidelines. 2012
- Designing Sidewalks and Trails for Access. 2006
- NACTO Urban Street Design Guide
- Manual on Uniform Traffic Control Devices. 2009
- AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities
- FHWA - Small Town and Rural Multimodal Networks Guide.
- NCDOT Pedestrian Crossing Treatment Evaluation Guidance

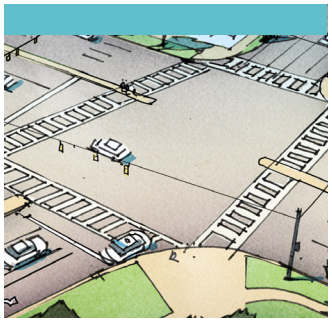
Pedestrian-friendly crossings are a critical feature in a well-connected pedestrian system because they provide the linkages between one segment of sidewalk to another as a pedestrian may cross a street, connect to another existing piece of sidewalk, or pass to a new development. A well-placed crossing can dramatically reduce pedestrian travel time and improve pedestrian safety – greatly increasing the convenience of walking as a mode of travel. Pedestrian crossings can be signalized or unsignalized, and located at intersections or at mid-block locations. Wendell currently does not have any signalized intersections within its limits.

Intersections should be free of obstructions and designed with ample space for crossing treatments, ramps, signage, lighting, and signal equipment when appropriate.

Crosswalk Treatments

The most basic crossing treatment is the continental crosswalk. This type of crosswalk provides a high visibility area for walkers to cross and cues drivers to stop if a pedestrian is present at the crossing. Typically, a marked crossing is used at intersections along major roads, near schools and higher pedestrian volumes areas.





Crosswalks

For: Crossing Delineation

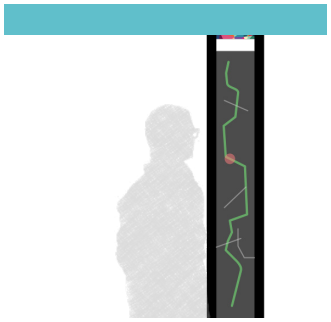
Crosswalks can be two strips, high-visibility "ladders," or colored/textured materials



Pedestrian Signals

For: Stopping Traffic

Mostly at intersections, but potentially other high pedestrian volume locations as well (e.g., schools)



Signs

For: Info & Regulation

Advisory, wayfinding, and posting regulations (like speed limits) - but too many create apathy



Amenities

For: Encouragement

Murals, benches, street trees, lighting, and outdoor activity make people feel at home walking



Design

For: Safety & Security

The design of roundabouts, curb extensions, speed controls, and the like influence walking



Special Cases

For: Pilots & Circumstance

Public art, rail crossings, complex intersections, and other locations provide opportunities for tailored solutions

Signs and Markings

Resources

- NCDOT Complete Streets Planning and Design Guidelines. 2012
- Designing Sidewalks and Trails for Access. 2006
- Manual on Uniform Traffic Control Devices. 2009
- AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities. 2004

In addition to sidewalks and crossings, pedestrian facilities also include signage along major pedestrian routes. Regulatory and warning signs serve primarily to reinforce traffic laws and rules of the road, and notify motorists and others of the presence of pedestrians. Markings including stop bars, shark's teeth, and school zone markings are examples of motorist warning signs that marked or embed onto the travel lanes. Often, the intended effect is to instruct motorists to drive more cautiously and reduce their speeds, thereby improving the safety for pedestrians in the given area.

Markings as well as regulatory and warning signs can be used in a variety of places, including at crosswalks, at intersections, in-street, and near schools. National standards for marking and sign placement and use can be found in the Manual for Uniform Traffic Control Devices (MUTCD).















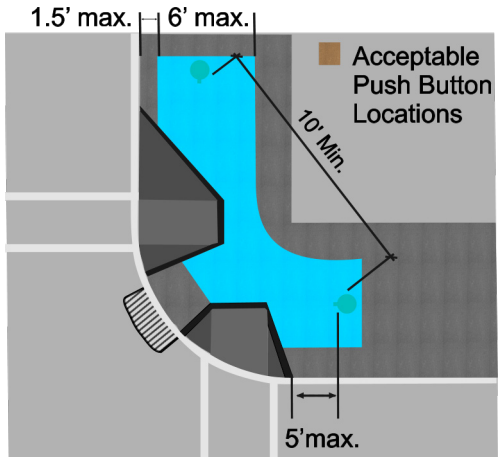
Pedestrian Activated Signals

Resources

- Designing Sidewalks and Trails for Access. 2006
- Manual on Uniform Traffic Control Devices. 2009
- NACTO Urban Street Design Guide
- AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities. 2004

All signalized intersections should be equipped with countdown pedestrian signals and crosswalks. In some cases, the built environment or user context may require audible pedestrian signals or special treatments like a High Intensity Activated Crosswalk (HAWK) Signal. Pedestrian push buttons should accompany pedestrian signals that are not phased into the regular traffic signal cycle; push buttons should be placed in a convenient and wheelchair accessible location. Pedestrian-activated signals should be used for roadways with long traffic signal cycles where pedestrians are to be given preference when present, and/or for signals where the pedestrian cue is not phased into the traffic cycle unless a button is activated. Pedestrian-activated signalization can also be used to provide lead pedestrian intervals in high-conflict areas, in order to give pedestrians a few seconds of full use of the intersection or crosswalk prior to allowing right or left turning movements for motorists. These options reinforce pedestrian safety at high-conflict intersection locations with significant crash history.






11
Mike Cyneck


CROSSWALK
STOP
ON RED


PUSH
BUTTON
FOR

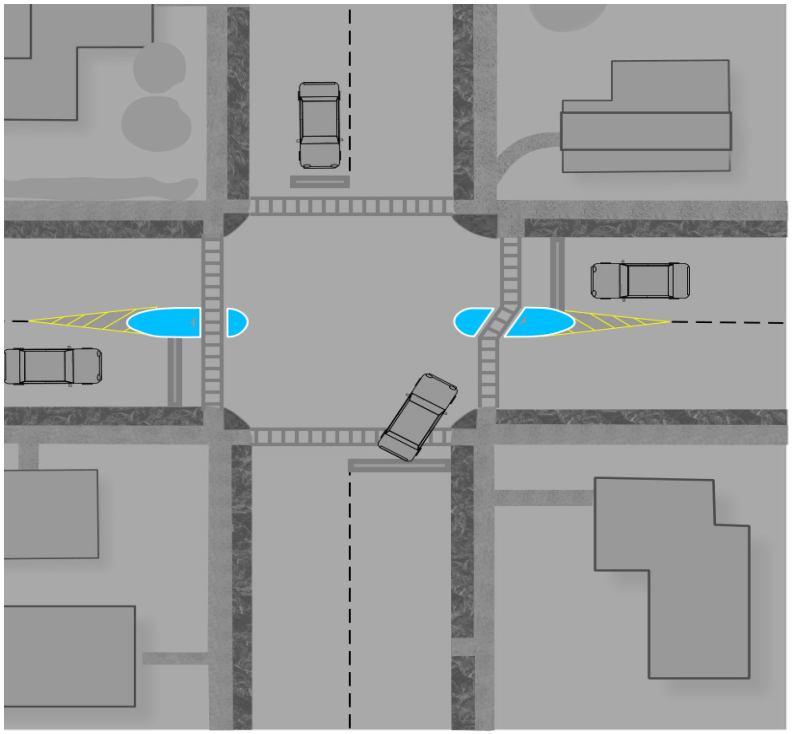
Bulb-Outs/Median Refuge

Resources

- NCDOT Complete Streets Planning and Design Guidelines. 2012
- Designing Sidewalks and Trails for Access. 2006
- Manual on Uniform Traffic Control Devices. 2009
- AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities. 2004

A refuge island is located along the center median of a roadway and allows pedestrians to cross one direction of traffic at a time. A portion of the median is removed and the crossing is placed to allow adequate access to the center of a roadway. Crosswalks and accessible ramps are provided in the cut through areas. Warning surfaces must be added to the crossing to allow blind pedestrian warning they are within a safe area of the crossing. Median refuge and crossing is recommended on Wendell Boulevard near the commercial area (no. 62) between Hanor Lane and Industrial Drive.







At Grade Railroad Crossing

Resources

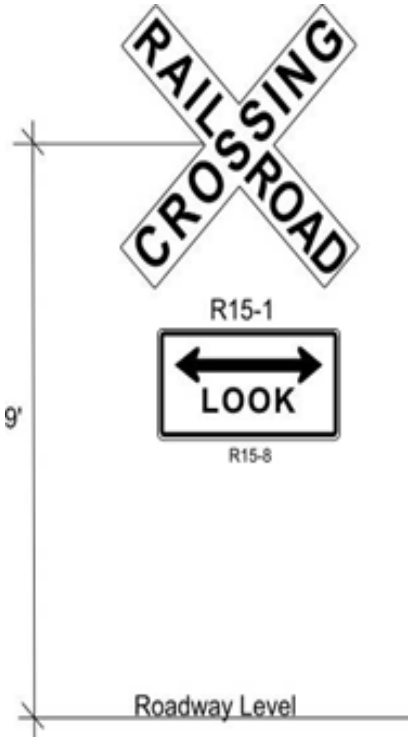
- Manual on Uniform Traffic Control Devices. 2009
- AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities. 2004
- FHWA. Railroad-Highway Grade Crossing Handbook 2007.

Wendell has a special interest ensuring that pedestrian crossings of railroads is handled safely, since the railroad bisects the town and separates potential origins and destinations. Perception of the barrier effect is even stronger on the part of long-time residents, furthering the need to provide connectivity to both sides of the tracks. Treatments can be thought of in three broad categories:

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

Pedestrian safety can be improved at railroad crossings by any of the following actions.

- Using active or passive devices to defer pedestrian activity to the safest area to cross.
- Audible warning systems with flashers.
- Inclusion of pedestrian signs, gates and signals.
- Designing crossings where pedestrians cross at a 90-degree angle to defer gaps, eliminating wheelchairs from getting stuck.







Pedestrian Amenities

Resources

- Americans with Disabilities Act Accessibility Guidelines (ADAAG).
- NCDOT Complete Streets Planning and Design Guidelines. 2012

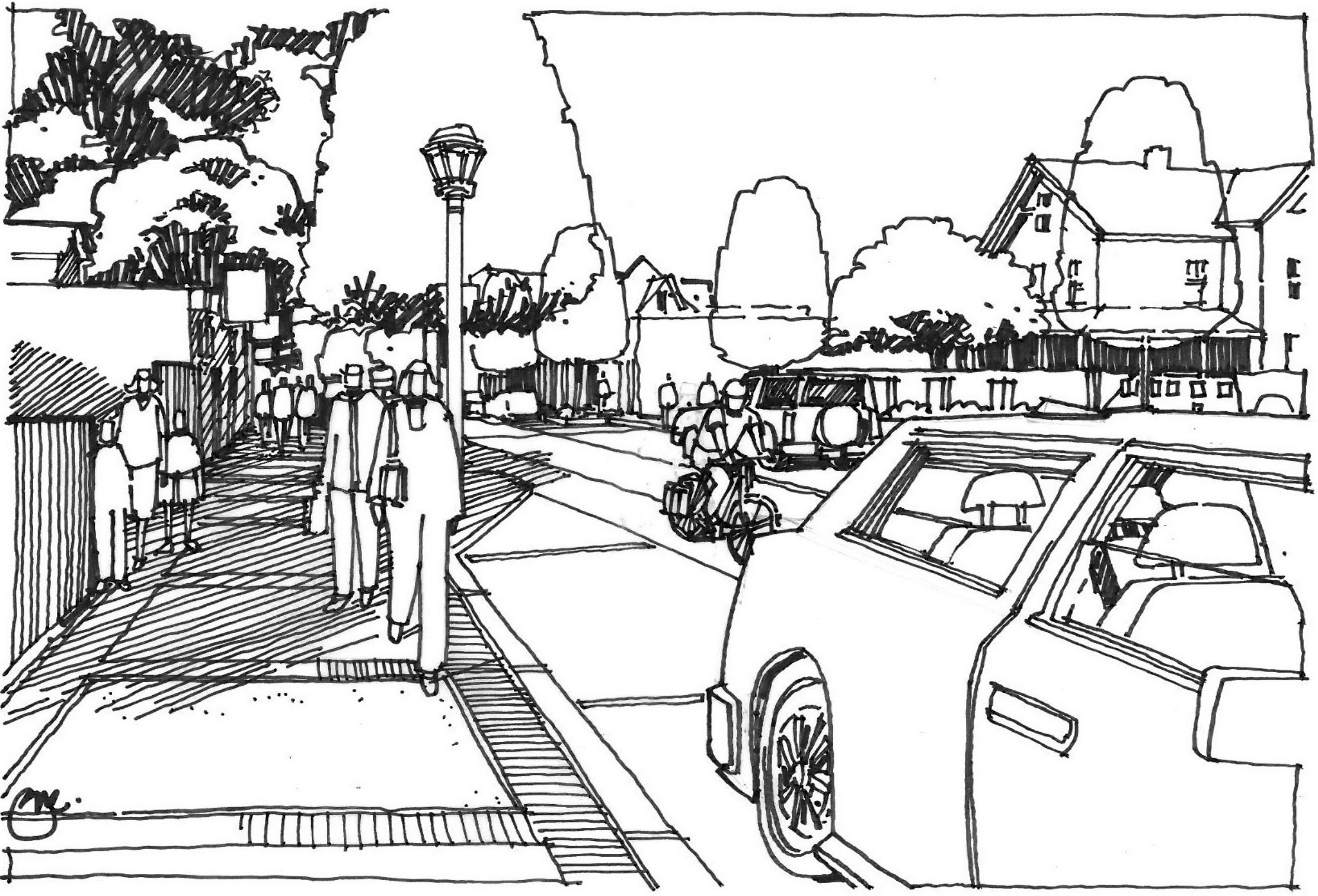
Streetscape elements can be included in future programming to enhance the walking experience and increase pedestrian activity in Wendell. Amenities such as benches, lighting and trees creates a more pleasurable walking area.

Street Trees
Trees are a vital part of the environment. Trees clean the air, reduce runoff and provide shade and cooling from the sun. Trees are shown to slow traffic which in turns makes walkers feel more safe to travel. Street trees are planted in between the roadway and sidewalk to providing shade and safe buffer from vehicles for pedestrians.

Street Furniture
Walkable communities allow pedestrians to walk, socialize and allow for rests during commutes if needed. Benches located along routes allow all users of the pathways options to stop whether it is due to a disability or to socialize with neighbors. Adding street furniture is an easy improvement to a streetscape project. Benches should be at least 20” tall to accommodate all users comfortably and should be 3 feet from the curb.

Lighting
Lighting is an important part of creating a walkable town. Lighting has multiple purposes including:

- Providing safety
- Helping pedestrians navigate pathways
- Encourages walking by making people safer
- Improve access to services, businesses, and transit.



Federal Funding Sources

Fixing America's Surface Transportation (FAST) Act

The 'Fast" Act was signed into law in 2015 and will create a 5-year certainty for states and local governments to fund specific projects. The bill's total 5-year funding pot is $305 billion, with $835 million in 2016 and 2017, and $850 million in 2018-2020 dedicated to bicycle and pedestrian projects.

The FAST Act is the first ever federal transportation bill to include Complete Streets Guidelines. The requirements help ensure that new National Highway System roadways offer better transportation options and keep pedestrians safe in and around roadway corridors. It also requires the use of NACTO's Urban Streets Design Guide when designing roadways, as well as permitting local governments to use their own adopted design guidelines if they are the direct recipient of federal funds, even if it differs from state standards.

The Surface Transportation Block Grant program (STBG) provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure.

Federal Transit Administration

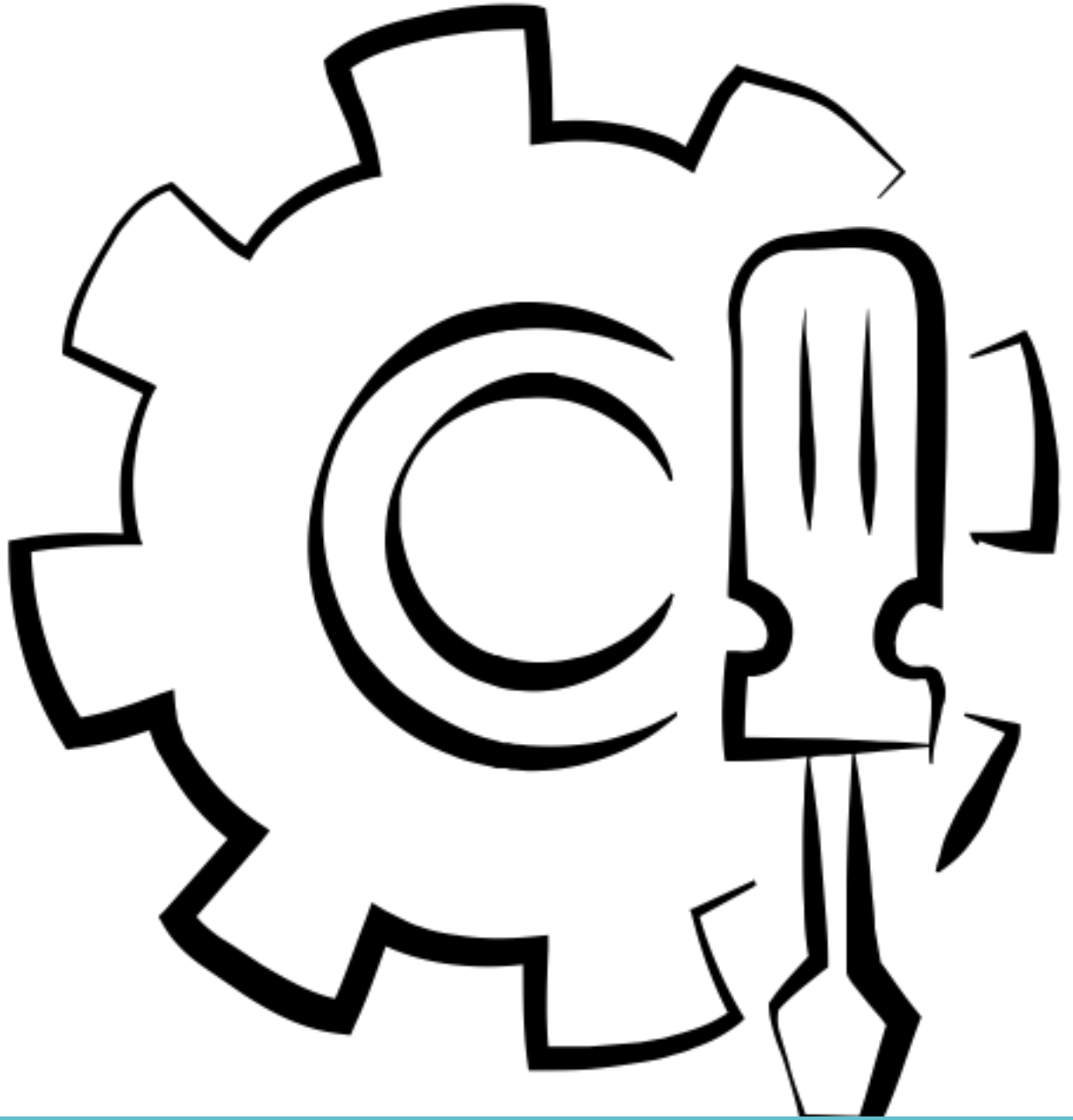
This program provides funding for transportation projects at the federal level and is allocated to State Department of Transportations. The State then applies funding to eligible projects. Projects including pedestrian projects are eligible as they increase safety for users and enhances interaction of all users on the full transportation network. https://cms.fta.dot.gov/

Safe Routes To School (SRTS)

The Federal Safe Routes to School program was established in 2006 and provided funding to all State Departments of Transportation. More recent legislation did not include funds specifically for Safe Routes to School, though projects to improve walking and bicycling safety are still eligible under the Transportation Alternatives Program. Infrastructure projects can only be considered Safe Routes to School projects if they are located within two miles of an elementary or middle school. Visit https://connect.ncdot.gov/projects/BikePed/Documents/NCDOT_SRTS_Description.pdf for more information.

Congestion Mitigation and Air Quality (CMAQ)

CMAQ was created under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 to support transportation projects that contributed to a reduction in congestion and in turn improved air quality. In 2015, the CMAQ program contributed more than $30 billion to fund over 30,000 transportation and environmental projects.



State/Local Funding Sources

Capital Improvement Program (CIP)
Currently Wendell has a CIP that outlines funded prioritized improvement projects. Future multi-modal transportation projects should be considered when amending the CIP each year.

Powell Bill
This program is paid to municipalities for the purposes of maintaining or constructing local streets that are the responsibility of the municipalities. Funds can be used for planning, construction, and maintenance of bikeways and sidewalks.

NCDOT State Transportation Improvement Program Projects
NCDOT funds projects both incidental to highway construction / widening and independent bicycle/pedestrian projects based on established project selection criteria. Approval of metropolitan or rural planning organizations is required.

Transportation Bonds
Revenue, general obligation, special assessment are used by various government entities – after a public referendum approving the bond proposal – to construct a variety of transportation improvements.

Capital Area Metropolitan Planning Organization (CAMPO)
CAMPO administers the Locally Administered Projects Program (LAPP) that can be used to finance pedestrian projects. The program will be used by the MPO to prioritize and program all projects in the region that will utilize federal funding that is the responsibility of the MPO (such as Surface Transportation Program – Direct Allocation (STP-DA), Congestion Mitigation for Air Quality (CMAQ), etc.). This process will involve a once-a-year call for all local roadway, transit, bicycle and pedestrian projects, and will result in an annual program of projects in the Transportation Improvement Program (TIP).

Governor's Highway Safety Program
The Governor's Highway Safety Program (GHSP) offers grants for safety improvement projects for state highways in North Carolina. Projects must focus on reducing crashes, injuries and fatalities as conditional requirements for qualifying for a potential grant. Learn more about the GHSP https://connect.ncdot.gov/municipalities/Law-Enforcement/Pages/Law-Enforcement-Reporting.aspx .

Annual Budget Allocations
The Town should set aside a budget each year so it can be prepared to participate in funding opportunities. Typically federal or foundation funds require a certain percentage of matching funds by a local government. Preparedness would eliminate the chances of losing funding due to time needed for planning and locating funds for a match.

Parks and Recreation Trust Fund (PARTF)

The North Carolina Division of Parks and Recreation provide a matching grant through the PARTF to local governments for parks and recreational projects to serve the public. This grant may be suitable for the unimproved trail recommendation from the existing Moody Trail to Wendell Falls Parkway.

Community Development Block Grant

CDBG funding is intended to help communities provide housing, create suitable living environments, and expand economic opportunities primarily in low- and medium-income areas. Wendell could use these grant funds for recreation facilities and planning. It should be noted that CDBG Funds are highly competitive and the requirements are extensive. For more information, please see: www.hud.gov/offices/cpd/communitydevelopment/programs.

Governors 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/.

North Carolina Conservation Tax Credit

Persons donating their land through conservation easements for public trails (among other uses) can receive up to $250,000 or 25% of the fair market value of the land conserved. Credits are not transferable to new property owners.

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.

Blue Cross Blue Shield of North Carolina Foundation Grants

The Blue Cross Blue Shield (BCBS) Foundation's mission is to improve the health and well-being of all North Carolinians by supporting living in active communities. BCBS's Healthy Living priority area emphasizes that healthy choices are made in communities and schools through access to safe, inviting places to be active such as sidewalks and safe places to bike. The program's strategy focuses on planning, promotion and consumer demand to get people out and active on sidewalks and existing trails. Local government entities are eligible to apply, and be able to submit select components of a certified public accounting audit, dependent on annual revenues. In addition to grantmaking, the Foundation also supports programs such as Be Active Kids and Healthy Community Institute, which are direct service programs that address healthy communities. More information: http://www.bcbsncfoundation.org/grantees/available-grants/

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) established the Fit Community designation and grant program to recognize and rewards North Carolina communities' efforts to support physical activity and healthy eating initiatives, as well as tobacco-free school environments. Fit Community is one component of the jointly sponsored Fit Together initiative, a statewide prevention campaign designed to raise awareness about obesity and to equip individuals, families and communities with the tools they need to address this important issue. All North Carolina municipalities and counties are eligible to apply for a Fit Community designation, which will be awarded to those that have excelled in supporting physical activity, healthy eating and tobacco use prevention in communities, schools, and workplaces.

Designations are valid for two years, and designated communities may have the opportunity to reapply for subsequent two-year extensions. The benefits of being a Fit Community include heightened statewide attention that can help bolster local community development and/or economic investment initiatives (highway signage and a plaque for the Mayor's or County Commission Chair's office will be provided), as well as the use of the Fit Community designation logo for promotional and communication purposes.

The application for Fit Community designation is available on the Fit Together Web site: http://www.fittogethernc.org/home.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.

Hazard Elimination and Railway-Highway Crossing Program (HSR)

The NCDOT sponsors these three programs through the NC Highway Safety Improvement Program. The Spot Safety program focuses on smaller ($250,000 or less) projects and mentions pedestrian facilities by name. Small urban funds are a similar source, but not often used for trails projects.

Recreational Trails Program

NCDENR manages a trails grant program with amounts up to $75,000 with a 25% match requirement. All grants are matched 1:1 with cash, donated property value, or in-kind services.

Land and Water Conservation Funds (LWCF)

The LWCF program is managed by NCDENR for acquiring land at a single site with grants up to $250,000 for permanent outdoor recreation uses.

Project For Public Spaces

Project for Public Spaces Heart of the Community grants provide financial and technical assistance to connect people and strengthen communities. The grant aims to support approximately six projects per year, and looks to address clear needs in the local community and have the potential for catalytic improvements. Grants have ranged between $50,000 and $100,000 to the grantee, plus an equivalent amount of in-kind support in the form of technical assistance from PPS staff, so the total values of the grants could be between $100,000 and $200,000.
More information: http://www.pps.org/hotc-faq/

Alliance for Biking and Walking: Advocacy Advance Grants

Advocacy Advance's Rapid Response Grants are predominately for advocacy efforts to help local organizations win, increase, and preserve public funding in their communities. The grants are short-term campaigns and aims to support how active transportation investments, whether from federal, state or local sources, are spent.
More information: http://www.advocacyadvance.org/grants#rapidresponsegrants

Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation funds a variety of initiatives that help everyone live a healthier life. Awards range from $3,000 to $300,00 and run from one to three years, generally. The grant funds four focal areas: Healthy Kids, Health Leadership, Health Systems and, in the Wendell Pedestrian Plan's interest, Healthy Communities (Built Environment and Health). Some, not all, of areas that are funded include:

- Planning and demonstration projects
- Research and evaluations
- Policy and statistical analysis
- Learning networks and communities
- Public education and strategic communications
- Community engagement and coalition-building
- Training and fellowship programs
- Technical assistance

More information: http://www.rwjf.org/en/how-we-work/grants-and-grant-programs.html

North Carolina Community Foundation

The North Carolina Community Foundation provides funding assistance through their community grantmaking program which helps to meet local needs in the form of education, human services, basic needs, health, recreation, youth development, environment, and others.
More information: http://www.nccommunityfoundation.org/grants-scholarships/grants/grantmaking-guidelines

Walmart Foundation

The Walmart Foundation's mission is to create opportunities so people can live better in their communities. The foundation aims to provide grants to communities that have a Walmart store present. Both programmatic and infrastructure projects are eligible for funding through its State Giving Program. Grants range from $25,000 to $200,000.
More information: http://giving.walmart.com/foundation

Duke Energy Foundation

The Duke Energy Foundation provides support to address the needs of the communities their customers live and work, with one of their focus areas being community impact.
The foundation receives grant requests for funding during the request for proposal cycle, which are published online and in the grant application.
More information: https://www.duke-energy.com/community/foundation.asp

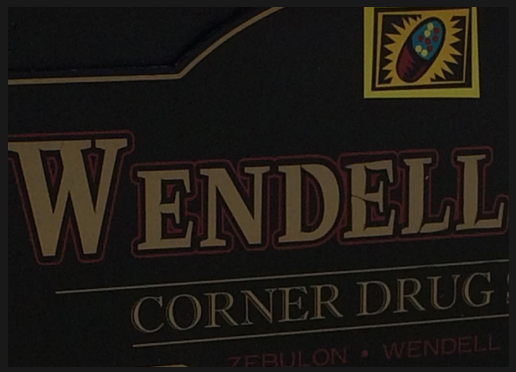
Impact Fees

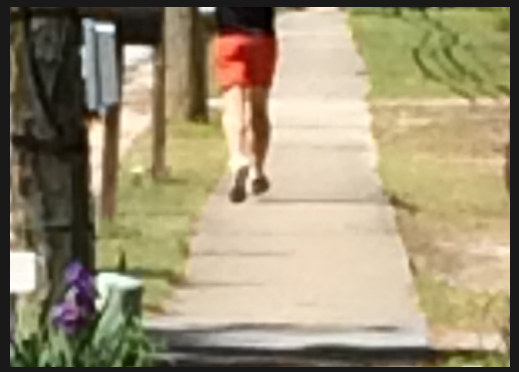
Three fee options that have been used by local governments to assist in funding pedestrian and bicycle facilities are listed here:

Stormwater Utility Fees. Greenway sections may be purchased with stormwater fees, if the property in question is used to mitigate floodwater or filter pollutants. Stormwater charges are typically based on an estimate of the amount of impervious surface on a user's property. Impervious surfaces (such as rooftops and paved areas) increase both the amount and rate of stormwater runoff compared to natural conditions. Such surfaces cause runoff that directly or indirectly discharges into public storm drainage facilities and creates a need for stormwater management services. Thus, users with more impervious surface are charged more for stormwater service than users with less impervious surface. The rates, fees, and charges collected for stormwater management services may not exceed the costs incurred to provide these services. The costs that may be recovered through the stormwater rates, fees, and charges includes any costs necessary to assure that all aspects of stormwater quality and quantity are managed in accordance with federal and state laws, regulations, and rules.
Streetscape Utility Fees. Streetscape Utility Fees could help support streetscape maintenance of the area between the curb and the property line through a flat monthly fee per residential dwelling unit. Discounts would be available for senior and disabled citizens. Non-residential customers would be charged a per foot fee based on the length of frontage on streetscape improvements. This amount could be capped for non-residential customers with extremely large amounts of street frontage. The revenues raised from Streetscape Utility fees would be limited by ordinance to maintenance (or construction and maintenance) activities in support of the streetscape.

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.


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APPRAISALS
BUY & SELL
WITH US


OVERHEAD BRIDGE
WAKE COUNTY
PROJECT CO. 306
BUILT WITH FEDERAL AID
1938