

Contract for Services and Scope of Work

Between ETC Institute and the Village of Pinehurst, North Carolina

ARTICLE I: SCOPE OF SERVICES

1. **Overview of Services to Be Performed.** ETC Institute will design and administer three citizen surveys for the Village of Pinehurst, North Carolina. The surveys will be administered during the months of August/September of 2015, 2016 and 2017. Each year, the final report will be completed within 10 weeks of the approval of the survey instrument by the Village.
2. **Maximum fixed fee.** The total fee for the project is \$12,126 per year. This includes \$10,488 to design and administer the survey, and \$1,638 for geocoding the data.
3. **ETC Institute's responsibilities.** The tasks that will be performed by ETC Institute as part of this agreement include the following:
 - a. finalizing the methodology for administering the survey based on input from the Village.
 - b. designing a survey instrument that is up to 20 minutes in length (7 pages).
 - c. selecting a random sample of households to be surveyed
 - d. setting up the database
 - e. conducting a pretest of the survey instrument
 - f. completing 400 surveys by a combination of mail and phone (ETC Institute's costs include all labor, postage and printing associated with the administration of the survey). The results of a random sample of 400 completed surveys will have a precision of at least +/-5% at the 95% level of confidence.
 - g. conducting data entry and quality control review for all completed surveys
 - h. providing complete printouts of the data
 - i. conducting benchmarking analysis that shows how the results for Pinehurst compare to other comparable cities.

- j. conducting importance-satisfaction analysis to identify the types of improvements that will have the most impact on satisfaction with village services.
 - k. completing a final report that will include an executive summary, charts and graphs, benchmarking analysis, importance-satisfaction analysis, tables showing the results to all questions on the survey, and a copy of the survey instrument.
 - l. making an on-site presentation of the survey results to the Village.
4. Responsibilities for the Village of Pinehurst will include the following:
- a. approving the survey instrument
 - b. providing a cover letter for the mail version of the survey
 - c. identifying requests for subanalysis of the data as appropriate.

ARTICLE II: PAYMENT FOR SERVICES

1. Invoices will be submitted each year upon completion of tasks described in Article I, Section 3, of this agreement as follows:
- ✓ Invoice #1: \$5,600. The first invoice will be submitted during the design of the survey.
 - ✓ Invoice #2: \$5,026. The second invoice will be submitted during the survey administration.
 - ✓ Invoice #3: \$1,500. The third invoice will be submitted upon completion of the final report.

ARTICLE III: MISCELLANEOUS PROVISIONS

1. Change in Scope. The Scope of Services for this contract shall be subject to modification or supplement upon the written agreement of the contracting parties. Any such modification in the Scope of Services shall be incorporated in this agreement by supplemental agreement executed by the parties.

2. Termination of Contract. This agreement may be terminated by either party upon written notice. If the contract is terminated by the Village, the Village shall reimburse ETC Institute for the full value of any tasks that have been performed through the date of the termination notice.
3. Rights to Use the Data. ETC Institute has the right to use the data as a component of ETC Institute's DirectionFinder® benchmarks, but ETC Institute will not release specific results for the Village of Pinehurst without written approval from the Village.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be signed by their duly authorized officers.

Date _____

Elaine Tatham, ETC Institute, President

Date _____

Contract for Services and Scope of Work

Between ETC Institute and the Village of Pinehurst, NC

ARTICLE I: SCOPE OF SERVICES

1. **Overview of Services to Be Performed.** ETC Institute will design and administer three business surveys for the Village of Pinehurst, North Carolina. The surveys will be administered during the months of August/September of 2015, 2016 and 2017. Each year, the final report will be completed within 10 weeks of the approval of the survey instrument by the Village.
2. **Maximum fixed fee.** The total fee for the project is \$4,725. This includes \$2,925 to administer the survey and \$1,800 to provide a report with charts and graphs, Importance/Satisfaction analysis and trend information where possible. Fifty (50) to 100 surveys will be guaranteed.
3. **ETC Institute's responsibilities.** The tasks that will be performed by ETC Institute as part of this agreement include the following:
 - a. finalizing the methodology for administering the survey based on input from the Village
 - b. using the 4 page survey that the Village has developed
 - c. mailing to the list of businesses provided on the sampling list ordered by ETC and the one provided by the Village
 - d. setting up the database
 - e. completing 50-100 surveys by a combination of mail and phone (ETC Institute's costs includes all labor, postage and printing associated with the administration of the survey).
 - f. conducting data entry and quality control review for all completed surveys
 - g. providing complete printouts of the data
 - h. completing a final report that will include an executive summary, charts and graphs, and, tables showing the results to all questions on the survey, and a copy of the survey instrument
4. Responsibilities for the Village of Pinehurst will include the following:

- a. approving the survey instrument
- b. providing a cover letter for the mail version of the business survey

ARTICLE II: PAYMENT FOR SERVICES

1. An invoice for \$2,925 will be submitted at the beginning of the project and an invoice for \$1,800 will be submitted with completion of the draft report.

ARTICLE III: MISCELLANEOUS PROVISIONS

1. Change in Scope. The Scope of Services for this contract shall be subject to modification or supplement upon the written agreement of the contracting parties. Any such modification in the Scope of Services shall be incorporated in this agreement by supplemental agreement executed by the parties.
2. Termination of Contract. This agreement may be terminated by either party upon 14 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party. If the contract is terminated by the Village, the Village shall reimburse ETC Institute for the full value of any tasks that have been initiated, up to the total amount of the next scheduled invoice.
3. Rights to Use the Data. ETC Institute has the right to use the data as a component of ETC Institute's DirectionFinder® benchmarks, but ETC Institute will not release specific results for the Village of Pinehurst without written approval from the Village.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be signed by their duly authorized officers.

Date _____

Elaine Tatham, ETC Institute, President

Date _____

Incident IBR Reported Offenses Month To Month Comparison

Pinehurst Police Department

January 2015 - January 2014

Part I Offenses	January 2014	January 2015	+/-	Percent Changed	Year-To-Date 2014	Year-To-Date 2015	+/-	Percent Changed
Murder	0	0	0	0%	0	0	0	0%
Rape	0	0	0	0%	0	0	0	0%
Robbery	0	1	1	-	0	1	1	-
Commercial	0	0	0	0%	0	0	0	0%
Individual	0	1	1	-	0	1	1	-
Assault	0	0	0	0%	0	0	0	0%
Violent Total:	0	1	1	-	0	1	1	-
Burglary	0	0	0	0%	0	0	0	0%
Residential	0	0	0	0%	0	0	0	0%
Non-Residential	0	0	0	0%	0	0	0	0%
Commercial	0	0	0	0%	0	0	0	0%
Other	0	0	0	0%	0	0	0	0%
Larceny	9	16	7	78%	9	16	7	78%
Auto Theft	0	0	0	0%	0	0	0	0%
Arson	0	0	0	0%	0	0	0	0%
Property Total:	9	16	7	78%	9	16	7	78%
Part I Total:	9	17	8	89%	9	17	8	89%

Part II Offenses	January 2014	January 2015	+/-	Percent Changed	Year-To-Date 2014	Year-To-Date 2015	+/-	Percent Changed
Drug	10	7	-3	-30%	10	7	-3	-30%
Assault Simple	2	0	-2	-100%	2	0	-2	-100%
Forgery/Counterfeit	0	0	0	0%	0	0	0	0%
Fraud	4	3	-1	-25%	4	3	-1	-25%
Embezzlement	0	0	0	0%	0	0	0	0%
Stolen Property	0	0	0	0%	0	0	0	0%
Vandalism	6	2	-4	-67%	6	2	-4	-67%
Weapons	1	0	-1	-100%	1	0	-1	-100%
Prostitution	0	0	0	0%	0	0	0	0%
All Other Sex Offenses	0	0	0	0%	0	0	0	0%
Gambling	0	0	0	0%	0	0	0	0%
Offenses Against Family/Children	0	0	0	0%	0	0	0	0%
D.W.I.	3	0	-3	-100%	3	0	-3	-100%
Liquor Law Violation	2	0	-2	-100%	2	0	-2	-100%
Disorderly Conduct	1	1	0	0%	1	1	0	0%
Obscenity	0	0	0	0%	0	0	0	0%
Kidnap	0	0	0	0%	0	0	0	0%
All Other Offenses	31	13	-18	-58%	31	13	-18	-58%
Part II Total:	60	26	-34	-57%	60	26	-34	-57%
Incident Total:	69	43	-26	-38%	69	43	-26	-38%

Arrest IBR Reported Offenses Month To Month Comparison

Pinehurst Police Department

January 2015 - January 2014

Part I Offenses	January 2014	January 2015	+/-	Percent Changed	Year-To-Date 2014	Year-To-Date 2015	+/-	Percent Changed
Murder	0	0	0	0%	0	0	0	0%
Rape	0	0	0	0%	0	0	0	0%
Robbery	0	0	0	0%	0	0	0	0%
Commercial	0	0	0	0%	0	0	0	0%
Individual	0	0	0	0%	0	0	0	0%
Assault	0	0	0	0%	0	0	0	0%
Violent Total:	0	0	0	0%	0	0	0	0%
Burglary	0	0	0	0%	0	0	0	0%
Residential	0	0	0	0%	0	0	0	0%
Non-Residential	0	0	0	0%	0	0	0	0%
Commercial	0	0	0	0%	0	0	0	0%
Other	0	0	0	0%	0	0	0	0%
Larceny	1	0	-1	-100%	1	0	-1	-100%
Auto Theft	0	0	0	0%	0	0	0	0%
Arson	0	0	0	0%	0	0	0	0%
Property Total:	1	0	-1	-100%	1	0	-1	-100%
Part I Total:	1	0	-1	-100%	1	0	-1	-100%

Part II Offenses	January 2014	January 2015	+/-	Percent Changed	Year-To-Date 2014	Year-To-Date 2015	+/-	Percent Changed
Drug	12	6	-6	-50%	12	6	-6	-50%
Assault Simple	2	0	-2	-100%	2	0	-2	-100%
Forgery/Counterfeit	0	0	0	0%	0	0	0	0%
Fraud	2	0	-2	-100%	2	0	-2	-100%
Embezzlement	0	0	0	0%	0	0	0	0%
Stolen Property	0	0	0	0%	0	0	0	0%
Vandalism	0	0	0	0%	0	0	0	0%
Weapons	1	0	-1	-100%	1	0	-1	-100%
Prostitution	0	0	0	0%	0	0	0	0%
All Other Sex Offenses	0	0	0	0%	0	0	0	0%
Gambling	0	0	0	0%	0	0	0	0%
Offenses Against Family/Children	0	0	0	0%	0	0	0	0%
D.W.I.	3	4	1	33%	3	4	1	33%
Liquor Law Violation	2	0	-2	-100%	2	0	-2	-100%
Disorderly Conduct	1	1	0	0%	1	1	0	0%
Obscenity	0	0	0	0%	0	0	0	0%
Kidnap	0	0	0	0%	0	0	0	0%
All Other Offenses	16	21	5	31%	16	21	5	31%
Part II Total:	39	32	-7	-18%	39	32	-7	-18%
Arrest Total:	40	32	-8	-20%	40	32	-8	-20%

SECTION ONE: INTRODUCTION AND DISCUSSION OF PEER COMMUNITIES

1.1 VISION STATEMENT



The Village of Pinehurst, North Carolina, is committed to providing its citizens with a safe community in which to live, work, and play. Part of this commitment includes the future improvement and/or construction of bicycle-friendly transportation corridors throughout the Village.

Consequently, the Village of Pinehurst hired McGill Associates to develop a Comprehensive Bicycle Plan, and assist with these efforts.

In preparing this plan, McGill Associates teamed with Kostelec Planning, LLC from Asheville, North Carolina, and also worked closely with a Bicycle Plan Steering Committee comprised of members appointed by the Village. A portion of the funding for the plan was derived from a grant provided by the North Carolina Department of Transportation (NCDOT), Division of Bicycle and Pedestrian Transportation (DBPT).

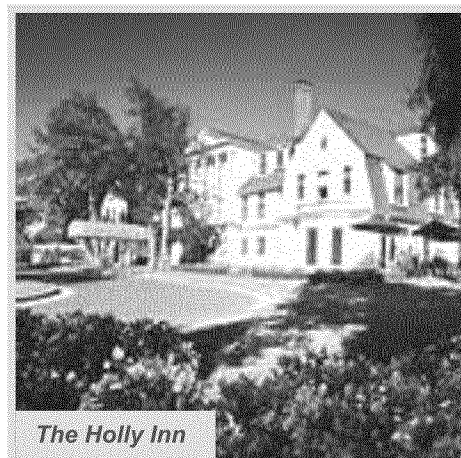
On June 3rd 2014, McGill Associates held a “kick-off” meeting with members of the Bicycle Plan Steering Committee to define their vision for the proposed Pinehurst bicycle network. After a brief introduction, the Steering Committee participated in an exercise designed to elicit their perceptions of the needs and desires for a bicycle system in the Village. Throughout the development of this plan, the Steering Committee provided valuable input and guidance to McGill Associates and the planning team.

In addition, the production of this Comprehensive Bicycle Plan was preformed concurrently with a Village-funded Comprehensive Pedestrian Plan. The project Steering Committee guided both efforts and established the vision for developing both bicycle and pedestrian facilities within Pinehurst.

1.2 HISTORY

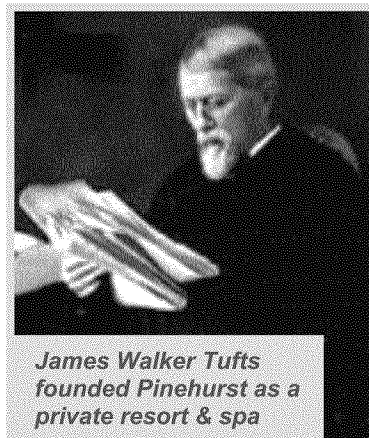
The History of the Village of Pinehurst

The Village of Pinehurst is situated in what is often referred to as the Sandhills of North Carolina. The Sandhills consist of a strip of ancient beach dunes in the interior of North and South Carolina (evidenced by a former coastline when the ocean level was higher, or the land was lower) and divides the “piedmont” and the “coastal plain”. Approximately 60 miles southwest of Raleigh, the state capitol, Pinehurst is also approximately 75 miles east of the



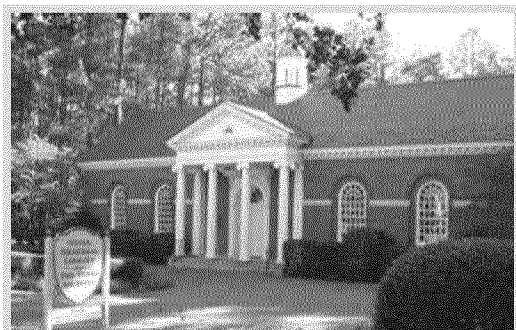
Charlotte metro area. The Village spans approximately 14.9 square miles, having 14.3 square miles of land and 0.6 square miles of water. Major thoroughfares to Pinehurst include NC Highway 5, NC Highway 2, NC Highway 211, and US Highway 15-501.

The Village of Pinehurst is the largest municipality in Moore County and is regionally recognized as an outstanding residential community; and internationally, as a major golf resort. Incorporated in 1980, the Village was founded in 1895 by soda fountain magnate James Walker Tufts who purchased 598 acres of land for \$1.25 per acre to create a health resort in the Sandhills. Mr. Tufts wanted a first-rate, private resort; and thus, hired Frederick Law Olmsted (designer of Central Park in New York and the Biltmore Estate in Asheville) for the project dubbed "Tuftstown".



*James Walker Tufts
founded Pinehurst as a
private resort & spa*

Tuft dreamed of building a beautiful, healthful village – where those suffering from respiratory and other ailments could recuperate in the land



Given Memorial Library & Tufts Archives

of abundant sunshine and thought to be the medicinal qualities of the pine-scented air. As patients' needs varied, Tuft built an assortment of cottages, rooming houses, and hotels, later followed by a livery stable, fire department, laundry, markets, department stores and poultry/dairy farms. Tuft finally named the Village "Pinehurst" ("pine" for the trees, and "hurst" for a rising plot of ground). Most of the original buildings are still in existence and can be toured today. The Tufts Archives is open to the public

and free of charge.

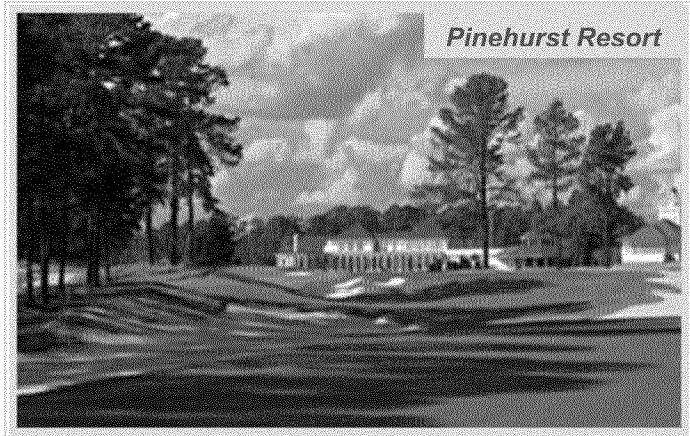
In 1900, Donald Ross was hired as the developer for golf at the Pinehurst Resort. Pinehurst Resort remained privately-held by the Tufts family until 1920 when a corporate form of ownership, Pinehurst, Inc., was obtained. By the late 1960's, the shareholders of Pinehurst, Inc., sold the property to the Diamondhead Corporation, who created 7,000 "membership" lots to sell, accompanied by the appropriate infrastructure – roads, water, sewer, etc. In 1980, pursuant to an Order of Incorporation, the Village of Pinehurst became an incorporated municipality. The resort property has changed hands several times over the years and world-renowned golf courses have been developed and expanded under each owner. Donald Ross eventually designed



*Statue memorializes
Payne Stewart's
1999 US Open win*

four (4) golf courses that would mark their places in history, as would famed golfers such as Ben Hogan, Sam Snead, Byron Nelson, Arnold Palmer, Jack Nicklaus, Payne Stewart, and many more.

In 1996, the Village of Pinehurst and Pinehurst Resort had the distinct pleasure of being given National Landmark status for their historical, significant role in United States golf history. Since then, the Village of Pinehurst has become the home of the North & South Golf Amateur (since 1901), PGA Championships, Ryder Cup matches, US Amateurs, Senior Open, and the 1999/2005 US Opens. In 2014, Pinehurst was the first venue in history to host the men's and women's US Open in back-to-back weeks.



Though known as the "Home of American Golf" (with more than 41 courses, most being playable year round), Pinehurst is rich with history, artists, pottery, architecture, and beautiful horse country. Unlike other burgeoning golf communities, Pinehurst retains a true small town atmosphere. It also hosts world championship matches in clay court tennis, croquet, and yard bowling; and is the home of superior equestrian and dog

facilities. Each fall, equestrian owners from the North and Midwest bring their jumpers, hunters, and dressage horses to the area to take advantage of the mild climate and soft sand footing.



Pinehurst has enjoyed its resort status, boasting world-renowned golf facilities and a Village Center filled with the charm of the New England area. Shopping in the Village of Pinehurst, and the nearby Towns of Southern Pines, and Aberdeen offers quaint boutiques and specialty shops, as well

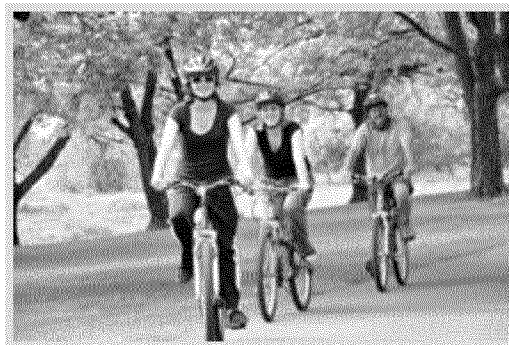
as numerous restaurants and cafes. The quiet and tranquil atmosphere makes Pinehurst an excellent vacation destination as well as a wonderful place to live. Committed to offering top quality services to residents and visitors alike, the Village of Pinehurst strives to ensure that residents enjoy a wonderful quality of life and visitors have a memorable experience.

Several factors have contributed to major demographic and economic changes to the Village of Pinehurst in recent years. The close working proximity to the Research Triangle (Raleigh, Durham, and Chapel Hill), Charlotte Metro, and Fort Bragg, have made Pinehurst an extremely desirable place to live and raise a family. From 1990 to 2000, the US Census Bureau indicated that Pinehurst's population grew by 91%, as compared to 27% for Moore County and 21% for North Carolina. This population growth is expected to continue, especially with changing demographics. While Pinehurst remains largely a community based on retirement, there is a growing population of families with children relocating to the Village.



The Village's unique Sandhills location with its moderate year round climate has led to a large number of tourists and sports enthusiasts traveling through or visiting the area each year; and consequently, some out-of-state tourists have begun to build summer/vacation homes in the area. In addition, the resort area has become a very popular retirement community. The influx of residents during 2008 to 2012 has resulted in the median household income being \$66,436 in Pinehurst as compared to the state average of \$46,450. Likewise, persons living below the poverty level are only 4.1% as compared to the 16.8% statewide. With senior citizens representing almost half of the population of the Village of Pinehurst, certainly health and wellness opportunities are in great demand.

Because of year-round tourism and rapid population growth, the leaders of the Village of Pinehurst have recognized the need for a Comprehensive Bicycle Plan that addresses both the current and future needs of their residents and visitors. This Plan will provide direction and purpose as the Village strives to meet the daily cycling needs of their community, as well as impact the citizenry of the Village and its surrounding area for many years to come. The

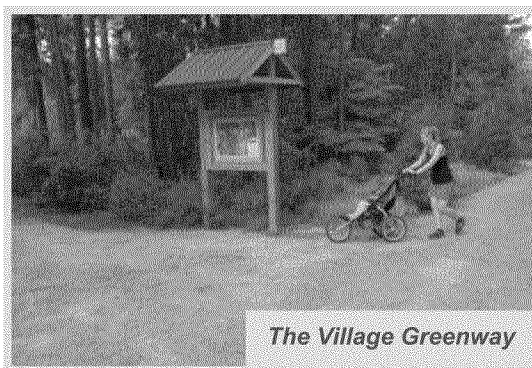


Village of Pinehurst Comprehensive Bicycle Plan 2015 addresses their vision by identifying specific goals and objectives; and, makes recommendations for achieving them.

Past and Current Municipal Efforts

Village Greenway Master Plan

Pinehurst maintains an existing Greenway trail that is approximately six (6) miles long, and represents the first three (3) phases of the Village Greenway Plan. The previously completed plan ultimately proposed 24 miles of planned trail. Part of the Greenway Project included the formation of the Village Greenway Habitat Committee. This group is working to make the Pinehurst Greenway a place where people can learn about the native plants and animals. The Committee has conducted frequent surveys along the Greenway in order to catalog the diverse flora and fauna that can be found along the path.



The Village Greenway

Bridge along the Village Greenway



The Greenway Master Plan consists of a system of several loops and endpoints, which meander through a suburban landscape of parks, homes, open areas, recreation facilities, and wooded tracts. The Greenway accommodates runners, walkers, and cyclists. Currently golf cart use of the trail is prohibited. However, there has been public interest in possibly accommodating golf cart travel on certain parts of this multi-modal pathway system.

Village of Pinehurst Engineering Standards and Specifications Manual

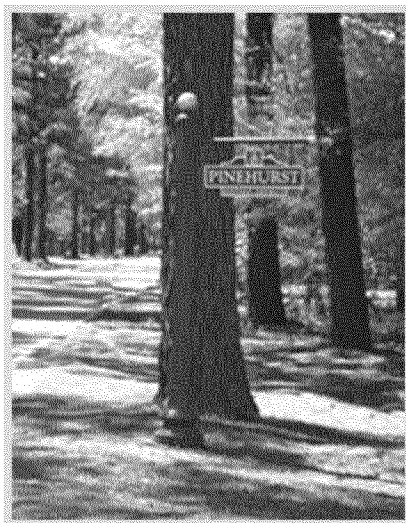
In August 2004, the Pinehurst Village Council adopted an Engineering Standards and Specifications Manual that specifies the minimum design standards for all new development within the jurisdiction of the Village. Section 4.0 of this Manual includes technical specifications for both sidewalks (minimum thickness of 4-inches, minimum clear-width of 5-feet) and for greenways (minimum 6-inches compacted, stone screenings, minimum clear-width of 6-feet). Standard details are also included in the Manual for Concrete Sidewalk, Brick Sidewalk, and Greenways. The Manual has been amended on several occasions since its original adoption, and continues to serve as the primary engineering reference document utilized in development within the Village.

Pinehurst Development Ordinance (PDO)

The Pinehurst Development Ordinance, commonly referred to as the PDO, was recently updated and adopted by Village Council in October 2014. This document establishes various rules and regulations associated with development within the Village, including requirements for sidewalks and greenways. The current PDO requires sidewalks to be

installed on one side of all new streets in new residential developments that serve 8 or more dwelling units, and on both sides of all new streets in non-residential developments. The PDO also establishes the definition of a greenway as “a linear open space, either privately-owned or owned by the Village or another unit of government, which may contain a trail for walking, bicycling, horseback riding or other passive recreation, but not for use by vehicles for purposes other than maintenance of the greenway.”

Historic District Standards and Guidelines



The Village’s Historic District and Guidelines were originally adopted by Village Council in September 2006, and provide “design principles and standards” for structures and landscaping within the local historic district. The document is also utilized by the Village’s Historic Preservation Commission (HPC) in reviewing proposed changes and new construction within the District. While the document does not provide design standards for sidewalks or walkways, it does reference that “original sand-clay and patterned brick sidewalks contribute to the character of some streetscapes in the District.” Projects within the public right-of-way do not require approval from the HPC according to the Standards and Guidelines document.

1.3 OVERALL GOALS

The purpose of the Comprehensive Bicycle Plan is to create a document to guide the Village of Pinehurst with development criteria for the following phases of its proposed



comprehensive bicycle system: (1) Planning, (2) Design, (3) Financing, (4) Implementation, and (5) Maintenance.

While enhancing and prioritizing capital improvements/maintenance projects for the Village, the plan will include special consideration given to critical areas for bicycle transportation and safety; as well as address the Americans with Disabilities Act (ADA) compliance issues.

The goals of the Village of Pinehurst Comprehensive Bicycle Plan 2015, which were developed with input from the study's Steering Committee, are as follows:

Goals and Objectives

- Increase the options for bicycling as an alternate form of transportation within the Village of Pinehurst:
 - Plan bicycle routes with input from the community in mind.
 - Increase and improve the bicycle-related infrastructure.
 - Provide aesthetically pleasing landscaping and resting places along commonly used paths and routes.
 - Connect the bicycle network to common destination points.
 - Promote a “walking/biking culture” in Pinehurst.
- Create a bicycle friendly community that is an important part of the urban structure:
 - Provide attractive, yet safe, bicycling *connections* from Village residential areas to nearby destinations.
- Promote bicycling as a healthy exercise:
 - Develop and/or participate in more healthy programs such as “Eat Smart, Move More North Carolina”, etc.
 - Partner with health and recreation providers to create healthy living programs and events that encourage and promote bicycling as a form of alternative transportation.
- Create a bicycle environment that is friendly to all users - including seniors, disabled persons, and children:
 - Provide ADA compliant facilities
 - Increase cycling safety with regard to vehicular traffic.



- Provide facilities for sitting/resting opportunities.
- Improve connections between disparate parts of the Village:
 - Provide a network of on- and off-street bicycling facilities to accommodate a multitude of users.
 - Provide bicycling connections between downtown Pinehurst and surrounding areas/destinations
 - Promote neighborhood connectivity
 - Provide equitable access to the bicycling network(s)
 - Provide bicycling access to schools, shopping areas, and work places
- Promote bicycle safety:
 - Promote bicycle safety through educational programs both inside and outside the schools.
 - Design a bicycle network that can be safely traversed by all.



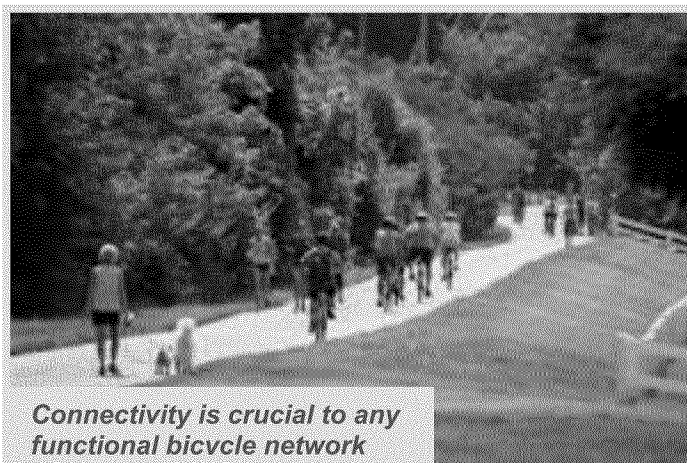
1.4 SCOPE, METHODOLOGY, AND PURPOSE OF PLAN

McGill Associates, P.A., was retained by the Village of Pinehurst to prepare a village-wide bicycle plan as a guide for identifying and prioritizing safe cycling linkages; thereby, creating a viable bicycle network. Most areas within the Village limits lack sufficient cycling facilities. The Village recognizes the need to plan for the future by developing a cycling network, which provides connectivity for its users. Using a proactive approach (such as this) is imperative in establishing priorities for future facilities, reducing construction costs, and implementing facilities in a logical manner.

The study area spans the Pinehurst Village limits and the immediate, surrounding extraterritorial jurisdiction (ETJ). Although the research will be focused primarily within the Village limits, it is important to understand the existing bicycle patterns into and out of Pinehurst and their destination points.

In order to comprehend the existing conditions, identify user needs, and be able to recommend appropriate improvements in this plan, the following processes were used:

1. **Inventory of the existing bicycling system:** An inventory of Pinehurst's limited facilities that support bicycling was conducted - identifying existing safety issues.
2. **Assessment of the needs of the cyclist:** The needs of bicyclists and the apparent lack of connectivity to destination points were identified and evaluated through data collected via public meetings, surveys, and direction provided by Village Staff and the Project Steering Committee.
3. **Formulation of objectives and recommendations:** Guidelines for the future development of facilities, repair of existing facilities, and maintenance were created. Probable costs for all recommendations were provided.
4. **Implementation of improvements by action-oriented method:** Key bicycle linkages and needs were identified and prioritized. Possible funding sources for the Village to pursue were identified.
5. **Examination and possible revision of current policies/programs:** Guidelines and implementation of current policies and existing cycling programs were identified and addressed.



Connectivity is crucial to any functional bicycle network

These components provide justification for the proposed improvements. Also, any time that recommendations for improvements or new construction are made, these recommendations must be prioritized. Implementing all of the proposed improvements at one time, or in a short time frame, would be both cost-prohibitive and overwhelming. It is important that the most immediate necessities be recognized first as the

implementation of capital improvements begins. In addition to facility needs, the formation of an implementation plan is an important short-term goal in establishing long-term objectives.

Bicycle facility-related needs – which are considered to be of the highest priority – are called critical needs. The critical facility needs for the Village are all focused on improving safety conditions for cyclists. In addition to bike lanes, bike shoulders, and shared roadway improvements, other emphasis should be placed on immediately

addressing unmarked crosswalks and inappropriate signage. The safety of cyclists is critical; it is the most important component of the bicycle facilities.

Bicycling facilities are the primary focus of this plan - in particular, bike lanes, bike routes, bikeable shoulders, side paths, and shared roadways. Thus, the Village Bicycle Plan delineates the (current and future) location, implementation, and maintenance of the proposed facility improvements; thereby, creating a cycling network that allows for connectivity within the Village as well as with its neighboring communities.

The improvements recommended in this Bicycle Plan are intended to be implemented over a period of time and will require creative funding mechanisms. Therefore, another significant short-term goal will be to identify improvement costs and funding opportunities, as well as prioritizing the improvements and projects.

1.5 IDENTIFYING PEER COMMUNITIES

In preparing this study, McGill Associates, Kostelec Planning, and the project Steering Committee identified several “peer communities” that relate to Pinehurst in terms of having a “residential resort” setting with numerous golf courses. These communities include:

- Coral Springs, Florida;
- Naples, Florida;
- Hilton Head Island, South Carolina
- Pebble Beach / Monterey, California; and
- Sun Valley / Ketchum, Idaho

This section contains a summary of key findings obtained through a review of bicycling-related plans, maps, and other resources within these communities.

The peer communities review revealed that Pinehurst may be behind the curve in a number of overall on-street and off-street bicycling facilities when compared to Monterey, Hilton Head, and Sun Valley; but, is not substantially worse off than these peer communities in terms of planning and policy (Hilton Head Island being an exception). Only two (2) of the five (5) peer communities are designated as Bicycle Friendly Communities by the League of American Bicyclists (Hilton Head and Sun Valley); Coral Springs is part of Broward County’s overall Bronze-Level Bicycle Friendly Community Award.





The regional approach to bicycling in these peer communities is evident through their planning history, availability of online resources and tools, and active campaigns within each community to promote safety for bicyclists. Municipalities in North Carolina are at a disadvantage when it comes to funding authority to construct such improvements, or empowerment to do so, given the historically over-arching role of NCDOT. Moving forward, the state's Complete the Streets policies offer the strongest indicator that Pinehurst can move toward rivaling these peer communities in terms of facilities.

The data and information that is readily available in North Carolina via the Pedestrian and Bicycle Crash Data tool is unrivaled by other states. No community-specific data was available from these communities to summarize and compare crash data or trends. Other than the Sun Valley/Ketchum area, none of the plans reviewed in these communities included such an analysis.

Figure 1.5 provides a summary of Key Findings in the Peer Communities, while Sections 1.6 through 1.10 provide additional information on the communities.



Figure 1.5: Key Findings from Peer Communities

Community	Key Findings:	Notable Accomplishment
Coral Springs, FL <i>Bronze-Level Bicycle Friendly Community (Broward County)</i>	- Has virtually no multi-use pathways and has some on-street bicycling facilities. - No existing bicycling or bicycle plan but has been involved with the MPO on regional bike planning efforts. - Florida's 3-foot passing law has led to the city's own enforcement and education campaign.	- Regional bicycle routing interface that allows users to choose their route by their preference of routes (short, fast, low traffic, scenic) - Development requirements to construct facilities and bike parking.
Naples, FL	- Has few on-street or off-street facilities. - Planning was conducted through a regional countywide pathways plan.	Is pursuing regional bicycle route implementation through the MPO.
Hilton Head Island, SC <i>Silver-Level Bicycle Friendly Community</i>	- Invested heavily in multi-use trails and sidepaths to link the community. - Has become a bicycle-tourism destination that nearly rivals the economic impact from golf.	- A long-standing commitment to multi-use trails as a key element of the community has driven Hilton Head's success. - The pathways are now a hub of the community and businesses and residences want to link to them.
Monterey, CA	- Has been proactively planning for bicycling for more than 15 years. - Multi-use trails are the primary facility in place along with some limited on-street facilities. - Efforts in the area are pursued from a regional perspective to link key routes, trails and destinations.	- Bicycle counts in Monterey at 20 locations. - Cataloging of more than 100 designated bicycle rack locations.
Sun Valley / Ketchum, ID <i>Silver-Level Bicycle Friendly Community</i>	- The string of resort communities are planning for bicycling as one region focused on a rail-trail that is the bicycling spine of the region. - Setting allows linkages from multi-use trails to hiking and mountain biking trails.	- Implemented a small-scale (one bike per station) bikeshare program. - Coordinates bicycling promotion with transit services for service sector commuters.

1.6 CORAL SPRINGS, FLORIDA

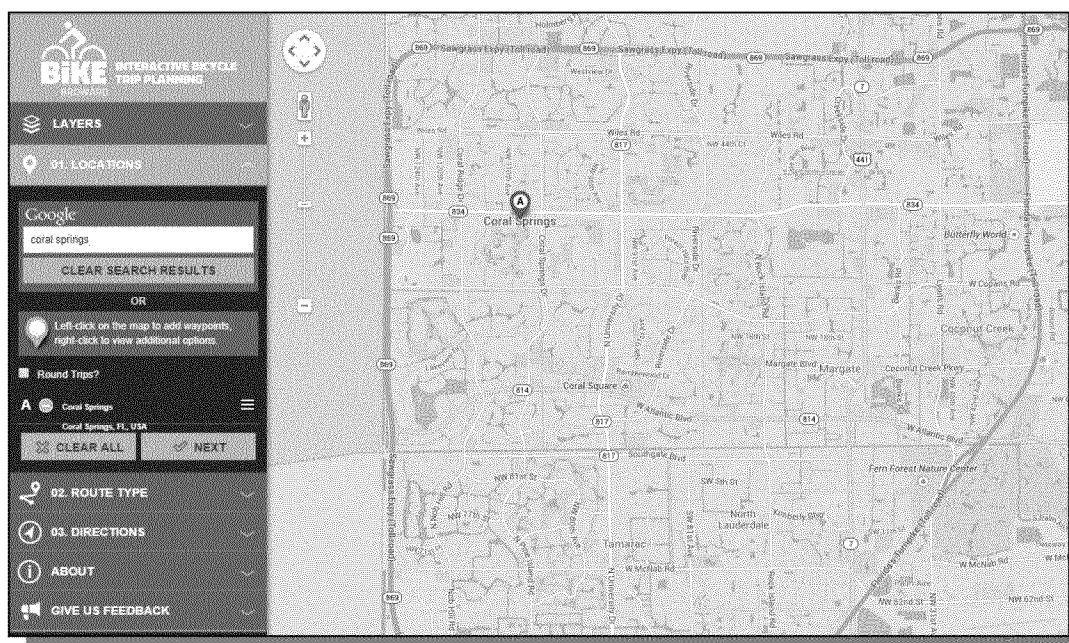
Most of the bicycle-related planning in Coral Springs has occurred through the metropolitan planning organization (MPO) for Broward County. The city's Comprehensive Plan contains several strong policy statements about improving bicycling and walking but the city has yet to develop a bicycle plan recommended in the Comprehensive Plan.



Coral Springs implements an annual “Move Over” bicycle safety campaign to help enforce Florida’s law that requires motorists to allow 3-feet when passing a bicyclist. The strongest evidence of Coral Springs’ actions relates to the requirements placed upon new development to incorporate the needs of bicyclists:

- Developers in Coral Springs are required to construct, repair or resurface adjacent bikeways and walkways as part of the development or redevelopment process.
- The City requires ample and secure bicycle parking at government buildings, schools, libraries, recreational facilities and significant commercial and multi-family developments.
- In the region, the Broward MPO manages an online interactive bicycle trip planning tool. (See Figure 1.6 below) The user can enter a start and end location and then select from bicycle routes based on the following categories: short; fast; least interaction with traffic; simple and scenic.

Figure 1.6: Bike Broward Interactive Bicycle Trip Planning Tool

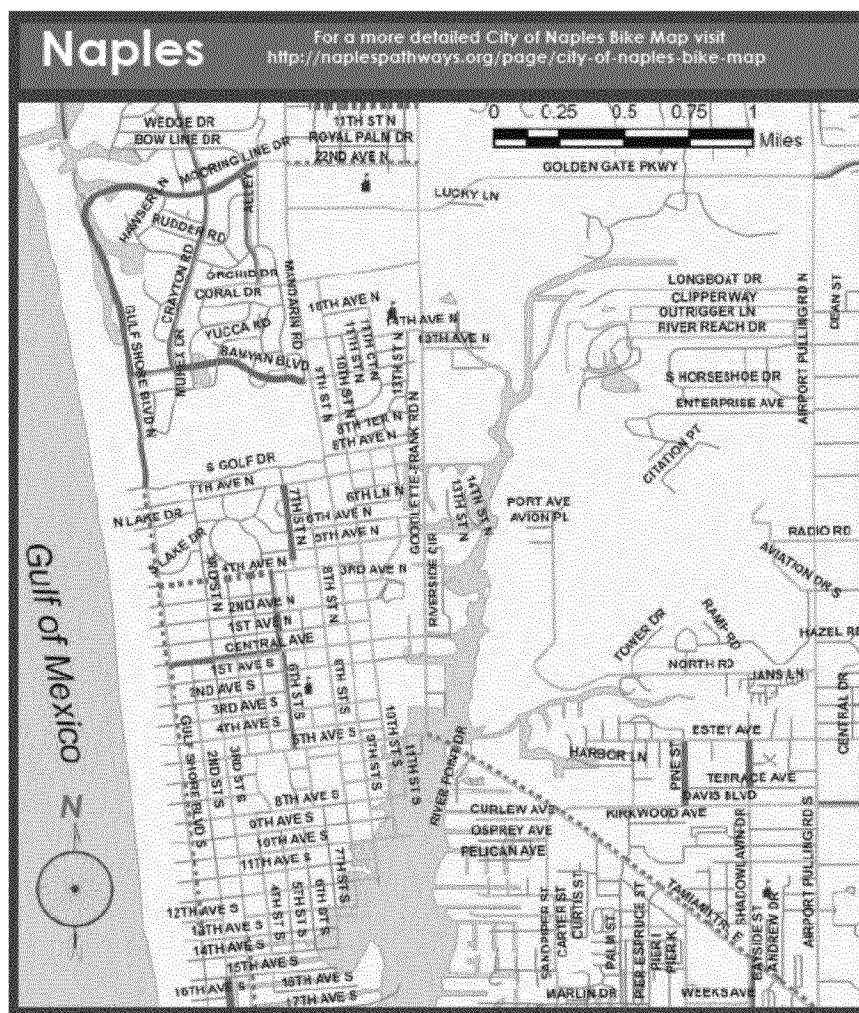


1.7 NAPLES, FLORIDA

Like Coral Springs, much of the bicycle planning in and around Naples occurs at the county level through the MPO—Collier MPO. MPOs in Florida are restricted to one-county entities and the state does not have multi-county agencies such as Triangle J COG; therefore, much of this planning is coordinated at county levels for transportation. The Collier MPO 2012 Comprehensive Pathways Plan examines bicycle facilities, greenways and sidewalks in the region with an emphasis on coastal communities, including Naples.

The bicycle facilities summary indicated Naples has approximately 24 miles of roadways that include 4 miles of paved shoulders and 6.5 miles of bicycle lanes. It was estimated that 44% of roadways in Naples had some type of bicycling facilities; 89% of the roadways have pedestrian facilities. There were no greenways identified in Naples but nearby Marco Island has almost 7 miles of greenways.

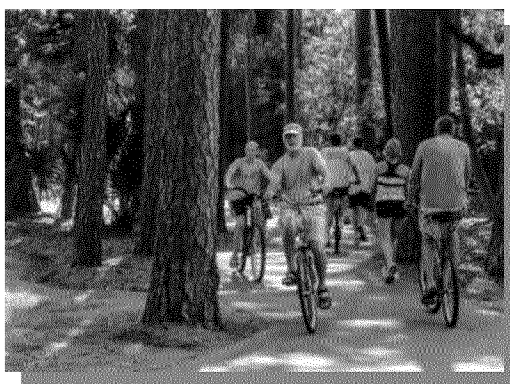
Figure 1.7: City of Naples Bicycle Map



1.8 HILTON HEAD ISLAND, SOUTH CAROLINA

Hilton Head is considered a marquee destination for both golf and bicycling—a reputation that is founded in golf but has emerged as bicycling since concerted efforts began in the 1980s to develop an island-wide pathway system.

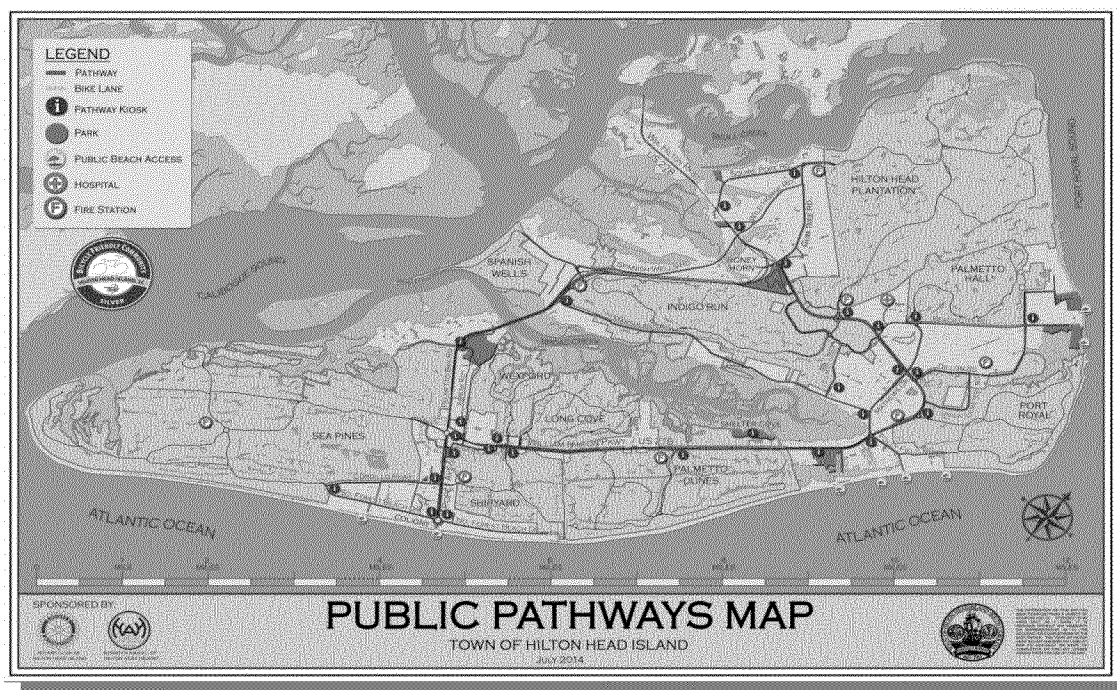
The Sea Pines Resort started the craze with pathways on the resorts, dubbed “leisure trails.” With more than 112 miles of paved pathways, Hilton Head Island is a Silver-Level Bicycle Friendly Community, as designated by the League of American Bicyclists, and spends more than \$175,000 per year on maintenance of its pathway system.



As the pathway system has been linked to major destinations and to routes within gated communities (50 of the pathway miles are within gated communities), the demand and usage of the system has skyrocketed. This is typical for communities to experience as they make the “tough decisions” (often the most expensive decisions) to build key linkages. An article in Hilton Head Monthly said that bicycle rentals at Sea Pines Resort have increased 25 percent since 2011. Hilton Head also has a Bicycle

Ambassadors Program, a group of volunteers who patrol the pathways during peak seasons and offer information to visitors and provide mechanical assistance.

Figure 1.8: Hilton Head Bicycle Path Map



1.9 PEBBLE BEACH / MONTEREY, CALIFORNIA

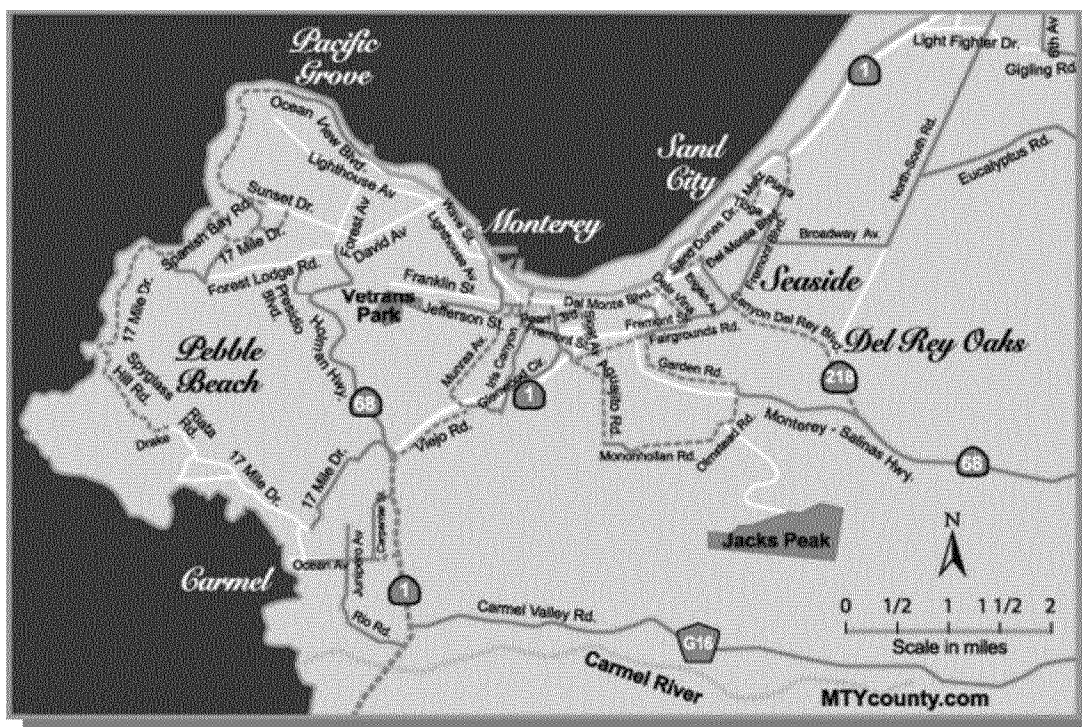
The City of Monterey Bicycle Plan is the most relevant effort in this area as it relates to bicyclist planning. The 2009 Plan was an update to a 1998 effort as well as the County's 2005 bicycling plan. The population of Monterey was 32,000 when the plan was produced.

Key recommendations of the Plan include:

- Development of two (2) bicycle boulevards (shared roadways that are optimized for bicycle traffic through safety enhancements along with targeted education efforts for motorist and bicyclists) to link downtown Monterey to area institutions and recreation trails. These are similar treatments to what is possible along some residential streets within Pinehurst that offer connectivity across the community or link parks, schools and other gathering places.
- Construction of bicycle lanes along North Fremont—a multi-lane arterial similar to NC 211 or NC 2 in Pinehurst.

It is evident from the Plan that the area has been actively planning for and monitoring bicycling activity as a municipality and a region for several years through regional transportation boards. One indicator of this is the bicycle count data contained in the plan. Monterey has data for 20 locations throughout the community and organizes those counts based on AM and PM peak periods. Monterey also cataloged the location of more than 100 designated bicycle parking racks and approximate capacity of each.

Figure 1.9: Pebble Beach/Monterey Area Bicycle Route Map



1.10 SUN VALLEY / KETCHUM, IDAHO

The Sun Valley region of Idaho, which includes the cities of Ketchum, Sun Valley and Hailey as well as several resorts, focuses its efforts on linking its pathway system to the community's many in-town and natural area destinations.

A rail-trail serves as the spine of the bicycle routes system that connects the valley communities. Sun Valley has constructed its own pathway system to link to the rail-trail.



Blaine County Recreation District—a special purpose agency with its own elected board and taxing authority—manages the trail as well as the parks and recreation system and some mountain bike and hiking trails.



The Recreation District operates and maintains two closed loop pump tracks suitable for kids on balance bikes as well as adults looking to practice mountain biking skills. Both are adjacent to school properties.

The bicycling promotion system and the region's transit and transportation demand management services are both managed by MountainRides. MountainRides is also the regional transportation agency managing the "5B Bikeshare" program that has 40 bicycles located at stations throughout the valley. The Bikeshare system is available seasonally and most bikes are located at single-rack stations. They can be rented via GPS and smartphone technologies.



- END OF SECTION -

[REDACTED]
TOWNSHIP:

CITYNAME: PINEHURST

TIMUQUANA TRL
NBHD: 630D
ROLL: REAL**Real Values**

Land Value:	31,760
Building Value:	0
Appraised Real Value:	31,760
Total Appraised Value	31,760

Property Class:	RV
Reason Code:	:
LUC:	R00

Exemptions and Exclusions

Deferred Value:	0
Senior / Disabled:	0
Veteran:	0
Historic:	0
100% E Class Ex:	0
Partial E Class Ex:	0
Total Exempt/Excluded/Deferred:	0

Assessed Valuation

Total RE Appraised Value:	31,760
Total Exempt/Excluded/Deferred:	0
Total Assessed (Taxable):	31,760

. 33 Acres

, 33





History, Charm, & Southern Hospitality.

Vision

The Village of Pinehurst is a charming, vibrant community which reflects our rich history and traditions.

Mission

Promote, enhance, and sustain the quality of life for residents, businesses, and visitors.

Values

Competent

Courteous

Professional

Responsive

RESOLUTION #15-09:

A RESOLUTION AUTHORIZING THE VILLAGE MANAGER TO RECONVEY CERTAIN DONATED CAPITAL ASSETS TO THE ORIGINAL GRANTOR.

THAT WHEREAS, in 2010 the Village received, for no consideration, 16 Scott Pak-Trackers air pack tracking devices and three (3) Scott hand-held tracking receivers from **Firefighter Support Services (20-5874952)**, a 501(c)3 charitable organization; and

WHEREAS, the Village of Pinehurst Fire Department no longer needs this equipment and has received a request from Firefighter Support Services for the items to be returned to the donating agency to redistribute to another fire department; and

WHEREAS, pursuant to North Carolina General Statute 153A-177, the Village Council is authorized to return the surplus donated equipment to Firefighters Support; and

WHEREAS, a notice of the Village Council's intention to reconvey these items has been duly published once a week for two weeks, prior to this action, as required by law.

NOW, THEREFORE, BE IT RESOLVED by the Village Council of the Village of Pinehurst, North Carolina, in the regular meeting assembled this 10th day of February, 2015, as follows:

SECTION 1. The Village Manager is authorized to reconvey the surplus property outlined above to Firefighters Support Services.

SECTION 2. Copies of this resolution shall be furnished to the Clerk to the Village Council, to the Village Manager, and to the Director of Financial Services for their direction and implementation.

ADOPTED this 10th day of February, 2015.

VILLAGE OF PINEHURST
VILLAGE COUNCIL

(Municipal Seal)

By: _____
Nancy Roy Fiorillo, Mayor

Attest:

Approved as to Form:

Lauren M. Craig, Village Clerk

Michael J. Newman, Village Attorney

VILLAGE OF PINEHURST



FINANCIAL STATEMENTS
FOR THE SIX MONTHS ENDED
DECEMBER 31, 2014

**Village of Pinehurst
Financial Statements
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**Village of Pinehurst
Combined Balance Sheet - All Fund Types
December 31, 2014**

	Governmental Fund Types		Account Groups			
	General Fund	Capital Project Funds	General Capital Assets	General Long - Term Debt	Totals December 31, 2014	Totals December 31, 2013
ASSETS						
Cash & investments	\$ 9,074,623	\$ (36,512)	\$ -	\$ -	\$ 9,038,111	\$ 9,723,807
Taxes receivable	924,149	-	-	-	924,149	955,685
Assessments receivable	77,802	-	-	-	77,802	99,299
Due from other governmental agencies	2,198,453	36,512	-	-	2,234,965	2,187,687
Interest receivable	-	-	-	-	-	272,487
Other receivables	308,019	-	-	-	308,019	-
Inventory	44,231	-	-	-	44,231	48,494
Capital assets	-	-	37,300,469	-	37,300,469	35,299,318
Amounts to be provided for retirement of general long-term debt	-	-	-	2,894,669	2,894,669	3,297,122
TOTAL ASSETS	\$ 12,627,277	\$ -	\$ 37,300,469	\$ 2,894,669	\$ 52,822,415	\$ 51,883,899
LIABILITIES AND FUND EQUITY						
Accounts payable	\$ 9,801	\$ -	\$ -	\$ -	\$ 9,801	\$ 158,256
Withholdings & accrued expenses	167,855	-	-	-	167,855	170,048
Accrued vacation	-	-	-	635,269	635,269	643,235
Net pension obligation	-	-	-	196,824	196,824	173,403
Deposits	62,127	-	-	-	62,127	48,653
Unavailable revenues	1,215,312	-	-	-	1,215,312	1,286,041
Residential assurance deposits	-	-	-	-	-	60,000
Long-term debt	-	-	-	2,062,576	2,062,576	2,480,484
Total Liabilities	1,455,095	-	-	2,894,669	4,349,764	5,020,120
EQUITY						
Investment in general capital assets	-	-	37,300,469	-	37,300,469	35,299,318
Fund Balance:						
Nonspendable:						
Inventory	44,231	-	-	-	44,231	48,494
Restricted:						
Stabilization by state statute	2,997,281	-	-	-	2,997,281	4,064,353
Transportation	-	-	-	-	-	467,849
Committed:						
Capital Project fund expenditures	-	-	-	-	-	-
Special Revenue fund expenditures	-	-	-	-	-	10,823
Assigned:						
Designated for expenditures	1,987,155	-	-	-	1,987,155	1,114,572
Unassigned	6,143,515	-	-	-	6,143,515	5,858,370
Total equity	11,172,182	-	37,300,469	-	48,472,651	46,863,779
TOTAL LIABILITIES & EQUITY	\$ 12,627,277	\$ -	\$ 37,300,469	\$ 2,894,669	\$ 52,822,415	\$ 51,883,899

Village of Pinehurst
Statement of Revenues, Expenditures and Changes in Fund Balance
Budget and Actual - General Fund
Six Months Ended December 31, 2014

	Annual Budget as of 12/31/14	Quarterly Budget as of 12/31/14	YTD as of 12/31/14	YTD as of 12/31/2013	Current Year Over (Under) Prior Year	% of 2015 Budget Spent / Received YTD
Revenues						
Ad valorem taxes & penalties	\$ 9,767,000	\$ 8,466,377	\$ 8,625,961	\$ 8,590,292	\$ 35,669	88.32%
Assessments	31,110	-	9,706	-	10,591	31.20%
Other taxes and licenses	2,800,700	1,417,510	1,468,474	1,262,511	205,963	52.43%
Intergovernmental revenues:			-			
Unrestricted	1,664,900	558,470	622,167	541,299	80,868	37.37%
Restricted	506,760	500,886	505,512	490,202	15,310	99.75%
Permits & fees	557,750	289,670	324,525	389,044	(64,519)	58.18%
Sales & service	539,500	367,750	391,970	360,442	31,528	72.65%
Other revenues	193,530	117,604	93,207	127,375	(34,168)	48.16%
Interest earned on investments	14,100	2,115	413	549	(136)	2.93%
TOTAL REVENUES	16,075,350	11,720,382	12,041,935	11,761,714	280,221	74.91%
Operating Expenditures						
Governing Body	233,000	129,400	92,908	76,339	16,569	39.87%
Administration	1,074,975	558,148	535,542	509,090	26,452	49.82%
Financial Services	606,310	384,518	336,011	338,287	(2,276)	55.42%
Human Resources	377,520	156,119	149,592	136,816	12,776	39.62%
Police	2,796,533	1,474,048	1,293,007	1,297,771	(4,764)	46.24%
Fire	2,630,299	1,427,438	1,189,995	1,135,080	54,915	45.24%
Inspections	226,090	115,546	98,825	99,444	(619)	43.71%
Public Services Administration	405,025	206,614	168,545	167,707	838	41.61%
Streets & Grounds	1,238,583	642,605	637,219	621,728	15,491	51.45%
Powell Bill Funds	763,300	(24,750)	637,759	17,507	620,252	83.55%
Solid Waste	1,462,275	806,965	582,632	605,233	(22,601)	39.84%
Recreation	1,310,091	693,474	624,287	516,895	107,392	47.65%
Library	380,000	40,000	340,000	330,000	10,000	89.47%
Harness Track	529,540	279,224	228,756	216,995	11,761	43.20%
Fair Barn	290,939	149,153	111,817	102,247	9,570	38.43%
Planning	666,790	338,777	250,440	303,974	(53,534)	37.56%
Community Development	372,275	252,075	114,036	163,812	(49,776)	30.63%
Debt Service	494,525	257,688	237,974	200,689	37,285	48.12%
Contingency	95,000	55,000	-	-	-	0.00%
Total Operating Expenditures	15,953,070	7,942,042	7,629,345	6,839,614	789,731	47.82%
Capital Outlay Expenditures						
Administration	130,205	122,705	46,786	3,200	43,586	35.93%
Financial Services	4,880	4,880	1,683	-	1,683	34.49%
Human Resources	2,440	2,440	841	7,500	(6,659)	34.47%
Police	158,695	55,195	7,668	96	7,572	4.83%
Fire	149,575	45,475	58,786	549,120	(490,334)	39.30%
Inspections	2,245	2,245	665	-	665	29.62%
Public Services Administration	62,690	62,690	537	-	537	0.86%
Streets & Grounds	485,843	420,843	215,043	239,666	(24,623)	44.26%
Powell Bill Funds	25,000	25,000	21,115	-	21,115	0.00%
Solid Waste	199,400	9,400	175,449	-	175,449	87.99%
Recreation	171,463	71,463	32,497	95,828	(63,331)	18.95%
Harness Track	143,157	136,157	137,464	19,070	118,394	96.02%
Fair Barn	71,925	71,925	22,297	-	22,297	31.00%
Planning	6,315	6,315	2,146	-	2,146	33.98%
Community Development	498,500	102,500	269,172	165,729	103,443	54.00%
Total Capital Outlay Expenditures	2,112,333	1,139,233	992,149	1,080,209	(88,060)	46.97%
TOTAL EXPENDITURES	18,065,403	9,081,275	8,621,494	7,919,823	701,671	47.72%
REVENUES OVER (UNDER) EXPENDITURES	(1,990,053)	2,639,107	3,420,441	3,841,891	(421,450)	

Village of Pinehurst
Statement of Revenues, Expenditures and Changes in Fund Balance
Budget and Actual - General Fund
Six Months Ended December 31, 2014

	Annual Budget as of 12/31/14	Quarterly Budget as of 12/31/14	YTD as of 12/31/14	YTD as of 12/31/2013	Current Year Over (Under) Prior Year	% of 2015 Budget Spent / Received YTD
Other Financing Sources (Uses)						
Operating transfers in	\$ 2,898	\$ -	\$ 2,897	\$ -	\$ 2,897	99.97%
Loan proceeds	-	-	-	550,000	(550,000)	0.00%
Total Other Fin. Sources (Uses)	<u>2,898</u>	<u>-</u>	<u>2,897</u>	<u>550,000</u>	<u>(547,103)</u>	<u>0.00%</u>
REVENUES AND OTHER FINANCING SOURCES OVER (UNDER) EXP AND OTHER FINANCING USES	(1,987,155)	2,639,107	3,423,338	4,391,891	(968,553)	
Appropriated Fund Balance	<u>1,987,155</u>	<u>299,445</u>	<u>-</u>	<u>-</u>	<u>-</u>	
EXCESS OF REVENUES, OTHER FINANCING SOURCES AND FUND BALANCE APP. OVER (UNDER) EXP AND OTHER FIN. USES	<u>\$ -</u>	<u>\$ 2,938,552</u>	3,423,338	<u>\$ 4,391,891</u>	<u>\$ (968,553)</u>	
FUND BALANCE, JULY 1			<u>7,748,844</u>			
FUND BALANCE, DEC 31			<u>\$ 11,172,182</u>			

Village of Pinehurst
Schedule of Capital Outlay by Function and Activity
Six Months Ended December 31, 2014

	Annual Budget	YTD Budget	YTD Expenditures	Remaining Balance
<u>Land</u>				
Streets & Grounds	\$ 153,800	\$ 113,800	\$ 56,881	\$ 96,919
Recreation	107,898	7,898	16,911	90,987
Harness Track	131,912	131,912	136,737	(4,825)
Community Development	441,000	65,000	262,409	178,591
	834,610	318,610	472,938	361,672
<u>Buildings and Grounds</u>				
Administration	38,200	38,200	13,460	24,740
Police	7,500	-	-	7,500
Fire	14,100	-	-	14,100
Recreation	22,000	22,000	-	22,000
Harness Track	7,000	-	-	7,000
Fair Barn	22,000	22,000	-	22,000
	110,800	82,200	13,460	97,340
<u>Equipment and Furniture</u>				
Administration	92,005	84,505	33,326	58,679
Financial Services	4,880	4,880	1,683	3,197
Human Resources	2,440	2,440	841	1,599
Police	37,945	37,945	7,668	30,277
Fire	42,795	42,795	27,484	15,311
Inspections	1,935	1,935	665	1,270
Public Services Administration	6,380	6,380	537	5,843
Streets & Grounds	185,583	160,583	156,488	29,095
Solid Waste	4,200	4,200	1,445	2,755
Recreation	40,975	40,975	15,586	25,389
Harness Track	2,145	2,145	726	1,419
Fair Barn	49,925	49,925	22,297	27,628
Planning	6,215	6,215	2,146	4,069
Community Development	57,500	37,500	6,763	50,737
	534,923	482,423	277,655	257,268
<u>Vehicles</u>				
Police	113,250	17,250	-	113,250
Fire	92,680	2,680	31,303	61,377
Inspections	310	310	-	310
Public Services Administration	56,310	56,310	-	56,310
Streets & Grounds	6,460	6,460	-	6,460
Solid Waste	195,200	5,200	174,004	21,196
Recreation	590	590	-	590
Harness Track	2,100	2,100	-	2,100
Planning	100	100	-	100
	467,000	91,000	205,307	261,693
<u>Infrastructure</u>				
Streets & Grounds	140,000	140,000	1,674	138,326
Powell Bill	25,000	25,000	21,115	3,885
	165,000	165,000	22,789	142,211
Total	\$ 2,112,333	\$ 1,139,233	\$ 992,149	\$ 1,120,184

% of Capital Outlay Budget Expended

46.97%

Note: This Schedule includes Fleet Maintenance, Buildings & Grounds and Information Technology Capital Outlay.

Page 4

Village of Pinehurst
Combining Statement of Revenues, Expenditures, and Changes in Fund Balance
Land Dedication Special Revenue Fund

	Total December 31, 2014	Total December 31, 2013
REVENUES		
Interest earned on investments	\$ 3	\$ 68
Other Financing Sources (Uses)		
Operating transfers out	(2,897)	-
	(2,897)	-
REVENUES AND OTHER FINANCING SOURCES OVER (UNDER) EXPENDITURES AND OTHER FINANCING USES	(2,894)	68
Fund Balance, July 1	2,894	10,755
FUND BALANCE, DEC 31	\$ -	\$ 10,823

Village of Pinehurst
Combining Balance Sheet - Capital Project Funds
Jackson Hamlet CDBG-III
December 31, 2014

	Total December 31, 2014	Total December 31, 2013
ASSETS		
Cash & investments	\$ (36,512)	\$ -
Due from other governments	36,512	-
TOTAL ASSETS	\$ -	\$ -
 Fund Balance:		
Reserved:		
Designated for capital improvements	\$ -	\$ -
Total equity	-	-
TOTAL LIABILITIES & FUND EQUITY	\$ -	\$ -

Village of Pinehurst
Statement of Revenues, Expenditures, and Changes in Fund Balance -
Budget and Actual - Capital Projects Fund - Jackson Hamlet CDBG-III
From Inception and for the Six Months Ended December 31, 2014

	Project budget	Prior years	Actual Current year	Total to date
REVENUES				
Community Development Grant	\$ 683,200	\$ 74,438	\$ 357,300	\$ 395,226
	<u>683,200</u>	<u>74,438</u>	<u>357,300</u>	<u>395,226</u>
EXPENDITURES				
Professional Services	73,200	8,018	33,000	41,018
Grants for community projects	<u>610,000</u>	<u>66,420</u>	<u>324,300</u>	<u>390,720</u>
	<u>683,200</u>	<u>74,438</u>	<u>357,300</u>	<u>431,738</u>
REVENUES OVER (UNDER) EXPENDITURES	<u>-</u>	<u>-</u>	<u>-</u>	<u>(36,512)</u>
REVENUES AND OTHER FINANCING SOURCES OVER (UNDER) EXPENDITURES AND OTHER FINANCING USES	<u>\$ -</u>	<u>\$ -</u>	<u>-</u>	<u>\$ (36,512)</u>
FUND BALANCE, JULY 1			<u>-</u>	
FUND BALANCE, DECEMBER 31			<u>\$ -</u>	

**Village of Pinehurst
Schedule of General Long Term Debt
Fiscal Year Ended June 30, 2015**

	Balance at 12/31/14	Balance at 12/31/13	Increase (Decrease)
Fire Station			
\$2,500,000; due in 30 semi-annual payments of fixed principal of \$83,334 plus interest @ 3.44%; collateralized by Fire Station bldg; final payment due on 3/15/2020.	\$ 916,667	\$ 1,083,333	\$ (166,666)
Fair Barn			
\$1,000,000; due in 40 semi-annual payments consisting of fixed principal of \$25,000 plus interest @ 4.60%; collateralized by Fair Barn bldg; final payment due on 3/11/22.	375,000	425,000	(50,000)
67.04 Acres (Chicken Plant Road)			
\$500,000; due in 30 semi-annual payments consisting of fixed principal of \$16,667 plus interest @ 3.98%; collateralized by 67.04 acres of land; final payment due 4/17/18.	116,667	150,000	(33,333)
2009 Firetruck			
\$500,000; due in 14 semi-annual payments of \$42,037 beginning on 6/1/10; final payment due on 12/1/16; interest @ 4.43% with a 35% interest rebate on each payment; collateralized by firetruck.	158,987	233,580	(74,593)
Capital Lease			
SAN Storage; due in 3 annual payments of \$20,932 beginning on 01/14/13; final payment due on 01/14/15; interest at 5.5%; title passes to the Village at the end of the lease term.	19,760	38,571	(18,811)
2013 Firetruck			
\$550,000; due in 14 semi-annual payments of \$41,917 beginning on 2/1/14; final payment due on 8/1/20; interest @ 1.75%; collateralized by firetruck.	475,495	550,000	(74,505)
	<u>2,062,576</u>	<u>2,480,484</u>	<u>(417,908)</u>
Unfunded Pension Benefit Obligation	196,824	173,403	23,421
Accumulated Vacation	635,269	643,235	(7,966)
	<u>832,093</u>	<u>816,638</u>	<u>15,455</u>
	<u>\$ 2,894,669</u>	<u>\$ 3,297,122</u>	<u>\$ (402,453)</u>

**Village of Pinehurst
Schedule of Ad Valorem Property Tax Collections
Six Months Ended December 31, 2014**

Real and Personal

Tax Year	Six Months Ended December 31, 2014			Six Months Ended December 31, 2013		
	Budgeted Collections	Gross Collections	% Collected Through 09/30/14	Budgeted Collections	Gross Collections	% Collected Through 09/30/13
Third Prior Year	\$ -	\$ 1,910	100.00%	\$ -	\$ 100	100.00%
Second Prior Year	-	158	100.00%	-	18	100.00%
First Prior Year	5,000	1,866	37.32%	5,000	2,229	44.58%
Current Year	9,224,000	8,356,438	90.59%	9,110,000	8,198,069	89.99%
	<u>\$ 9,229,000</u>	<u>\$ 8,360,372</u>	<u>90.59%</u>	<u>\$ 9,115,000</u>	<u>\$ 8,200,416</u>	<u>89.97%</u>

Motor Vehicles

Tax Year	Six Months Ended December 31, 2014			Six Months Ended December 31, 2013		
	Budgeted Collections	Gross Collections	% Collected Through 09/30/14	Budgeted Collections	Gross Collections	% Collected Through 09/30/13
Third Prior Year	\$ -	\$ 284	100.00%	\$ -	\$ 214	100.00%
Second Prior Year	-	184	100.00%	-	553	100.00%
First Prior Year *	2,000	123,301	6165.05%	2,000	42,265	2113.25%
Current Year	536,000	141,139	26.33%	565,000	346,984	61.41%
	<u>\$ 538,000</u>	<u>\$ 264,908</u>	<u>49.24%</u>	<u>\$ 567,000</u>	<u>\$ 390,016</u>	<u>68.79%</u>

* Includes amounts collected in July and August through the DMV that were previously recorded as Current Year using the staggered method of vehicle levy and collection.

**Village of Pinehurst
Schedule of Ad Valorem Property Tax Levy
Six Months Ended December 31, 2014**

Property Valuation				
	Six Months Ended December 31, 2014	Six Months Ended December 31, 2013	Dollar Increase (Decrease)	Percentage Increase (Decrease)
Real & Personal	\$ 3,308,884,985	\$ 3,253,572,804	\$ 55,312,181	1.70%
Motor Vehicles *	93,133,497	149,156,251	(56,022,754)	-37.56%
	<u>\$ 3,402,018,482</u>	<u>\$ 3,402,729,055</u>	<u>\$ (710,573)</u>	<u>-0.02%</u>
Levy				
	Six Months Ended December 31, 2014	Six Months Ended December 31, 2013	Dollar Increase (Decrease)	Percentage Increase (Decrease)
Real & Personal	\$ 9,261,768	\$ 9,111,619	\$ 150,149	1.65%
Motor Vehicles *	260,165	418,319	(158,154)	-37.81%
	<u>\$ 9,521,933</u>	<u>\$ 9,529,938</u>	<u>\$ (8,005)</u>	<u>-0.08%</u>

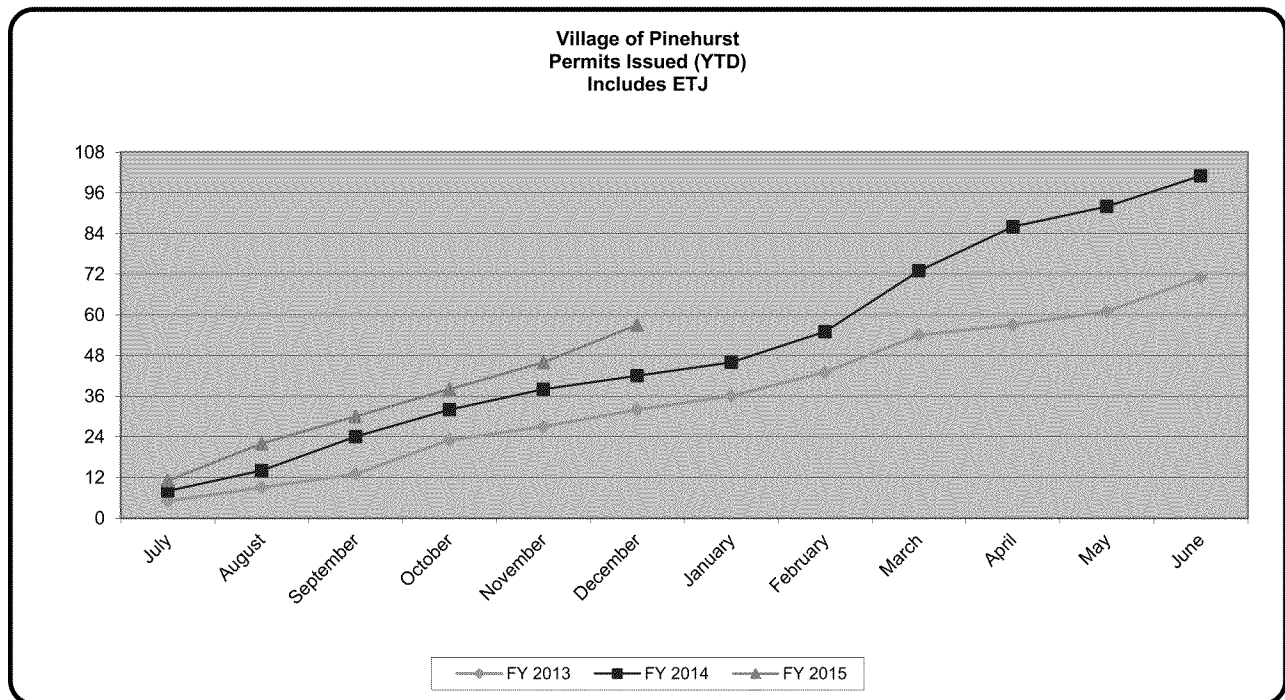
* Prior year Includes amounts collected in July and August using an "Invitation to Renew method by the DMV versus using the staggerd method of vehicle levy and collection by the County. The new method resulted in the valuation and collection of 14 months of Motor Vehicle taxes in fiscal year 2013-2014.

**Village of Pinehurst
Schedule of Interfund Transfers
Six Months Ended December 31, 2014**

	Budgeted		Actual	
	Transfers In	Transfers Out	Transfers In	Transfers Out
General Fund Transfers:				
Land Dedication Fund	\$ 2,898	\$ -	\$ 2,897	\$ -
Land Dedication Fund	-	2,898	-	2,897
	<u>\$ 2,898</u>	<u>\$ 2,898</u>	<u>\$ 2,897</u>	<u>\$ 2,897</u>

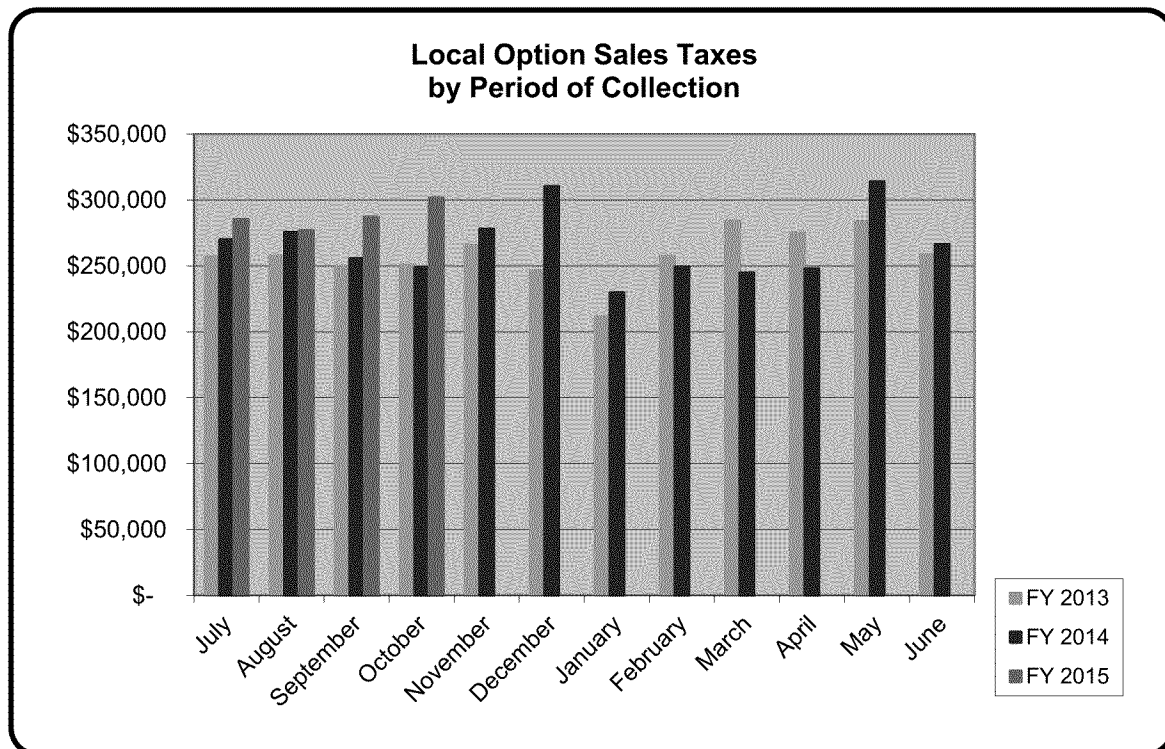
**Village of Pinehurst
Residential Building Permits - Includes ETJ**

	FY 2013		FY 2014		FY 2015		Construction Costs Percentage Change YTD
	# of	Est.	# of	Est.	# of	Est.	
	Permits Issued	Construction Costs	Permits Issued	Construction Costs	Permits Issued	Construction Costs	
July	5	\$ 1,418,713	8	\$ 1,579,000	11	\$ 2,106,000	33.38%
August	4	2,380,000	6	1,624,120	11	2,470,488	42.88%
September	4	1,108,000	10	1,698,171	8	1,998,500	34.15%
October	10	2,531,000	8	3,444,648	8	1,543,000	-2.73%
November	4	815,000	6	1,195,000	8	1,472,000	0.51%
December	5	1,417,000	4	1,141,400	11	2,667,725	14.75%
January	4	764,000	4	1,216,800	-	-	3.01%
February	7	1,706,000	9	1,608,000	-	-	-9.25%
March	11	2,812,700	18	3,864,200	-	-	-29.44%
April	3	790,237	13	3,209,000	-	-	
May	4	1,085,000	6	1,201,000	-	-	
June	10	1,619,900	9	2,264,000	-	-	
YTD	71	\$ 18,447,550	101	\$ 24,045,339	57	\$ 12,257,713	



**Village of Pinehurst
Local Option Sales Taxes**

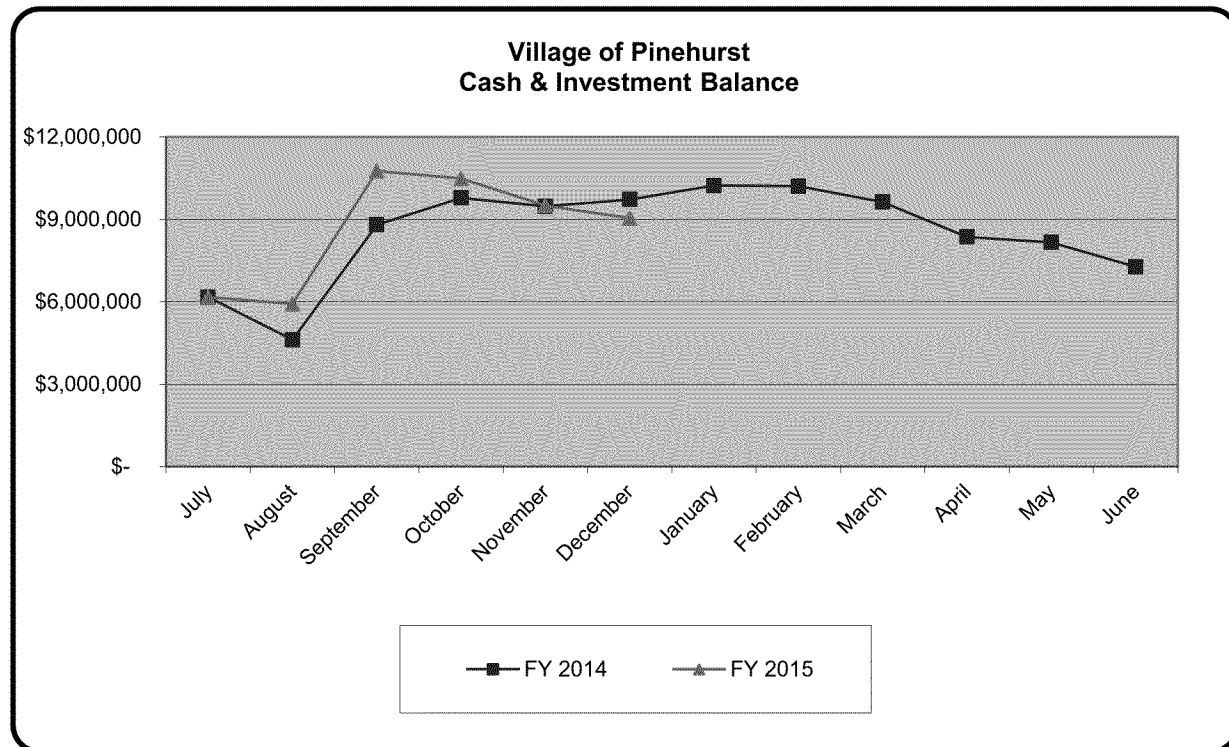
	FY 2013	FY 2014	FY 2015	Same Month Change From Prior Year
July	\$ 256,870	\$ 269,967	\$ 285,352	5.70%
August	257,725	275,713	276,790	0.39%
September	249,925	255,685	287,107	12.29%
October	250,726	248,959	301,580	21.14%
November	265,785	278,014	-	
December	246,614	310,229	-	
January	211,509	229,653	-	
February	257,455	249,354	-	
March	284,085	244,765	-	
April	275,036	247,995	-	
May	283,616	314,055	-	
June	258,733	266,495	-	
YTD	<u>\$ 3,098,079</u>	<u>\$ 3,190,884</u>	<u>\$ 1,150,829</u>	



Village of Pinehurst Investment Yield Summary

	FY 2014			FY 2015		
	Cash Balance	Investment Earnings	Investment Yield*	Cash Balance	Investment Earnings	Investment Yield*
July	\$ 6,163,553	\$ 5,345	1.08%	\$ 6,167,938	\$ (6,270)	-1.14%
August	4,609,828	19	0.00%	5,916,617	5,372	1.08%
September	8,799,599	(6,791)	-1.23%	10,757,924	34	0.00%
October	9,777,850	1,940	0.25%	10,481,371	1,170	0.13%
November	9,471,301	53	0.01%	9,496,173	56	0.01%
December	9,722,307	52	0.01%	9,036,543	55	0.01%
January	10,223,815	56	0.01%			
February	10,200,186	3,560	0.42%			
March	9,629,106	57	0.01%			
April	8,355,669	48	0.01%			
May	8,160,318	40	0.01%			
June	7,270,246	6,263	0.99%			
Average	<u>\$ 8,531,982</u>	<u>\$ 10,642</u>	0.12%	<u>\$ 8,642,761</u>	<u>\$ 417</u>	0.00%

* Investment yield is presented on an accrual basis.

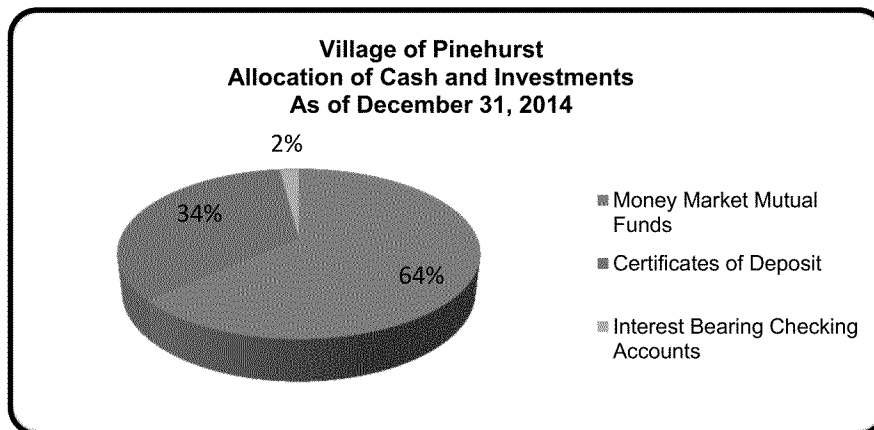


**Village of Pinehurst
Cash and Investment Schedule
As of December 31, 2014**

Investment	Bond Ratings (Moody's/S&P)	Purchase Date	Maturity Date	Cost
Money Market Mutual Funds				
North Carolina Capital Management Trust	AAAm			5,651,317
Certificates of Deposit				
BB&T Capital Markets	4 star	10/03/13	10/03/14	-
First Bank	3.5 star	01/17/14	01/17/15	500,000
First Bank	3.5 star	07/29/14	07/29/15	1,524,654
First Tennessee Bank	4 star	08/04/14	08/04/15	1,000,000
Interest Bearing Checking Accounts				
PNC Bank Operating				360,572
Petty Cash				<u>1,568</u>
Total Cash and Investments				<u><u>\$ 9,038,111</u></u>
Total Cash and Investments (same quarter previous year)				<u><u>\$ 9,723,807</u></u>

Summary of Cash and Investments

Money Market Mutual Funds	\$ 5,651,317
Certificates of Deposit	3,024,654
Interest Bearing Checking Accounts	360,572
Petty Cash	<u>1,568</u>
	<u><u>\$ 9,038,111</u></u>



Village of Pinehurst
Schedule of Fund Balance - General Fund
December 31, 2014

	Fund Balance at 12/31/14	Fund Balance at 12/31/13
General Fund		
Nonspendable:		
Inventory	\$ 44,231	\$ 48,494
Restricted:		
Stabilization by State Statute	2,997,281	4,064,353
Transportation	-	467,849
Assigned		
Subsequent year's expenditures	1,987,155	1,114,572
Unassigned	6,143,515	5,858,370
	<u>\$ 11,172,182</u>	<u>\$ 11,553,638</u>

Village of Pinehurst
Schedule of Budget Amendments - General Fund
For the Fiscal Year Ended June 30, 2015

As of December 31, 2014

	ORIGINAL 2014-2015 BUDGET	Amended * Qtr Ended 09/30/14	Amended Qtr Ended 12/31/14	Amended Qtr Ended 03/31/15	Amended Qtr Ended 06/30/15	Total Amendments	Amended 2014-2015 Budget
REVENUES							
Ad valorem taxes	\$ 9,767,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,767,000
Other taxes and licenses	2,800,700	-	-	-	-	-	2,800,700
Unrestricted Intergov't Revenues	1,664,900	-	-	-	-	-	1,664,900
Restricted Intergov't Revenues	506,760	-	-	-	-	-	506,760
Permits & Fees	557,750	-	-	-	-	-	557,750
Sales & Services	532,500	-	7,000	-	-	7,000	539,500
Assessments	31,110	-	-	-	-	-	31,110
Other Revenues	193,530	-	-	-	-	-	193,530
Investment Income	14,100	-	-	-	-	-	14,100
Other Financing Sources	-	2,898	-	-	-	2,898	2,898
Appropriated Fund Balance	1,687,710	256,445	43,000	-	-	299,445	1,987,155
TOTAL REVENUES	\$ 17,756,060	\$ 259,343	\$ 50,000	\$ -	\$ -	\$ 309,343	\$ 18,065,403
OPERATING EXPENDITURES							
Governing Body	233,000	-	-	-	-	-	233,000
Administration	1,074,975	-	-	-	-	-	1,074,975
Financial Services	606,310	-	-	-	-	-	606,310
Human Resources	459,905	(82,385)	-	-	-	(82,385)	377,520
Police	2,773,875	3,658	19,000	-	-	22,658	2,796,533
Fire	2,535,925	94,374	-	-	-	94,374	2,630,299
Inspections	226,090	-	-	-	-	-	226,090
Public Services Administration	405,025	-	-	-	-	-	405,025
Streets & Grounds	1,213,665	24,918	(7,123)	-	-	17,795	1,231,460
Powell Bill	788,300	(25,000)	-	-	-	(25,000)	763,300
Solid Waste	1,435,975	26,300	-	-	-	26,300	1,462,275
Planning	658,435	8,355	-	-	-	8,355	666,790
Community Development	293,900	78,375	-	-	-	78,375	372,275
Recreation	1,288,335	6,756	15,000	-	-	21,756	1,310,091
Library	380,000	-	-	-	-	-	380,000
Harness Track	524,040	5,500	-	-	-	5,500	529,540
Fair Barn	289,380	1,559	-	-	-	1,559	290,939
Contingency	100,000	(5,000)	-	-	-	(5,000)	95,000
Debt Service	494,525	-	-	-	-	-	494,525
Total Operating Expenditures	15,781,660	137,410	26,877	-	-	164,287	15,945,947
CAPITAL EXPENDITURES							
Administration	102,205	28,000	-	-	-	28,000	130,205
Financial Services	4,880	-	-	-	-	-	4,880
Human Resources	2,440	-	-	-	-	-	2,440
Police	142,695	-	16,000	-	-	16,000	158,695
Fire	126,575	23,000	-	-	-	23,000	149,575
Inspections	1,645	600	600	-	-	1,200	2,845
Public Services Administration	67,505	(4,815)	(4,815)	-	-	-	57,875
Streets & Grounds	479,530	6,313	9,313	-	-	15,626	495,156
Powell Bill	-	25,000	-	-	-	25,000	25,000
Solid Waste	197,900	1,500	1,500	-	-	3,000	200,900
Planning	2,010	4,305	4,305	-	-	8,610	10,620
Community Development	498,500	-	-	-	-	-	498,500
Recreation	162,755	8,708	810	-	-	9,518	172,273
Harness Track	109,245	33,912	-	-	-	33,912	143,157
Fair Barn	76,515	(4,590)	(4,590)	-	-	(9,180)	67,335
Total Capital Expenditures	\$ 1,974,400	\$ 121,933	\$ 23,123	\$ -	\$ -	\$ 154,686	\$ 2,119,456
TOTAL EXPENDITURES	\$ 17,756,060	\$ 259,343	\$ 50,000	\$ -	\$ -	\$ 318,973	\$ 18,065,403

* Includes \$235,345 that was reappropriated from FY 2013-14.

Village of Pinehurst
Schedule of Fair Barn Revenues and Expenditures
Six Months Ended December 31, 2014

	Annual Budget as of 12/31/14	Quarterly Budget as of 12/31/14	Actual 12/31/14	YTD as of 12/31/2013	Current Year Over (Under) Prior Year	% of 2015 Budget Spent / Received YTD
<u>Fair Barn</u>						
Revenues	\$ 183,000	\$ 111,500	\$ 133,711	\$ 114,209	\$ 19,502	73.07%
Expenditures						
Operating	290,939	149,153	111,817	102,247	9,570	38.43%
Capital	71,925	71,925	22,297	-	22,297	31.00%
Debt Service	67,825	33,913	34,201	35,351	(1,150)	50.43%
	<u>430,689</u>	<u>254,991</u>	<u>168,315</u>	<u>137,598</u>	<u>30,717</u>	<u>39.08%</u>
Net <u>Before</u> Discounts	<u>(247,689)</u>	<u>(143,491)</u>	<u>(34,604)</u>	<u>(23,389)</u>	<u>(11,215)</u>	<u>13.97%</u>
Event Revenue Discounts			(20,268)	-	(20,268)	
Net <u>After</u> Discounts	<u>\$ (247,689)</u>	<u>\$ (143,491)</u>	<u>\$ (54,872)</u>	<u>\$ (23,389)</u>	<u>\$ (31,483)</u>	<u>22.15%</u>
Operating Revenues as a % of Operating Expenditures - Before Discounts	63%	75%	120%	112%		
Operating Revenues as a % of Operating Expenditures - After Discounts	63%	75%	101%	112%		
Target			78%			

Village of Pinehurst
Schedule of Harness Track Revenues and Expenditures
Six Months Ended December 31, 2014

	Annual Budget as of 12/31/14	Quarterly Budget as of 12/31/14	Actual 12/31/14	YTD as of 12/31/13	Current Year Over (Under) Prior Year	% of 2015 Budget Spent / Received YTD
<u>Harness Track</u>						
Revenues	\$ 249,000	\$ 199,000	\$ 223,350	\$ 198,965	\$ 24,385	89.70%
Expenditures						
Operating	529,540	279,224	228,756	216,995	11,761	43.20%
Capital	143,157	136,157	137,464	19,070	118,394	96.02%
	<u>672,697</u>	<u>415,381</u>	<u>366,220</u>	<u>236,065</u>	<u>130,155</u>	<u>54.44%</u>
Net <u>Before</u> Discounts	<u>(423,697)</u>	<u>(216,381)</u>	<u>(142,870)</u>	<u>(37,100)</u>	<u>(105,770)</u>	<u>33.72%</u>
Event Revenue Discounts			(1,040)	-	(1,040)	
Net <u>After</u> Discounts	<u>\$ (423,697)</u>	<u>\$ (216,381)</u>	<u>\$ (143,910)</u>	<u>\$ (37,100)</u>	<u>\$ (106,810)</u>	<u>33.97%</u>
Operating Revenues as a % of Operating Expenditures - Before Discounts	47%	71%	98%	92%		
Operating Revenues as a % of Operating Expenditures - After Discounts	47%	71%	97%	92%		
Target			53%			

John G. Frye, CPA
395 Magnolia Road
Pinehurst, NC 28374
Phone: 910-295-8646
Fax: 910-295-4434
e-mail: jfrye@vopnc.org

Village of Pinehurst

Memo

To: Village Council
From: John G. Frye
CC: Jeff Batton & Senior Leadership
Date: January 30, 2015
Re: Financial Statements for the Quarter Ended December 31, 2014

The Village remains in a very good financial position through the first half of the fiscal year. Revenues exceeded expenditures by a larger margin than anticipated in our forecast for the first two quarters. In addition, our operating expenditures are under control and our revenue outlook is stable. These results should position us well to carry out the objectives outlined in the FY 2015 Strategic Operating Plan.

Financial Position:

The Village's General Fund is showing \$3.4 million in income for the first six months of the year compared to \$3.8 million the prior year. The Village budgeted for revenues to exceed expenditures by roughly \$2.6 million for the two quarters.

In terms of fund balance, the Village's fund balance is currently 62% of expenditures, which is slightly lower than the 67% level seen the previous year at December 31.

The Village's total cash & investment balances decreased by \$686,000, or 7% compared with the previous year. This decrease is due primarily to the timing of the Village's resurfacing program. This year, the \$659,000 of the resurfacing work was completed in the fall. Last year, all of the resurfacing was completed in the spring.

Of the \$9.0 million in cash and investments at December 31, 2014, \$3.0 million was held in high-quality certificates of deposit purchased under the Village's investment program. Our long-term debt balances continue to remain relatively low. The Village currently owes a total of \$2,100,000 in notes payable and capital leases.

Revenues & Expenditures:

General fund revenues were \$322,000, or 2% above the year-to-date budget projections. Property tax revenues were \$160,000 above the quarterly revenue estimate. This increase is most likely due to the slightly higher collection rate of 91% compared to the previous year rate of 90%.

Local option sales tax revenues were \$51,000 higher than the revenue forecast. Revenues for the month of June and the impact of the 2014 U.S. Open Championships were estimated at the close of the previous fiscal year. The actual revenues, when received in September, were approximately \$60,000 higher than anticipated and account for the majority of this variance.

General fund operating expenditures were \$313,000 or 3.9% below the quarterly budget overall. This variance is just below the expected expenditure variance of 5%. Compared to the previous year, operating expenditures were up \$790,000 for the quarter, mostly due to the early completion of our annual resurfacing work as mentioned above.

For capital outlay, 87% of the capital outlay budgeted in the first two quarters was expended. Most of the variance is due to several projects for the Assembly Hall that were planned for the first quarter but not yet completed. These projects include a new video screen, projector, and video recording equipment. Also three Police vehicles ordered in the second quarter have not been received. Variances of this type are common and will work themselves out as the fiscal year progresses.

Financial Outlook:

The Village issued 57 residential building permits valued at \$12,258,000 during the first two quarters. Both the number of homes permitted and the total value of the homes are higher than the previous year. The average value of these homes, however, decreased from \$238,000 to \$215,000, or 9.7% when compared to the previous fiscal year.

The amount of fund balance appropriated this fiscal year is \$1,987,000. This is significantly higher than the \$1,075,000 appropriated last year. Based on our mid-year estimates, we anticipate the Village's fund balance will decrease by approximately \$700,000 by the end of FY 2015. This is positive compared to the \$763,000 that was estimated when the budget was originally adopted in May of 2014. This estimate will leave the ending fund balance for the General Fund at 39% of expenditures, near the top of our policy target range. This is slightly higher than the 37% originally projected when the budget was adopted.

Other Items:

During the first two quarters, the Fair Barn covered 101% of operating expenditures with operating revenues. This is lower than the 112% achieved at this point the previous year but above the balanced scorecard target of 78%. Before discounts were applied, the Fair Barn actually made an operating profit for the quarter with the ratio standing at 120%.

The Harness Track covered 97% of its operating expenditures compared to 92% the previous year. This can be misleading as most stall rental income for the season is recognized at the beginning of the season, while expenditures are incurred across the entire season. Their performance target for expenditure coverage for the year is 53%. As the season moves along, the ratio will decline and become more comparable to the annual target.

Conclusion:

As we begin preparing our budget for the upcoming year, Council and Village managers will need to ensure that expenditure growth is maintained at sustainable levels. As I have said before, the Village continues to remain in a solid financial position as a result of our conservative financial policies, good financial planning, and diligent budget oversight. Should you have any questions about these quarterly statements, please feel free to contact me.

Memo

To: Village Council
From: John Frye
CC: Jeff Batton & Natalie Dean
Date: January 30, 2015
Re: Projected Year-End Financial Results and Budget Amendment

Projected Year-End Financial Results

Based upon my review of the quarterly financial statements through the end of December and discussions with Senior Management and Department Heads, I have formulated my estimate of the Village's projected year-end financial results. At this time, I estimate that the Village's expenditures will exceed its revenues at year-end by approximately \$700,000. This is positive compared to the \$763,000 that was estimated when the budget was adopted in May of this year. This means that less of the fund balance appropriated as a revenue source in the budget will actually be used.

Total fund balance for the General Fund at the beginning of this fiscal year was \$7,749,000. I am projecting that fund balance will decrease to \$7,043,000 by the close of this fiscal year. This estimate will leave the ending fund balance for the General Fund at 39% of expenditures, near the top of our policy target range. This is slightly higher than the 37% originally projected when the budget was adopted.

Budget Amendment

When evaluating our projected actual amounts compared to the current budget, I identified a few of the more significant items that have deviated from our original budget projections. We propose the Village revise the budget estimates for these items in an effort to get the budgeted amounts closer to expected levels. The details of the proposed changes are explained below:

Revenues

- Electricity franchise taxes are trending higher based on actual receipts. We recommend increasing this revenue projection by \$64,000.
- Receipts for facility rentals are also running higher than anticipated. This is primarily due to increased usage of the Arboretum as a wedding venue. We recommend increasing this revenue projection by \$13,000.
- The remaining \$43,225 of the NCDOT Bicycle Planning Grant awarded last fiscal year was not budgeted as a revenue in the current fiscal year. This amendment will add these funds to the budget as a revenue source.
- Profits of \$1,412 from this year's holiday wreath sales need to be added to the revenue budget.

- An appropriation of \$3,644 must be established to account for the final donations related to the Marshall Monument project. This will close out this project.

Expenditures

- Profits of \$1,412 from this year's holiday wreath sales need to be added to the expenditure budget for beautification projects.
- An appropriation of \$3,644 must be established to account for the expenditures related to the Marshall Monument project. No additional expenditures are planned at this time.
- In our review we discovered that the group insurance budgets in Streets & Grounds and Harness Track budgets were set too low when the budget was originally adopted. We recommend increasing the Streets & Grounds and Harness Track group insurance budgets by \$8,000 and \$13,500 respectively.
- In Fleet Maintenance the allocation of equipment repairs, vehicle repairs, tires, and fuel have varied from what we originally anticipated. We recommend increasing the Fleet allocation in Solid Waste by \$25,000 and reducing the Police and Fire allocations by \$15,000 and \$10,000 respectively. No additional funds are being requested with this adjustment.

In total, these adjustments will increase the Village's FY 2014 Budget by \$26,556 and will reduce fund balance appropriated by \$98,725. Adopting the above adjustments within the revenue and expenditure accounts will enable the Village to prepare more accurate budget estimates for the next fiscal year and maintain statutory compliance required by the Local Government Budget and Fiscal Control Act.

As we enter the strategic planning and budgeting season, Council and Village managers need to remain vigilant to maintain expenditure growth within the levels of revenue growth we are experiencing. As I have said before, the Village continues to remain in a solid financial position as a result of our conservative financial policies, good financial planning, and diligent budget oversight. Should you have any questions, please feel free to contact me.

Budget Amendment Summary			
<u>Revenues</u>	<u>Increase/(Decrease)</u>		
Electricity Franchise Tax	\$ 64,000	10-00-100-3231	Estimate revision
Facility Rentals	13,000	10-80-130-3411	Estimate revision
Recreation Grants	43,225	10-80-170-3360	Bicycle Planning Grant
Downtown Beautification Revenue	1,412	10-00-120-3850	Wreath profits
Restricted Donations	3,644	10-00-120-3882	Marshall Monument project
Fund Balance Appropriated	(98,725)	10-00-120-3882	Reduce fund balance appropriated
Net Revenue Increase/(decrease)	<u>\$ 26,556</u>		
<u>Expenditures</u>	<u>Increase/(Decrease)</u>		
Downtown Beautification	\$ 1,412	10-00-970-6541	Wreath Profits
S&G-Contracted Services	3,644	10-20-420-5300	Marshall Monument Project
S&G-Group Insurance	8,000	10-20-420-4300	Revised estimate
HT-Group Insurance	13,500	10-80-620-4300	Revised estimate
Solid Waste-Fleet Maint ISF	25,000	10-30-510-5903	Increase allocation
Police-Fleet Maint ISF	(15,000)	10-10-310-5903	Decrease allocation
Fire-Fleet Maint ISF	(10,000)	10-10-320-5903	Decrease allocation
Net Expenditure Increase/(Decrease)	<u>\$ 26,556</u>		

ORDINANCE #15-02:

AN ORDINANCE AMENDING THE ORDINANCE APPROPRIATING FUNDS FOR OPERATIONS OF THE VILLAGE OF PINEHURST, REGARDING REVENUES AND EXPENDITURES OF THE GENERAL FUND FOR THE VILLAGE OF PINEHURST, NORTH CAROLINA (MID-YEAR BUDGET ADJUSTMENTS).

THAT WHEREAS, the Village budgeted for revenues and expenditures in FYE June 30, 2015 for the General Fund; and

WHEREAS, the estimates for FYE June 30, 2015 revenues and expenditures have been calculated and there are some variations between the amounts budgeted and the amounts expected;

NOW, THEREFORE, BE IT RESOLVED by the Village Council of the Village of Pinehurst, North Carolina, in the regular meeting assembled this 10th day of February 2015, as follows:

SECTION 1. To amend the General Fund with regard to revenues and expenditures, the revenue and expenditure accounts are to be changed as follows:

<u>Account No.</u>	<u>Account Name</u>	<u>Debit</u>	<u>Credit</u>
Revenues:			
10-00-100-3231	Electricity Franchise Tax		\$ 64,000
10-80-130-3411	Facility Rentals		13,000
10-80-170-3360	Recreation Grants		43,225
10-00-120-3850	Downtown Beautification		1,412
10-00-120-3882	Restricted Donations		3,644
10-00-190-3905	Fund Balance Appropriated	\$ 98,725	
Expenditures:			
10-00-970-6541	B&G-Downtown Beautification	\$ 1,412	
10-00-970-3560	B&G-Charges to Other Depts.		\$ 1,412
10-80-610-5904	Recreation-B&G Maintenance-ISF	1,412	
10-20-420-5300	S&G-Contracted Services	3,644	
10-20-420-4300	S&G-Group Insurance	8,000	
10-80-620-4300	HT-Group Insurance	13,500	
10-30-510-5903	Solid-Waste Fleet ISF	25,000	
10-10-310-5903	Police-Fleet ISF		15,000
10-10-320-5903	Fire-Fleet ISF		10,000

SECTION 2. Copies of this budget amendment shall be furnished to the Village Clerk, to the Village Manager, and to the Financial Services Director for their direction and implementation.

THIS ORDINANCE passed and adopted this 10th day of February 2015.

VILLAGE OF PINEHURST
VILLAGE COUNCIL

(Municipal Seal)

By: _____
Nancy Roy Fiorillo, Mayor

Attest:

Approved as to Form: _____

Lauren M. Craig, Village Clerk

Michael J. Newman, Village Attorney

DRAFT

SECTION TWO: EVALUATING CURRENT CONDITIONS

2.1 OVERVIEW



Active, involved communities promote bicycle-friendly environments for their residents and visitors

In Section 2, the existing bicycle facility conditions in the Village of Pinehurst are inventoried and evaluated. To begin this process, information was gathered from a variety of sources, which included interviews, site analysis, a public questionnaire, community meetings, a community bike ride, relevant planning documents and direction from the Project Steering Committee and Village staff. The information

gleaned from this initial research was later used to develop the final Village of Pinehurst Comprehensive Bicycle Plan.

In general, a bicycle-friendly environment indicates a strong and actively-involved community. Improving bicycling access between destinations within the Village of Pinehurst would serve – not only to support bicycling as a safe and healthy alternative to driving – but would enhance the vitality of the entire community.

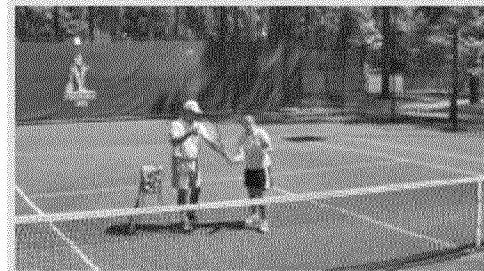
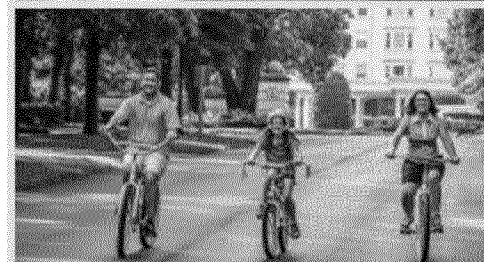
A viable bicycle transportation network is *essential* to the economic and social welfare of a sizable population within the community. Functional bicycle facilities strive for (but are not limited to) accommodating the following characteristics discussed in Section 1:

- (1) Healthy lifestyles
- (2) Alternative transportation
- (3) Reduction of environmental impacts
- (4) Safety
- (5) Community identity

User Demographics/Current Usage

According to the United States Census Bureau, the estimated population for the Village of Pinehurst in 2010 was 13,124 people. Census 2000 gauged the Village's population at 9,706, resulting in a growth between 2000 and 2010 of 35%. Recent data published by the North Carolina State Data Center estimates that the population increased to 15,525 in 2013, resulting in an 18% growth rate over a 3-year period. There are several suspected reasons for the rapid increase in population, such as:

1. The ever-increasing popularity of the resort area as both an adult sports mecca and a retirement community (with an extremely moderate climate) continues to lure residents on a full or part-time basis.
2. The life expectancy of the retirement-aged citizens continues to increase.
3. Although an economic downturn occurred during this decade, many senior citizens received retirement packages earlier than planned; thus, further increasing the number of possible retirees.
4. The closing of military bases in other parts of the country increased the military population of the Fort Bragg Army Base in nearby Fayetteville. The Village of Pinehurst is an attractive living area – on many levels – for those military families who can afford it.



The United States Federal Census gives a breakdown of the population of the Village of Pinehurst according to the following age groups:

Age Distribution of Population of the Village of Pinehurst

AGE	NO. RESIDENTS	PERCENTAGE
Under 5 years	560	4.3
5 to 9	610	4.6
10 to 14	622	4.7
15 to 19	452	3.4
20 to 24	236	1.8
25 to 29	406	3.1
30 to 34	533	4.1
35 to 39	709	5.4
40 to 44	658	5.0
45 to 49	689	5.2
50 to 54	684	5.2
55 to 59	844	6.4
60 to 64	1,174	8.9
65 to 69	1,255	9.6
70 to 74	1,080	8.2
75 to 79	944	7.2
80 to 84	835	6.4
85 yrs. and over	833	6.3

Source: U.S. Census Bureau, 2010 American Community Survey: General Profile of Characteristic at <http://factfinder.census.gov>

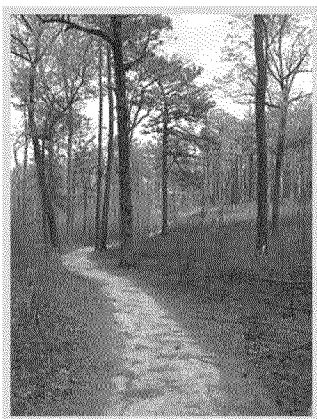
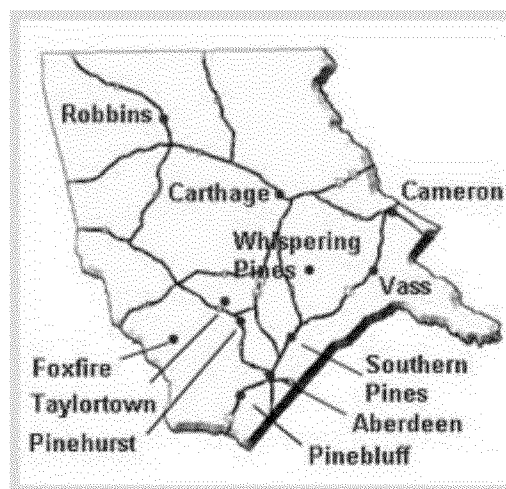
The age breakdown of the Village of Pinehurst's population is not typical to North Carolina. The "retired" population is by far the largest demographic for the Village, with adults between the ages of 60 and 85+ supplying almost 47% of the population. It should be noted that a percentage of the senior population often utilizes alternate forms of transportation other than a personal motor vehicle.

Other important statistics revealed about Pinehurst include:

- The population density is approximately 940 people per square mile
- The daytime population change due to commuting is approximately + 3,931
- 4.1% of the population lives in poverty
- 69% of residences are considered "family households"
- There were only two (2) pedestrian fatalities between the years of 1975-2011 and no bicycling fatalities.

Physical Characteristics

The Village of Pinehurst is located in the "sandhills" of North Carolina. The Sandhills is a region in the interior of the states of North Carolina and South Carolina. It is a strip of ancient beach dunes, which generally divides the Piedmont area from the Coastal Plains and is the evidence of a former coastline (when the ocean level was higher or the land was lower). These beach deposits were formed approximately twenty (20) million years ago during the Miocene Epoch. Typically, beach fossils/deposits can be found near the front edges of the Sandhills. The Coastal Plains are also "terraced" from ocean levels; but, none have been as long-lasting and as large as the dunes in the Sandhills.



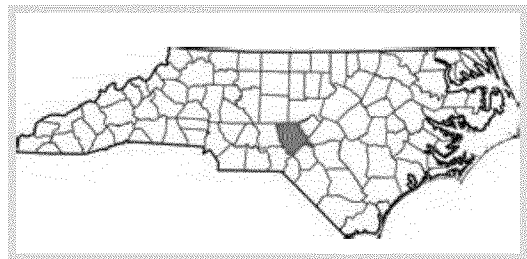
Dry, sandy soils amid scrubby forests are typical of the Sandhills Region. Because the soils in this area are predominantly porous and sandy, the Sandhills suffers from drought; therefore, irrigation is normally required for agriculture. Some areas within the Sandhills are noted for peach production, primarily because peaches need a well-drained soil to prosper.

Prior to agricultural use, most of the Sandhills were forested with Longleaf Pine, Loblolly Pine, Turkey Oak, and Blackjack Oak. In areas of extreme drainage, the forests are quite scrubby in appearance. Additionally, the Longleaf Pine begins to dominate in an area such as this – where frequent lightning-induced fires

are typical.

The Sandhills region of North Carolina most notably refers to the area in and surrounding the municipalities of Pinehurst, Southern Pines, and Aberdeen in Moore County. Sitting at an approximate elevation of around 561 feet, the Village of Pinehurst has a total area of 14.9 square miles (14.3 is land and 0.6 is water). There are no major rivers flowing through Pinehurst; however, there are several bodies of water, including Lake Pinehurst, and Pinewild Lake. Four (4) local thoroughfares are the predominant venues for transportation – US 15/501 (traveling north/south), NC 5 (traveling north/south), NC 2 (traveling east/west), and NC 211 (traveling east/west). The Village of Pinehurst is located approximately 68 miles from the state's capitol of Raleigh; and the Moore County Airport is situated approximately five (5) miles to the northeast.

The area is home to dozens of churches and synagogues representing most religions and denominations. Universities are also in close proximity to Pinehurst. Sandhills Community College is located approximately 4 miles from the Village, and major universities are within a two-hour driving distance including the University of North Carolina at Chapel Hill, Wake Forest University in Winston-Salem, North Carolina State University in Raleigh, and Duke University in Durham.



2.2 LOCAL TRANSPORTATION NETWORK ASSESSMENT

Public transportation plays a vital role in enhancing the productivity and the quality of life in the United States. It promotes access to employment, community resources, medical care, and entertainment in communities across America. Both those who *choose* to ride (and those who have no other choice) benefit from its presence. By reducing congestion, air pollution, and travel times; public transportation benefits cyclists as well.

In urban areas, transit typically ranks as the second most used travel mode (after personal vehicles). North Carolina has one of the better highway systems in the nation and it has supported the emergence of the state as an economic power and population center. However, in urban areas, congestion and travel delays are occurring more frequently; and even though North Carolina continues an aggressive highway building program, it appears that the state will be unable to keep pace with the demands placed on its capacity. With this in mind, area planners have been leaders in meeting the current and future needs of transit.

Existing Non-Pedestrian Transportation Network

MCTS (Moore County Transportation Services)

Moore County Transportation Services provides transportation services on an advanced reservation basis. Services for senior citizens, persons with disabilities, limited general public individuals and human service agencies are provided on a county-wide basis.

Limited out-of-county services are provided for specialized care (for example: a trip to a specialized medical provider in the Triangle region).

MCTS is primarily controlled by an advisory board. The purpose of the Transportation



Advisory Board (TAB) is to assist the Moore County Transportation Services (MCTS) in accomplishing its stated goal to provide safe and efficient transportation to the citizens of Moore County and promote

community support for and participation in the MCTS department. The TAB functions include:

- Making recommendations to the Moore County Board of Commissioners regarding the MCTS system;
- Overseeing transportation for the clients of the human service oriented agencies located in Moore County in order to fulfill the County's fiduciary responsibilities to citizens by the most effective means;
- To provide advice and support to the MCTS Director regarding policy, planning and development of operational procedures and practices consistent with program policies.

Members of the Transportation Advisory Board are appointed by the County of Moore Board of Commissioners.

Community Concerns, Needs, and Priorities

In order to ensure a successful study, it is vital that the public be able to share their issues, needs, and desires. The methodology used in establishing a Bicycle Plan for municipalities should always include citizen input.



To better understand the needs of facility users, three (3) different methods were used to identify specific concerns/demands of Village residents. The different methods offer options to local citizens and present additional information that, otherwise, could not be assessed from just one (1) method. These methods consisted of conducting Steering Committee discussions, surveys, and Community Workshops/Events. While the surveys, and map exercises were good tools to record participant responses to specific questions, open discussion with citizens also

contributed a great deal of information regarding the desires and concerns of local bicyclists.

Steering Committee Discussions

To act as a *guide* for the development of the Bicycle Plan, a Steering Committee was formed during the initial planning process to establish a vision and identify the needs and priorities of pedestrians. The steering committee acted as the principal advisory body to McGill Associates, and was composed of members from the Village staff, Village Council, NCDOT and local citizens. The names of Steering Committee members can be found in the Acknowledgments at the beginning of this document. A total of five (5) Steering Committee Meetings were held during the preparation of this plan.

During an initial Steering Committee meeting to solicit input on the bicycle/pedestrian environment in the Village, members were divided into small groups and given maps along with colored dots and markers. The members were asked to check the maps for inaccuracies and to mark cycling destinations, and problem intersections and gaps in the current network. They were also asked to draw where they would like to see new sidewalks, greenways, and bike lanes. The results of this exercise and those from the Community Workshops are recorded in the following paragraphs.

Community Workshops

Bicycle and Pedestrian Public Input was sought during both advertised, formal public workshops held at the Village Hall designed to provide drop in service for local residents that wished to attend and participate in either mapping exercises identifying needs and desires or open discussion to share opinions and suggestions.

Community workshops were also held during special events including a Live After 5 event and the Parks and Recreation Fall Festival to provide the public an opportunity to be involved in the bicycle planning process. This also assured a good crowd from which to attract participants for the workshop exercises.

Other community outreach occurred at a Community Bike Ride, where participants rode common local routes as a group and discussed the opportunities and barriers along each route.

Community Workshop and Open House #1

Over 45 people participated in the initial workshop held at Village Hall on September 16, 2014. Meeting participants could drop in during either morning (9 a.m.-Noon) or afternoon (5 p.m.-8 p.m.) meeting times. Participants were invited to fill out a bike/pedestrian survey, to participate in a mapping analysis exercise and/or an open



discussion. A copy of the combined Bicycle/Pedestrian Plan survey can be found in Appendix A. The map exercise was used to initiate discussions about existing pedestrian and cycling corridors, needed facilities and dangerous conditions in Pinehurst.

The consensus at this workshop is that the Pinehurst Greenway should be expanded to connect with the Downtown, surrounding neighborhoods and common destinations. Other popular ideas included having paved sidewalks in the residential areas tie to the Greenway. Additional paths in which people were concerned with included the existing sand/clay paths in the historic Village area and the possibility of improving these paths.

Citizens also reported difficulty using the existing greenways and paths for biking due to the surface material. The major concern for participants during the workshop was if proposed improvements would follow the existing Pinehurst Greenway Plan recommendations calling for a wide cross-section for gravel paths. The most popular idea from participants was for narrower sidewalks (5'-6') to be installed where appropriate within neighborhoods that should connect with the larger Greenway trails.

Dangerous Intersections that were identified by the community included:

- Numerous intersections along NC 211, NC 5/Beulah Hill Road, and NC 2
- Juniper Creek Road and US 15/501
- Pinehurst Trace and US 15/501
- Monticello Drive and Morganton Road

Community Workshop #2

The second community meeting took place during a Live After 5 event on October 10, 2014 in Downtown Pinehurst. Approximately 40 participants stopped by the Bicycle/Pedestrian Plan booth and shared ideas and concerns for the system in Pinehurst. Participants were asked to review, comment, and share their ideas about the existing and proposed biking facilities and conditions. Participants were also asked to complete a survey to collect more detailed information regarding their cycling experience in Pinehurst and their suggestions for improving the system.



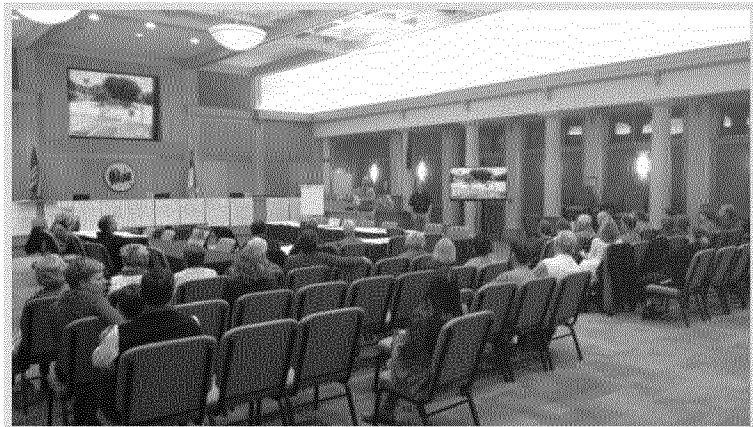
Community Workshop #3

The third community meeting took place at the Pinehurst Parks and Recreation Fall Festival on October 24, 2014 at Cannon Park. Participants were asked to review, comment, and share their ideas about the existing and proposed biking facilities and conditions. Participants were also asked to complete a survey to collect more detailed information regarding their cycling experience in Pinehurst and their suggestions for improving the system. Approximately 30 people participated in the open discussions, mapping exercise and/or completed a survey.



Community Workshop and Open House #4

The fourth and final community meeting was also held at Village Hall on December 4, 2014. This meeting was attended by roughly 50 residents, who were provided with the current results of the survey/questionnaire, given the opportunity to fill out their own survey, and provided with preliminary recommendations and future bike corridors to be included within the plan. Attendees were also given the opportunity to express comments and/or concerns regarding existing facilities, ask questions about the plan and recommendations, and view various maps that are intended to be included within the plan.



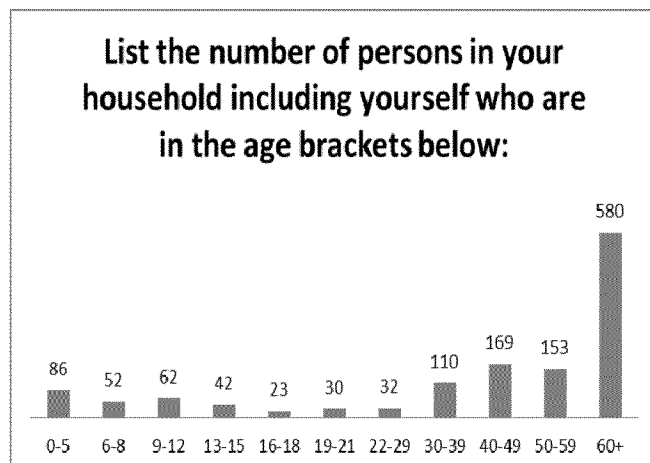
Community Bike Ride

As part of developing this plan, a Community Bike Ride was held on September 13, 2014 beginning at the Village Hall. Approximately 20 local cyclists of all ages attended to learn more about the plan, and discuss local cycling habits and destinations within Pinehurst. The ride included several "trips" around Pinehurst to local destinations, and frequent stops to discuss concerns about each route and items that would make the route safer and more enjoyable.



Participants in the Bike Ride were also asked to take the Bicycle/Pedestrian Survey that had been generated for this project.

Pedestrian/Bicycle Survey

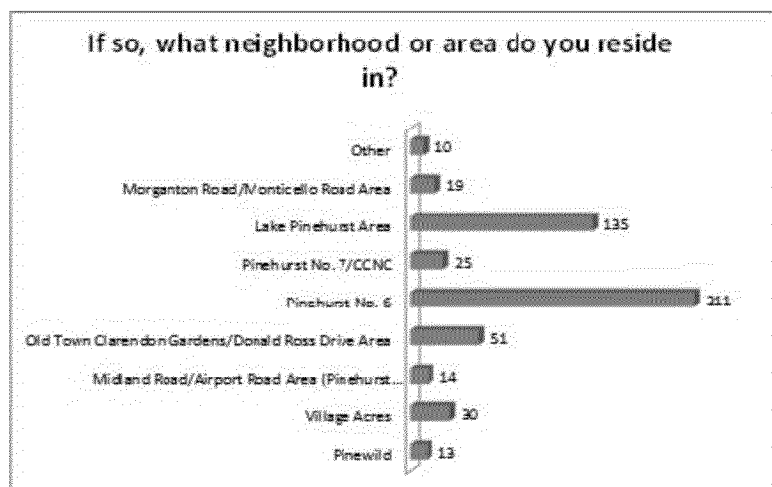
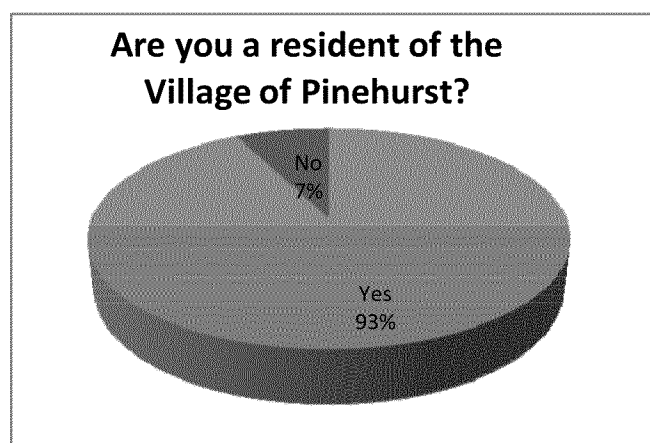


To further solicit input from the public about the current bicycling opportunities in Pinehurst, a public survey was conducted by means of a questionnaire, which was made available to residents via Community Meetings, by pick-up at Village Hall, and via the internet from a link on the Village's main web page. The survey, which can be found in the Appendix, was designed to solicit opinions on both *general* and *specific* concerns in the Village of Pinehurst. Approximately 600 people, representing

approximately 1,250 individuals, filled out the Pinehurst Pedestrian & Bicycle Plan Survey. The survey questions and a summary analysis for each are pictures in the next few pages.

As indicated in the graphic above, the majority of survey participants were adults age 60 and above (approximately 48%). While all age groups were represented, this outcome reflects the typical profile for Pinehurst (47% of residents are age 60+).

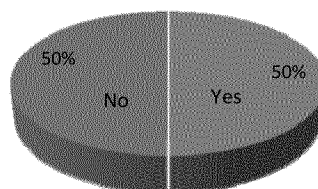
The Majority of survey participants were residents of Pinehurst.



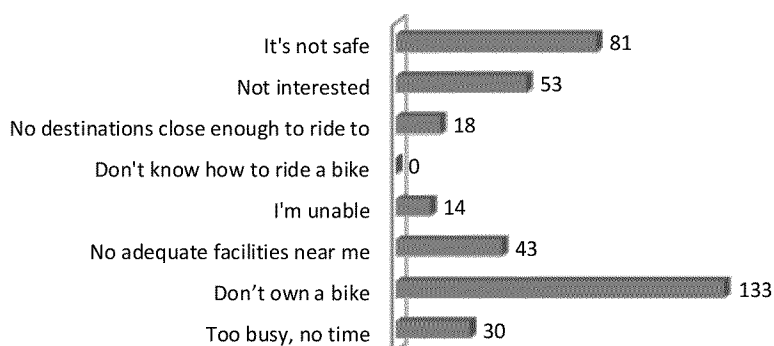
Participants from all of Pinehurst chose to participate in the survey, however, the majority of surveys were provided by residents identifying with Pinehurst Number 6 and the Lake Pinehurst Area.

Half of survey responses indicated riding a bike within the last six months, those that hadn't ridden reported not doing so either because they didn't own a bike or felt riding in Pinehurst was not safe, were not interested in riding or didn't feel adequate facilities were located near them.

Have you or a member of your family ridden a bicycle in the last six months?

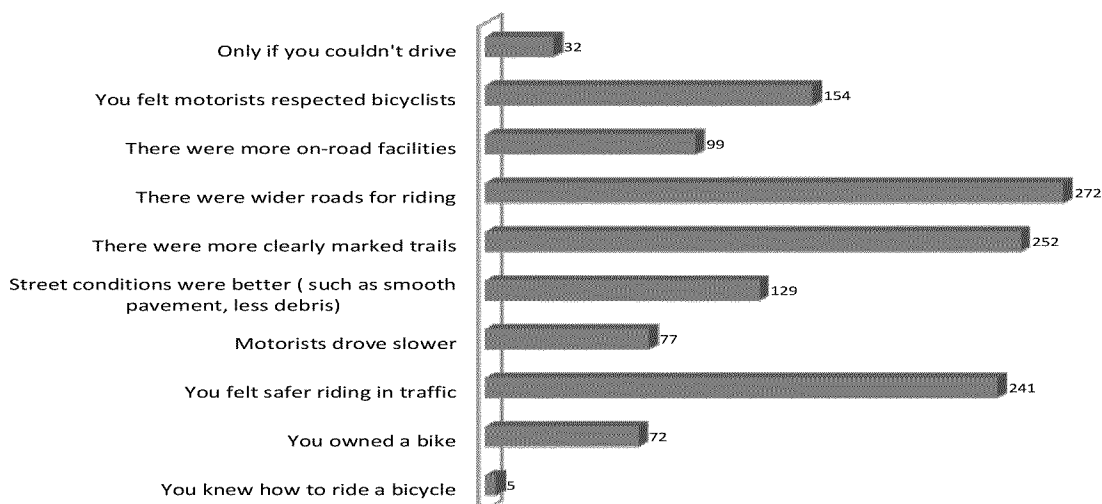


If no, why not? (Check all that apply)

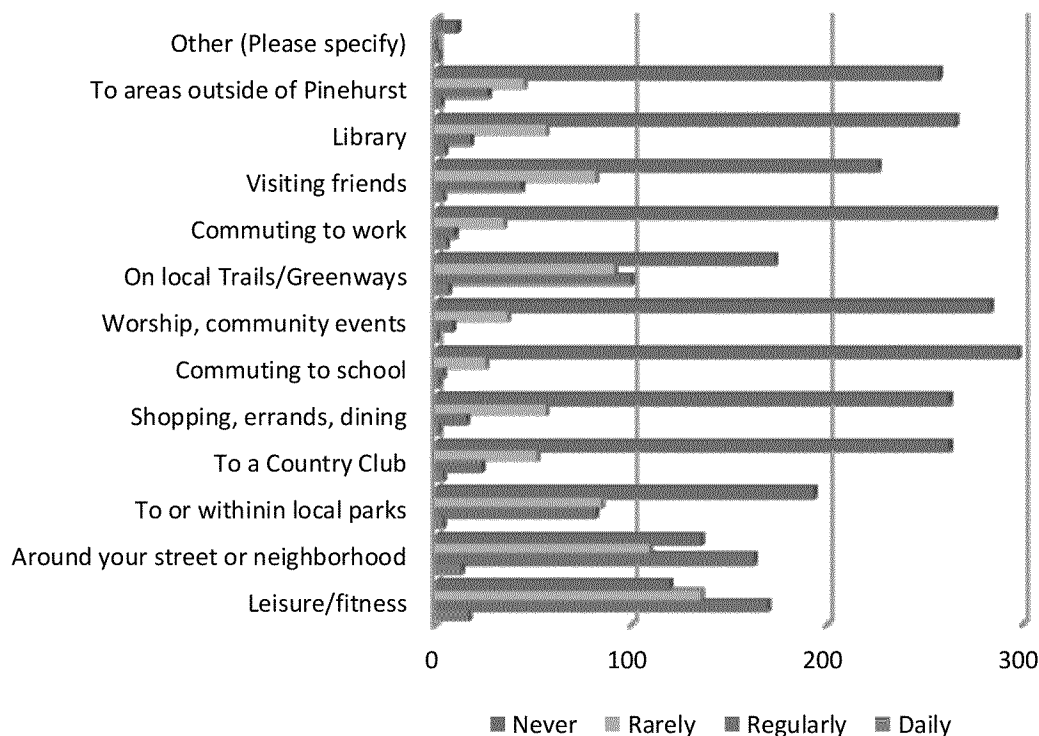


Other reasons included a lack of time, inability to ride or the perception that desired destinations were not close enough in proximity to ride to.

Would you ride your bike more if: (Check all that apply)

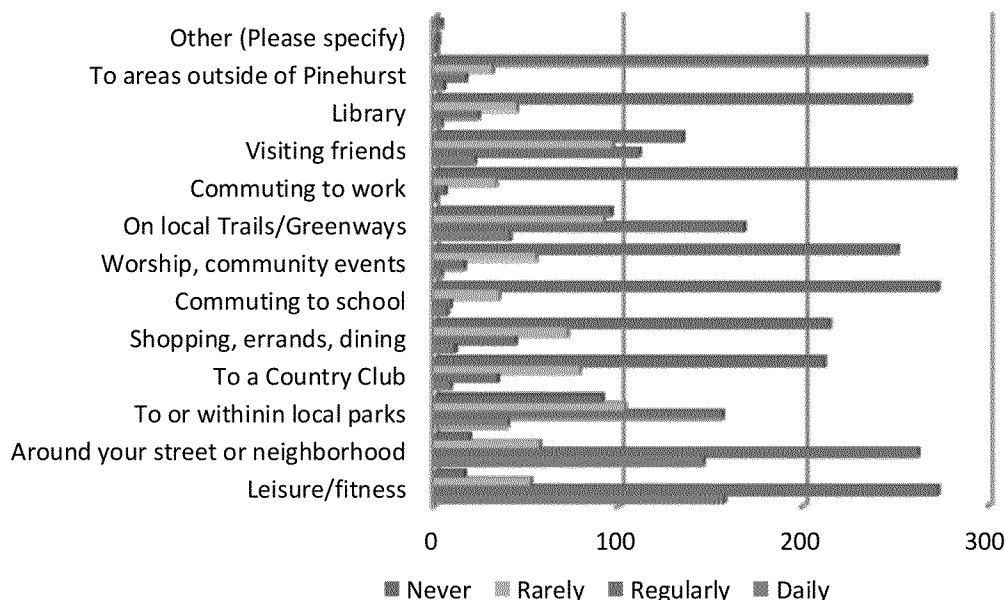


Please select how often you typically bike for the following purposes:



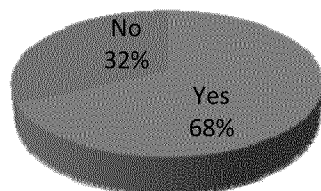
Survey responses indicate that riding for leisure/fitness and riding around neighborhood streets were the major reasons for riding a bike in Pinehurst.

Please select how often you typically walk for the following purposes:



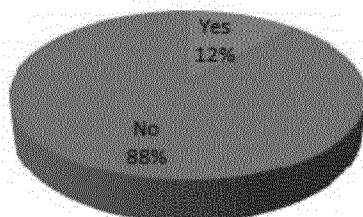
Survey participants reported walking for leisure/fitness and walking around their neighborhood streets as being the most common reason for walking in Pinehurst. Other common reasons included walking to parks, the Greenway and to visit friends. More than 2/3 of respondents indicated a desire to walk or bike more if better and/or safer facilities were provided.

Would you or your family members walk or bike to or within any of the previously listed destinations (schools, parks, greenways, etc.) if better and/or safer facilities were provided?



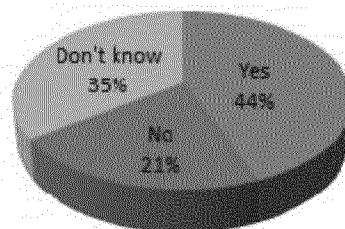
The majority of survey participants reported not having participated in the Pinehurst Walking School Bus program. This is not surprising, considering the age distribution of survey participants.

**Have you or anyone in your family
ever participated in the Walking
School Bus Program at Pinehurst
Elementary School?**

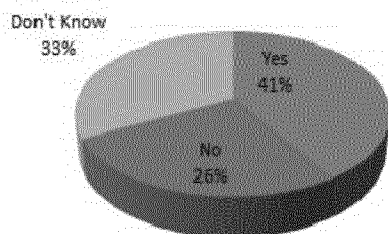


While 44% of those surveyed were in favor of restoring the historic sand/clay paths within the Village, 21% were not in favor of restoration. However, 35% of survey participants were not certain whether or not the historic paths should be restored. This level of uncertainty should be further explored by the Village prior to deciding a course of action regarding the restoration of the historic sand/clay paths.

**Are you or anyone in your
household in favor of the restoration
of the historic sand/clay paths
within the Village?**

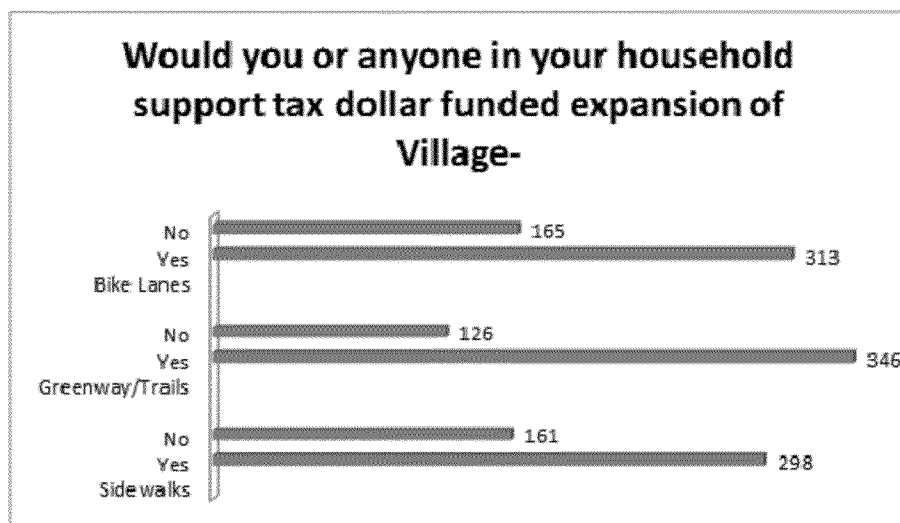


**Do you think there are enough
signalized pedestrian crosswalks in
Pinehurst?**

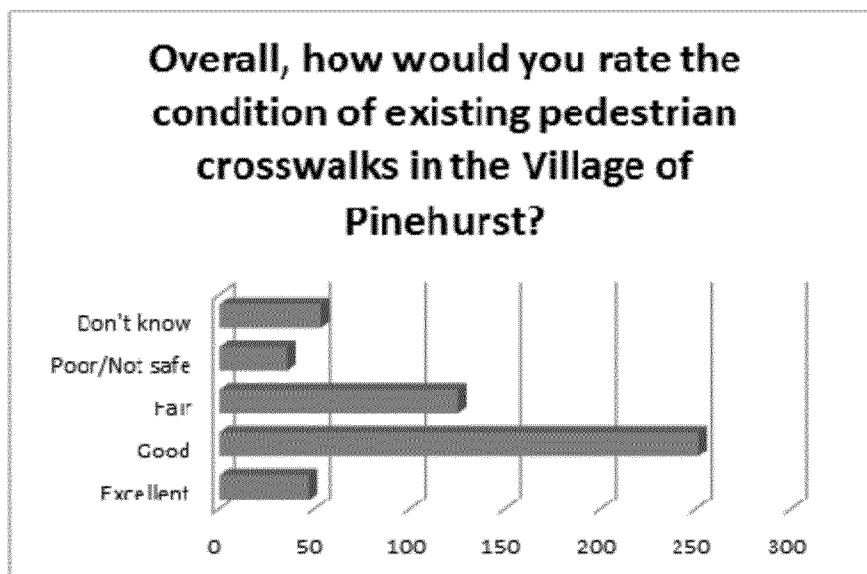


Most of the survey participants either think there are enough signalized crosswalks or don't know.

The majority of survey respondents reported being in favor of tax dollar funded expansion of the bike lanes, Greenways/Trails, and Sidewalks in the Village, with Greenway/Trails being the highest percentage.



Most of the survey participants reported the condition of existing pedestrian crosswalks in the Village as being good.



Additional Comments

The survey/questionnaire also gave participants the option of providing additional written comments related to bike and pedestrian facilities in Pinehurst. Questions were asked about suggested bike lane and trail routes, physical barriers that prevent the safe use of the existing system, the Village's best investment in walking/bicycling facilities, and any additional comments that the respondent had. Common themes associated with the written comments include:

- More connectivity is needed between residential areas and destination points, such as Downtown Pinehurst, and neighboring communities

- Praise to the Village for the existing greenway system, trails at the Arboretum, and trails at Rassie Wicker Park
- A desire for more sidewalks in residential neighborhoods, and the opinion that existing roads are too narrow and that walking/biking in residential areas is generally unsafe. Some resistance to sidewalks in front yards was noted due to small lot sizes.
- A preference for off-street biking opportunities in lieu of bike lanes within existing streets
- The current greenway system is generally good for walking but not for biking (particularly with training wheels) or pushing a stroller
- Safety concerns for walkers and cyclists along Linden Road, particularly those that utilize the roadway in lieu of the greenway
- A need for signalized crosswalks across major highways (15-501, 211, etc.)
- Many respondents don't like the idea of having to drive somewhere to safely walk or bike

Analysis

The survey generally indicates that residents are interested in bicycling within Pinehurst, but that safety concerns are preventing many from regularly riding a bike. Many also feel that there is a lack of connectivity to common destinations within the Village and that not enough biking facilities exist to safely access these destinations. The survey has also indicated that support for expanding the pedestrian/bicycle system exists in a major way. This survey has established both the need for improvements to the existing pedestrian/bike system in Pinehurst as well as the need for expanding these systems in the future.

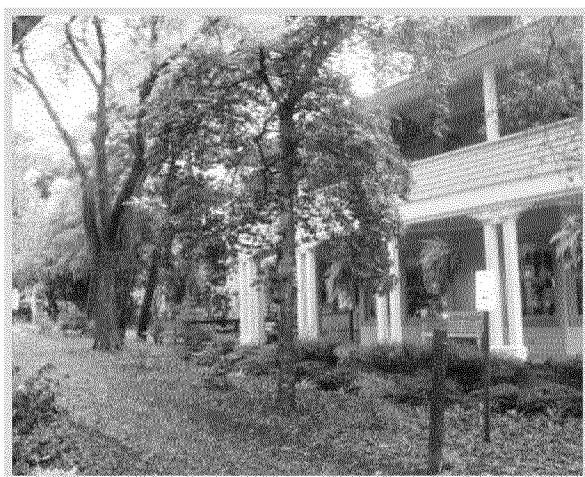
Other reasons for improvements to the bicycling system include the growing trend of healthy living and fitness as they relate to improving quality of life. Access to facilities was a common theme coming from the responses and many comments were made related to the need for expanding both pedestrian and bicycling facilities.

2.3 INVENTORY AND ASSESSMENT OF EXISTING BICYCLE FACILITIES

Assessment of Local Bicycling Conditions in Pinehurst

The current bicycling system in Pinehurst does not contain any dedicated facilities or special route markings for bicyclists. Those wishing to bike on area roads have to share the road with motorists and other vehicles. In addition, the area's greenways are unpaved and not conducive to many types of bicyclist travel, but they are used by bicyclists as they are oftentimes the only connecting facility or they are where bicyclists feel most comfortable riding.

Some residential areas within the Village of Pinehurst benefit from the recent development of the Pinehurst Greenway. These areas along the Greenway now have access to recently completed sidewalk along Highway 211 and down Linden Road. The Greenway is best-suited for low speed bicycling and bicycles with wider gauge tires; road bikes with narrow tires are not suited for sand or gravel pathways.



The historic Village areas offer the best on-street bicycling conditions within the Village due to its low volume, low speed and shaded streets. One who wishes to comfortably bike for recreation or to reach destinations within this area find a very pleasant place to ride. Unfortunately, there is very poor connectivity to get to the downtown from residential and business areas just outside the historic Village area. Village businesses may benefit by being accessible via a bicycling network consisting of facilities, pavement markings and route signage that links the various tourist

attractions, resorts, government facilities, hotels, restaurants, residential areas, the hospital, etc.

On busier roads and highways, there is limited shoulder width to accommodate bicyclists and there are no continuous routes with shoulders wide enough (4' or 5') for bicycling. The "enclosed" feel of some streets due to tree canopy and narrow travel lane widths make routes such as Linden Road and Highway 2 more suitable for bicycling than Highway 5 or Highway 211. On streets with an enclosed feeling, motorists tend to drive slower due to close proximity of trees and motorists in other travel lanes. This does not mean that less confident bicycle riders will feel comfortable in those situations; rather those bicyclists who are comfortable riding on-road are less subject to hazards than on some other "wide open" routes.

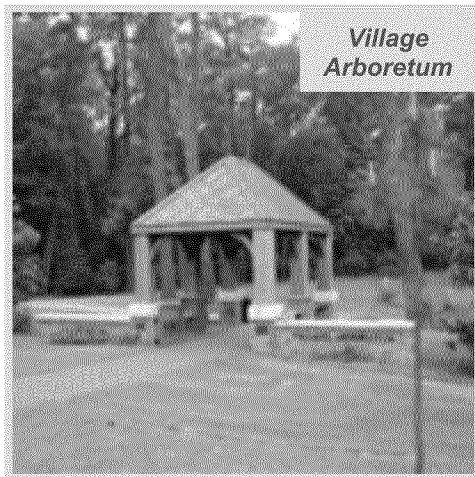
Bicycling Trip Characteristics

Bicycling trips are generally characterized as short and long distance trips, made for transportation or utilitarian purposes. Since residential areas within the Village are without dedicated bicycling facilities, there are few trips made for transportation purposes. Kids may bike on local streets and residents may ride short loops for short recreational trips. Long distance recreational rides may begin in these areas but often end up on more rural settings. A number of residents voiced frustration



during community meetings about having to use their car to drive to a separate location to access the Greenway.

The common idea shared by participants of the community meetings, is that all the residential areas within the Village have access to at least one bicycle route within their neighborhood that connects to the Greenway or other bicycle routes. Due to right-of-way constraints a dedicated bicycle lane or bikeable shoulder is not feasible in most residential areas therefore a network of “shared lane markings” is recommended to raise awareness of the presence of bicyclists on these routes. State highways and other collector and arterials roads may accommodate bicycle lanes in the future and provide on-street connections to area Greenways.



The Village Arboretum offers dedicated, picturesque recreational paths near the Village Hall. These paths connect with the Pinehurst Greenway. The Greenway currently offers approximately 6 miles of well-maintained path available and is beginning to serve as an important connecting component for alternative transportation through the Village.

The Pinehurst Greenway is currently gravel/sand in many locations, limiting accessibility for some users, particularly some bicyclists. As sections of this system are considered for paving for A.D.A. compliance or other reasons, this important asset to the Village will serve as a critical unifying component linking neighborhoods and resort areas with shopping areas, job sites, schools, parks, doctors' offices, the Hospital and other nearby communities.

Sites that either generate or have the potential for generating bicycle traffic include:

- **First Health Moore Regional Hospital & Fitness Center** – There are nearby greenway connections and some local streets suitable for bike travel.
- **Sandhills Community College** – There are no facilities leading to the College along Airport Road but this Plan recommends a sidepath or bikeable shoulders connecting to the facility and the Southern Pines greenway.
- **Rassie Wicker Park** – There are pathways leading to the park from the Village Hall and Arboretum. On-street shared lane bicycle routes could connect the Village Green area to the Park.
- **Village Arboretum** – Both paved and non-paved paths traverse this Park which is accessible from the Village Hall.
- **Village Hall** – There are pathways nearby from Rassie Wicker Park.
- **Harness Track/Fair Barn** – No bicycle routes lead to these locations.
- **Pinehurst Greenway** – The Pinehurst Greenway connects to Rassie Wicker Park, Cannon Park, Given Memorial Park, Highway 211 and eventually moves past the FirstHealth campus and adjacent residential properties.



- **Given Memorial Library** – The Library is accessible via many of the Village's residential streets that offer a pleasant environment for bicycling and may be combined with on-street pavement markings or route signage to heighten motorists to the awareness of bicyclists and provide a wayfinding system to reach the area.
- **Pinehurst Elementary School** - A recently updated portion of sand/clay path provides pathway connectivity from the adjacent residential community.
- **Various resorts within the Village** – Some are connected with the Greenway system while others remain on the periphery accessible via low speed, low volume routes. Others are inaccessible via on-street bike routes or are along or require crossing of high speed, high volume streets to access.

Shopping destinations are scattered throughout the Village, but the main shopping areas that currently generate or could potentially generate bicyclist traffic are:

- **Market Square Retail Areas** – This symbolic downtown within Pinehurst has a mix of fair to good condition sidewalks that extend from the center of the square to nearby residential areas. The paved sidewalks typically lead to historic sand/clay paths.
- **Olmsted Village** – This popular destination is not located within the Village limits but is frequently used by Pinehurst residents. The recent widening of Highway 211 included the construction of new concrete sidewalks on both sides of the road that terminate at Olmsted Village near the intersection of Highway 211, NC Hwy 5 and Central Park Avenue.

Busy roadways pose a major barrier for cyclists trying to walk from one point to another. According to NCDOT, the roadways with the highest Annual Average Daily Traffic counts (2013 AADT) in the Village of Pinehurst include:

- **US Highway 211** – 11,000 to 12,000 AADT
- **NC5/Beulah Hill Road** – 11000 to 17000 AADT
- **US 15/501**– 16,000 to 26,000 AADT
- **NC2/Midland Road/Palmetto Road**– 8,700 to 18,000 AADT
- **Linden Road**– 3,600 AADT

There are a number of intersections along these typically busy corridors that have a perception of being unsafe because of the volume and/or speed of vehicular traffic that cyclists must navigate. Most of these intersections do not have signals or crosswalks.

The exception is the intersections on Highway 211 that were recently improved by NCDOT. These intersections are equipped with both crosswalks and ped-heads.

To create a bicycle-friendly transportation system in the Village of Pinehurst, existing corridors will have to be strengthened by filling in gaps, repairing existing facilities, and providing safe and efficient paths across busy vehicular corridors. Additional corridors need to be provided to connect major portions of the Village (east to west and north to south) and to serve as neighborhood connectors. New connectors need to be provided



to reach important destinations, especially near public schools, parks, and popular commercial areas.

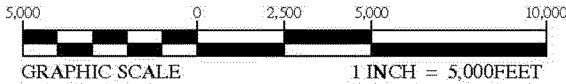


Village of Pinehurst
North Carolina

Pedestrian & Bicycle Plan
2014-2024

Map 1
INVENTORY

- Existing Park Facility
- Future Park Property
- Golf Course
- Existing Pond/Lake
- Existing Greenway Trail
- Existing Sand/Clay Path
- Existing Sidewalk Good Condition
- Existing Sidewalk Poor Condition
- Existing State Bike Route
- Moore County Bike Touring Route
- Moore County Potential Greenway Corridor
- Existing Southern Pines Greenway Trail
- Village of Pinehurst
- Pinehurst ETJ
- Existing School
- Existing Hospital
- Existing Fire Station
- Existing Place of Worship
- Problem Area (Sidewalk Ends, ADA issue, Lack of connectivity, Etc.)
- Crosswalk Issue (Needs Pedhead, needs maintenance, etc.)

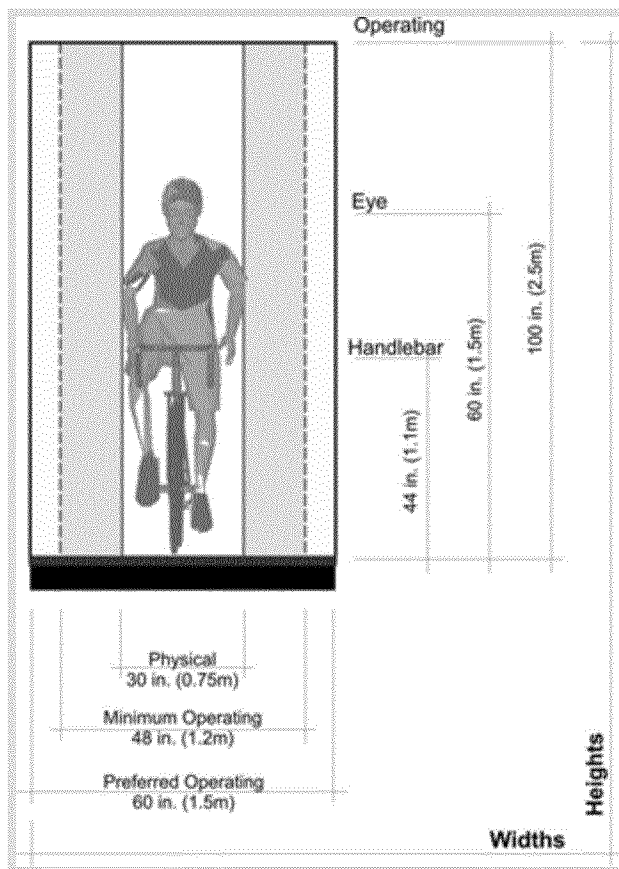


SECTION 3: BICYCLING DESIGN GUIDE

3.1 DESIGNING FOR BICYCLISTS

Designing for bicyclists is very different than simply designing facilities for bikes. A bicycle is an inanimate object incapable of movement without human power. Properly designed facilities are constructed in a manner that indicates the designer understands what it is like to be a bicyclist moving through a space. Due to the physical exposure a bicyclist has when compared to a motorist, it is important to acknowledge the physical characteristics of a bicyclist. AASHTO notes that “understanding bicyclists’ operating characteristics is therefore essential to design facilities that minimize the likelihood of injury.”

For the same reasons that motor vehicle travel lanes are made wider when truck traffic is higher, the design for bicyclists should also reflect the type and volume of bicyclists. People for Bikes, a nationwide advocacy organization, unveiled a new approach to designing bicycling facilities in 2014 with their “Build it for Isabella” campaign. In traditional traffic engineering parlance, the “design vehicle” is what determines how a street is designed. “Isabella” is the design user for bicycling facilities, a 12-year old girl who is ready to explore her neighborhood by bike.

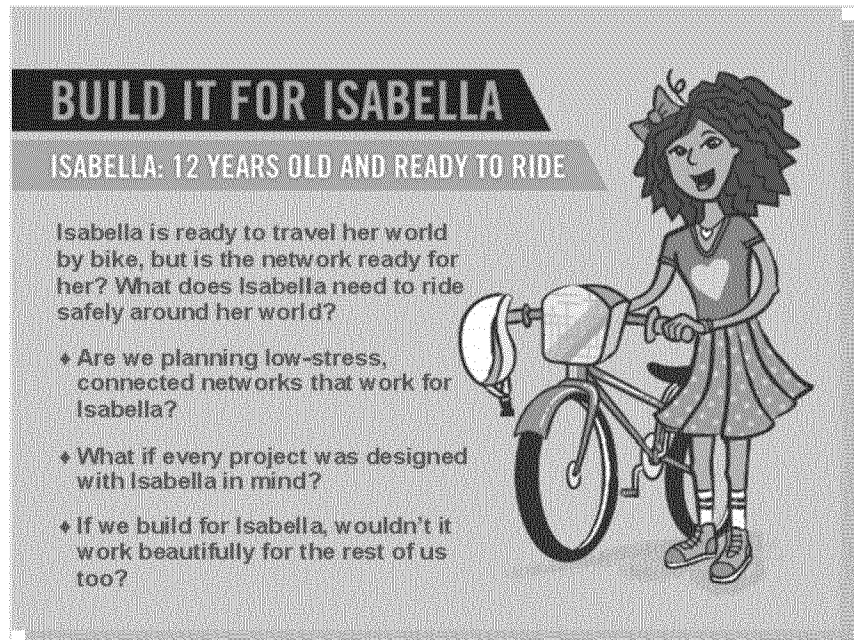


The “Build it for Isabella” approach builds upon the growing knowledge base of bicyclist types, which acknowledges there are at least four (4) distinct types of attitudes people have toward bicycling that were identified in an Oregon study. They are:

- **Strong & Fearless:** These bicyclists often ride regardless of roadway conditions and riding is a strong element of their identity.
- **Enthused & Confident:** These riders are comfortable sharing the road with automobile traffic but prefer to do so while riding in their own facility (e.g. bike lanes).
- **Interested but Concerned:** They are curious about riding a bike but are reluctant to ride where they do not feel safe. They may already mountain bike or use greenways.

- **No Way, No How:** This group is not interested in bicycling due to either a lack of interest, inability to ride, or concerns about topography and safety. How can we introduce them to bicycling?

We heard from each of these riding perspectives during the community bicycle ride for the Pinehurst Comprehensive Bicycle Plan. Several riders expressed a desire to have facilities separated from motor vehicle traffic and even the most confident riders in the group expressed a desire for their own space on many of the roadways in the area due to traffic speeds and volumes.



It is imperative that we assess the needs of bicyclists from each of these four perspectives when considering how we design for Isabella. A safe bicycling network allows bicyclists in one category to potentially move up into a category of more confident riders. Some bicyclists attitudes may float between these categories based their unique situation. Bicyclists who are strong and fearless when riding by themselves may be interested but concerned at the prospects of riding a bicycle with their child.

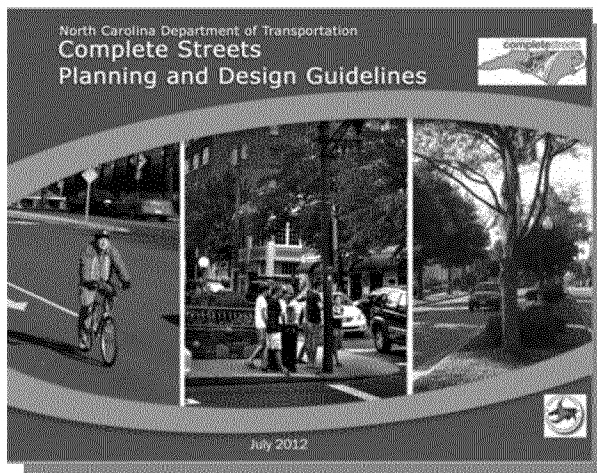
Strong and fearless or enthused and confident riders may have a “no way, no how” attitude if it means they have to travel along a section of highway that is either off limits to bicyclists or where no facilities exist next to high speed traffic. This does not mean that every facility on every street must accommodate Isabella; rather we should strive to build a bicycling network that provides parallel routes to major streets where less confident riders can still feel safe. There will also be constraints and traffic conditions that inhibit a bicyclist’s willingness to ride in certain situations.

As bicyclist types are changing, so are the bicycles they are riding, which means that a four-foot lane is barely adequate to accommodate a diverse range of bicyclists. A common design application in North Carolina is to default to a four-foot bicycle lane because the prevailing standards state this as a minimum, and precedence has been set with building bicycling and walking facilities to meet only these minimum standards.

While this may suit the Strong and Fearless rider, it ignores the need and comfort of others who have less fearless attitudes about cycling. We rarely build motor vehicle lanes to the minimum width (e.g. you will never see a new 9-foot travel lane built on a North Carolina street or highway).

Applying Complete Streets

Just because a street has sidewalks and bike lanes does not always mean it is “complete” from the perspective of safely accommodating all users of all ages and abilities. Careful consideration must be given to the needs of bicyclists and how they interact with traffic along different routes. Destinations along or near a proposed bicycle route are important to understand the type of bicyclists that can be expected.



NCDOT's Complete Streets policies, related guidelines and practices mean that the State is likely to improve streets with bicycling facilities when they are part of other major roadway upgrades or changes in configuration. Given the presence of the Historic District, it is unlikely that NCDOT will add capacity to streets like Highway 2 and Highway 5 through Pinehurst.

The recent widening of NC 211 most likely prohibited bicycle lanes from ever being added to that corridor due to the existing width of pavement in between the curbs. Therefore, the addition of bike lanes or bikeable shoulders is most likely to occur through resurfacing of the streets by NCDOT (in partnership with Pinehurst to add pavement width where possible) or through Pinehurst independently pursuing federal or local funds to add the lanes to state-managed and other routes.

Given these realities and as noted in the introduction to this chapter, the corridor-specific recommendations contained in the recommendations chapter designate a short-term and long-term set of recommendations. The short-term recommendations are geared toward pavement markings, signage and route designation while long-term recommendations reflect more substantial infrastructure upgrades.

The route recommendations also include major influences on the demand for bicycle traffic, the NCDOT Complete Streets cross section that best fits the existing corridor and a planning-level cost estimate. A planning level bicycle quality of service (or level of service analysis) was conducted based on existing conditions.

While Complete Streets are being implemented by NCDOT, it is still imperative that Pinehurst and its residents remain diligent about how bicyclists and pedestrians are accommodated on projects. As noted earlier in this chapter, the default position by the State is to build to the minimum, sometimes regardless of local context and concerns for bicycling and walking along a route. Imagine having only a four-foot wide bicycle lane on NC 211. Would that give enough room to allow bicyclists to feel safe next to 55 mph traffic? Probably not.

The Village of Pinehurst should work closely with its local NCDOT Division office to articulate these needs during the project development process so proper input can be given to the designers, who are oftentimes housed in Raleigh and are not as familiar with local context. There are several positive examples across the state where this type of constant interaction has yielded better design for bicyclists along state highways.

Cycling Elements at Intersections

There are a number of other treatments that can improve bicyclists' ability to safely navigate high-conflict areas like intersections. Bicycle boxes, bicycle stop bars and lead signal indicators position the cyclist ahead of motorists at intersections and improve visibility between bicyclists and motorists. In addition, bicycle detection at intersections improves network and intersection function for bicyclists. Additional treatments not specified above and included in AASHTO, NACTO, or other guidance, will be considered.



Environmental Review

Any project that utilizes federal funding, either through NCDOT-led efforts or Pinehurst-led projects, will require an environmental analysis. During this process, the designation of the Historic District will likely have a major impact on the type of recommendations that could be pursued. It is imperative that Pinehurst and NCDOT include statements about the purpose and need for active transportation facilities along these routes during the early stages of the project so they are not eliminated during the environmental review process (if major upgrades occur).

Projects outside the Historic District will also require an environmental review if using federal funds and it is equally important to include bicycling and walking facilities as part of the purpose and need. Right-of-way acquisition on projects outside the Historic District is not likely to pose as much of a challenge to implementation as those within the Historic District.

NCDOT's Bicycle Policy

In addition to the State's Complete Streets policy, NCDOT operates under an adopted Bicycle Policy that stems from the State's 1974 Bicycle and Bikeways Act. Some important elements of the bicycle policy for Pinehurst to remember when projects are pursued are:

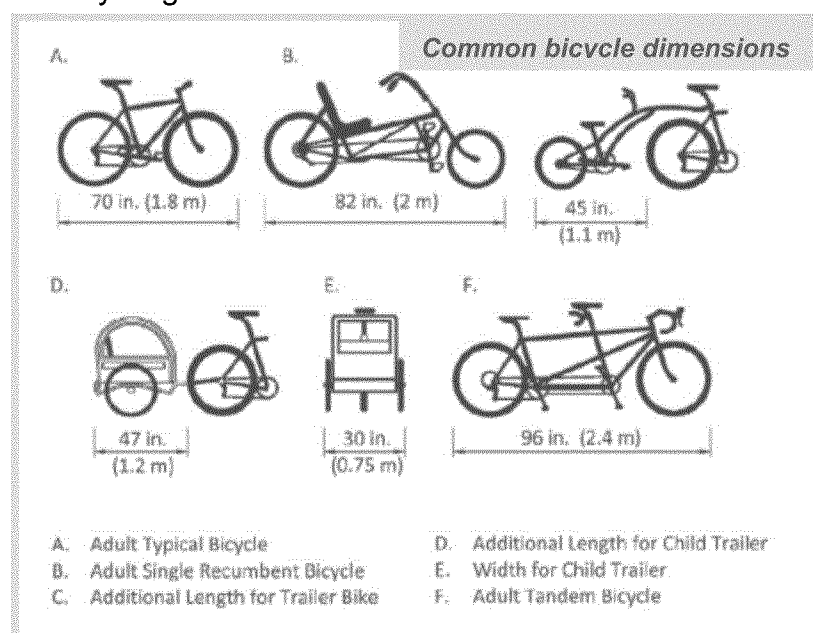
- Bicycle compatibility shall be a goal for State highways, except on fully-controlled access highways where bicycles are prohibited, in order to provide reasonably safe bicycle use.
- All bicycle facilities...shall conform with the (State) adopted Design Guidelines for Bicycle Facilities on State-funded projects, and also with guidelines published by

the American Association of State Highway and Transportation Officials (AASHTO) on federal aid projects.

- Paved shoulders shall be encouraged as appropriate along highways for the safety of all highways users, and should be designed to accommodate bicycle traffic.

3.2 DESIGN GUIDANCE FOR BICYCLING FACILITIES

As prescribed in NCDOT's Bicycle Policy, most of the prevailing guidance on the design of bicycling facilities stems from AASHTO. In 2012 the organization published its



Guidelines for the Development of Bicycle Facilities, which serves as the foundations for the design guidance contained in this chapter. The Village of Pinehurst should purchase this document to have on-hand for future discussions as it is not universally known about or applied in North Carolina.

The other prevailing design guidance for transportation engineers is the *Manual on Uniform Traffic Control Devices* (MUTCD), which

sets the standards for traffic control practices across the United States. The application of MUTCD is why speed limit signs look the same in most states and the striping and signage along highways and streets is consistent. The most recent MUTCD was adopted in 2009 and includes the most comprehensive set of considerations for signage and pavement markings for bicyclists. Engineers, in most cases, are hesitant to deviate from its guidance due to fears of litigation.

In some instances, NCDOT's own design guidelines have identified features that are more bicycle friendly, such as how to determine appropriate bikeable shoulder width based on the speed of adjacent motor vehicle traffic. Where appropriate, these design elements are incorporated below.

This section is intended to be a high-level primer on bicycle facility design as much more detailed information is available through AASHTO's guidance, the Manual on Uniform Traffic Control Devices and other state and federal publications.

The important thing to note is that as the bicycling culture is changing in America, the design standards are also evolving rapidly and new guidance is being published yearly from various organizations.

Common Bicycle Speeds

Bicyclist Type	Feature	Value
Typical Upright Adult Bicyclist	Speed, paved level terrain	8-15 mph
	Speed, downhill	20-30 plus mph
	Speed, uphill	5-12 mph
	Perception reaction time	1.0-2.5 seconds
	Acceleration rate	1.5-5.0 feet per second
	Deceleration rate on dry level pavement	8.0-10.0 feet per second
	Deceleration rate for wet conditions	2.0-5.0 feet per second
Recumbent Bicyclist	Speed, level terrain	11-18 mph
	Acceleration rate	3.0-6.0 feet per second
	Deceleration rate	10.0-13.0 feet per second

Bicycle Lanes

A bicycle lane is defined by AASHTO as a “portion of roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings and signs. It is intended for one-way travel, usually in the same direction as the adjacent traffic lane.”

The bicycle lane is the most common application for dedicated bicycling facilities and typically ranges in width from four-feet to six-feet adjacent to a motor vehicle lane (this width does not

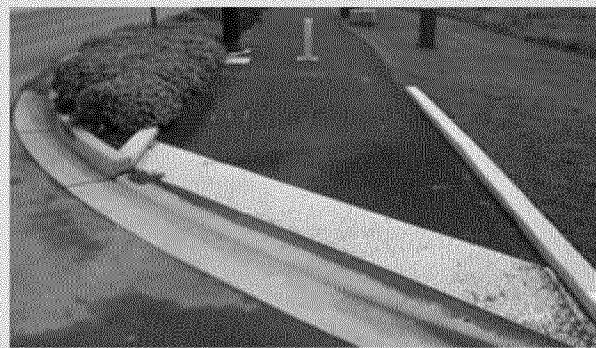
Shared lane marking in Southern Pines (Note the marking is incorrectly placed in the travel lane as it does not direct the bicyclist to ride outside the door zone of parked vehicles).



include the width of the gutter pan as it is not usable space for a bicyclist).

Four-foot wide lanes are most appropriate on low-speed streets such as collectors where there is not as much discrepancy in the speed of the bicyclist versus the speed of the motorist. On higher speed facilities, the width should be greater (5-feet on 35 mph to 45 mph streets; 6-feet on streets with speed limits greater than 45 mph).

Note the sidepath along a state highway. The width of ramps where the path meets the street should be the same as the pathway.



Bikeable Shoulders

Bikeable shoulders are similar to bike lanes except there is no curb and gutter and the shoulder may or may not be marked as a bike lane. It is defined as a “portion of roadway contiguous with the traveled way that accommodates stopped vehicles, emergency use and lateral support for the roadway surface. Shoulders that are 4-foot (less than 35 mph speed limit) or 5-foot (35 mph to 45 mph speed limit) are considered bikeable because they are a width similar to a bike lane.”

Shared Lane Markings (or sharrow)

The use of shared lane markings has become more popular on streets where adding a bicycle lane or shoulder is not feasible or planned. A shared lane marking is defined by AASHTO as a “pavement marking symbol that indicates an appropriate bicycle positioning in a shared lane, which is a lane of traveled way that is open to both bicycle and motor vehicle travel.”



Shared lane markings send other messages to bicyclists and motorists: 1) That a bicycle has a right to use the lane and the lane should be shared; 2) Positions a bicyclist in a travel lane with on-street parking in a location where they can avoid opening car doors; and 3)

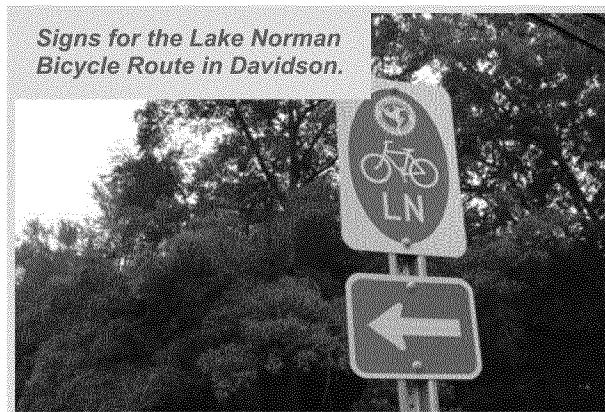
Positions a bicyclist in a travel lane without on-street parking in a location where they are not squeezed out or riding along the right edge of pavement.

Special care should be taken when marking a shared lane. MUTCD recommends a 10-foot or 11-foot distance from the center of the marking to the curb face when on-street parking is present. However, local conditions may vary and necessitate placing the marking further out into the travel lane or in the middle of the travel lane.

Shared Use Pathways/Sidepaths

Common design principles for shared use pathways and sidepaths are covered elsewhere in this plan. For bicyclists needs, however, there are some special considerations when designing and building multi-use trails. A pathway that accommodates bicycling should be 10-foot wide at minimum (8-foot is allowed in short, constrained sections) but 12-foot or 14-foot wide pathways are preferred in high volume areas or near parks and schools.

A common response to building greenways is that some residents and officials feel that giving a bicyclist a separated trail will “get them off the road.” This may be true for less confident riders but a trail should not be seen as a substitute for on-road facilities as some bicyclists will prefer to be on the road in most situations.



Some special considerations on shared pathways include:

- A firm and stable surface that can accommodate a wide variety of bicycle types. Narrow tires on road bikes can make travel unsafe on gravel or sand paths.
- Sidepaths should be placed in areas where there are few driveway cuts or low potential for future driveway cuts. Motorists do not expect two-way bicycle traffic on a pathway crossing a driveway.
- Curb ramps and crosswalks at intersections of greenways and other pathways should be a width that conforms to the width of the pathway. Oftentimes, especially in North Carolina since NCDOT does not have a greenway curb ramp design standard drawings, communities place a five-foot wide ramp at an intersection with a multi-use trail. This is not compliant with ADA requirements or AASHTO's design guidelines.

Other Treatments

- **Signed Bicycle Routes**

Neighborhood bicycle routes or bicycle wayfinding is becoming more popular on streets where there is not the need for dedicated bicycling facilities. In a similar fashion as Pinehurst has signed and marked its greenway, the Village may pursue designating a neighborhood bicycle route or historic bicycle tour of Pinehurst through a system of pavement markings and/or signage.

Given Pinehurst's desires to keep signage to a minimum, the standard "green on white" bicycle route marking systems are not recommended. Other low profile signs or markings are recommended.

- **Bicycle Boulevards**

Bicycle boulevards are street segments, or a series of contiguous street segments, that are modified to accommodate through bicycle traffic and minimize through motor vehicle traffic. Bicycle boulevards are best suited for street sections that link major destinations like a park or school to a greenway or other major bicycling facility where a dedicated greenway connection is infeasible or a bicycle lane is not practical due to the low-speed, low-volume nature of the street. Bicycle boulevards typically consist of special signage and pavement markings denoting them as a space where bicyclist movement is prioritized.

- **Green Lanes**

A green marking can be used in situations where conditions are not typical, such as a contraflow lane or more commonly where motor vehicle traffic merges across a bike lane.



Painting a bicycle lane or sections of a bicycle lane with green paint is becoming a more popular

treatment to help visually offset the bicyclist's space of the roadway as a way to improve safety and visibility. The most common treatment of green bicycle lanes is applying the paint where a motorist is merging across a bicycle lane, either at an intersection to reach a right-turn only lane or at a freeway interchange. Green lanes require special permission from Federal

Highway Administration as they are not yet universally accepted in prevailing design standards.

- **Cycle Tracks**

The applications of cycle tracks, which are separate dedicated facilities for bicyclists within a street right-of-way are increasingly popular on urban streets. Think of it as a multi-use trail but located within the street. Another example of this is a bicycle lane placed between an on-street parking lane and the curb rather than on the motor vehicle travel lane side of the parking lane. The only location where this appears to be possible in the future in Pinehurst would be if portions of the four-lane section of Highway 2 are converted to a two-lane section, then a cycle track could be considered on the south side of the street utilizing one of the travel lanes.

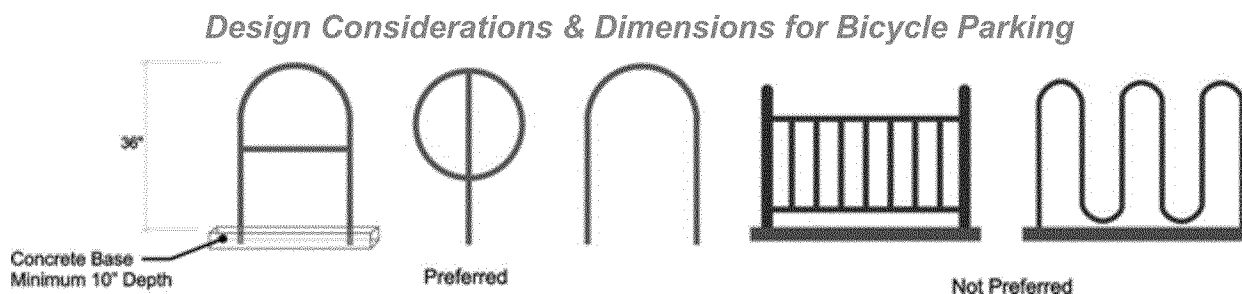
3.3 OTHER BICYCLIST ACCOMMODATIONS

Parking lots and driveway entrances/exits are surprisingly hazardous for bicyclists. Motorists are not conditioned to notice bicyclists in these environments. Sometimes novice cyclists will “cut through” parking areas to avoid perceived hazards on the road, and engage in bad practices such as cutting across parking aisles. Driveway entrances sometimes have channelized islands that allow motorists to make high-speed turns into a parking lot that can pose hazards for both cyclists and pedestrians.

Bicycle parking

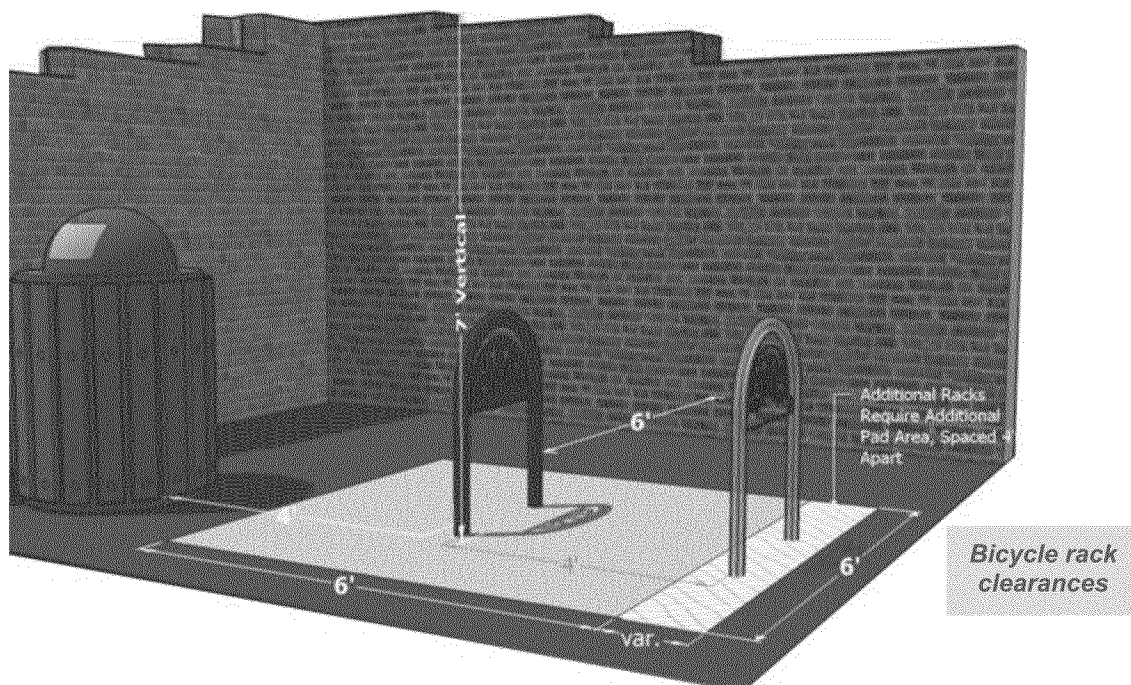
Bicycle parking racks can almost literally come in any shape or style you can imagine, thanks to some vendors catering to special markets for event centers, universities (with specific mascots), municipal icons, and artists.

However, the basic rack styles are still a variant of the “post-and-loop” design like those shown in green below. These styles are easily recognizable as usable bicycle racks instead of works of art and help prevent two bicycles rubbing up against each other.



In contrast, the popular “wave” rack style at far right generally only supports the bicycle at one point, as does the comb rack (second from right), often seen at public schools. Regardless of the specific style, a thick (10”) concrete base should be constructed for each bicycle parking station.

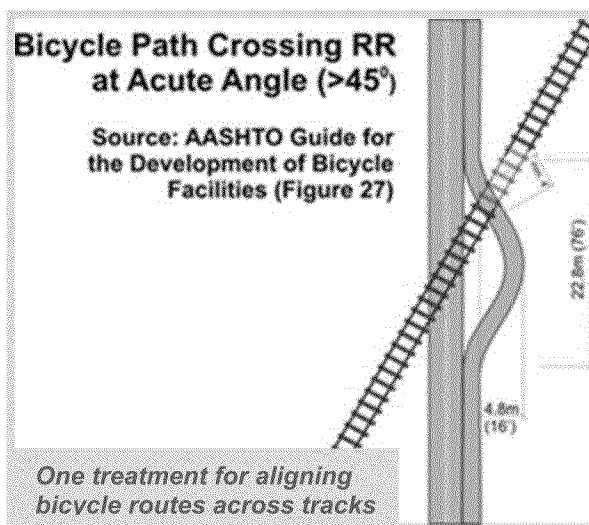
Note also that bicycle parking areas should have minimum 6’ horizontal clearances on all sides to ensure that each rack can be used properly, and at least a 7’ vertical clearance (see graphic on the following page). A shorter horizontal clearance (minimum: 4’) may be used behind the rack - note that bicycles are to park parallel to the rack, not “through” them for post-and-loop designs.



Crossing Railroad Tracks

Most railroad tracks and on-road bicycle paths will cross at a near-90 degree angle. Bicycles crossing tracks at a less than 45 degree angle should consider the treatment shown at right, which calls for a realignment of the bicycle path to create a more perpendicular approach angle.

Some communities have begun using shared-lane markings (sharrows) to indicate to bicyclists the most suitable way to cross a railroad track that is within an urban street where improvements such as those shown at right are not feasible.

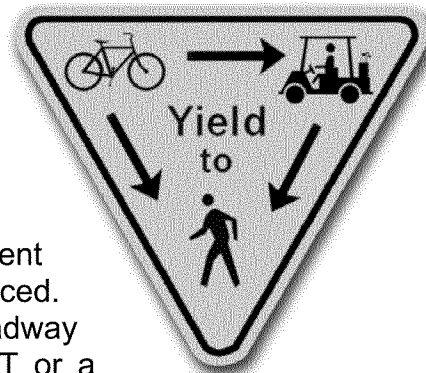


Drainage Grates & Utility Covers

Drainage grates can pose a serious hazard for bicyclists, particularly on older streets where the design and placement of drainage grates did not consider the potential use of bicyclists. Grates with openings that are parallel to the curb cause the wheels on bicycles (particularly those with narrow tires) to fall into the grates and result in a crash.

On new construction projects, grates should be placed only within the gutter pan of the street with grate openings that are perpendicular to the curb and direction of travel. On

older streets, the jurisdiction in control of that street should be requested to retrofit the grates with new grates with openings that are perpendicular to the curb. Another retrofit treatment is the welding of straps across the grate perpendicular to the direction of travel, which narrows the opening of the grate to prevent the bicycle wheel from falling into the opening.



Grates and utility covers ("manholes") create different problems for bicyclists as roadways sink or are re-surfaced. Grates and utility covers should be flush with the roadway and should be replaced or reconfigured when NCDOT or a municipality resurfaces a street so they remain flush with the pavement.

Utility covers can pose problems on greenways as many of them are constructed along sewer easements. As with roadways, the utility covers should be flush with the trail surface and (where possible) outside of the travel way.

Rumble Strip

The addition of rumble strips along highways causes great concern among bicyclists due to the way in which these rumble strips are placed on the shoulders of high speed roadways. The shoulders are the only suitable area for bicyclists to travel due to the speed differential.

To account for the needs of bicyclists, rumble strips should be placed as close to the edge line or fog line of the highway to maximize the space available for the bicyclist along the highway. Design standards for most four-lane highways leave enough room along the shoulder (typically 5-feet or greater) for the bicyclists to operate outside the area of the rumble strips.

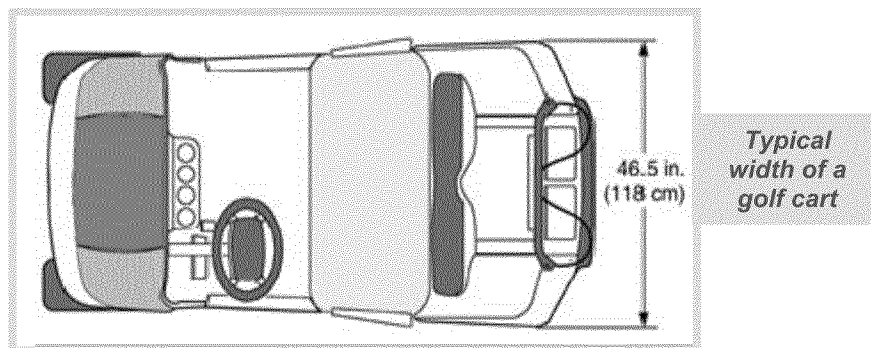
3.4 GOLF CARTS, BIKEWAYS, & GREENWAYS

There is concern in many communities like Pinehurst, particularly those with golf courses or destinations where there is demand from residents and visitors using golf carts, about what happens when bicycle traffic mixes with golf cart traffic.

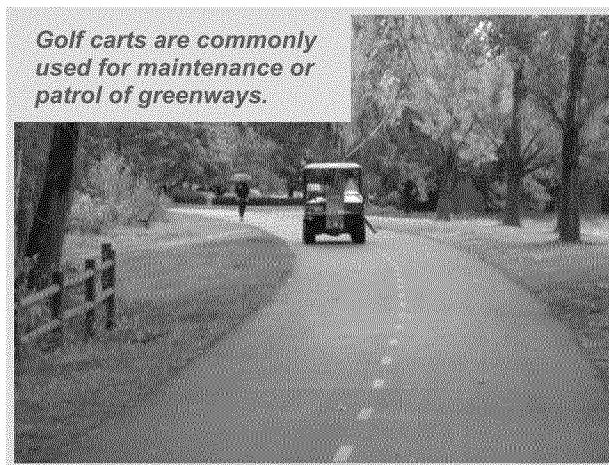
Pinehurst does not allow golf carts on its greenways, which is a wise decision given the limitations of the existing greenway system in terms of width of trail segments and presence of a soft surface.

In general, the two modes should be able to peacefully co-exist along paved multi-use trails if adequate width is given for all users to safely pass one another. The top operating speed of most golf carts is 15 mph, however, an average speed of 12 mph for golf cart and bicycle traffic is preferred on a multiuse trail due to the nature of its use and presence of pedestrians. All users should yield to pedestrians on a trail and the

general rule is that bicyclists yield to golf carts if both are present on a trail due to the operating width of the cart.



Coweta County, Georgia addressed the use of greenways in its greenway master plan with special designation given to trails where golf cart use was allowed. Golf cars are allowed only on hard surface trails where the trail width is a minimum of 10-feet. No motorized vehicles are allowed on soft surface trails.



Peachtree City, Georgia has a 90-mile greenway system that allows golf carts and places a 20 mph speed limit on those carts (also requires them to be registered).

Golf carts or similar vehicles are used as patrol vehicles in many communities with expansive greenway systems, which shows that their use of trails can be safely done when there is respect among all users.

The Recommendations chapter of this plan notes the difficulties faced in Pinehurst with achieving a fully-connected bikeway or greenway network due to constraints with existing rights-of-way and the Historic District designation. Paving the existing greenway trails is not supported by most residents because they feel it is counter to the historic sand-clay path network. Unless portions of the greenway system are paved and widened to be at least 10-feet in width, golf cart use should remain restricted along the greenway system.

If bike lanes or bikeable shoulders are pursued on major routes in Pinehurst, there is the potential for golf cart use of this space but restrictions on golf carts related to legal road uses would still apply. It is not recommended that golf carts be expected to operate in a single direction 5-foot wide shared bicycle lane. Golf carts are typically 4-feet wide, which gives only six inches on either side of the cart for shy distance from either the edge of pavement or the travel lane.

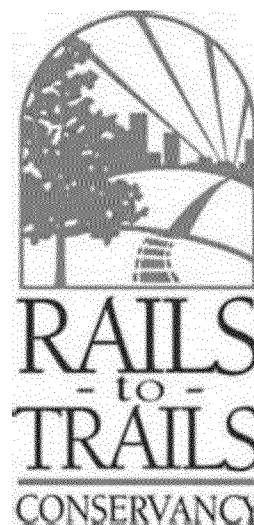
3.5 RAILS WITH TRAILS

One solution—albeit a complex one—for golf carts moving in and around Pinehurst is the use of “rails with trails” along the existing railroad track that runs parallel to Linden Road between Pinewild and the intersection with Highway 5. Rails with trails are multi-use trails placed alongside active railroad lines and within the railroad right-of-way. There are nearly 1,400 miles of rails-with-trails in the United States (including 3 in North Carolina) with 39% of the mileage along active rail lines. Based on aerial photography, there appears to be room on either side of the rail line up to the Highway 5 overpass to incorporate a trail alongside the rail line.

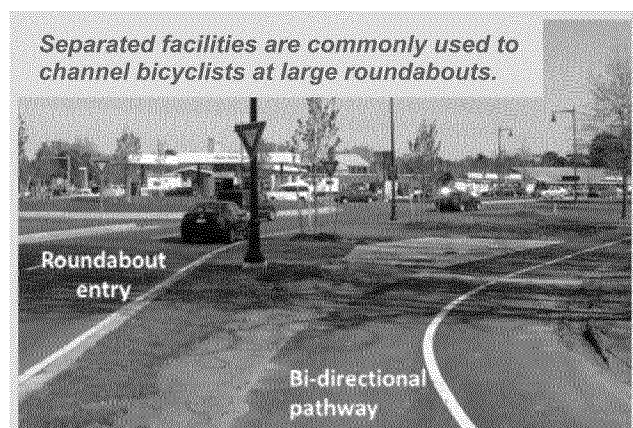
This would require negotiation over use of the space and liability with the Aberdeen, Carolina and Western Railway. The common design elements of rails with trails are:

- Vertical barrier, such as a fence, between the pathway and the rail road tracks.
- Eliminating or reducing opportunities for crossing the railroad by trail users, oftentimes restricted to where other roadways cross or at the terminus of the trail.

Across the United States, rails with trails are very safe. The Rails to Trails Conservancy 2012 report found only one recorded fatality involving a rail-with-trail user and just two reports of injuries over a 20-year period. This includes 161 rail-with-trails facilities in 41 states. The Conservancy notes that “trail builders and advocates need to be equipped with risk management tools and compelling examples of successful rails-with-trails to help assuage concerns about safety and liability often expressed by the railroad.” The Conservancy has several online resources available for communities wishing to pursue rails-with-trails. (www.railstotrails.org)



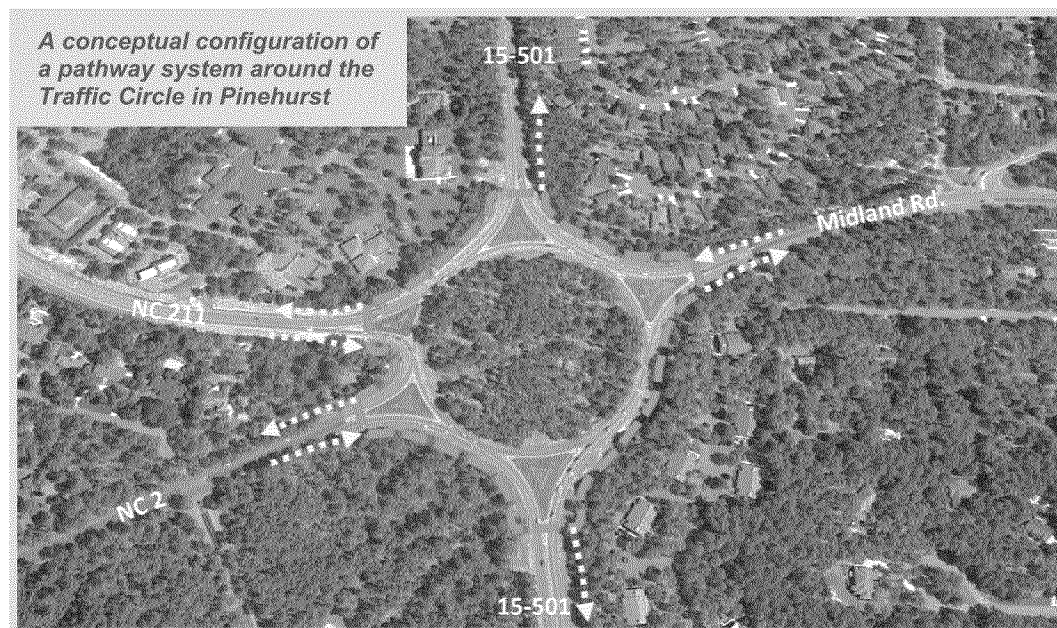
3.6 BICYCLING & ROTARIES



The primary Traffic Circle in Pinehurst poses many challenges to both motorists and bicyclists. There is also regular confusion when visitors approach the Circle because it does not function like most traffic circles that are called “roundabouts” in the United States. It is a traffic “rotary” and has several design features that differ from roundabouts. Roundabouts are generally viewed as safer and more accommodating to bicyclists than traditional signalized

intersections because the speed of traffic at entry or yielding into the flow of traffic is done at a speed more comparable to a bicyclist's speed of travel. This occurs due to the tight radius of the roundabout and deflection angles at the point of entry that slow vehicle traffic. There are also options for "slip ramps" that allow bicyclists to exit the roadway and navigate the perimeter of a roundabout on a pathway shared with pedestrians.

The characteristics of traffic rotaries that make it difficult are that operating speeds are higher than roundabouts because of the larger radius of the rotary and lack of meaningful deflection angles. While roundabouts are designed to decrease weaving among motorists while in the circle, traffic weaving is unavoidable in rotaries. All of these pose issues for most bicyclists and this is why the Traffic Circle in Pinehurst is such a barrier. Traffic rotaries like the Circle can be designed to accommodate bicyclists via a separated perimeter pathway network. This is a common treatment in Europe, particularly in The Netherlands and Denmark.



3.7 EMERGING TRENDS

The Pinehurst Comprehensive Bicycle Plan is a document that emphasizes prioritizes over a ten-year timeframe. As noted earlier, the rapid evolution of bicycling culture is changing how design professionals consider bicyclists. It is likely that design guidance that is current as of early 2015 may be out-dated when some recommendations of this plan are implemented.

Prevailing design guidelines will always be a step or two behind the prevailing needs of bicyclists and it is difficult for designers to justify treatments that are not part of adopted design guidelines due to liability concerns. This section summarizes some emerging trends in bicycle facility design and organizations that are addressing the emerging trends.

WalkBikeNC Implementation

There are several recommendations contained in North Carolina's statewide pedestrian and bicycle plan that could influence how NCDOT and other communities across the state implement future designs for bicycling facilities. Governor McCrory's *Vision25* document on the state's future for transportation recommends implementation of the statewide plan.

Pinehurst should keep track of the progress of this as well as subsequent updates to the state's *Complete Streets Planning and Design Guidelines* to ensure the most modern application of treatments for bicyclists is accommodated.



NACTO Urban Bikeway Design Guide

The National Association of City Transportation Officials (NACTO) has recognized that prevailing guidance from AASHTO is not well-suited for bicycle mobility in urban areas. They developed this design guide as a way to account for those unique needs. The NACTO guide is available online for free and includes several innovative treatments, many of which are acceptable applications within what MUTCD allows.

Cycle tracks and colored bicycle lanes are prevalent in the Design Guide, as are various treatments for bicycle boulevards and how to accommodate bicyclists are intersections.

WalkBikeNC recommends NCDOT endorse this design guide so that communities and NCDOT are comfortable with applying some of its concepts. Many communities across the country, including Charlotte, have already endorsed it.

MUTCD Updates

The Manual on Uniform Traffic Control Devices is updated periodically and the last update was in 2009. Previous updates occurred in 1988, 2000 and 2003; therefore, we are in a phase where another update is likely to occur prior to 2020. The growing trend for more inclusive bicycling facilities is likely to lead to the incorporation of more specific guidance on accommodating bicyclists and changes to some existing treatments.

- END OF SECTION -

SECTION 4: BICYCLING EDUCATION & ENCOURAGEMENT

4.1 EDUCATION AND BICYCLING

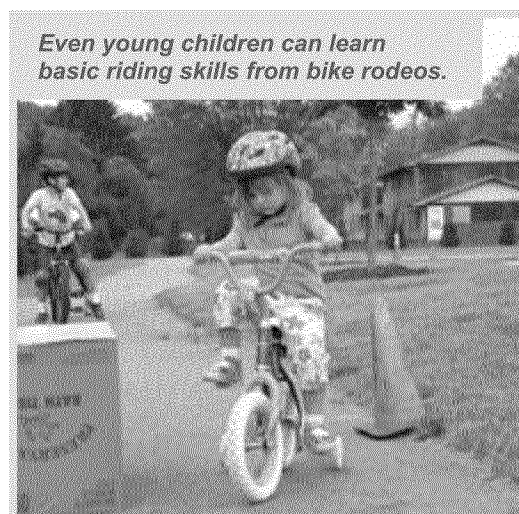
The type of educational programs that should be offered to residents and visitors of Pinehurst vary greatly by the intended audience, notably the age and abilities of the bicyclist. No matter what improvements are made to the roadways, if bicyclists and motorists are not adhering to the rules of the road, crashes will occur and the bicyclist will suffer worse injury due to their lack of the protective shield that motorists have. Therefore, it is extremely important to have ongoing training programs for both children and adults. It is also important to continue efforts for the Pinehurst greenway system so children and novice riders have places to ride and learn.

Reaching out to adults helps build behavior patterns that can translate to children becoming more aware of bicycling. Teaching children also helps to develop safer drivers in the future and can serve as a motivating influence on parents.

The recommendations developed in this chapter have been organized by the various user types based on age groups rather than on detailing of specific educational programs, for which there are a variety of online sources.

Organizations such as the NCDOT Bicycle Program, League of American Bicyclists, Safe Routes to Schools National Partnership, National Highway Traffic Safety Administration (NHTSA) and several state-level bicycle advocacy organizations have online materials and videos that can be distributed to students as well as parents.

Not all of these endeavors should fall on the shoulders of Pinehurst; rather groups such as the Sandhills Cycling Club, Moore County Schools, FirstHealth Moore Regional Hospital, and other area municipalities can offer opportunities to partner on implementing several of these programs.



Young Children

It is important that any educational program takes into consideration the cognitive ability of children as young children are unable to determine the speed of a vehicle. Children below the age of eight operate their bicycles on sidewalks, greenways or on low volume streets, therefore their actions are most similar to those of pedestrians. They do not always understand how to determine when or where it is safe to cross the roadway and they are so small that motorists may not see them until it is too late.

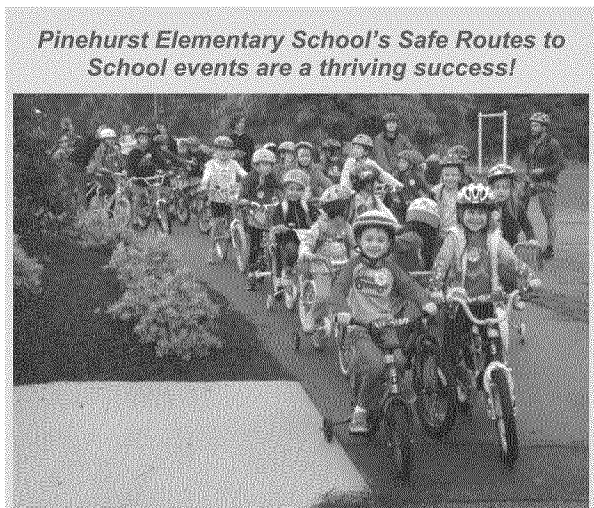
Children younger than 3rd grade age are best-served learning to always dismount from their bike and hold hands with an adult to cross the road. The most common crashes involving young children occur because they dart out into the roadway without looking. This usually happens because they are concentrating on an object they have an interest in, such as a dog. Children of this age may not think they are entering a roadway and don't sense or understand the dangers.

Learning to come to the edge of the roadway, then stop and look about before entering the road is a very important lesson. Young children need to learn where to safely bike and walk along a road as well as how to share the sidewalk with others.

When dealing with bike skills, the target should be on awareness that driveways are where cars travel. They need to stop and look both ways for cars entering and exiting the drive before proceeding.

Educational methods to target children of this age group should include:

- Joint parent/child programs to teach proper skills;
- Instructional videos, such as Willie Whistle, which is available from the National Highway Traffic Safety Administration (NHTSA);
- Participation in Safe Routes to Schools programs such as bicycle trains and walking school buses;
- Coloring books designed specifically for bicycle education of young riders;
- How-to booklets on proper bicycling sizing and riding on 2 wheels.



Third Grade to Fifth Grade Children

By the time children are in third, fourth, or fifth grade, their cognitive skills have developed to where they can begin to determine when it is safe to dismount their bicycle and cross the street without holding an adult's hand. This age group still needs to be reminded about looking both ways as there is still a tendency to dart into the roadway. This occurs because they assume that it is safe to enter the street because the first person in the group made it through. They forget to look for themselves.

Children of this age who are self-taught or have spent most of their time riding in their driveway or on residential streets are more likely to ride facing traffic; either because their parents told them to do so or they confuse the walking against traffic rule with the

bicycle rules that specific riding with the flow of traffic. Parents and children falsely believe if they see the cars eye-to-eye they can get out of the way to avoid a crash, however, the motorist has no time to wait until it is clear to pass them and must react more quickly.



This is the key message for children of this age as they can now begin to judge speed and understand dangers before they occur. Their hearing is more defined and they can start making judgment as to the proper way to maneuver on the street.

Therefore, this is the age where they should be learning hand signals, bike handling skills such as starting and stopping under control, and making turns. Children at this age can be perfecting their balance and avoiding hazards. Riding a bike on a quiet road with a parent is acceptable and a parent may want to begin talking with this child about what they are doing and observing while driving to begin the understanding of cause and effect and how traffic rules are applied.

Educational methods to target children of this age group should include:

- Riding skills taught as part of the educational curriculum in elementary schools;
- Bicycle rodeos at the schools or as part of special events;
- More advanced videos, such as "Ride Smart: It's Time to Start", available through NHTSA; and
- Participation in Safe Routes to Schools programs such as Bicycle Trains and Walking School Buses.

Middle School Age Children

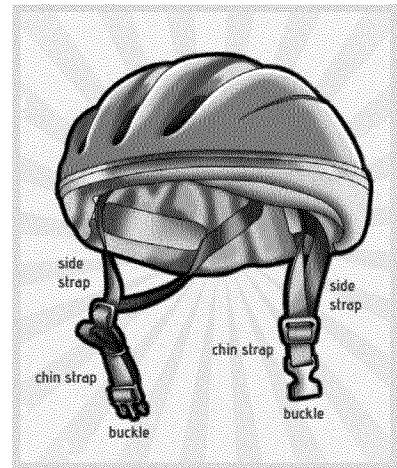
By the time a child has reached middle school age the parent should be taking advantage when driving with the kids in the car and talk about what they are doing while driving, what they see as problems that could occur on the road and what decisions they are making. This provides children with a foundation for understanding the rules of the road, share the road concepts, and how to handle various situations.

Children are great observers of their parent's behavior. This age is when kids begin to think about doing things on their own; they crave independence and are willing to travel anywhere and everywhere they can on their bicycle. With that, they need good judgment and the experience to understand how their behavior and what they do will affect what happens on the road. This is also when kids become more courageous about riding at night or at dusk, which necessitates lights, reflectors, and reflective clothing for safety.

They need experiences in a safe environment to practice their skills and to perfect them as they build upon skills learned at the elementary school level and increased cognitive abilities to make judgments about potentially hazardous situations. Specific on-road skills such as signaling before turns and rear gazing before turning while practicing on a simulated streetscape, along with opportunities to interact with other types of traffic, will give them more experience so they can be safe. It will also prepare them for being good drivers who know how to interact safely on the street.

At this stage, specific educational opportunities should include:

- Full-length bicycle rodeos;
- Reading and writing assignments related to bicycle safety;
- Poster contests;
- Use of more advanced instructional videos such as “Bike Safe. Bike Smart.”;
- Traffic Skills 101 courses with adults or parents for more advanced or experienced riders; and
- After school riding clubs.



Let's Go NC!



The Let's Go NC! program is an educational curriculum intended for school-age children to teach them how to walk and bike safely. The program is intended to give children essential skills they need to enjoy healthy and active lifestyles.

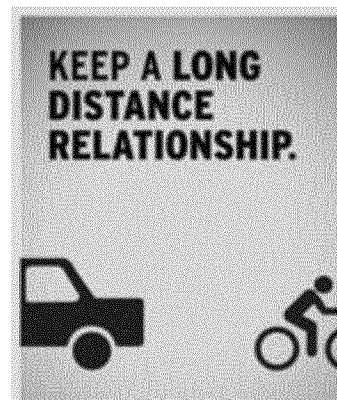
Let's Go NC! provides teachers, parents, and PTA's an all-in-one package of lesson plans, materials, activities, and instructional videos that encourage children to learn about and practice fundamental skills that build safe habits. This program, developed for NCDOT's Division of Bicycle and Pedestrian

Transportation Division and Safe Routes to School Program by NC State University, is a free program with materials and videos available online.

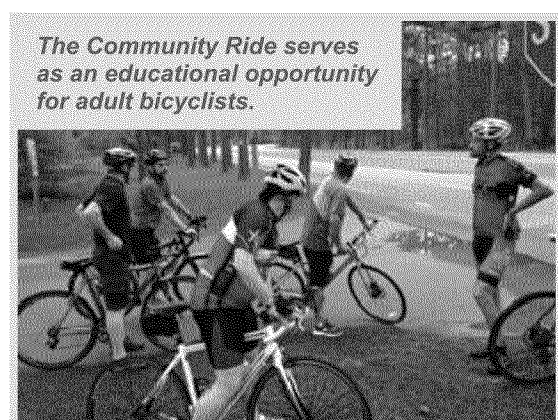
Adults

Once children have progressed beyond middle school age, they can be included in many adult-specific educational and outreach modules. Most adult bicyclists have not had any training in appropriate riding behaviors, even though most have had driver's education training and possess a driver's license.

Providing training for adults is important because their fears often keep them from trying to use a bicycle for transportation or recreation. The most common behaviors for adults are riding too close to the road edge, not being predictable, or not letting others know their intentions. Some adults still adhere to the "ride against traffic" dictum from their childhood. They may also be riding on sidewalks or not watching where they are going when operating in mixed traffic or along a greenway.



The most direct method of adult education is the Traffic Skills 101 course developed by the League of American Bicyclists. The course, along with associated Traffic Skills 201 and Commuter Skills courses, is taught by certified League Cycling Instructors to give adults the skills and confidence needed to ride comfortably in traffic.



Offering these classes should be part of any total education program. Courses typically last six hours and include classroom discussion, parking lot skills and a short ride on the road. Discussions include how the rules of the road apply to bicyclists, how and where to ride in specific traffic situations, how to be predictable, and skill practice in avoiding collisions. There is also a video developed by the League of American Bicyclists for adults that is available through the League or a NHTSA video "Bicycle Safety Tips for Adults."

Other adult-specific educational programs should include:

- Organized rides for novice riders, such as the Sandhills Cycling Clubs Friday Night Social Ride;
- Integration of bicycle-related questions on driver's license exams;
- Take-home handouts to children who participate in bicycle rodeos or other programs;

- Parent-specific outreach while their children are participating in bicycle rodeos;
- “Silver Wheels” programs to encourage older adults to ride their bicycles;
- Educational outreach with law enforcement officials;
- Outreach at community events such as downtown or music festivals; and
- Promotion of safe riding skills through materials distributed as part of organized rides or special event rides, such as the Tour de Moore.



Motorists

It is almost impossible to change the behaviors of motor vehicle drivers once they have been behind the wheel for a few years. Even in the most advanced bicycling cultures in the United States, there is still a challenge posed to bicyclists by motorists who feel that they own the roadway.

The increased use of mobile phones for purposes other than making phone calls has created a new set of problems for bicyclists. North Carolina banned texting while driving in 2009 but it remains a problem and a concern for bicyclists.

The most influential way to have an impact is to reach new drivers through driver's education classes. The present driver's education programs do not spend much time on bicycle and pedestrian safety or how to maneuver a car with other roadway users. Many of the driver education teachers in North Carolina are under contract through an independent company and not the Department of Education or Department of Transportation.

Involvement from the law enforcement community can also contribute to advanced education of motorists and bicyclists. Involving law enforcement officers in Traffic Skills 101 courses to review applicable traffic laws and teach participants of nuances in North Carolina laws can be more effective than an instructor simply reciting state code.

League Cycling Instructors (LCI)

The cycling community in Pinehurst and Moore County should consider development of a bicycle education program for children and adults that is similar to programs already in place in places like Buncombe County, NC. For example, there are 10 individuals in Buncombe County certified by the League to teach bicycle training courses. Having individuals with this certification gives a community many advantages, the first being a

first-rate curriculum from the League of American Bicyclists that has been tested across the United States and provides materials that are age appropriate.

Another important component of this certification is insurance coverage provided to LCIs through the League. Participants in traffic skills classes and parents whose children are taking part in a bicycle rodeo are concerned about safety during the event and organizers are concerned about liability.

Documentation

Documenting the work in this area will help improve programming, justify future funding and assist in grant applications, and provide a barometer by which progress is made in creating a bicycling culture in Pinehurst and Moore County. Simply documenting the number of children and adults engaged in these educational programs also provides government staff and elected officials with justification for continued support throughout the community.

It is also important to develop pre- and post-tests when conducting classes in the public schools to help gauge student retention and improve the program. Test questions need to be the same to determine what has been learned as well as asking what the children remember from the class. It is also important to document how many children and what age children are involved with educational programs. This information is also essential when applying for Bicycle Friendly Community status through the League of American Bicyclists.

SECTION 4.2: ENCOURAGING BICYCLING

Developing encouragement programs to complement educational efforts and engineering investments helps promote usage of the system and makes people feel safer when they decide to try bicycling. Making it easy and fun to ride for transportation can increase bicycle mode share. Sandhills Cycling Club, FirstHealth Moore Regional Hospital and Pinehurst Elementary School have already established a track record for encouragement activities, most notably through organized weekly rides and Safe Routes to School events.



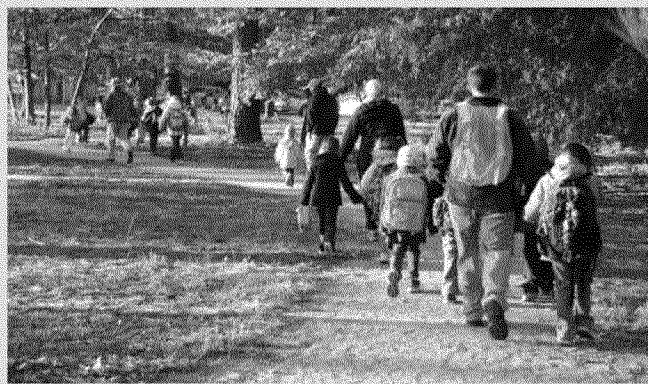
Building upon these encouragement programs is critical to building awareness of bicycling. Encouragement efforts can also provide a highly visible outreach mechanism to showcase the accomplishments of Pinehurst, the County and local advocates as they pursue more long-range facilities investments.

This section outlines some major encouragement programs and recommendations. Many recommendations also include a pedestrian element - as many programs are designed to promote active living through both bicycling and walking.

Safe Routes to School (SRTS)

In 1969 about half of all students walked or bicycled to school. Today, however, more than half of all children arrive at school in private automobiles and only 15 percent of school trips are made by walking or bicycling.

The Safe Routes to School program's success in Pinehurst illustrates its power as a successful encouragement technique.



Designed to address these dramatic statistics, the Safe Routes to School Program was organized to create and promote safe walking and bicycling in order to improve safety near schools, promote active lifestyles, and reduce pollution and congestion caused by school traffic during arrival and departure times. The first Safe Routes to School program debuted in Europe in the 1970s and the first program in the United States began in the Bronx, New York in 1997. Less than 15 years later, the Safe Routes to School

Program has become both a federally-funded and grassroots national movement.

A SRTS program is a school-based effort that involves young students, teachers, law enforcement officers and parents in the development of school safety and encouragement initiatives such as Walk to School Day, bicycle trains, Walking Wednesdays, pedestrian safety assemblies and bicycle rodeos. SRTS funding is also available for various facility investments and other activities.

These programs can help engage children in safe walking behaviors and encourage more bicycling and healthier lifestyles. Common steps to creating a successful program are to kick-off with an event on International Walk-to-School Day, then subsequently work with PTA members, teachers and students to identify needs and program ideas while incorporating encouragement measures and education into the school curriculum for students to learn safe walking and bicycling skills and the benefits of an active lifestyle.

The Safe Routes to School program at Pinehurst Elementary School is already a strong program that encourages students to walk or bike to school. The advancement of the area's greenway network can only serve to strengthen this program.

Themed Rides

The concept of organizing themed rides can be a fun experience and add to the comfort factor of riding bicycles. Options for Pinehurst and the area include organizing some type of bicycle-based history or culinary tour. This could be organized in cooperation with restaurants throughout the area who offer bite size samples of their food in exchange for a small promotional fee.

Similar rides to coffee shops or other unique destinations could be incorporated into the ride. Holding group rides where participants dress in costumes or that is held to celebrate special days such as St. Patrick's Day or Halloween can develop group camaraderie and encourage riders to enjoy the spirit of riding. Given the history of the area, a special ride devoted to touring and learning about places of historical significance would be another option.

Bicycle Wayfinding Systems and Route Maps

More and more communities are using pedestrian and bicycle wayfinding systems to provide visitors and residents with directional and distance information to major landmarks, parks and other local attractions. Given Pinehurst's attractions, cultural destinations and parks, a similar system would be very useful.

Depending on the distances between attractions, it is advisable to combine bicycle and pedestrian wayfinding systems, recognizing that some bicycle-based destinations may only be accessed from on-street routes and may then have to be combined with auto-oriented wayfinding.



Bicycle wayfinding systems are comprised of small signs that point bicyclists to major destinations along bicycle-friendly routes.

Bicycle and pedestrian wayfinding signs should be at a height of at least 7 feet, with a font and orientation appropriate for viewing by those traveling at the speed of a pedestrian or bicyclist. Distance information should be provided in blocks or miles and kiosks with a map can be useful for visitors. Such a system could incorporate local themes, allowing area artists an opportunity to design sign templates. Opportunities for private-public partnerships exist, such as working with area retailers or B&B's along

the route to sponsor signage and/or complementary brochures in exchange for a mention in the guide.

Healthy Living Initiative

One of the major characteristics of a bicycle-friendly community is to have a body of citizens, municipal staff and elected leaders who are engaged in and educated about the economic, health, and general quality of life benefits of a bicycle-friendly community.



Additionally, educational activities could be held at the Village Hall such as presentations on pedestrian- and bicycle-friendliness to learn about the projects, programs, and policies that can encourage a more bicycle- and pedestrian-friendly city. Several organizations, such as the National Center for Bicycling and Walking (www.bikewalk.org), Walkable Communities, Inc., and the Complete the Streets initiative (www.completestreets.org), provide resources such as speakers, handouts, guides, and publications which can be used for the education and encouragement component of the event. Local businesses might be asked to encourage employee participation in workplace walking clubs and events, along with the promotion of a local walking route and corresponding map. This program could also be promoted in local schools, health centers and at City/County events. A "Fitness Challenge" event and/or regular senior cycling/walking program could also be incorporated.

Bike to Work Day

Bike month is each May and National Bike to Work Day is usually held the 3rd Friday of May. The League of American Bicyclists has a packet to assist in starting a bike to work event in your town. This can be accessed through their web site www.bikeleague.org.

Encouragement programs can build locally separate from the national events. Some local contests in North Carolina provide awards like the Golden Sneaker (for walkers), Golden Spoke (for cyclists) and Golden Wheel (for carpoolers and bus riders) who choose non-single occupancy vehicle rides. Programming usually includes breakfast stations with free coffee and treats on the specific day and education classes to give people more confidence to try a new travel mode that day. Some communities have awards for the most creative commute and most decorated bicycle.

Other Encouragement Activities

- **Bike and Walk to School Days**

October is International Walk & Bike to School Month. The premise of this program is to encourage children to walk and bike to school as a way to increase physical activity, help children develop an understanding of their environment and to become more healthy and independent. When it is safe to walk and bike to school, this is an encouragement program; when it is not already safe it is

important to hold a safety workshop and audit with a variety of community leaders, school officials and parents to develop an understanding of the needs, concerns, challenges and opportunities to make it safe.

- **Work with Active Routes to School**

NCDOT organized the Active Routes to School program with public health partners to coordinate and train professionals that can assist with active routes to school events. The encouragement programs for the children once the facilities are in and around the school. These programs develop enthusiasm and encouragement for the kids and they want to participate.

- **Valet parking through bike corrals**

Organized community festivals is a way to develop secure parking, education about your programs, and provide a way to get feedback from the general public. It also adds a fun element to the festival. Besides providing the service, you definitely want to use this opportunity to educate the public about your programs and collect email addresses. Make colorful posters and have them laminated for durability. It is also important to document how many bikes are parking each time this service is provided and how many volunteers have worked, including their hours.



Bicycle corrals or valet parking for bikes make it easier for bicyclists to attend special

- **Documentation**

An important component of any of these programs is documenting how many people are served through them. Tallying comments as to why people participate, what works and what doesn't are all important to expand bicycle-related encouragement programs. Knowing how groups and individuals achieve their goals helps understand the community from a bicycling perspective and can help groups like Sandhills Cycling Club and other partners determine how effective it has been. Documentation also helps with future funding pursuits as many communities do not document their progress.

- END OF SECTION -

SECTION 5.1: SAFETY & ENFORCEMENT

5.1 SAFETY

Pinehurst prides itself on being a safe community and has received accolades as an Outstanding North Carolina Traffic Safety Community for several years. The efforts taken by Pinehurst to uphold itself as a safe community are evident in the *Village of Pinehurst Community Survey Findings*:

- 98% cite Safety and Security as very important reason for choosing to live in Pinehurst;
- 69% say their Safety and Security needs are being met;
- 58% rate the overall feeling of safety as “Excellent”;
- 77% feel safe walking in business areas of Pinehurst; and
- 81% feel safe walking alone in their neighborhood during the day.

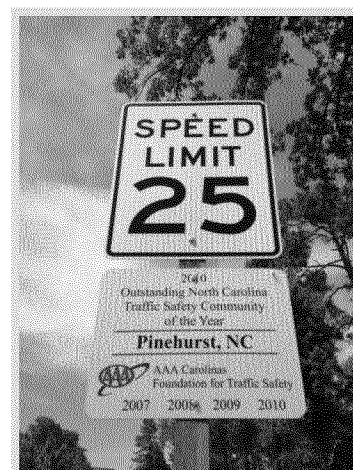
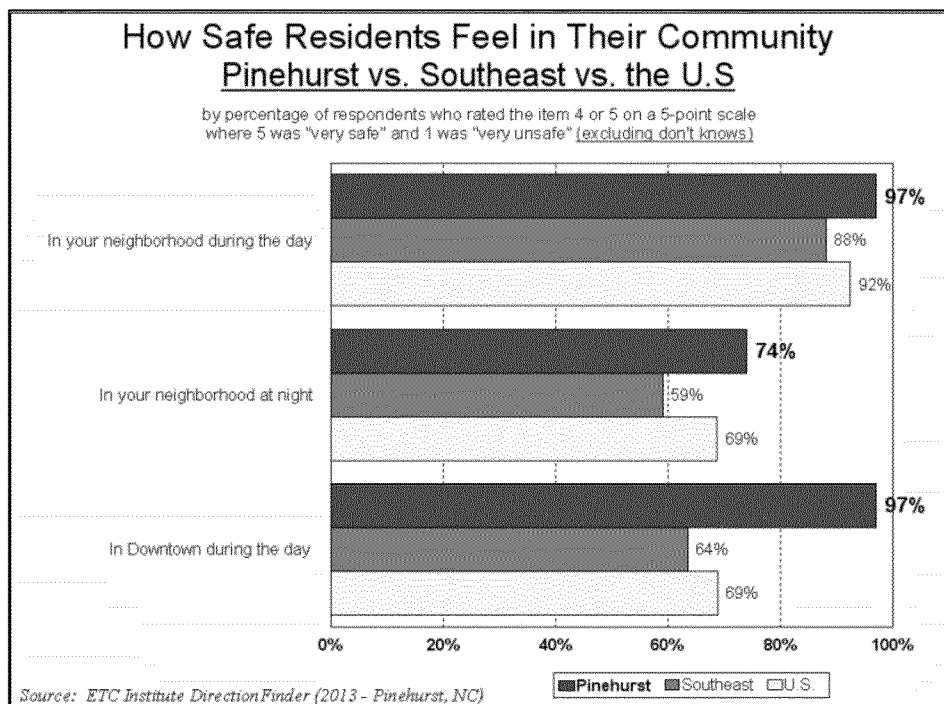


Figure 5-1: Safety in Pinehurst Compared to the Southeast



5.2 BICYCLIST AND PEDESTRIAN CRASH ANALYSIS

Pinehurst's reputation as a safe community is also reflected in the crash data related to walking and bicycling. According to crash data compiled by NCDOT and analyzed by the Highway Safety Research Center at UNC Chapel Hill, Pinehurst had 13 pedestrian

crashes and 16 bicyclist crashes from 1997 through 2012. There was one disabling injury to a pedestrian and one bicyclist fatality.

The low number of crashes involving pedestrians and bicyclists make it difficult to draw conclusions from the data in terms of factors such as vehicle speed, motorist behavior, location-based safety needs or bicycle and pedestrian behavior. Pinehurst defines itself as a “residential resort” community, which means that the nighttime population base is relatively stable throughout the year but the daytime population due to the draw of the resort and supportive land uses causes the population to rise, which includes an increase in vehicular traffic and, most likely, pedestrian and bicyclist traffic. This makes it difficult to produce accurate rates of crashes in relation to population, which is the case in many similar communities across the State.

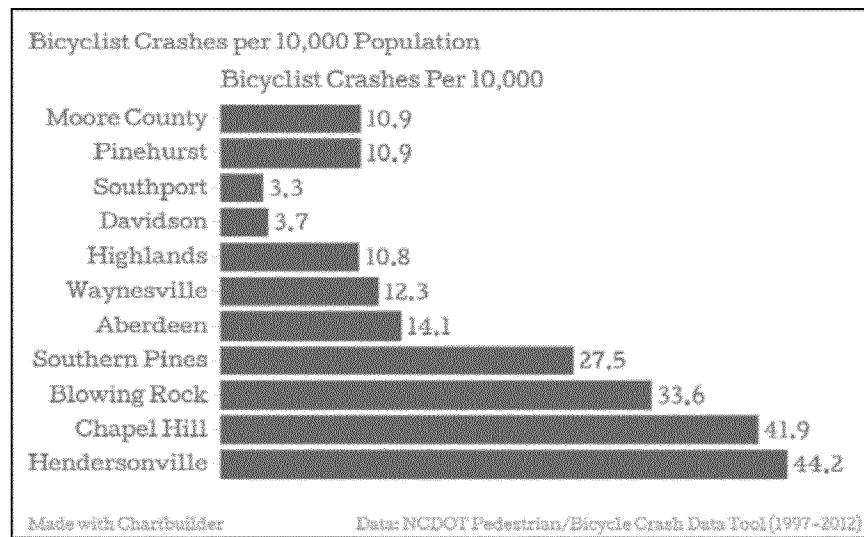
Bicyclist Crashes

Figure 5-2 includes a comparison of Pinehurst bicyclist crash rates per 10,000 population over a 15 year period as compared to Moore County, other Moore County communities and other communities across North Carolina that have similar characteristics to Pinehurst. Pinehurst rates the same as Moore County as a whole with 10.9 bicyclist crashes per 10,000 population and lower than other Moore County communities. Pinehurst bicyclist crash rates are generally lower than other peer communities in North Carolina but notably higher than Davidson and Southport.

Notable Bicyclist Crash Statistics:

- 10 of the 16 crashes occurred on streets with a posted speed limit between 30 and 35 mph;
- 8 of the 16 crashes occurred on street or highway managed by NCDOT;
- 9 of the 16 drivers involved were over the age of 50; and
- 5 of the 16 crashes occurred on Thursdays.

Figure 5-2a: Bicyclist Crashes per 10,000 Population

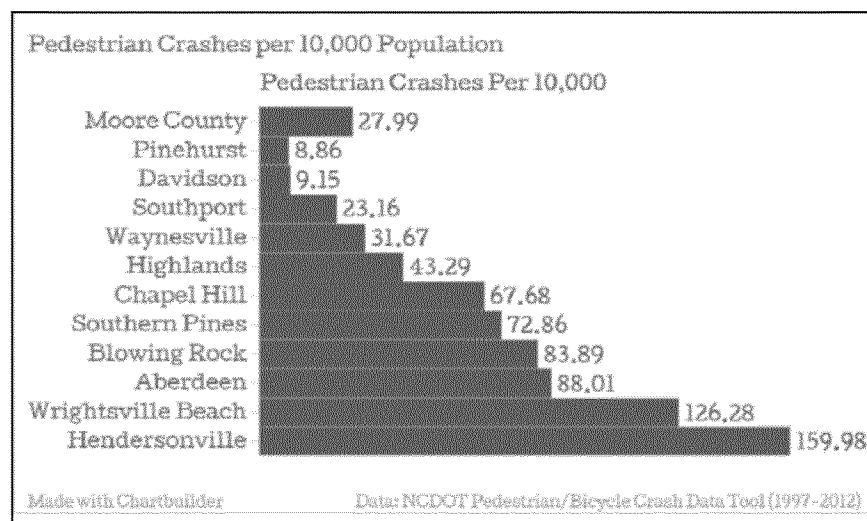


Pedestrian Crashes

Figure 5-2.2 includes a comparison of Pinehurst pedestrian crash rates per 10,000 population over the same time period with the same communities identified for bicyclist crash comparison. Pinehurst has the lowest rates (8.86 crashes per 10,000) when compared to other peer communities in North Carolina and a rate that is notably lower than Moore County as a whole (27.99 crashes per 10,000).

- 10 of the 13 crashes occurred on streets with a speed limit of 35 mph or less;
- 8 of the 13 crashes occurred on local streets;
- 4 of the 13 crashes occurred off-street in public areas or parking lots
- 5 of the 13 drivers involved in crashes with a pedestrian were over the age of 70; and
- 4 of the 13 crashes occurred on Fridays.

Figure 5-2b: Pedestrian Crashes per 10,000 Population



5.3 ENFORCEMENT ACTIONS FOR BICYCLIST SAFETY

There are a number of documented approaches to law enforcement that enhance the safety of bicyclists. Most of these involve simply targeting existing enforcement of traffic laws to locations where there is high bicyclist traffic or a documented history of vehicle conflicts.

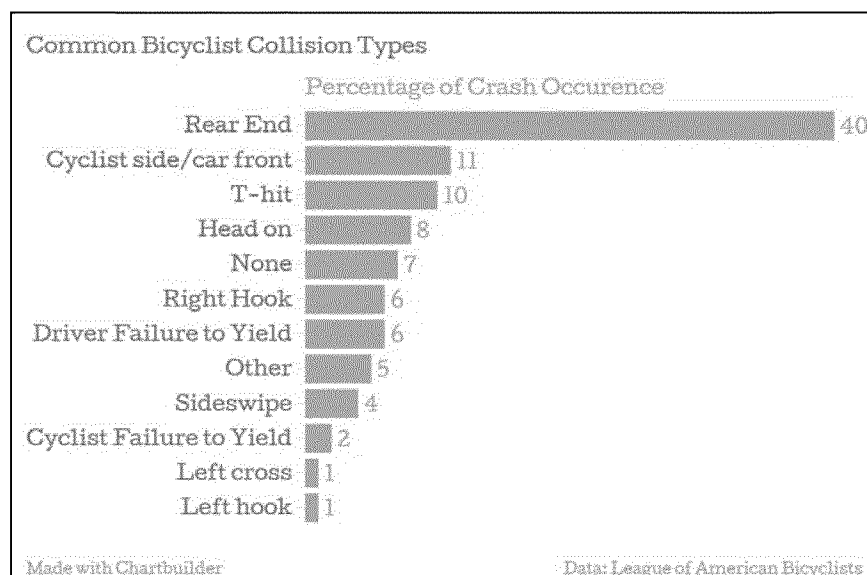
Bicyclist safety needs are unique and are best addressed based on the needs of the individual mode. Rarely do conflicts occur between bicyclists and pedestrians in the same space and the likelihood of serious injury or death is almost non-existent because of the speed at which each mode operates.

Bicyclist Safety Efforts

Bicyclist safety and enforcement of laws in North Carolina remains difficult due to State laws that are considered weaker than most states when it comes to bicyclist rights and safe passing enforcement. As shown in Figure 5-3.2, the most common bicyclist/motorist crash is a rear-end collision. This leads to campaigns that focus on bicyclist visibility but the research indicates this is not as effective as perceived. Motorist behavior and motorists seeing bicyclists is also an emphasis and more research is being conducted into distracted driving as an emergent issue in highway safety.

A comprehensive guide for bicycling safety could easily comprise the bulk of this report. Various resources from NCDOT and the League of American Bicyclists are available to help communities better promote bicycling safety and a quick web search can yield several such publications.

Figure 5-3a: Common Bicyclist Collision Types



Safe Passing¹

BikeWalkNC, the statewide advocacy organization for active transportation, has published its summary of safe passing. They note that narrow two-lane State roads are important travel routes for commuting and recreational bicyclists. When there is little or no shoulder and the travel lane is narrow, competent drivers recognize that there isn't room to pass within the bicyclist's lane, and so they wait until the oncoming lane is clear of traffic for an adequate distance before moving into the next lane to pass.

¹ This excerpt taken directly from BikeWalkNC: <http://www.bikewalknc.org/2014/08/safe-passing-and-solid-centerlines/>



In many places where this occurs, a solid yellow centerline is striped to discourage passing of other motor vehicles. Traffic engineers place this striping where there is not adequate distance to safely pass a motor vehicle that is traveling near the maximum posted speed limit. But in the real world, drivers recognize that the distance required to pass a slow moving bicyclist is a small fraction of this distance, and invariably ignore the striping in favor of weighing the safety and convenience of passing under the existing conditions. Drivers routinely cross solid centerlines to pass bicyclists safely, and police routinely ignore this as long as the passing driver does not create a danger for oncoming traffic.

Law enforcement officers are often asked this question – and are often uncomfortable responding. In states lacking clarifying language in the traffic laws, police may struggle to find legal support for ignoring solid centerlines when conditions are clearly safe for passing. Some states – Colorado, Maine, Mississippi, Ohio, Pennsylvania and Wisconsin, for example – have traffic laws explicitly allowing drivers to cross a solid centerline to pass a bicyclist under safe conditions. BikeWalk NC recommends that North Carolina adopt similar language. In the meantime, police in North Carolina are in the same position as those in states such as Florida and Texas, where police have turned to the laws that govern driving around disabled vehicles and fallen trees to justify not ticketing prudent drivers. In North Carolina, this is § 20-146 (a)(2):

§ 20-146. Drive on right side of highway; exceptions.

(a) Upon all highways of sufficient width a vehicle shall be driven upon the right half of the highway except as follows:

(1) When overtaking and passing another vehicle proceeding in the same direction under the rules governing such movement;

(2) When an obstruction exists making it necessary to drive to the left of the center of the highway; provided, any person so doing shall yield the right-of-way to all vehicles traveling in the proper direction upon the unobstructed portion of the highway within such distance as to constitute an immediate hazard...

N.C. Highway Patrol 1st Sgt. Brian Gilreath provided the following explanation quoted in the 8/19/2014 *Asheville Citizen-Times*:

- As long as you don't affect the movement of oncoming traffic — that's where common sense comes in — you're allowed to go left of center to avoid hazards and obstructions in the roadways," Gilreath said. "Take for example if a farmer drops a bale of hay in the roadway, and you need to go around it. Even though you're left of center, you have not violated the law. [...] An officer would have a hard time convincing a judge that you're supposed to ride behind a bicyclist for 10-15 miles... [Citizen Times, 8/19/2014]*

This aligns with the pragmatic interpretation that the Florida Department of Law Enforcement approved for the Florida Bicycle Law Enforcement Guide:

- The prohibition of passing in a no-passing zone does not apply when an obstruction exists making it necessary to drive to the left of the center of the*

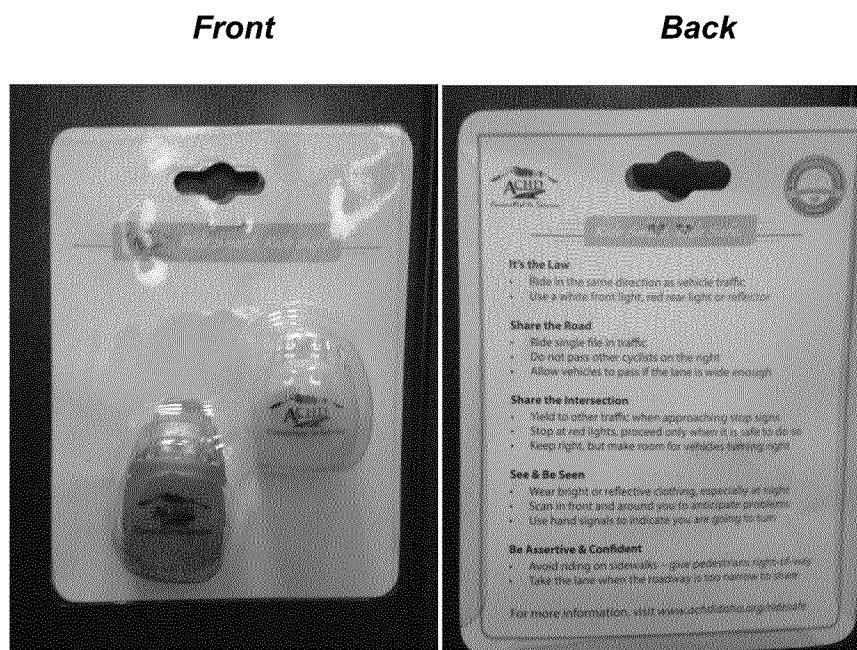
highway [§316.0875(3)]. Thus, when a cyclist is traveling so slowly as to constitute an “obstruction,” a motorist may cross the center line in a no-passing zone to pass the cyclist if the way is clear to do so, i.e., when it can be seen that any oncoming traffic is far enough ahead that the motorist could finish passing before coming within 200 feet of an oncoming vehicle.

Visibility

Visibility, particularly in poor weather conditions and at night, is a common problem for bicycle riders who are dependent on a bike for transportation. Many bicyclists do not have the resources to invest in reflective clothing and LED lighting for their bikes and are left to ride in their work attire and on a bike that may or may not have reflectors.

Communities such as Asheville used grant funding to purchase lights to be given away to bicyclists who are observed riding in conditions where poor visibility is an issue. Law enforcement is provided with the lights and a brochure on safe riding practices to give to bicyclists.

Figure 5-3b: Lights for Bicyclists Used as an Enforcement Technique



What about enforcement for bicyclists?

There is a common misconception among motorists that bicyclists do not follow prevailing traffic laws. While there is a proportion of bicyclists for whom this is true, studies have shown that the percentage of bicyclists failing to obey traffic laws is no



different than motorists, motorcyclists and truck drivers that also fail to obey prevailing law.

That being said, law enforcement should seek to enforce traffic laws for all road users, bicyclists and motorists alike. Bicyclists are expected to act like motorists at intersections, obeying stop signs and red lights. They should be warned, or cited in egregious situations, just as motorists. In groups, bicyclists tend to engage in “group think” when it comes to actions and this can sometimes lead to some members of a group not yielding right-of-way when appropriate. It is incumbent upon riding groups to enforce traffic laws among their riders.

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. According to NCDOT, Watch for Me NC involves two key elements:

- Safety and educational messages directed toward drivers, pedestrians and bicyclists, and
- Enforcement efforts by area police to crack down on some of the violations of traffic safety laws.

Local programs are typically led by Municipal, County, or Regional Government staff with the involvement of many others, including pedestrian and bicycle advocates, City planners, law enforcement agencies, engineers, public health professionals, elected officials, and others. NCDOT piloted the program Wake, Durham, and Orange Counties (Triangle Area) in 2012. In 2014, communities were asked to apply for Watch for Me NC funding to become partner communities. Any community is allowed to use the materials developed for the program, which are available at <http://www.watchformenc.org/>.

Based on the community’s awarded campaign funding for 2014, Pinehurst should work with Moore County and other towns within the County, as well as Sandhills Community College to submit during a future grant cycle. Some partnerships that were awarded during the 2014 campaign are:

- Chowan County/Edenton (pop. 14,800)
- Craven County/New Bern (pop. 104,000)
- Jackson County/Sylva/Western Carolina University (pop. 40,500; enrollment 10,300)
- New Hanover County/Wilmington/UNC-Wilmington (pop. 209,000; enrollment 13,900)
- Pitt County/Greenville (pop. 172,600)

- Watauga County/Boone/Appalachian State University (pop. 51,900; enrollment 17,900)

Figure 5-3c: Watch for Me NC Promotional Materials



- END OF SECTION -



SECTION 6: HEALTH IMPACTS OF BICYCLING & WALKING

In order to encourage healthy living through bicycling and walking, a community must create an environment where people feel safe enjoying those modes for recreation and transportation. Drivers are not always accustomed to driving through areas with significant pedestrian traffic in combination with more vehicular turning movements and other distractions. Drivers who are merely passing through Pinehurst or its neighborhoods may see the presence of bicyclist and/or pedestrian traffic as an inconvenience.

A health assessment was conducted as part of this Pinehurst Comprehensive Bicycle Plan and the accompanying Comprehensive Pedestrian Plan to hone in on potential health-related outcomes—both positive and negative—of increasing investment and promotion in active transportation facilities. While the Pedestrian Plan has been completed as a separate document, this section discusses health impacts of both bicycle and pedestrian facilities, since their assessments were completed concurrently.

6.1 HEALTH CONDITIONS

Little health specific data is available to evaluate for Pinehurst as much of the analysis on local health conditions is based on countywide surveys led by the Moore County Health Department. The Health Department has generated a Community Health Assessment (2013) and State of the County Health Report (2012) that summarizes health conditions among Moore County's population and recommends focal points of intervention to address these findings.

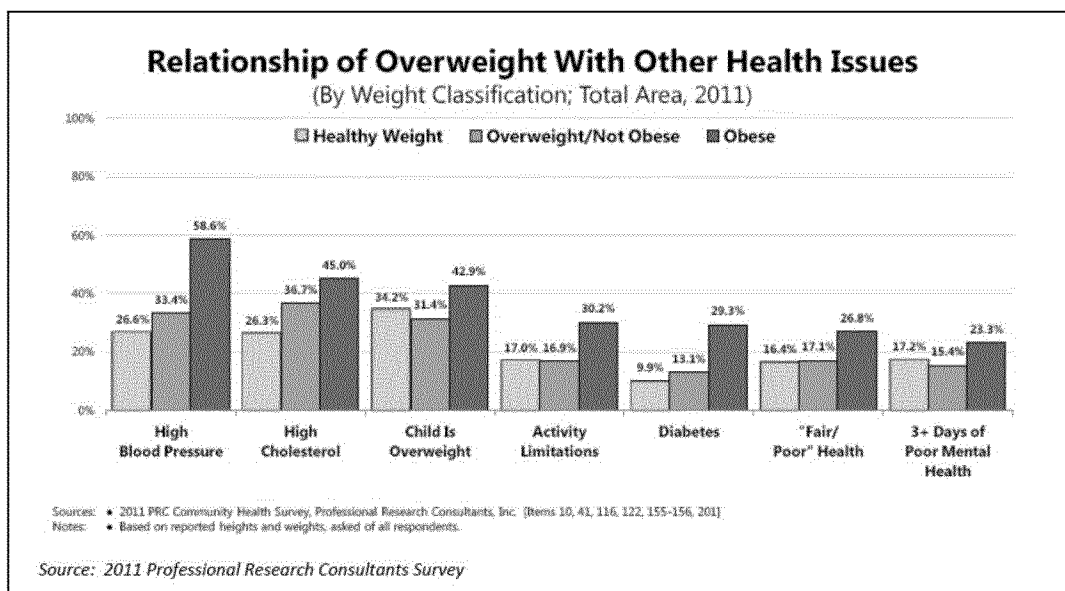
Emerging issues in Moore County related to the potential for increased biking and walking include:

1. Cancer, heart disease and cerebrovascular disease (stroke) remain the 3 leading causes of death for the years 2006 through 2010.
2. 21% of respondents to the Moore County CHA survey report no leisure time physical activity in the past month.
3. 55% of respondents exercised fewer than 3 times per week for at least 30 minutes per session.
4. Moore County should expand collaboration to respond to rising obesity and physical inactivity rates.

What is also known and a clear focal point for area stakeholders is the link between physical activity (ie. walking and bicycling) and the role activity plays in maintaining a healthy weight. Furthermore, maintaining a healthy weight and lifestyle has direct and indirect consequences on chronic diseases that are also of acute interest in the community.

Figure 6-1 provides a graphical representation of health issues for various weight classifications.

**Figure 6-1: Relationship of Overweight with other Health Issues
(Moore County, CHA 2013)**



Moore County is not alone in its quest to improve healthy weight rates among its population. The County as well as most others throughout North Carolina are all attempting to intervene where possible to turn the tide of unhealthy weights. Though the County ranks near the top quartile for percentage of "overweight", it is near the bottom third in percentage of "obese". See Figure 6-2 below.

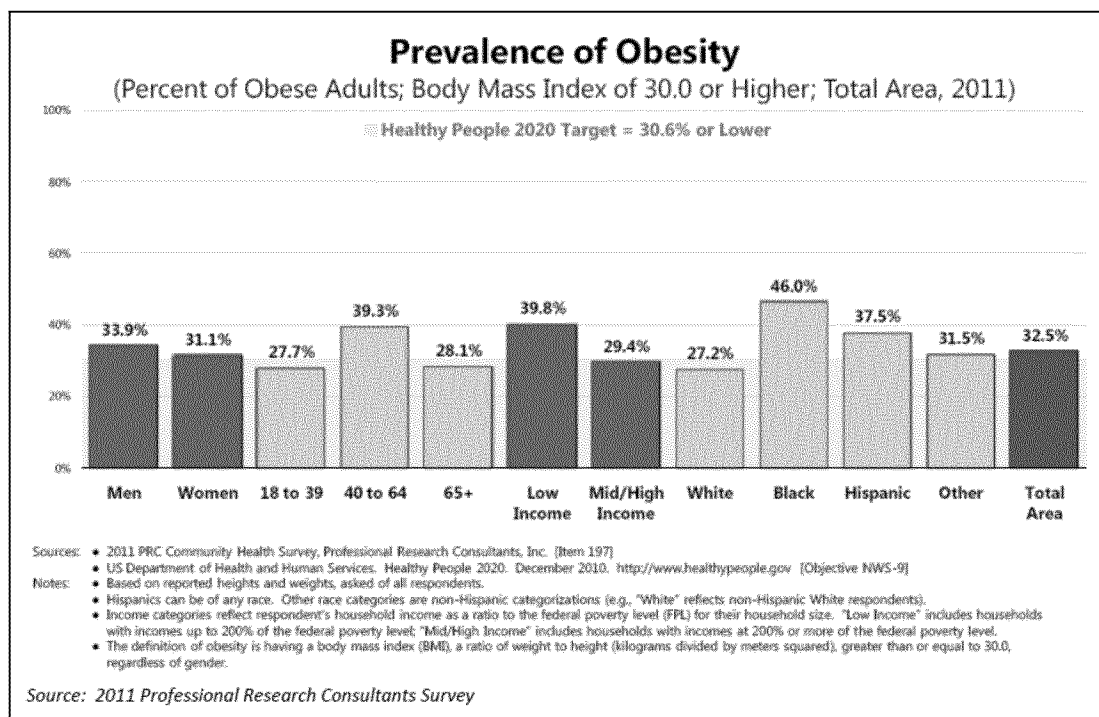
**Figure 6-2: Moore County Comparison for Rates of Overweight & Obese
(Moore County, CHA 2013)**

NC-NPASS 2011, % Overweight/Obese, 2-4 Years				
County/State	% Overweight	Rank	% Obese	Rank
Moore	14.8%	27 th	16.4%	64 th
Carteret	17.5%	68 th	10.9%	6 th
Chatham	18.4%	82 nd	17.9%	84 th
Haywood	19.1%	91 st	12.4%	15 th
Stanly	13.7%	15 th	15.4%	44 th
North Carolina	16.2%	--	15.7%	--

Source: 2011 NC-NPASS

Figure 6-3 provides a prevalence of obesity for various factors.

**Figure 6-3: Prevalence of Obesity
(Moore County, CHA 2013)**



While Pinehurst-specific information is not available, by using demographic factors related to “social determinants of health,” we can identify themes that indicate where the health impacts of bicycling and walking could be most needed for Pinehurst’s population. According to the Centers for Disease Control and Prevention (CDC), the social determinants of health are “the circumstances in which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics.”

From a social determinant of health perspective, the following demographic details compiled via the 2010 US Census for Pinehurst point to potential vulnerable populations when compared to findings from the Moore County Community Health Assessment:

- The Non-White population total is 8.4% (1,300 of Pinehurst’s approximately 15,000 residents);
- 47% of Pinehurst’s population is over the age of 65, a percentage notably higher than 23.7% of Moore County’s population;
- 14.9% of Pinehurst residents rent their house or apartment; and
- 51.4% of persons age 25 or over have not obtained a Bachelor’s (or higher) degree.

Persons who are part of these social cohorts are those most likely to experience negative impacts to their health as a result of these attributes. Conditions that exist today however, can be improved to try and mitigate negative impacts on particular cohorts through infrastructure investment. Infrastructure in the form of pedestrian and



bicycle facilities has afforded people legitimate transportation options, and has also improved roadway safety for all users and increased the efficiency of the overall network. By making such investments, rates for active transportation rise through increased participation; this participation impacts health. Increased bicycling and walking is shown to increase several aspects of a person's life, as shown in Figure 6-4 below.

Figure 6-4: Health Outcomes of Increased Walking and Bicycling

Health Outcome/Determinant	Direction and Extent	Likelihood	Distribution	Quality of Evidence
Stress reduction	▲ ▲	Likely	Effect linked to green/natural spaces	***
Exposure to nature	▲ ▲	Likely	Residents within 1.5 miles of greenways/trails	*
Fewer cars on local roads	▲ ▲	Likely	Bicycle commuters	
Housing values	▲ ▲ ▲	Likely	Homes within 3200 ft. of trails	***
Business attraction	▲ ▲	Likely	Depends on industry	***
Retail access	▲ ▲	Likely	Related industry (i.e. bike shops)	**
Physical Activity	▲ ▲ ▲	Likely	Residents living in neighborhoods with complete and extensive sidewalk network/bicycle facilities	***
Physical activity with increased street and pedestrian connectivity	▲ ▲ ▲	Likely	Not specified	***

In Pinehurst, projects aimed at increasing walking and bicycling fall under three principal categories: Pedestrian Facilities, Bicycle Facilities, and Greenways. To provide insight into what each recommendation is and to describe the positive and possible negative health consequences of constructing them, the following Figure 6-5 is provided for pedestrian, bicycle, and multi-use facilities:



Figure 6-5a: Health Benefits of Walking, Bicycling, and Multi-Use Investments

Facility Type:	Description	Broad Health Benefits
Pedestrian		
New Sidewalks	Constructing new sidewalks compliant with ADA standards where they currently do not exist is a cornerstone of a walkable and active community. New sidewalk will vary in width where pedestrian use is higher and should be built with adequate roadway buffer space where warranted.	Provides stable and predictable walking surface Heightens profile and presence of pedestrians to motorists Can be usable space for providing street furniture, signage, vegetation Is not prone to flooding, roadway debris, or rutting like gravel or dirt surfaces Initial construction can generate noise, dust, and potential stress
Crosswalks	Providing a designated space for pedestrians to cross a street either at an intersection or mid-block is the intended use for crosswalks. Crosswalk design can range from simple paint schemes, to more complex design including the use of pedestrian or traffic signals, pedestrian countdown signals, auditory devices and refuge islands.	Fosters pedestrian movement at predictable locations Allow accessibility to particular land uses Heightens awareness for pedestrian presence to drivers If used with an elevated platform, can calm traffic and reduce severity of possible crash Without maintenance, crosswalks can lose both reflective properties and visual prominence Crosswalks generally put pedestrians in direct line with motorists. Use is principally dependent on driver compliance.



Figure 6-5b: Health Benefits of Walking, Bicycling, and Multi-Use Investments

Facility Type: Bicycle	Description	Broad Health Benefits
Shared Lane Markings/Shared lane arrows (Sharrows)	Shared lane markings or “sharrows” are painted stencils placed on streets at regular intervals to align bicyclists in the appropriate location and to heighten the awareness of motorists as to the high probability of bicyclists presence. Share lane marking are generally used on medium volume streets, with on-street parking, or when bicycle lanes cannot be adequately used due to space limitations.	Help to increase bicyclist profile on a street segment Promote bicyclists alignment away from “door zone” Gives some assurance to bicyclists that they are welcome to use street space Do not provide true separation from vehicles If not maintained, can fade eliminating effectiveness
Bike Lanes	Bicycle lanes are painted lanes placed on streets to define a dedicated area for bicyclists to ride. Bike lanes are often used on heavier volume streets or on streets with heavier traffic volumes.	Provide a dedicated on-street space for bicyclists Can help “calm” traffic by narrowing through way Accommodates multiple bicycle types Do not provide a true separation from vehicles If street widths vary and bike lane width not maintained to a safe width, use can be diminished If not maintained, can fade eliminating effectiveness



Figure 6-5c: Health Benefits of Walking, Bicycling, and Multi-Use Investments

Facility Type	Description	Broad Health Benefits
Multi-use		
Complete Streets	A “complete street” is one designed, considerate, and given appropriate space for all users including motorists, bicyclists and pedestrians. In addition, a street is deemed “Complete” if it adequately considers and optimizes adjacent land uses, is designed for a context sensitive travel speed, and provides ample buffer space between uses.	Gives ample space for pedestrians and bicyclists, fostering and promoting active modes. An attractive and vibrant street can attract more use and users Buffer space and design limits high vehicle speeds, conflicts with defenseless users All elements of the street need to be maintained to ensure continued intentions
Separated Pathway	Greenway routes are constructed to ADA standards, are generally outside of roadway right of ways and span through open space, riverways, or through designated easements. Greenways are free of vehicle traffic, but can intersect roads and accommodate all user types both pedestrian and bicyclists.	Removes user from roadways Dedicated pedestrian/bicyclist space Connects land uses other than by roadway Provides stable walking surface If isolated, perception of danger heightened User type variability could lead to bike/pedestrian, or bike/bike crashes If outside of peripheral vision of motorists, crashes rates at intersection increased
Natural path	A natural path is one that is without a paved or artificial surface and can be used by pedestrians and bicyclists. Natural paths are generally built with minimal enhancements, and can be near roads or streets or in natural landscape settings like hills, or river or lake shorelines	Removes users from roadways Dedicated pedestrian/bicyclist space Immerses users in a natural setting Lower cost to construct Surface can become unpredictable or unstable without normal maintenance Can be limited due to weather events such as flooding or soiling

6.2 THE 7 DIMENSIONS OF HEALTH AND WELLNESS

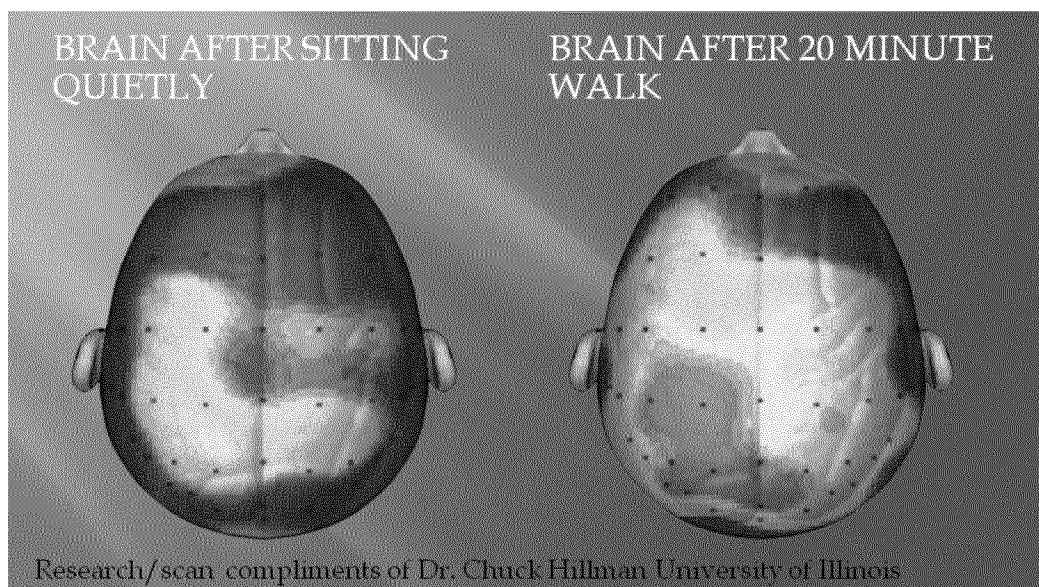
When we think about *health*, whether individual or public, we often limit our associations with the term to general topics such as healthcare, physical activity, and nutrition. We think about the common mantras from our peers and healthcare professionals - *Don't forget your annual checkup. Run this many miles per day. Eat this, not that.* We often forget, or perhaps never even realize, that true and complete health is about so much more.

According to the World Health Organization, health is “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”

Meaning that achieving complete health entails much more than merely reaching optimal physical health.

In other words, health is holistic. It is made up of many interconnected components that must all be achieved individually in order to obtain overall health. These components can be easily organized into what is known as *The Seven Dimensions of Health*: physical; social; economic and occupational; environmental; spiritual; emotional; and intellectual. These dimensions are interrelated and each has the ability to strongly influence the others. Further, walking and bicycling have impacts that extend beyond the physical dimension of health, as illustrated in this section.

Figure 6-6: Impacts of Walking on Brain Activity



The implementation of active transportation methods, specifically walking and biking, has been proven to help both individuals and communities thrive in each of these seven dimensions and ultimately achieve total health. During the health workshop that was held as part of this Plan, participants identified several destinations within Pinehurst that promote healthy living through the lens of the 7 Dimensions. Figure 6-7 includes the results of this exercise along with definitions of the dimensions of health and the implication of bicycling and walking on health.

Figure 6-7: Dimensions of Health & Wellness and Implications for Bicycling & Walking in Pinehurst

Dimension of Health & Wellness	Definition	Implications of Bicycling & Walking
<i>Pinehurst Destinations by Dimension</i>		
Physical <i>Rassie Wicker Park</i> <i>Cannon Park</i> <i>Pinehurst Resort</i> <i>Neighborhoods</i> <i>Sandhills CC</i> <i>FirstHealth Complex</i> <i>Greenway Trails</i>	The ability to maintain a healthy quality of life that allows us to get through our daily activities without undue fatigue or physical stress. The ability to recognize that our behaviors have a significant impact on our wellness and adopting healthful habits (routine check ups, a balanced diet, exercise, etc.) while avoiding destructive habits (tobacco, drugs, alcohol, etc.) will lead to optimal Physical Health and Wellness.	• Low-impact and easy way to improve physical health that can be enjoyed by people of all ages. • Gives your heart, blood vessels and lungs a good workout, as well as increased cardiovascular fitness; increased strength and flexibility; improved joint mobility; improved posture and coordination; and decreased body fat. • One of the best ways to reduce the risk of health problems such as stroke, heart disease, some cancers, diabetes and arthritis. • 30 minutes of moderate walking per day five days a week can help ensure a longer, healthier and happier life. • One hour of walking may increase your life expectancy by two hours.
Social <i>Rassie Wicker Park</i> <i>Cannon Park</i> <i>Pinehurst Resort</i> <i>Neighborhoods</i> <i>Village Center</i> <i>Sandhills CC</i> <i>Elementary School</i> <i>Greenway Trails</i> <i>Tufts Library</i>	The ability to relate to and connect with other people in our world. Our ability to establish and maintain positive relationships with family, friends and co-workers contributes to our Social Health and Wellness.	• Creates shared sense of community by making an activity that is also transportation a social event. • Provides mobility to members of a community who may not have access to a private vehicle. • People who live in walkable areas with less traffic statistically have more friends than those who live in areas with heavy traffic. • Every few members of a community are excluded from its benefits.
Economic/ Occupational <i>FirstHealth Complex</i> <i>Pinehurst Resort</i> <i>Village Center</i> <i>Sandhills CC</i> <i>Shopping Centers</i>	The ability to get fulfillment from our jobs or career fields while still maintaining balance in our lives. Our desire to contribute in our careers to make a positive impact on the organizations we work in and to society as a whole.	• Physically active people save an average of \$500 per year on healthcare costs. • Walkable and bikable communities are becoming more valuable and stimulating economies through increased property values, job creation, local spending, and tourist spending. • Improves an employee's attitude and work ethic and increases motivation and productivity. • People who walk or bike regularly are overall



Dimension of Health & Wellness	Definition	Implications of Bicycling & Walking
<i>Pinehurst Destinations by Dimension</i>		mentally and physically healthier, and therefore enjoy their jobs more and work more efficiently, contributing to an overall increase in occupational health.
Environmental <i>Rassie Wicker Park</i> <i>Cannon Park</i> <i>Pinehurst Resort</i> <i>Sandhills CC</i> <i>Greenway Trails</i>	The ability to recognize our own responsibility for the quality of the air, the water and the land that surrounds us. The ability to make a positive impact on the quality of our environment, be it our homes, our communities or our planet.	• Pollution-free modes of transportation with reduction of carbon emissions, noise pollution and water pollution. • Walking and bicycling facilities are an efficient use of space. Over 20 times as many people can travel in the same space when walking as compared to in a car. • Significantly reduces an individuals' ecological footprint • Leads to greater appreciation for being in contact with nature and recognizing personal effects on the quality of the environment.
Emotional <i>Rassie Wicker Park</i> <i>Cannon Park</i> <i>FirstHealth Complex</i> <i>Greenway Trails</i> <i>Sandhills CC</i>	The ability to understand ourselves and cope with the challenges life can bring. The ability to acknowledge and share feelings of anger, fear, sadness or stress; hope, love, joy and happiness in a productive manner.	• Physical activity has also been proven to benefit the emotional and mental well-being of individuals. • Americans identify "relaxation and peace" (stress reduction) as the 2nd most prevalent benefit they experience from physical exercise. • Walking specifically has been shown to reduce the decline of cognitive performance among the elderly • Promotes a good night's sleep – an essential element of maintaining good emotional health – more effectively than many other popular physical activities
Intellectual <i>Sandhills CC</i> <i>Elementary School</i> <i>Tufts Library</i>	The ability to open our minds to new ideas and experiences that can be applied to personal decisions, group interaction and community betterment. The desire to learn new concepts, improve skills and seek challenges in pursuit of lifelong learning.	• Associated with better cognitive performance by children in school. • Gives people a chance to slow down and step away from their stress, their to-do lists, and their TVs and clear their mind so they can think about other things in life. • Linked to improving the cognitive functions of adults, and decreasing the rate of cognitive decline among the elderly. • Improves intellectual health simply through the challenge of making it a part of their regular daily activity.
Spiritual	The ability to establish peace and harmony in our lives. The ability to develop congruency between values and actions	• Relaxing recreational activities are linked to spiritual wellness. • Natural environments have a great spiritual meaning and represent a strong sense of



Dimension of Health & Wellness	Definition	Implications of Bicycling & Walking
<i>Pinehurst Destinations by Dimension</i>		
<i>Rassie Wicker Park</i> <i>Area churches</i> <i>Sandhills CC</i>	and to realize a common purpose that binds creation together.	place, typically associated with memories of special times spent outdoors. • Can strengthen a person's identity and help them define who they are by allowing them to be themselves and express their personality – a very important aspect of spiritual health

- END OF SECTION -



SECTION 7: BICYCLE ROUTES & RECOMMENDATIONS

7.1 BICYCLE ROUTES & TYPES

Creating a complete network of on-street bicycling facilities in Pinehurst will be a challenge due to the existing street configurations and rights-of-way, combined with the Historic District designation and likelihood that some investments could result in a removal of a row of pine trees on one or both sides of a street.

Therefore, a comprehensive bicycling network in Pinehurst will be more likely comprised of a combination of both long-range infrastructure upgrades (where possible) and short-term pavement marking or signage projects that link disconnected greenway segments or provide on-street linkages between destinations on low-volume, low-speed streets.

The terms used to describe recommendations outlined in this chapter are listed below:

- **Bicycle Lane:** A portion of roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings and signs. It is intended for one-way travel, usually in the same direction as the adjacent traffic lane.
- **Bicycle Route:** A roadway or bikeway designated by the jurisdiction having authority, either with a unique route designation or with Bike Route signs, along which bicycle guide signs may provide directional and distance information.
- **Bikeable Shoulder:** A portion of roadway contiguous with the traveled way that accommodates stopped vehicles, emergency use and lateral support for the roadway surface. Shoulders that are 4-foot (less than 35 mph speed limit) or 5-foot (35 mph to 45 mph speed limit) are considered bikeable because they are a width similar to a bike lane.
- **Shared-Lane Marking (or Sharrow):** A pavement marking symbol that indicates an appropriate bicycle positioning in a shared lane, which is a lane of traveled way that is open to both bicycle and motor vehicle travel.
- **Shared Roadway:** A roadway that is open to both bicycle and motor vehicle travel.
- **Sidepath:** A shared use path or greenway located immediately adjacent and parallel to a roadway, similar to a sidewalk but intended for use by pedestrians and bicyclists.

The following corridors within or connecting to Pinehurst were identified during the planning process as those routes that are popular among local bicyclists and may be subject to short- or long-term infrastructure improvements:

- Highway 2, from Highway 5 to Station Avenue

- Highway 5, from Holly Pines Drive to Highway 211
- Highway 211, from the Traffic Circle to Pinehurst/Taylortown limits
- US 15/501, from Juniper Lake Road to Voit Gilmore Lane
- Airport Road (SR 1843), from Highway 2 to Gaeta Drive
- Linden Road (SR 1115), from Chicken Plant Road to Highway 5
- Morganton Road (SR1205), from Highway 5 to US 15/501
- Murdocksville Road, from Highway 211 to Juniper Lake Road

Several other streets around the Village are more suitable for bicycling in their current configuration and may be subject to designation of neighborhood or Village bicycle routes in combination with planned greenway routes to help serve those who are uncomfortable riding on busier roads.

Most of the streets and highways recommended for long-range improvements in this Plan are under the jurisdiction of NCDOT. Some routes are managed by the Village of Pinehurst and transition to NCDOT management at the Village limits. Therefore, coordination of improvements with NCDOT will need to occur as projects are proposed.

7.2 SHARED LANE MARKING ROUTES

The easiest and least costly short-term improvements in Pinehurst consist of installing shared lane markings, or “sharrows,” along several of the two-lane roads. A shared lane marking can be painted in the travel lane of a roadway to mark it as a shared space and raise the awareness of the presence of bicyclists. Sharrows, in a Pinehurst context, can be used to mark bicycle routes between places such as the Village Green and Cannon Park or they can be used to mark an on-street route along a residential street to connect to the Greenway.

It was also suggested during the Comprehensive Bicycle Plan process that sharrows could also serve as an alternate marking for bike routes within the bounds of the Historic District in lieu of signage.

The Manual on Uniform Traffic Control Devices (MUTCD) recommends that shared lane markings be installed every 250 feet along a route and at intersections. MUTCD states the purpose of shared lane markings as:

- Assist bicyclists with lateral positioning in a shared lane with on-street parallel parking in order to reduce the chance of a bicyclist's impacting the open door of a parked vehicle;





- Assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane;
- Alert road users of the lateral location bicyclists are likely to occupy within the traveled way;
- Encourage safe passing of bicyclists by motorists; and
- Reduce the incidence of wrong-way bicycling.

Sharrows are typically applied using thermoplastic marking kits that can be purchased and installed by Village Public Works personnel or contracts. In general, sharrows can cost up to \$6,500 per mile to install plus approximately \$500 per intersection (markings and labor).

Corridors within Pinehurst recommended for shared lane markings are:

- Linden Road, from NC 5 to Village limits;
- Juniper Creek Boulevard, loop between US 15/501 and Spring Lake Road;
- Gun Club Road/Spring Lake Drive, from NC 211 to US 15/501;
- Diamondhead/St. Andrews/Lake Hills from NC 5 to Linden Road;
- Memorial Drive, from NC 211 to US 15/501;
- Monticello Road, from NC 5 to Morganton Road; and
- Page Road, from NC 2 to NC 211.

In addition, a Village Shared Lane Route is recommended to mark a route that links the Village Green area to Pinehurst Resort, Rassie Wicker Park, Pinehurst Elementary School, and Cannon Park along these streets: Carolina Vista Drive, Chinquapin Road, Magnolia Road, Everett Road, Rassie Wicker Drive, McKenzie Road, and Rattlesnake Trail.

7.3 MAJOR ROUTE RECOMMENDATIONS

More costly investments involve adding pavement width to many of the area's roadway to link streets within Pinehurst to nearby communities, existing or planned greenway linkages, and various destinations. The addition of five-foot shoulders that can be marked as bicycle lanes are the primary recommendation along most routes since many of Pinehurst's major streets lack curb and gutter and are not proposed to have them.

These recommendations are contained in the individual route profiles listed on the following pages. The proposed improvement includes designation as a bike lane (preferred) or, at minimum, a bikeable shoulder that is wide enough to be marked as a bicycle lane.

The advantage in marking them as a bicycle lane is that it indicates to motorists and bicyclists where they can be positioned on the roadway. The dedicated space can make bicyclists feel more comfortable along the roadway if adequate width is given in consideration of the speed of adjacent traffic. The advantage in not marking them as

bicycle lanes is that bicyclists may use the vehicular travel lane in the event of debris or deteriorating pavement without motorists expecting them to strictly adhere to staying in the bicycle lane. The addition of shoulders can be generally accommodated for \$200,000 to \$250,000 per mile. Typically, the addition of shoulders is done as a standalone project or as part of a major roadway resurfacing project.

Shoulders marked as bicycle lanes on NC 107 in Jackson County.



On streets where there is existing tree canopy and/or pine trees close to the street, it is recommended that no improvements be made unless NCDOT pursues a “modernization project” to improve safety along the route since Pinehurst’s trees are such an integral part of its identity.

The project profiles include several features for Pinehurst to use in future funding initiatives and discussions with NCDOT:

- Route description;
- Short- and long-term recommendations (where applicable);
- Cost estimates for short-term recommendations;
- Project length;
- Bicyclist quality of service (QOS) analysis, including existing QOS and modeled QOS based on the recommended improvement;
- The NCDOT Complete Streets cross section that best fits the proposed improvement; and
- Major influences on bicyclist traffic and destinations along or near this route.

The following tables provide the individual route profiles and accompanying recommendations:

Highway 2, from Highway 5 to Station Avenue

Context

Highway 2 is the main east-west route through the historic part of the Village. The two-lane route transitions to a four-lane road at Kelly Road/Page Road. It is a four-lane road from this point, through the Circle to Station Avenue on the border with Southern Pines. West of the Circle, it is a low-speed, but higher volume arterial route. East of the Circle, it is a higher-speed and high volume route.

The Southern Pines Bicycle Plan recommended wide outside lanes along the route but it is undergoing study by NCDOT.



Short-Term Recommendations

There are few options to add facilities such as bikeable shoulders or bicycle lanes along the route due to various constraints. Based on existing traffic volumes, the installation of shared-lane markings is recommended to establish increased awareness for the presence of bicyclists.

Cost Estimate: \$20,000

Work with NCDOT to identify feasible options for section east of the Circle during their upcoming study. Wide outside lanes should be discouraged in favor of bikeable shoulders.

Long-Term Recommendations

A more progressive analysis of future volumes along Highway 2 in the existing four-lane section would be necessary to determine if four-lanes are needed. Traffic volumes near the Circle have increased by only 1,700 since 1999, so a road diet might be feasible. This would allow designation of the outside lane as a bicycle lane, a combined bike/pedestrian lane or a cycle track. The cost estimate could vary based on the various options.

Influences

- Pinehurst Resort
- Village Center
- Historic neighborhoods
- Linden Road route
- Through recreational bicyclists

Length: 3.1 miles

Quality of Service:

Existing: C (3.27)
As Proposed: A (1.77)

Traffic Volume (2013)

5,200 east of Carolina Vista
8,700 west of Circle



Urban/Suburban
Boulevard

Highway 5, from Holly Pines Drive to Highway 211

Context

Highway 5 is the main north-south route through the historic part of the Village, skirting Pinehurst Resorts. The two-lane route has various right-of-way constraints through the Historic District. It is a high-volume arterial route near Highway 2 but traffic volumes are lower on the north and southern limits of the Village. The railroad bridge is a major constraint just south of the Highway 2 intersection.



Short-Term Recommendations

Adding bikeable shoulders (4 or 5-feet; 5 preferred) north of McKenzie drive appears feasible given right-of-way clearance and lack of major constraints in this section. Shared lane markings should be installed along the entire route where shoulders do not exist.

Cost Estimate: _____

Long-Term Recommendations

Add bikeable shoulder (5-foot) from McKenzie Drive, south through the Highway 2 intersection and to the southern Village limits will require more detailed study and investment.

Influences

- Pinehurst Resort
- Village Center
- Historic neighborhoods
- Linden Road route
- Through recreational bicyclists

Length: 2.7 miles

Quality of Service:

Existing: D/E (3.67-4.28)
As Proposed: B (2.07-2.68)

Traffic Volume (2013)

7,800 at NC 211
17,000 south of Hwy 2
10,000 at Trotter Dr.



Rural Avenue

Highway 211, from the Traffic Circle to Pinehurst/Taylortown limits

Context

Highway 211 was recently upgraded to a four-lane divided highway through Pinehurst, with curb, gutter and sidewalk. The access-controlled corridor is a high-speed, high-volume facility with traffic signals at major roadway crossings. The current Greenway section crosses Highway 211 near Rattlesnake Trail and Gun Club Drive.

Conditions are not suitable for on-street bicycling along Highway 211, but the south side of the corridor is optimal to be upgraded to include a sidepath instead of a sidewalk.



Short-Term Recommendations

Upgrade existing sidewalks on the south side of Highway 211 to include a 10-foot paved pathway (may be 8-foot in areas constrained by guardrail) while preserving the existing buffer between the street and sidewalk.

Upgrade curb ramps at locations where the sidepath links to a greenway to include ramps that are the same width as the pathway.

An extension from NC 5 to the Pinewild entrance could be considered as a route to get bicyclists, walkers and potentially golf carts from the area into Village streets.

Cost Estimate:

- NC 5 to Circle: \$250,000 to \$300,000
- Pinewild entrance to NC 5: \$2.2 million

Influences

- Cannon Park & Rassie Wicker Park
- FirstHealth Moore Regional Hospital
- Shopping areas along NC 211
- Village Center
- Existing/planned greenways

Length:

- 1.8 miles (NC 5 to Circle)
- 2.2 miles (Pinewild entrance to NC 5)

Quality of Service:

- Existing: D (3.66)
- As Proposed: A (1.95)

Traffic Volume (2013)*

- 13,000 west of Highway 5
- 11,000 east of Highway 5
- 12,000 at the Circle

* Pre-widening



Urban/Suburban
Parkway

US 15/501, from Juniper Lake Road to Voit Gilmore Lane

Context

US 15-501 is a principal arterial that bisects Moore County and serves several of its communities. It is a four-lane road in various configurations south of Memorial Drive.

The Southern Pines Bicycle Plan recommended a sidepath near the Circle to connect to Midland Road and provide a linkage to the FirstHealth Moore Regional Hospital Area.



Short-Term Recommendations

Seek opportunities to add bikeable shoulders (4-feet; 5 preferred) along the route through Pinehurst with an emphasis on areas north of the Circle to link to existing and planned greenways.

Cost Estimate: \$850,000

Long-Term Recommendations

Work with Southern Pines to identify potential of constructing a sidepath along the east side of the highway.

Cost Estimate: \$3.4 million (paved)

Influences

- Shopping areas along US 15/501
- FirstHealth Moore Regional Hospital
- Pinehurst Resort and other communities
- Southern Pines
- Existing/planned greenways

Length: 3.4 miles

Quality of Service:

Existing: D (4.03)
As Proposed: A (1.97)

Traffic Volume (2013)

11,000 north of Juniper Lk
16,000 north of Circle
26,000 south of Circle
25,000 north of Morganton Rd



**Urban/Suburban
Parkway**

Airport Road (SR 1843), from Highway 2 to Gaeta Drive

Context

Airport Road connects NC 2 to Sandhills Community College and Reservoir Park in nearby Southern Pines. The Southern Pines Greenway terminates along the north side of the road approximately 1.3 miles east of the Highway 2 (Midland Road) intersection.



Long-Term Recommendations

Work with Southern Pines and NCDOT to identify a suitable route for a greenway extension to link to the Southern Pines greenway. This may be pursued through development of properties along the north side of the road.

If the greenway remains unpaved, bikeable shoulders or bike lanes should be added along Airport Road.

A micro-path connection should be considered to connect Turner Road to Pinehurst Trace Drive to provide a connection to these neighborhoods and the hospital. This connection allows bicyclists and other greenway users to avoid the Circle area.

Cost Estimate:

- Greenway (unpaved): \$200,000 to \$300,000
- Bikeable shoulders: \$200,000 to \$250,000
- Micropath connection: \$5,000 to \$15,000

Influences

- Sandhills Community College
- FirstHealth Moore Regional Hospital
- Through recreational bicyclists
- Existing/planned greenways

Length: 1.0 miles

Quality of Service:

Existing: C (3.50)
As Proposed: A (1.84)

Traffic Volume (2013)

6,100



Rural Avenue

Linden Rd (SR 1115), from Chicken Plant Rd to Highway 5

Context

Linden Road is one of the most challenging routes in Pinehurst in terms of strategies to accommodate bicyclists. The challenges lie in the existing tree canopy along the route that also provides for a shaded route with a vertical enclosed feeling. It is a popular recreational bicycle route. The greenway that parallels the street is not conducive to bicycle travel. There is also demand along the route from golf cart users in Pinewild



Recommendation

Due to the sensitive nature of standalone recommendations for Linden Road, Pinehurst should not pursue immediate action along the route. Adding bike lanes or bikeable shoulders would require removing a row of pine trees on both sides of the street and disrupt the historic feel of the route.

If, at some time in the future, the street is proposed for improvements by NCDOT to alleviate safety concerns due to the proximity of the trees then Pinehurst may consider this an opportunity to add shoulders or bike lanes.

A rail-with-trail option may exist between Pinewild and the Pinehurst Resort to accommodate a multi-use trail along the railroad tracks to accommodate bicyclists, golf carts and other users. This would require long-term negotiations with the Aberdeen Carolina and Western railroad to implement but would be a more suitable option for demand along the route. An overpass or at-grade intersection would have to be constructed at NC 5.

Influences

- Pinehurst Resort
- Village Center
- Pinewild
- Through recreational bicyclists
- Golf cart users

Length: 2.0 miles

Quality of Service:

Existing: C (3.14)
As Proposed: A (1.64)*
** If bike lane/shoulder.*

Traffic Volume (2013)

3,600 west of NC 5

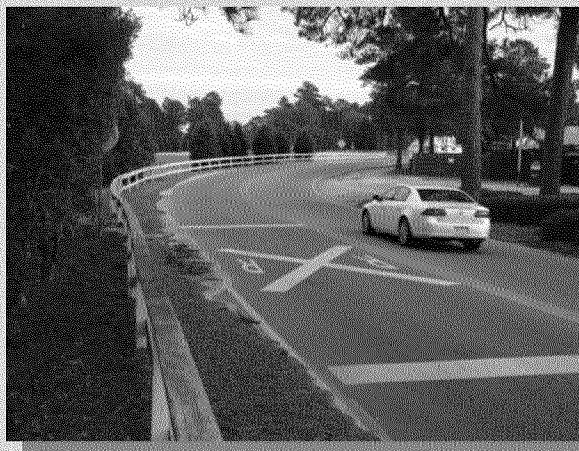


Rural Avenue

Morganton Road (SR1205), from Highway 5 to US 15/501

Context

Morganton Road is a primary east-west route connecting Pinehurst to Southern Pines as well as various neighborhoods that access the route. The route has some constraints in the area where it bisects Pinehurst Resort but some opportunities may exist for bike lanes or shoulders if sidewalks (recommended in the Pedestrian Plan) are constructed on one side. It would link these areas to shopping areas along US 15/501 and planned sections of the Southern Pines greenway.



Long-Term Recommendations

Construct bike lanes or bikeable shoulders along Morganton Road. Based on prevailing road conditions these should be 5-foot wide lanes (may be reduced in resort area to 4-foot to account for constraints).

Cost Estimate: \$625,000

Length: 2.2 miles

Quality of Service:

Existing: D (3.81)
As Proposed: A (2.31)

Traffic Volume (2013)

9,000 east of NC 5
15,000 west of 15/501

Influences

- Pinehurst Resort
- Area neighborhoods
- Shopping areas along US 15/501
- Existing/planned greenways



**Rural Avenue or
Rural Boulevard**

Murdocksville Road, from Highway 211 to Juniper Lake Road

Context

Murdocksville Road is a secondary north-south route that links Pinehurst to recreational bicycle routes in Moore County. Route upgrades could be considered as part of future resurfacing projects but the route likely remains a low priority route when compared to others in and near Pinehurst.



Recommendations

Work with NCDOT on a future resurfacing project to add bikeable shoulders or bike lanes along the route (5-foot preferred)

Cost Estimate: \$375,000

Length: 1.5 miles

Quality of Service:

Existing: C (3.43)
As Proposed: A (0.50)

Traffic Volume (2012)
4,200

Influences

- Pinehurst Resort
- Village Center
- Historic neighborhoods
- Through recreational bicyclists

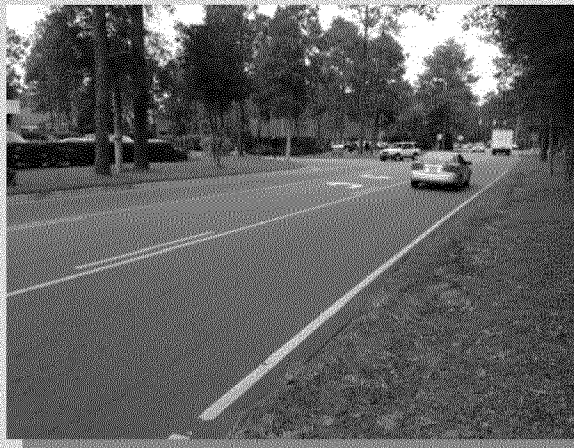


Rural Road

Page Road, from NC 2 to US 15/501

Context

Page Road provides an important connection between NC 211 and US 15/501. Historically a cut-through for motorists, the route could be conducive to bicyclists avoiding the Circle area. Greenway linkages are planned or already exist nearby.



Long-Term Recommendations

Construct bike lanes (5-foot) along the route between Memorial Drive and US 15/501 with connections to nearby greenways (existing or planned). Install shared lane markings from NC 211 to Memorial Drive. These improvements should be considered along with or after other nearby greenways or sidepaths are constructed and special attention should be given to intersection improvements at existing signals.

Cost Estimate: \$100,000

Length: 0.5 miles

Quality of Service:

Existing: C (3.13)
As Proposed: A (1.97)

Traffic Volume (2011)

5,900

Influences

- Shopping areas along NC 211
- FirstHealth Moore Regional Hospital
- Village Center connections
- Existing/planned greenways
- Through recreational bicyclists



Rural Avenue

7.4 THE TRAFFIC CIRCLE

The Traffic Circle at US 15/501, NC 211, and NC 2 has been a focus of many transportation debates over the past several decades. NCDOT continues to evaluate the Traffic Circle and connecting links to consider how to improve vehicular traffic flow in an around the traffic rotary.

As confusing and frustrating as the Traffic Circle is for motorists, it is equally as confusing and frustrating, combined with being unsafe, for people on foot or traveling by bike. Few places are challenged with such a traffic rotary in the United States which is why an immediate and obvious solution has not been implemented.

The European methods for navigating active transportation modes around or through such rotaries consist of either bypassing them altogether via overpasses and underpasses (a very costly option that physically separates the modes) or placing multi-use pathways around the periphery of them (a less costly option that still requires pedestrians and bicyclists to utilize at-grade crosswalks).

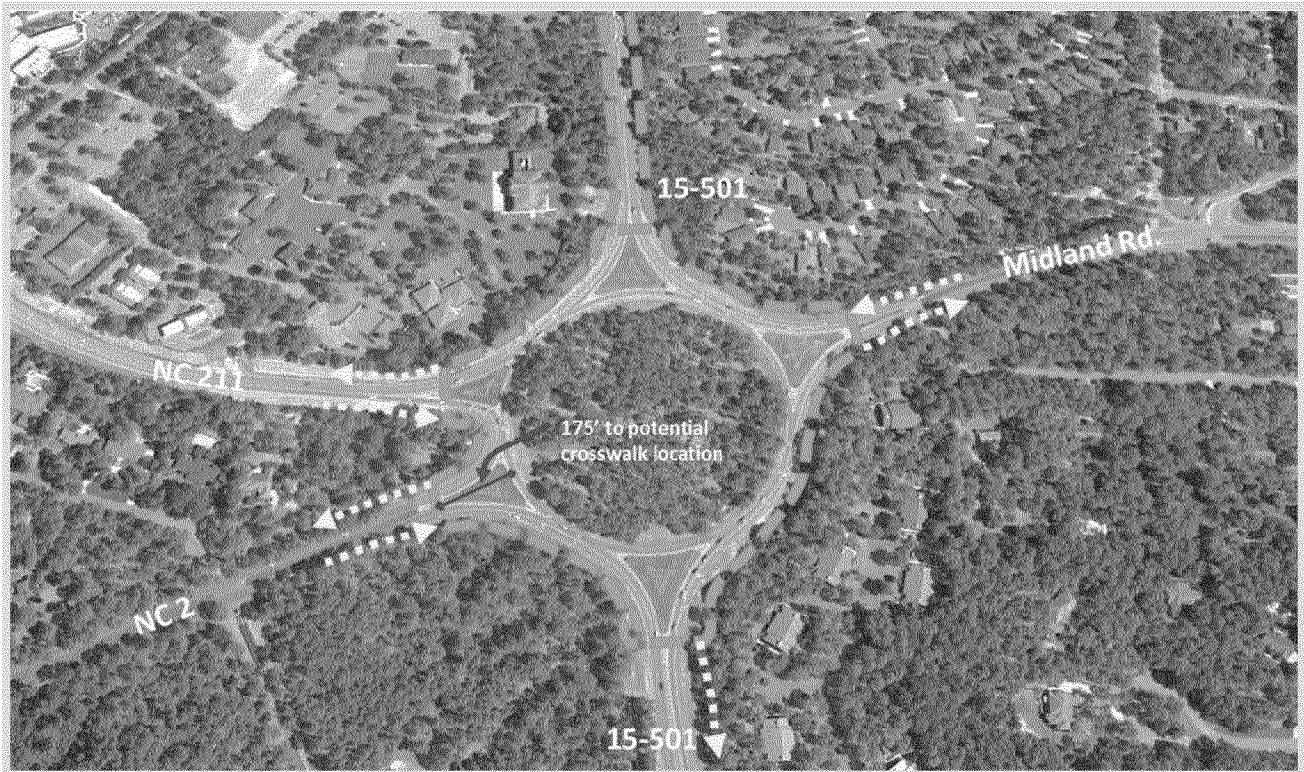
The low-cost option that has some potential is the routing of a multi-use trail around the periphery of the Traffic Circle with crosswalks placed far enough back from the entry points to the circle so that motorists do not have to simultaneously process how to enter the Traffic Circle while also watching out for pedestrians and bicyclists.

A conceptual routing of this pathway is shown on the following page and is meant as a starting point for future discussions with NCDOT. The BLUE lines illustrate a potential pathway network and the yellow arrows denote bike route recommendations contained in this plan.

On some legs there is the potential to move the crosswalks back to the nearest signal. This may not be much of an inconvenience for bicyclists but can represent a timely out-of-direction travel route for pedestrians. At minimum, the crosswalks could be set back at least 175-feet from the entry to the circle at a point that minimizes the cross distance and maximizes visibility. The distance from the Traffic Circle entry to end of the taper of the vehicular entry/exit lane is between 175 and 200 feet in its existing configuration.

Z-crossings that force pedestrians and bicyclists to “face” motorists while in the crosswalks are also recommended given the complexities in navigating the area. A vertical barrier such as shrubbery or fencing should be constructed along the periphery of the Traffic Circle and on walk/bike route leading up to crosswalks. This discourages pedestrians and bicyclist to “cut” corners on the circle or attempt to cross into the center. An example of a z-crossing is shown on the following page.

A future suite of improvements could be a hybrid of improvements that consist of at-grade crossings on secondary legs of the Traffic Circle with underpasses or overpasses along higher volume legs.



Conceptual circumferential pathway route around The Circle



*Example of a
z-crossing at a
roundabout
crosswalk in
Hilton Head,
South Carolina*

- END OF SECTION -

SECTION FIVE: FACILITY STANDARDS AND GUIDELINES

5.1 PEDESTRIAN DESIGN CONSIDERATIONS AND GUIDELINES

The guidelines in this Pedestrian Plan were developed through assessment and documentation of practices (observed or informed) documented by site observation, community input, and/or Steering Committee comments. National and State design standards as defined by the NCDOT, the Manual of Uniform Traffic Control Devices (MUTCD), the American Association of State Highway Transportation Officials (AASHTO), the Americans with Disabilities Act (ADA), and the Federal Highway Administration (FHA) directly influenced the formation of these guidelines. If any discrepancies occur between the design guidelines developed for the Village of Pinehurst and existing national and state standards, the national and state standards take precedence.

Furthermore, cost estimates provided for proposed improvements are relevant only for the date in which this document was prepared. The Village of Pinehurst should seek a current cost estimate for any proposed work from a qualified engineer and/or landscape architect before submitting the work for bid.

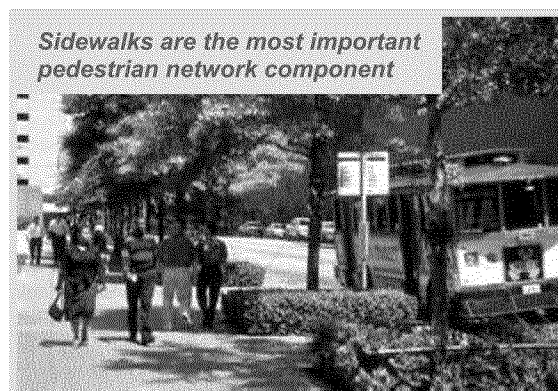
The following descriptions and typical details are intended to be used as design standards and alternative treatments for pedestrian facilities. It is noted that the Village's Engineering Standards and Specifications Manual contains both specifications and standard details for sidewalks and greenways, and the PDO dictates when new sidewalks are required as new developments occur. Being that many of the local streets are NCDOT roadways, the Village should also obtain the proper approvals and permits prior to implementing projects on subject roads.

5.2 PEDESTRIAN FACILITY ELEMENTS

Sidewalks and Walkways

Sidewalks make up the majority of pedestrian facilities and are the most important component of a pedestrian network. The number of pedestrians using a particular facility will determine which type of sidewalk should be implemented.

Sidewalks are the primary connectors for residential areas, shopping centers, and businesses. They create opportunities for people to meet and socialize. They provide



places for children to play and adults to exercise. They provide an alternate means for people to access commercial and business areas.

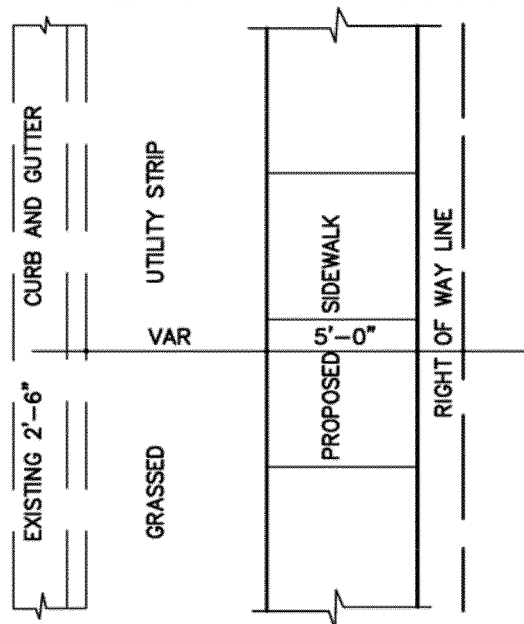
The Village Engineering Standards and Specifications Manual requires all sidewalks to be a minimum of five (5) feet in clear width, providing an ample pathway for pedestrians to walk to their destinations. Where adequate right-of-way is available, a buffer can be utilized in order to separate the sidewalk from the roadway. Sidewalk areas within and leading to busier areas in Pinehurst should be wider to allow for a denser population, street furniture, and other amenities.

Sidewalks shall be constructed within the street right-of-way or a dedicated and platted sidewalk easement in accordance with NCDOT and Village standards. Sidewalks shall normally be installed at the time of roadway construction or widening unless otherwise approved by the Village. In addition, sidewalks shall be provided along streets within new developments as well as existing development expansion that are non-residential, multi-family, or single family residences.

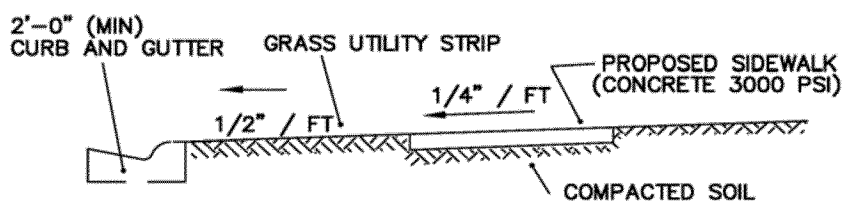
The Village's Standard Concrete Sidewalk Detail is shown on the following page.

NOTES:

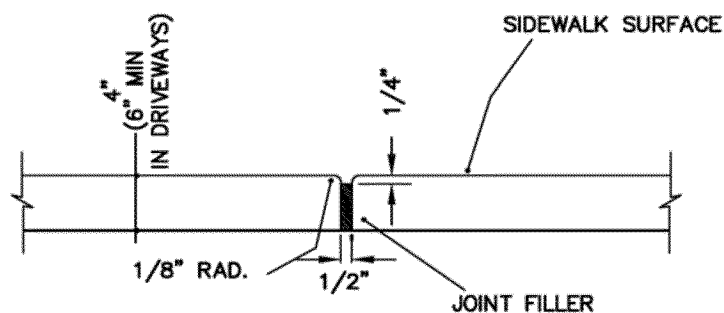
1. TRANSVERSE EXPANSION JOINT TO BE A MAXIMUM OF 50 FT.
(90' - EXTRUDED CURB).
2. ALL CONCRETE TO BE FINISHED WITH CURING COMPOUND.



PLAN VIEW



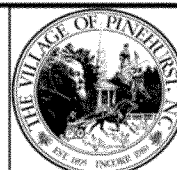
TYPICAL SECTION



TRANSVERSE EXPANSION JOINT

REV	DESCRIPTION	DATE	APPROVED BY
△	ISSUE FOR PUBLICATION	06/04	HJG
NOT TO SCALE DWG NO. 4.02		SHEET 1 OF 1	

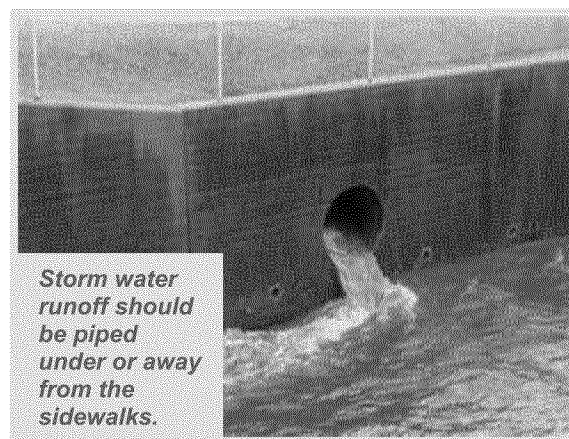
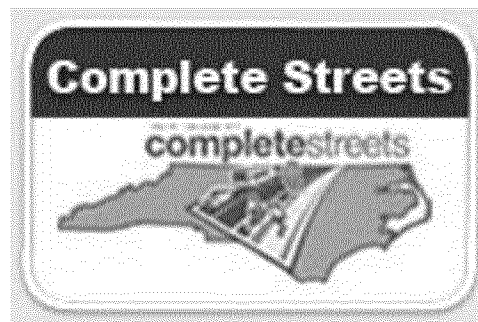
STANDARD
CONCRETE
SIDEWALK



All sidewalks shall be constructed in accordance with the standard detail and the additional specifications as follows:

Guidelines for Sidewalk Design/Construction:

- The minimum thickness of a sidewalk shall be 4 inches. At locations where a driveway crosses a sidewalk, a 6-inch depth is required.
- All paved sidewalks shall be constructed of concrete unless intended for the historic Village areas where they shall be brick to match existing material and colors used at Village Green sidewalks, or unless otherwise approved by the Village. Sidewalks shall typically be a minimum distance of five (5) feet off the back of curb with a minimum width of five (5) feet. This requirement may vary upon the approval of the Village depending on site constraints.
- The design of the sidewalk shall be such that pedestrian safety is provided and the usability of the sidewalk is not affected.
- Sidewalks shall have a uniform slope toward the roadway of $\frac{1}{4}$ inch per foot.
- If a 5-foot wide buffer or planting strip is provided between the sidewalk and back of curb/EOP, the slope shall not be less than $\frac{1}{4}$ inch per foot nor greater than 18 inches toward the roadway unless approved by the Village. In some cases there may not be sufficient width to provide the planting strip.
- Where no curb and gutter exists on a road that requires sidewalks, the Village may require curb and gutter installation in addition to the installation of the sidewalk.
- Where sidewalks and/or greenways intersect any section of curb/gutter or street section, wheelchair ramps shall be installed per Village standards.
- The sidewalk design and construction shall conform to ADA standards.
- Pipes, drains, or other such concentrated storm water devices shall not discharge across a sidewalk, but be piped or flumed under the sidewalk.

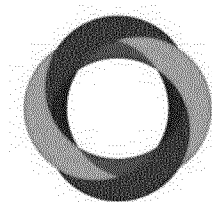


Sidewalk/Walkway Costs:

The cost of a 5-foot wide concrete sidewalk is approximately \$25/linear foot, while the cost of curb and gutter is approximately \$22/linear foot. Asphalt walkways are generally

less expensive in terms of construction costs but more difficult to traverse and more expensive to maintain.

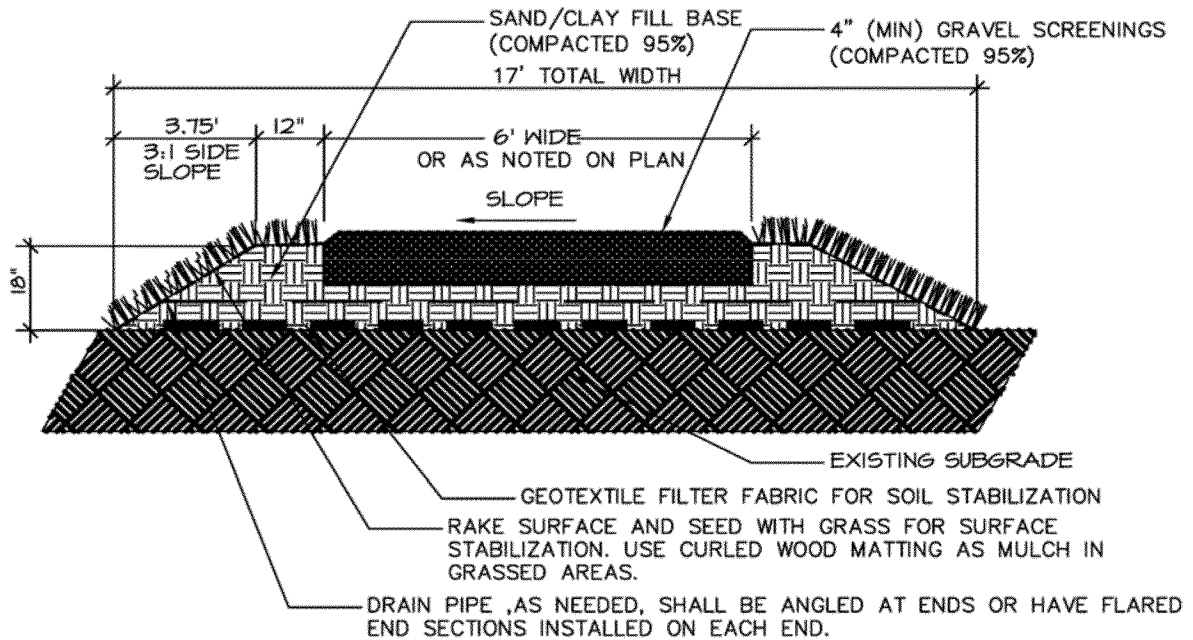
Greenway and Multi-Use Trails



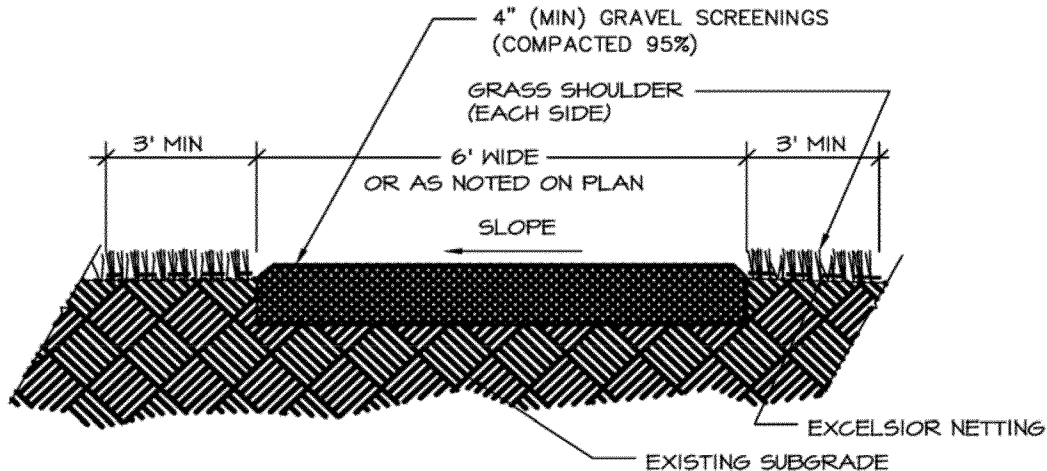
As sidewalks have different standards for various applications, greenways vary due to such factors as space, existing conditions, and usage. The pedestrian facilities, which have been proposed for the Village of Pinehurst, differ in variety and purpose. A greenway can be a multi-use facility that is located off-street and offers multiple opportunities for different users - such as walking, in-line skating, and biking. Special considerations of safety should be made when these facilities are located near a roadway. Adequate separation or barriers should be implemented between the roadway and the multi-use path.

The Village's Standard Greenway Detail is shown on the following page. In addition, the Village's Engineering Standards and Specifications Manual includes a specification on greenways, which states:

- All greenways shall have a minimum section of 6" compacted thickness stone screenings (note that this conflicts with the detail which shows 4" gravel screenings)
- Asphalt paving may be required if felt to be in the best interest of the Village
- Minimum width shall be 6' clear width with a 4' shoulder/swale on each side
- Maximum allowable longitudinal gradient of 10%
- All greenways shall be located within a platted 15' wide easement



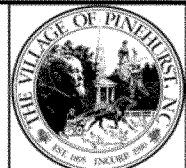
- * FINISHED TRAIL SURFACE TO BE A MAXIMUM OF 1" ABOVE FINISHED SOIL GRADE.
- * STONE SCREENINGS SHALL VARY IN SIZE FROM 1/64" TO 1/8" WITH A UNIFORM DISTRIBUTION OF SIZES. A SAMPLE OF SCREENINGS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO USE IN CONSTRUCTION.
- * PROVIDE A MAXIMUM CROSS SLOPE OF 1.5% TO THE LOW SIDE OF TRAIL FOR SURFACE DRAINAGE.



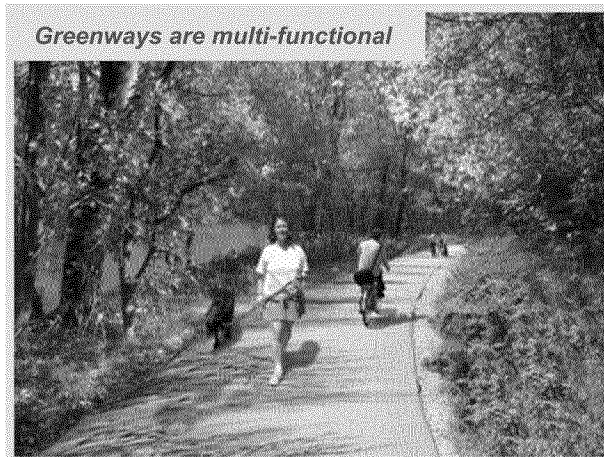
- * FINISHED TRAIL SURFACE TO BE A MAXIMUM OF 1" ABOVE FINISHED SOIL GRADE.
- * ROOT PRUNE AREA WHERE TRAIL IS TO BE LOCATED AND COMPACT LOOSENEED SOIL TO 2" MIN BELOW EXISTING GRADE. INSTALL GRAVEL SCREENINGS AND COMPACT TO A MIN DEPTH OF 3" THICK AND 1" ABOVE GRADE.
- * STONE SCREENINGS SHALL VARY IN SIZE FROM 1/64" TO 1/8" WITH A UNIFORM DISTRIBUTION OF SIZES. A SAMPLE OF SCREENINGS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO USE IN CONSTRUCTION.
- * PROVIDE A MAXIMUM CROSS SLOPE OF 1.5% TO THE LOW SIDE OF TRAIL FOR SURFACE DRAINAGE.

REV	DESCRIPTION	DATE	APPROVED BY
△	ISSUE FOR PUBLICATION	06/04	HJG
NOT TO SCALE DWG NO. 5.13		SHEET 1 OF 1	

GREENWAY



A greenway is defined simply as a *trail corridor on primarily undeveloped land, as along a river or between urban centers, that is reserved for recreational use or environmental preservation*. As the greenway movement has experienced tremendous popularity, these facilities have been developed on abandoned railroad beds, utility corridors, and through residential communities. Most multi-use trails are wider than sidewalks for a variety of reasons. The minimum width for two-directional trails is generally 10'; however, 12'-14' widths are preferred where heavy pedestrian traffic is anticipated. Due to many of the facilities being off-road, the larger width provides access for maintenance and emergency vehicles.



A majority of greenways are now constructed using asphalt as the surface. This application is used primarily due to the lower cost as compared to concrete, which is used for sidewalks.

Design techniques should be considered in order to create an aesthetically pleasing greenway, clearing of vegetation should be limited to clearing for construction, clearing underbrush to increase sight lines, and clearing for the safety of the trail user. Meandering the greenway can help create

opportunities for landscaping/sightlines - particularly along long, straight corridors.

Greenway/Multi-Use Trails Costs:

The cost of a 10-foot wide asphalt trail is approximately \$800,000/mile. This consists of a 6" stone base and 2" of asphalt, but can also vary based on a variety of factors.

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

Concrete trails should be used in flood prone areas - due to its durability versus asphalt, which can wash away or heave. In addition, concrete trails will withstand sub-grade failure and root intrusion better than asphalt surfacing.

Asphalt is predominately used on greenway trails primarily due to cost. It requires more maintenance than concrete due to its flexibility, which can cause movement of the trail. It is also important to construct a 2' stone shoulder on both sides of the asphalt edge to help prevent the edges from failure and erosion.

Sidepaths

A sidepath is essentially a multi-use path that is oriented alongside a road but is separate from the road. The AASHTO Guide to the Development of Bicycle Facilities

and North Carolina Bicycle Facilities Planning and Design Guidelines caution prudence for those contemplating a sidepath (or widened sidewalk) facility to look at all the various elements of the roadway corridor environment and the right-of-way before making a decision.



Sidepaths should only be constructed along corridors that have relatively few intersections and driveways, reducing possible conflict points.

There are certain roadways with high traffic volume and vehicle speeds where sidepaths are the only bicycle facility that can be considered without radical changes to the existing roadway design. In these cases, a sidepath could be a possible treatment to accommodate bicycle traffic. This option must take into account the possibility of intersecting driveway and roadway conflicts. Sidepaths should be provided

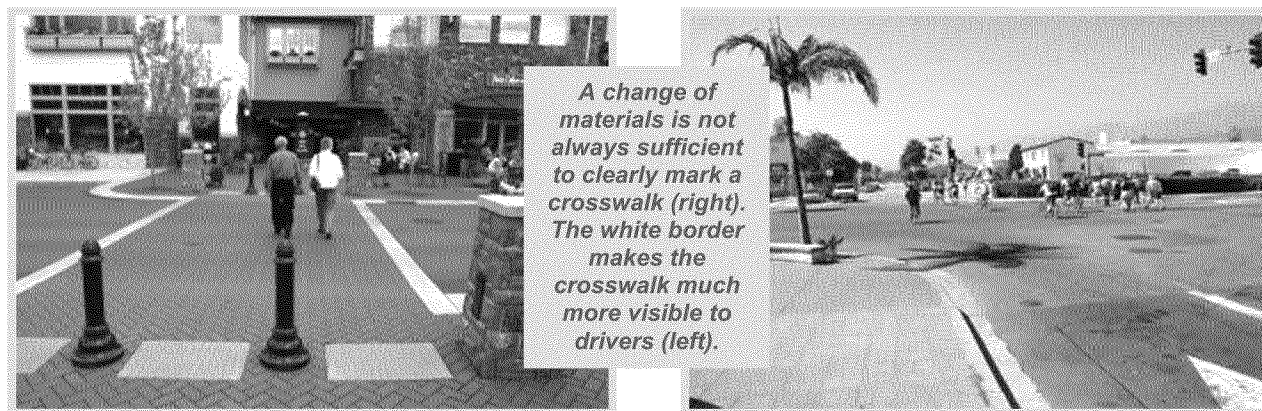
on both sides of the roadway if possible to encourage bicyclists to ride in the same direction as adjacent traffic. Eventual long-term solutions should be to widen the roadway or provide narrower travel lanes to accommodate bicycle lanes.

Marked Crosswalks

Pedestrians need to be able to traverse the local transportation system as easily and safely as those in vehicles. Providing marked crosswalks is one of many ways to facilitate the safe crossing of streets and parking lots. A marked crosswalk is any crosswalk, which is delineated by white painted markings placed on the pavement. *Crosswalks consisting of textured, colored, or otherwise contrasting materials are 'unmarked' crosswalks unless white paint is also present.*

- Crosswalks should consist of two (2) twelve-inch white lines with a separation of six (6) feet.
- Pedestrian crossing zones should have a width of at least six (6) to eight (8) feet.
- All marked pedestrian traffic crossings must be approved by the Village or NCDOT Traffic Engineer prior to installation.
- All mid-block pedestrian traffic crossings shall be designated as a crosswalk with pavement markings and signage in accordance with MUTCD and must be approved by the Village or NCDOT Traffic Engineer prior to installation.

The Village Engineering Standards and Specifications Manual requires all pavement markings to be made with reflective thermoplastic.

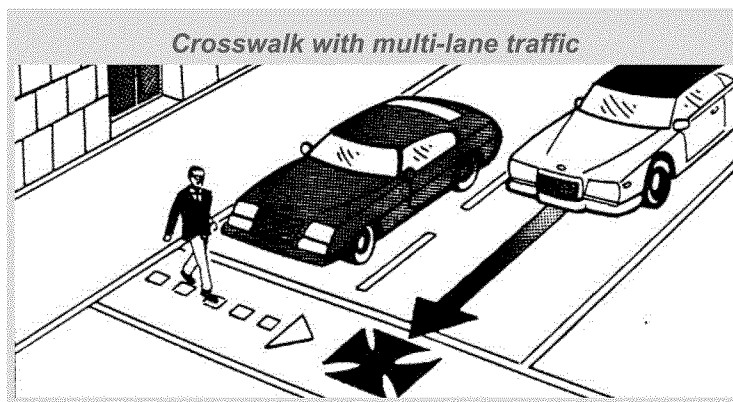


NCDOT follows the national guidelines outlined in the federal MUTCD, the Traffic Control Devices Handbook, and other references. These references cover all aspects of the placement, construction, and maintenance of all approved traffic control devices.

In order to ensure the public understanding of traffic control devices, the devices need to be consistent. All traffic devices - including crosswalk markings and signs - must conform to all state and federal standards and regulations for dimensions, color, working, and graphics. Legal crosswalks usually exist at all public street intersections, whether marked or unmarked. However, the only way a crosswalk can exist at a *mid-block* location is if it is marked. It should be noted that NCDOT requires that mid-block crossings be no less than 200 feet from an adjacent signalized intersection.

Crosswalks are not a guarantee of pedestrian safety. State laws require a motorist to yield to pedestrians in a marked crosswalk. However, on roads with moderate to higher speeds and traffic volumes, drivers seldom comply. More vehicle/pedestrian collisions occur at marked crosswalks on multi-lane streets with a high volume of vehicular traffic than at unmarked crosswalks. This may be explained in part by the observation that older adults tend to cross at marked crosswalks, rather than at unmarked. As this age group is the most vulnerable pedestrian group, this may explain the accident numbers. The addition of warning signs and lights for drivers greatly decreases the risk to pedestrians.

There are definitely safety concerns on multi-lane roads, which have crosswalks. (See the figure shown here.) If the driver nearest the curb stops for a pedestrian, but the driver in the next lane cannot see them and continues through the crosswalk, then the driver in the adjacent lane strikes the pedestrian.



Pedestrians should not be totally dependent on crosswalks; but rather, they should consider crosswalks as means of assistance and direction along the safest route, rather than as a way to stop traffic.

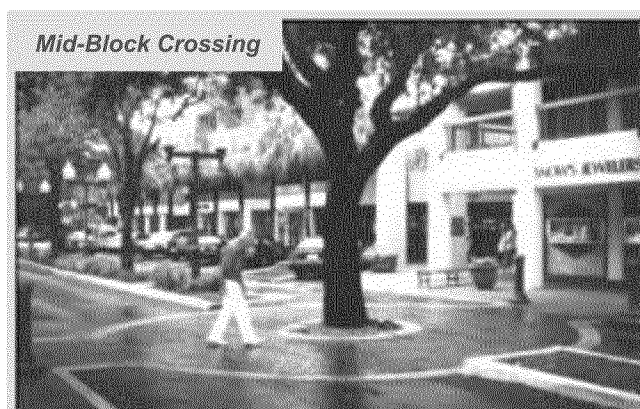
Crosswalks should be marked at intersections where there is substantial conflict among the vehicles and the pedestrian activity, where there are concentrations of pedestrians (otherwise pedestrians could not find the proper place to cross), and where traffic movements are controlled. Examples of such locations are:

- Approved school crossings
- Signalized intersections
- Four-way stop intersections

Midblock Crossings

A Mid-Block Crossing is any crosswalk that is not located within an intersection. NCDOT standard practice is to install Mid-Block Crosswalks based on an engineering study. Mid-Block Crossings should be signed and marked in compliance with the MUTCD, the North Carolina Supplement to the MUTCD, and the current NCDOT Roadway Standard Drawings.

- Crosswalks at mid-block should not be installed within 300 feet of another signalized crossing point.
- Advanced warning signs are needed when mid-block crossings are present.
- Raised crosswalks are typically used on two-lane streets with less than 35 MPH speed limit.



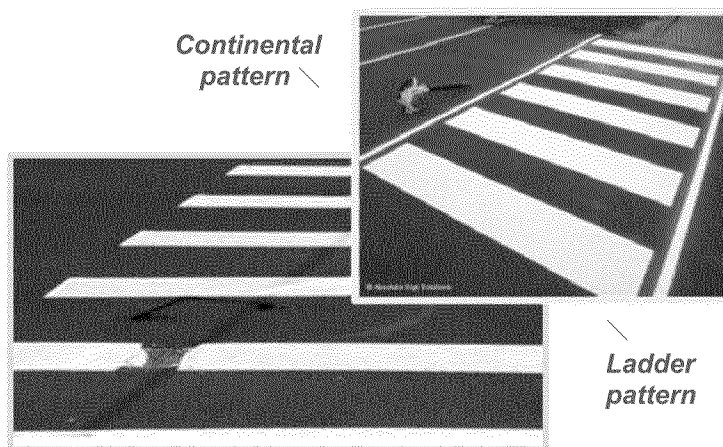
For additional information regarding the NCDOT policy on Mid-Block Crossings please refer to: <http://www.ncdot.org/doh/PRECONSTRUCT/traffic/tepp/Topics/C-36pr.pdf> (.)

Additional Guidelines for Crosswalks:

The following guidelines are taken from the USDOT Federal Highway Administration's *Pedestrian Facilities Users Guide – Providing Safety and Mobility* (2002), and the Association of State Highway and Transportation Officials' *Guide for the Planning, Design and Operation of Pedestrian Facilities* (2004).

- Crosswalks should not be installed where speeds exceed 40 mile per hour.
- As noted above, in some areas, crosswalks should be used together with other traffic control devices to increase pedestrian safety. This is especially important on roads where the average daily traffic exceeds 10,000 vehicles.
- When placing crosswalks NCDOT typically requires pedestrian facilities (sidewalks) on both sides of the roadway.

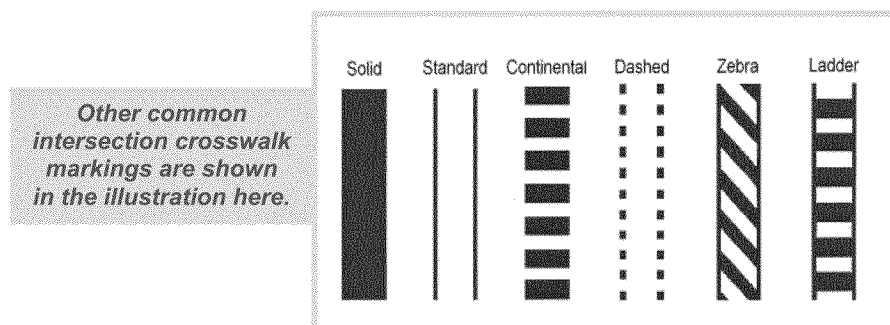
- The MUTCD requires that the width of crosswalks be at least six (6) feet wide. In areas of high vehicle and pedestrian traffic, the crosswalks should be at least ten (10) feet wide. The NCDOT recommends widths of 10' or greater.
- Pedestrian access to the crosswalks via curb ramps and other sloped areas should be fully contained within the crosswalk markings.
- Markings for the crosswalk should extend across the entire width of roadway.
- The MUTCD recommends all crosswalk markings be white.
- The continental and ladder patterns for crosswalk markings are more easily seen and comprehended by motorists. Therefore it is recommended that one of these patterns should be chosen for crosswalks in the Village of Pinehurst. All lines should be 12 inches to 24 inches wide and spaced one foot to five feet apart, depending upon the location and width of the roadway.



- Additional devices such as traffic signals and beacons should be added where vehicle speeds and traffic are higher.

Many factors must be analyzed before deciding on the location and type of crosswalk(s) to be installed. Some of them are:

- The number of pedestrians that will be served
- The function of the highway
- The volume and speed of vehicles
- The width of the road
- Both current and future predicted conditions
- The typical abilities of the pedestrians that would use the crosswalk
- How they will be initially funded; then, maintained



Typical Crosswalks Costs:

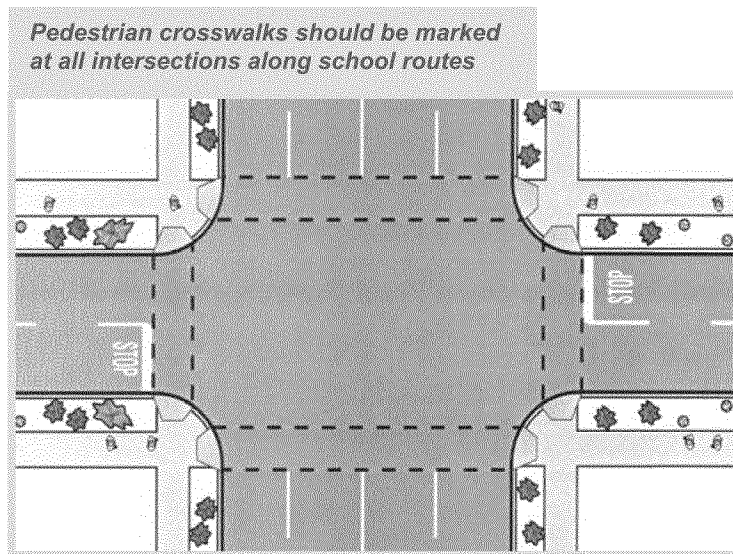
Regular striped: \$150

Ladder or continental crosswalks: \$350
Pattern Concrete: \$3,500

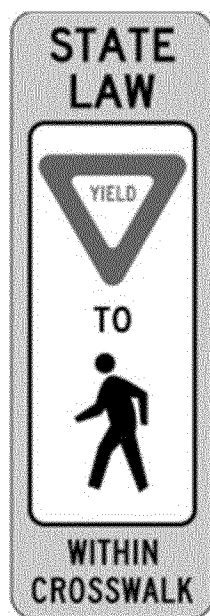
Maintenance costs vary according to the region and the pattern of striping used.

School Crosswalks

With the elevated concern for the safety of children walking to school, criteria for placing marked crosswalks along the route are generally a bit different. Crosswalks should be marked at all intersections along the suggested route to school where the volume of children reaches about 40 in a two-hour period.



Regulatory Signs and Warning Signs for Crosswalks



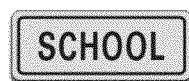
Regulatory signs give notice of traffic laws or regulations that pedestrians, cyclists, and motorists are required to follow. *Warning* signs call attention to unexpected conditions on, or adjacent to, a roadway, bike, or pedestrian facility that can be potentially hazardous to users.

Pedestrian-related signage serves primarily to alert motorists to the presence of pedestrians. The intended effect is to cause motorists to drive more cautiously and reduce their speeds, thereby improving safety for pedestrians in the given area.

Signs can be used in a variety of places, including crosswalks, intersections, in-street, and near schools. National standards for sign placement and use can be found in the MUTCD, which provides guidance for warning signs which can be used at crosswalks or along the roadway:

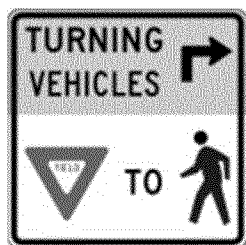
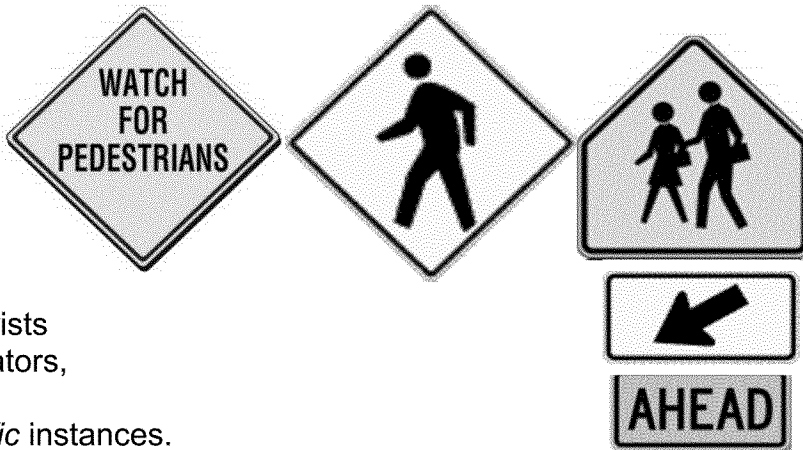
The following signs have been recommended to municipalities for installation. For more signs and more detailed guidelines for sign installation and use, the municipality should consult the MUTCD.

The first sign (previous page) is usually installed *in-street* to warn motorists to yield to pedestrians in a crosswalk.



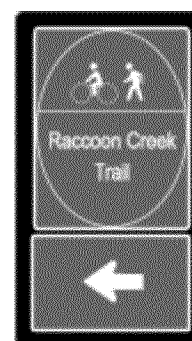
The *school* sign (shown here) can be added to the *in-street* sign for placement near a school.

These signs are commonly used as pedestrian *warning* signs. The third of these signs is shaped with a horizontal bottom edge in order to either be combined with the “arrow” symbol or with the “ahead” sign to indicate crosswalk(s) for motorists in a school zone. These indicators, in particular, notify motorists to watch for pedestrians in *specific* instances.

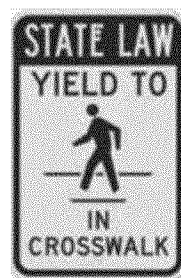


Turning signs are usually placed at intersections to warn motorists (that are turning right or left) to yield to pedestrians in crosswalks.

The last sign is an example of typical *way-finding* signage that is used to help cyclists at major decision points along designated bicycle routes. *Way-finding* signs are specific to their locations.



Additional pedestrian-related signage includes the STOP for pedestrians, as shown on the left side; as well as the signs displaying “stop” and “yield” signs as state laws.



This chart has been taken from the MUTCD and shows Pedestrian-Related Signage of the regulatory” type.

MUTCD Pedestrian-Related Signs

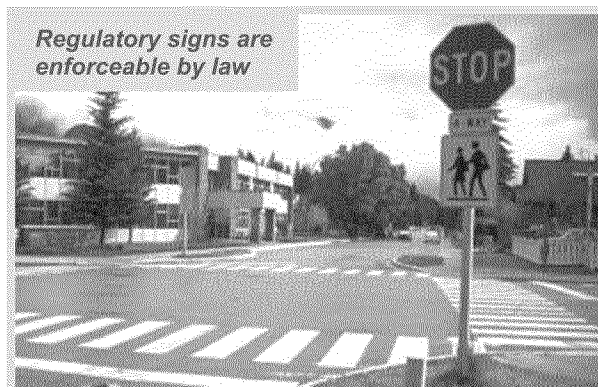


School, Warning, and Informational Signs



Sign	MUTCD Code	MUTCD Section	Conventional Road	Regulatory
Yield here to Peds	R1-5	2B.11	450x450 (18x18)	
Yield here to Peds	R1-5a	2B.11	450x600 (18x24)	
In-Street Ped Crossing	R1-6, R1-6a	2B.12	300x900 (12x36)	
Peds and Bikes Prohibited	R5-10b	2B.36	750x450 (30x18)	
Peds Prohibited	R5-10c	2B.36	600x300 (24x12)	
Walk on Left Facing Traffic	R9-1	2B.43	450x600 (18x24)	
Cross only at Crosswalks	R9-2	2B.44	300x450 (12x18)	
No Ped Crossing	R9-3a	2B.44	450x450 (18x18)	
No Hitch Hiking	R9-4	2B.43	450x600 (18x24)	
No Hitch Hiking (symbol)	R9-4a	2B.43	450x450 (18x18)	
Bikes Yield to Peds	R9-6	9B.10	300x450 (12x18)	
Ped Traffic Symbol	R10-4b	2B.45	225x300 (9x12)	
School Advance Warning	S1-1	7B.08	900x900 (36x36)	School, Advance Warning, Informational
School Bus Stop Ahead	S3-1	7B.10	750x750 (30x30)	
Pedestrian Traffic	W11-2	2C.41	750x750 (30x30)	
Playground	W15-1	2C.42	750x750 (30x30)	
Hiking Trail	I-4	--	600x600 (24x24)	
1. Larger signs may be used when appropriate. 2. Dimensions are shown in millimeters followed by inches in parentheses and are shown as width x height. 3. First dimension in millimeters; dimensions in parentheses are in inches. 4. All information in table taken directly from MUTCD.				

Regulatory Signs

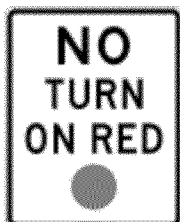


Regulatory signs are designed to warn motorists and pedestrians of a legal requirement such as STOP or YIELD. These signs require certain actions and are enforceable by law. Many motorist signs, including stop signs, yield signs, turn restrictions, and speed limits - all have a direct or indirect impact on pedestrians. Some examples of signs which affect pedestrians include pedestrian warning signs, motorists warning signs, NO TURN

ON RED signs, and guide signs.

The Village Engineering Standards and Specifications Manual requires regulatory signs to meet the requirements of the MUTCD, latest edition, and any modifications hereto established by NCDOT.

The NO TURN ON RED sign may be used in some instances to facilitate pedestrian movements. *The MUTCD* lists six (6) conditions when "no turn on red" may be considered, three (3) of which are directly related to pedestrians or signal timing for pedestrians.



The use of NO TURN ON RED signs at an intersection should be evaluated on a case-by-case basis. Less restrictive alternatives should be *considered* in lieu of NO TURN ON RED. Also, supplementary signs, such as WHEN PEDESTRIANS ARE PRESENT or WHEN CHILDREN ARE PRESENT may be placed below the NO TURN ON RED sign.

There are occasions when NO-TURN-ON-RED restrictions are beneficial and specific recommendations relating to pedestrians include:

- Part-time restrictions should be discouraged; however, they are preferable to full-time prohibitions when the need only occurs for a short period of time.
- Universal prohibitions at school crossings should not be made, but rather restrictions should be sensitive to special problems of pedestrian conflicts, such as the unpredictable behavior of children and problems of the elderly and/or persons with disabilities. Pedestrian volume should not be the only criterion for prohibiting right turns on red.

There are a number of regulatory signs, which are posted specifically for pedestrians, which include:

- PEDESTRIANS PROHIBITED signs to prohibit pedestrian entry at freeway ramps.

- Pedestrian crossing signs are used to restrict crossings at less safe locations, prohibit pedestrian activity and divert them to optimal crossing locations. Various alternatives include the USE CROSSWALK (with supplemental arrow) sign, which may be used at intersections with traffic signals that have high- conflicting turning movements or at mid-block locations directing pedestrians to use an adjacent signal or crosswalk. These signs are critical at schools or other buildings that generate significant pedestrian volumes.
- Traffic signal signs include the pedestrian push-button signs or other signs at signals directing pedestrians to cross only on the green light or WALK signal. Pedestrian push-button signs should be used at all pedestrian-actuated signals. It is helpful to provide guidance to indicate *for which* street the button is intended (either with arrows or street names). The signs should be located adjacent to the push button and the push buttons should be accessible to pedestrians with disabilities.



Warning Signs



Warning signs are used to inform motorists/pedestrians, who are unfamiliar with any unusual or unexpected conditions. Warning signs predominantly fall under the permissive category ("may" condition) and when used, should be placed to provide adequate response times. Warning signs are generally diamond-shaped with black letters or drawings on a yellow background and should be made of reflective or illuminated material. The overuse of warning signs breeds disrespect and should be avoided.

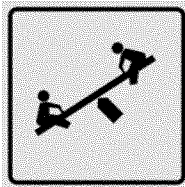
The Advance Pedestrian Crossing sign is predominantly used to warn motorists of possible pedestrian conflicts. This sign should be installed in advance of mid-block crosswalks or other locations where pedestrians may not be expected to cross busy streets. Their use is significantly minimized at most urban intersections since pedestrian crossings are an expected occurrence. However, in some cases, this sign may be selectively used in advance of high-volume pedestrian crossing locations to add emphasis to upcoming crosswalks.



Where there are multiple crossing locations, a supplemental distance plate may be used (NEXT XXX FEET). The advance pedestrian crossing signs should not be linked to other *warning* signs (except for a supplemental distance sign or an advisory speed plate) or *regulatory* signs (except for NO PARKING signs) to avoid information overload and to allow for an improved driver response. Care

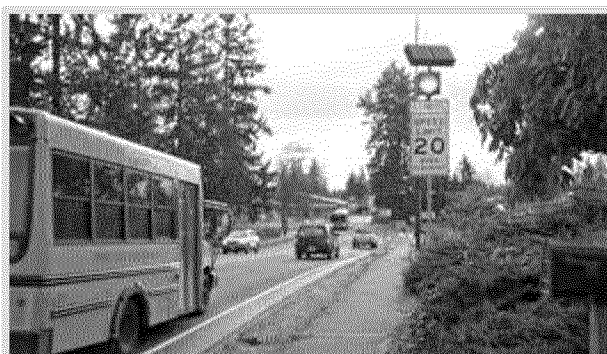
should be taken in sign placement in relation to other signs to avoid sign clutter and to allow adequate motorist response.

The Pedestrian Crossing Sign is similar to the Advance Pedestrian Crossing sign, but has the crosswalk lines shown on it. This sign is intended to be used at the crosswalk. When used, it should be preceded by the advance warning sign and should be located immediately adjacent to the crossing point. To help alleviate motorist confusion, a black-and-yellow diagonally downward pointing arrow sign may be used to supplement the pedestrian crossing sign.



The Playground sign may be used in advance of a designated children's play area to warn motorists of a potentially high concentration of young children. This sign should generally not be needed on local or residential streets where children are expected. Furthermore, play areas should not be located adjacent to high-speed major or arterial streets; or if so, should be fenced off to prevent children from darting into the street.

According to the *Traffic Control Devices Handbook*, CAUTION-CHILDREN AT PLAY or SLOW CHILDREN signs should not be used since they may encourage children to play in the street and may encourage parents to be less vigilant. Such signs also provide no guidance to motorists in terms of a safe speed, and the sign has no legal basis for determining what a motorist should do. Furthermore, motorists should expect children to be "at play" in all residential areas, and the lack of signage on some streets may indicate otherwise. The signs are unenforceable and act as another roadside obstacle to pedestrians and errant motorists. Use of these non-standard signs may also imply that the involved jurisdiction approves of streets as playgrounds, which may result in the jurisdiction being vulnerable to liability.



Flashing lights, warning signs, and posted speed limits give motorists plenty of advance warning of school crossings

School Warning signs include the advance school crossing signs, the school crossing sign, SCHOOL BUS STOP AHEAD sign, and others. School-related traffic control devices are discussed in detail in Part VII (Traffic Controls for School Areas) of the MUTCD. A reduced speed limit sign with flashing lights can be installed ahead of the actual crossing. The lights are set to flash during school hours, alerting drivers that a lower speed limit is in effect when the flashers are operating. Another sign and light combination is SCHOOL SPEED

LIMIT 20, where the speed limit is illuminated during school hours.

The MUTCD allows for the development of other specialty warning signs based on engineering judgment for unique conditions. These signs can be designed to alert unfamiliar motorists or pedestrians of unexpected conditions and should follow the criteria for the design of warning signs. Their use should be minimized to retain effectiveness and should be based on well-informed judgment.

Signs and Way-finding

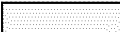
Signage is governed by the *MUTCD*, which provides specifications on the design and placement of traffic and pedestrian signs installed within public right-of-ways. Signs are designed to provide important information that improves pedestrian and vehicular safety. By letting people know what to expect, there is a greater chance that they will react and behave appropriately. For example, giving motorists advanced warnings of upcoming pedestrian crossings or that they are entering a traffic calming area will enable them to modify their speeds. The amount and types of signage should be carefully considered as the overuse of signs can result in noncompliance, confusion, and disrespect.

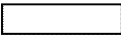
Municipalities should develop clear guidelines for the use of vehicular and pedestrian signs. Care should be taken to avoid an over-reliance on signs and paint to control motorist behavior. This may mean altering and/or relocating existing signs and markings that have proven to be ineffective for pedestrian safety.

The MUTCD has developed guidelines for signs and pavement markings that leave sufficient room for creative regulatory design. As a result, there is leeway in adapting guidelines to policy needs for specific signing/markings. Colors for signs and markings should conform to the color schedule recommended by the MUTCD. For instance, the orange signs to the right indicate construction. Such uniformity allows for recognition across jurisdictions.

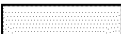
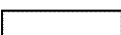


The recommended background colors for signs are as follows:

-  General warning and school signs
-  Stop or prohibited
-  Service guidance, route markings
-  Destinal/directional guidance, recreation, information
-  Public recreation and scenic guidance
-  Construction and maintenance warning
-  Regulation

-  Regulation and route markings
-  A new fluorescent yellow-green color is now approved for use on school and warning signs. This bright, unique color easily attracts the attention of drivers.

For pavement markings, the following should be used:

-  Centerline stripes
-  All other pavement stripes and markings, including edge stripes, lane markings, and crosswalks.

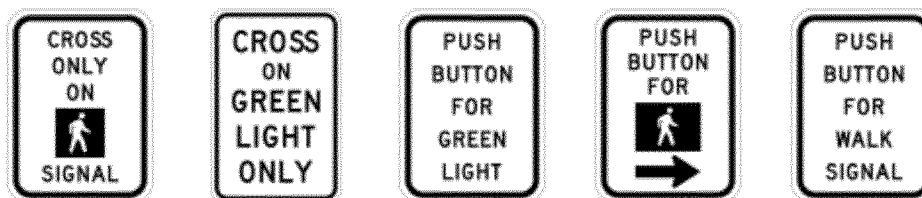
Pedestrian Signs

Pedestrian signs are designed to give information and direction in order to improve safety and relieve conflict between motorists and pedestrians. Signs are used to direct pedestrians to crosswalks or to limit pedestrian crossings at specific locations. Signs can also warn pedestrians of unexpected driver maneuvers. All signs should be periodically checked to make sure they are in condition, free from graffiti, and that they continue to serve a purpose.



good

Unauthorized graffiti is illegal, disruptive



Other and/or additional signs (as seen above) may be used for pedestrians at traffic signals to define the meaning of the WALK, DON'T WALK, and flashing DON'T WALK signal indications. The decision to use these signs (or alternatively, stickers mounted directly on the signal pole) is strictly a judgment call and is primarily for educational purposes. As such, their use may be more helpful near schools and areas with concentrations of elderly pedestrians – both of which are high-risk areas. This information may also be effectively converted into brochures for distribution and ongoing educational purposes.

Guidelines for Pedestrian Signs:

- Pedestrian signs must be in compliance with the MUTCD.

- Signs can be used to direct pedestrian traffic to desirable crossing locations and to prohibit pedestrian crossings at undesirable locations.
- Installing too many signs at a location should be avoided to prevent confusion and disregard.

Aside from signs designed to impart information or explanation to pedestrians, there are additional types of signs, directed at both pedestrians and motorists. These signs are intended to increase the safety of bicyclists and pedestrians.

Directional Signs

Directional signs for pedestrians are intended to assist people (who are new to the area) or to assist residents who may not know the most direct route to a destination by foot (or by vehicle, for that matter). Distances, which are meaningful to pedestrians (such as the number of blocks, miles, and/or the average walking time), should be used to assist them when possible and/or practical. When installed by NCDOT, directional signs are green in color, as consistent with the color chart discussed earlier.



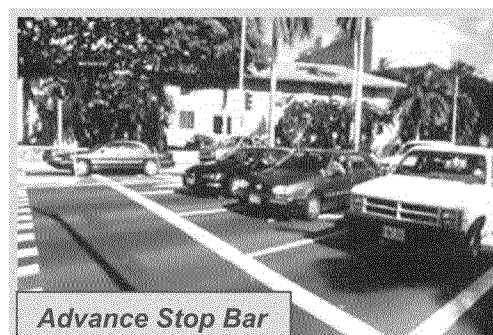
School Zone Treatments and School Route Plan Map

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

School crossing signs should clearly mark all school crosswalks on the suggested route, as well as be placed at crosswalks within the school zone. Busy intersections crossed by children should include traffic control devices such as signals and signs.

Advance Stop Bars

In order to increase vehicle and pedestrian visibility, the vehicle stop bar should be applied to the street 15 to 30 feet back from the pedestrian crosswalk at signalized crossings and mid-block crossings. Stop bars are one to two feet wide and extend across all approach lanes at intersections. By moving the bar further away from the crossing, motorists are influenced to stop further back from the crosswalk when yielding right-of-way to pedestrians. This helps to reduce conflicts (near collisions) between motor vehicles and pedestrians.



Advance Stop Bar Cost:

Signage: \$50 - \$150 plus installation

No additional cost if new line is installed in new paving.

Curb Ramps

Curb ramps are vital in providing access between the sidewalk and the street for people who use wheelchairs and other motorized mobility devices. Curb ramps are most commonly found at intersections, but they may also be used at other locations such as on-street parking, loading zones, bus stops and midblock crossings. The implementation regulations under Title II of the ADA specifically identify curb ramps as requirements for existing facilities and all new construction. Curb ramps for existing facilities must be included in Transition Plans. According to the Title II implementation regulations, priorities for the installation of curb ramps in existing facilities should include access to government facilities, transportation, public accommodations, and for employees at their place of employment (U.S. Department of Justice, 1991a).



For many people with mobility impairments, curb ramps actually make it more difficult to navigate the pedestrian corridor. Crutches and canes are sized to fit the individual user so that the energy required for walking is minimized on a hard, level surface. Use of these types of walking aids is more difficult on sloped surfaces such as curb ramps. Widening the crosswalk to allow people to use either the curb or the curb ramp will ease access for cane and crutch users, who are not comfortable traveling on a sloped surface.

People with vision impairments rely on the “curb” to identify the transition between the sidewalk and the street. The installation of curb ramps removes this cue and replaces it with a ramp which is much more difficult to detect. Therefore, it is important that as curb ramps are installed to create access for people who use wheelchairs, they are installed in such a way as to maximize detect ability for people with vision impairments. The ADA requires the addition of a detectable warning on all curb ramps. This consists of truncated domes extending across the entire width of the ramp and they must be in a contrasting color to the surrounding paving - either dark to light or light to dark.

Guidelines for Curb Ramps:

- Provide a level maneuvering area or landing at the top of the curb ramp.
- Clearly identify the boundary between the bottom of the curb ramp and the street with a detectable warning.

- Design ramp grades that are perpendicular to the curb.
- Place the curb ramp completely within the marked crosswalk area.
- Avoid changes of grade that exceed 11 percent over a 610 mm (24 in) interval.
- Design the ramp that does not require maneuvering on the ramp surface.
- Provide a curb ramp grade that can be easily distinguished from surrounding terrain; otherwise, use detectable warnings.
- Design the ramp with grades of $7.1 \pm 1.2\%$. [Do not exceed 8.33 percent (1:12)].
- Design the ramp and gutter with a cross slope of 2.0 percent.
- Provide adequate drainage to prevent the accumulation of water or debris on or at the bottom of the ramp.
- Transitions from ramps to gutter and streets should be flush and free of level changes.
- Align the curb ramp with the crosswalk, so there is a straight path of travel from the top of the ramp to the center of the road to the curb ramp on the other side.
- Provide clearly defined and easily identified edges or transitions on both sides of the ramp to contrast with sidewalk.

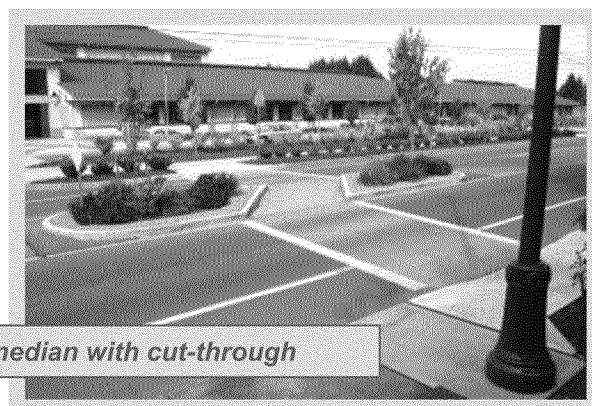
Curb Ramp Costs:

The cost is approximately \$1,500 to \$2,000 per curb ramp (new or retrofitted).

Raised Medians

Medians (also known as refuge islands) are the portion of a divided roadway that separates traffic flows, which head in opposite directions. At roundabouts, these are called splitter islands. Medians help pedestrians cross intersections by reducing the crossing distance from the curb to a protected area. This allows pedestrians to cross during smaller gaps in traffic. For this reason, medians are especially helpful for pedestrians who are unable to judge distances accurately. In

addition, medians also help people with slow walking speeds to cross wide intersections during a short signal cycle. Medians are also useful at irregularly-shaped intersections, such as sites where two roads converge into one. In commercial districts, medians provide pedestrians with valuable protection from oncoming traffic. In residential areas, they serve as traffic calming devices and green space.



Raised median with cut-through

- Median crossings should be at least 6 feet in width to accommodate more than one pedestrian.
- Median crossings should include a level landing that is at least four feet square, providing a balanced resting space.

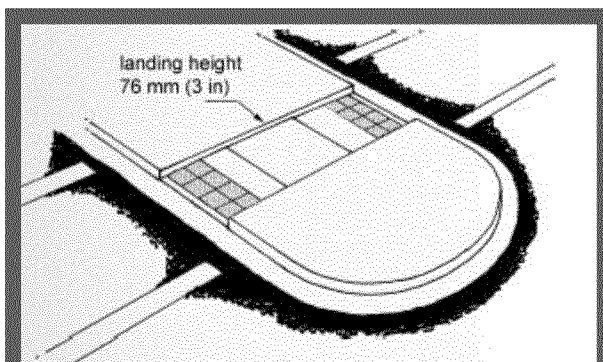


Figure shows raised median, pedestrian cut-through, & curb ramp warning surfaces

- Where streets are in excess of 60 feet, push-buttons for signalized crossing should be installed.
- Crossings in excess of 60 feet in width should be provided with medians or crossing islands and curb extensions.

Whenever possible, medians should be raised to separate pedestrians and motorists. Raised medians make the pedestrian more visible to motorists and they are easier for people with vision impairments to detect. Raised medians should be designed with a cut-through at street level or a ramp. This provides pedestrian access to individuals who cannot travel over a curb.

Detectable warning surfaces should be placed at the edge of both ends of the median in order for the streets to be recognized by pedestrians who are visually impaired. If the corner includes a pedestrian actuated control device, one should also be located at the median.

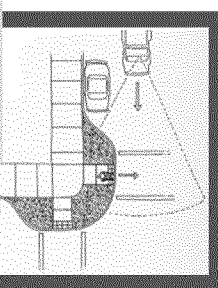
Raised Median Costs: The cost is approximately \$15,000 to \$30,000 per 100 ft.

Curb Extensions (Bulb-outs)



Photo and diagram illustrate features of pedestrian bulb-outs

Curb extensions improve visibility between pedestrians and motorists and make it easier to install perpendicular curb ramps with level landings. They also reduce the crossing distance for pedestrians.



Low landscaping or grass can be added to the curb extension to clarify the appropriate path of travel for individuals with vision impairments. In addition, the following steps should be considered:

- Trim the vegetation, relocate signs and utilities, and eliminate clutter.
- Prohibit parking near the corner of the intersection.
- Provide for raised medians /crosswalks. Provide advance stop line before marked crosswalk on a multi-lane road.

Curb extensions are appropriate at certain mid-block crossings. The presence of turning truck traffic must also be taken into consideration/acknowledged when considering the installation of any curb extensions. While larger curb radii may accommodate truck turning, smaller radii help to shorten pedestrian crossing distance.

Curb Extension/Bulb-out Costs:

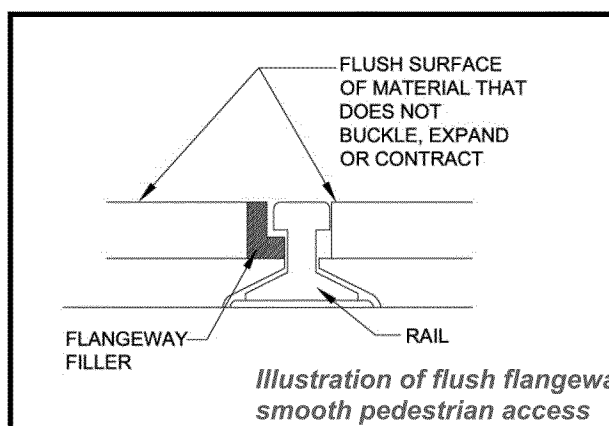
The cost is approximately \$2,000 to \$20,000. The cost can increase depending on the amount of relocated infrastructure.

Traffic Calming

The term “traffic calming” may be described as the physical features and methods used to help negate the effects of vehicular traffic on pedestrian travel. Often the objectives of traffic calming are to reduce vehicular speeds, provide for a safer and more pleasing travel experience for both pedestrians and drivers and to improve the livability of neighborhood streets. Traffic calming often discourages the use of residential streets as cut-offs to main arterial routes. There are a number of different traffic calming engineering techniques such as median islands, speed tables, raised crosswalks, traffic circles, chicanes, curb extensions and speed limit reductions.

Recommendations for traffic calming along specific roadways are discussed further in Section 6, Program and Policy Recommendations. Good planning and study of how particular traffic calming options may impact the local community including nearby parallel roadways, on street parking availability, and emergency vehicles should be conducted before installing any selected treatment.

Pedestrian Railroad Crossings



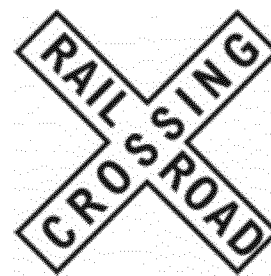
Railroad crossings pose unique hazards for pedestrians. The rails, ties, and bedding surface(s) are potential tripping hazards; especially if the material used to pave the crossing is subject to buckling, expanding, or heaving (such as asphalt). Also, if there are inadequate lines of sight and/or poor night lighting, the approach of trains can be hidden from pedestrians.

These hazards are magnified if the pedestrian has special visual needs and/or mobility challenges.

One solution has been to fill the areas between the rail(s) with walking grade material. But in order for a train to pass, there must be at least a 2" gap between the material and the track or flange. This gap poses a hazard for wheelchairs and mobility scooters; when the small, narrow front wheels hit the unevenness of the gap, they will often turn sideways and can become lodged in the flangeway gap. The gaps are also large enough for a small child's foot or the tip of a cane walker to become stuck in the flangeway. Where pedestrians must cross Light Rail Train tracks or the tracks of slowly moving trains, there is a rubber insert that can fill the flangeway gap and not interfere with the operation of the train.

Guidelines for Pedestrian Railroad Crossings:

- Raise the approach to the track to meet the top level of the rail. The approach should be flat for five feet on either side of the track.
- Use flangeway fillers wherever railroad traffic will allow.
- Use surface material that will not buckle, expand, or contract adjacent to the tracks to prevent tripping hazards.
- Pedestrian paths should always approach the tracks at a 90 degree angle.
- Install detectable, truncated warning domes in the sidewalk to warn pedestrians.
- Install railroad crossing warnings along sidewalk in the form of signs, flashing lights, and audible sounds.
- Signals and/or gates should be considered to prevent the passage of pedestrians when a train is approaching.

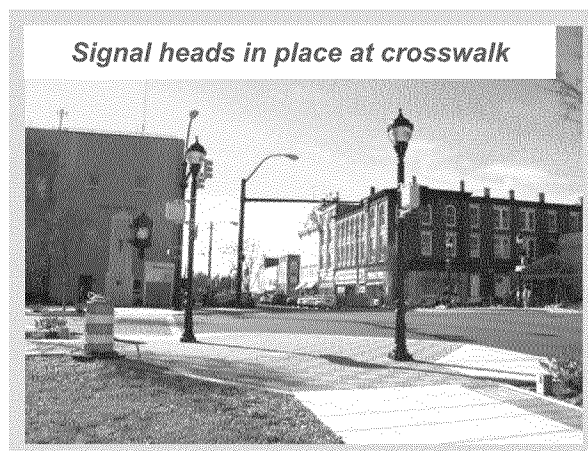


Pedestrian Railroad Crossing Costs:

Level Paving at Track: \$400 per linear foot (lengthwise along track)

Pedestrian/Countdown Signals

Pedestrian signal heads should be used at all traffic signals where pedestrians are permitted to cross, unless pedestrian volumes are extremely low. The use of WALK/DON'T WALK pedestrian signal indicators at signal

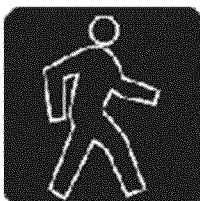
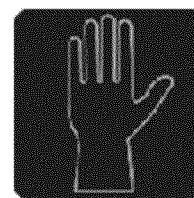


locations is important in many cases; in particular,

- when vehicle signals are not visible to pedestrians;
- when signal timing is complex (e.g., there is a dedicated left turn signal for motorists);
- at established school zone crossings;
- when an exclusive pedestrian interval is provided; and
- when streets are extra wide and where pedestrian clearance information is considered helpful.

In addition, *countdown signals* offer an additional safety measure by informing pedestrians of the amount of time remaining for safe crossing.

The use of international symbols on pedestrian signal heads is preferable and is recommended in the MUTCD; the "WALK" and "DON'T WALK" word messages are also accepted as allowable alternatives in the MUTCD. NCDOT policy is the use of signals with hand symbols. Pedestrian signal heads should be clearly visible to the pedestrian at all times – whether pedestrians are in the



crosswalk or simply waiting on the far side of the street. Larger pedestrian signal heads can be beneficial in some circumstances where more activity is prevalent or greater distances are involved. Signals may be supplemented with audible messages to assist trained visually impaired pedestrians; however, these audible messages should not be used randomly, because they can become an environmental (noise) issue – thus, inhibiting pedestrian safety.

Leading Pedestrian Interval

According to Ron Van Houten, Ph.D., Center for Education and Research in Safety, Dartmouth, Nova Scotia;

“At signalized intersections, right and left turning vehicles present a danger to pedestrians crossing during the WALK interval, and crash statistics show that pedestrians are especially vulnerable to left turning vehicles (left turning vehicles are overrepresented in pedestrian crashes).

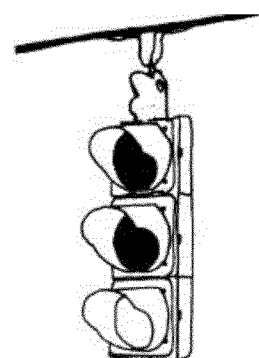
One practical solution to this problem is to program the traffic signals to allow the pedestrian to begin crossing before the vehicle traffic on the parallel street is given the green light. This is commonly referred to as a leading pedestrian interval (LPI). One of the most effective ways to decrease crashes that involve motor vehicles and pedestrians is to separate them in time. Pedestrians and motor vehicles can be separated in time by providing a leading pedestrian interval, which permits pedestrians to gain a head start before turning vehicles are released.

Research has shown that this treatment is associated with a decrease in pedestrian/motor vehicle conflicts and an increase in the percentage of

motorists that yield right of way to pedestrians. This study examined the influence of a three-second LPI on pedestrian behavior and conflicts with turning vehicles.”

Guidelines for Pedestrian and Countdown Signals:

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



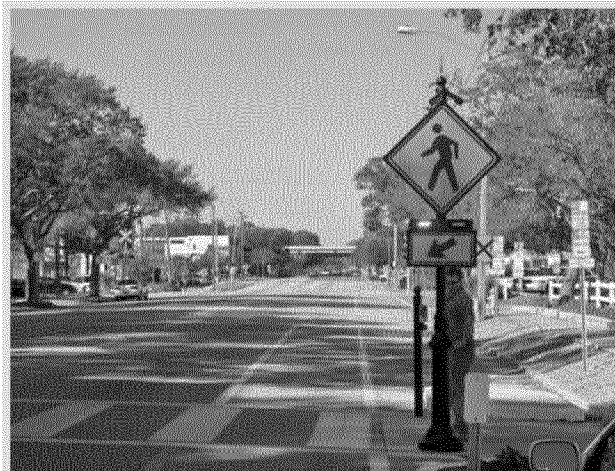
Pedestrian Signal/Countdown and Audible Cue Costs:

Signal cost is \$5,000/ \$500 to \$800 per head; audible cue is approximately \$300 per signal.

High Intensity Activated Crosswalk (HAWK) and Rectangular Rapid Flash Beacon

The following description is an excerpt taken from the MUTCD:

“The majority of pedestrian crashes occur at mid-block crossings. Any alternative traffic control device that is not a traffic signal has historically had minimal effect on motorist yielding behavior on multilane roads. Because of the high cost of traffic signals their installation is restricted to intersections with high motor vehicle and pedestrian usage. The traffic signal warrant also limits the application of such devices to high pedestrian volume areas.



One alternative to a traffic signal is the use of the "High Intensity Activated Crosswalk" (HAWK) signal to assist pedestrians in crossing major streets. The HAWK beacon signal consists of two RED signal indications above a YELLOW signal indication forming a beacon signal that remains dark until activated by a pedestrian. Once activated the signal initiates a flashing yellow indication to warn approaching drivers, followed by a solid yellow identical to a normal

signal to warn of impending requirement to stop. The solid yellow is followed by a brief solid red indication, which is followed by a wig wag flashing red signal requiring drivers to stop before proceeding."

Typical costs range from \$35,000 – \$60,000.

It should be noted that pedestrian/vehicular conflicts can be further mitigated by adding painted warning stripes in advance to an approaching crosswalk in both lanes. The addition of stop bars and signage indicating where vehicles are to stop during a crossing event should also be included in this type of "mid-block" crossing. Other alternatives to the above described signalization are suggested in the MUTCD as follows:

"One inexpensive device to increase yielding rates on multilane roads is the use of pairs of rectangular yellow LED beacons (RRFB) that employ a stutter flash pattern similar to that used on emergency vehicles."

One important study on the LED Beacon was performed by The Center for Education and Research in Safety. The study affirmed that, "At several multilane pedestrians crossings the device produced yielding levels that are equivalent to a traffic signal. No other device without a red indication has produced similar yielding data." (An Analysis of the Efficacy of Rectangular-shaped Rapid-Flash LED Beacons to Increase Yielding to Pedestrians Using Crosswalks on Multilane Roadways in the City of St. Petersburg, FL. Dr. Ron Van Houten & Dr. J.E. Louis Malenfant,).

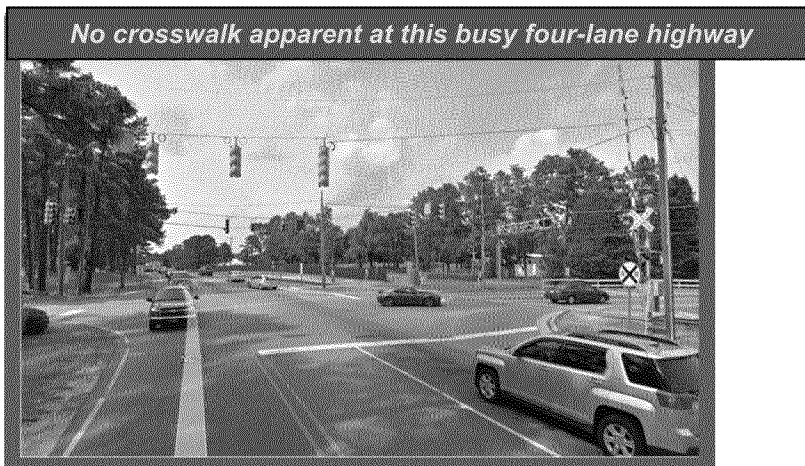
RRFB Cost is approximately \$10,000 to \$15,000 for purchase and installation of two units (one on either side of a street). This includes solar panels for powering the units, pad lighting, indication units (for both sides of street) with RRFBs in the back and front of each unit, signage on both approaches, all posts, and either passive infrared detection or push buttons with audio instructions. Costs would be proportionately higher for additional units placed on a median island, etc.

For additional information on HAWK and RRFB signalized crossings go to:

- <http://mutcd.fhwa.dot.gov/htm/2009/part4/part4f.htm>
- <http://safety.fhwa.dot.gov/intersection/resources/techsum/fhwasa09009/>

Traffic Signals

Traffic signals create gaps in traffic flow allowing pedestrians to cross the street. Traffic signals should allow adequate crossing time for pedestrians and an adequate clearance interval based upon a maximum walking speed of four feet per second. A lower speed of less than four ft. /sec. should be used in determining pedestrian clearance time for areas where there is a heavy concentration of the elderly or children. Signals are particularly important at high use, mid-block crossings on higher-speed roads, on multi-lane roads, and around more highly-congested intersections.



National warrants from the MUTCD (based on the numbers of pedestrians and vehicles crossing an intersection) are usually used in the selection of traffic signal sites. However, judgment must also be used on a case-by-case basis. For example: a requirement for installing a traffic signal is that there are a certain number of pedestrians present. If a new facility is being built (such as a park or recreational path) there will be a new demand and the signal should be installed in conjunction with the new facility, based on projected crossing demand. There may also be *latent* demand if a destination is not currently accessible but could become so with new facilities or redesign.

In downtown areas, signals are often closely spaced, sometimes located at every block. They are usually spaced further apart in suburban or outlying areas. When high pedestrian traffic exists during a majority of the day, fixed-time signals should be used to consistently allow crossing opportunities. Pedestrian actuation should only be used when pedestrian crossings are intermittent.

Traffic Signal Guidelines:

- Traffic signals should be used where pedestrian traffic is regular and frequent. The signal should be timed to a consistent interval. Pedestrian actuation should only be used when pedestrian crossings are intermittent.
- Signal cycles should be kept short (ideally 90 seconds maximum) to reduce pedestrian delay. Pedestrians are very sensitive to delays and a 30-second maximum wait time is ideal.

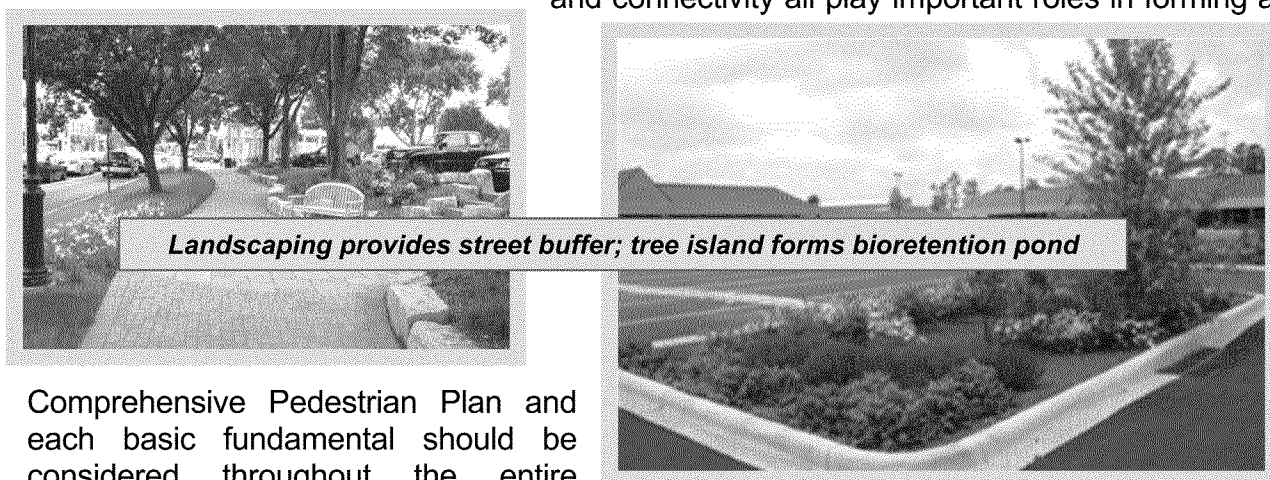
- Marked crosswalks at signals can encourage pedestrians to cross at the signal and help dissuade motorists from encroaching into the crossing area.

Traffic Signal Cost:

The cost ranges from \$20,000 to \$140,000.

Landscaping/Enhancement

A network of safe, comfortable, aesthetically pleasing pedestrian corridors with connectivity to desirable destinations creates and promotes a livable community. Without each of these elements present, the walking community is incomplete. Safety, beauty, and connectivity all play important roles in forming a



Comprehensive Pedestrian Plan and each basic fundamental should be considered throughout the entire planning process.

Landscaping can provide aesthetic improvement into a place that is otherwise hardened by buildings, concrete and streets. It can also be used to provide a buffer and separation from pedestrians and motorists, reduce the width of the roadway, calm traffic, and help to develop a desired aesthetic appearance.

Street trees can visually impact areas by breaking up the hardscape often found in urban areas. Also, trees and plantings improve the environment by shading the street; thus, providing cleaner and better air quality.

When tree islands are built and designed correctly, they can help collect and filter vegetative swales from nearby streets and buildings. These areas, called bioretention ponds, act as a sponge collecting oils, fertilizers, and detergents and then release the stormwater. Bioretention ponds are encouraged - not only to improve water quality, but also to reduce storm flows during heavy rain events.

The local municipality is typically responsible for the landscaping requirements; although, there are some instances where community groups assist with the funding and installation of landscaping and maintenance. Native plants are often preferable as they more easily adapt to the local environment. Growth characteristics of the plant

material should be carefully considered when choosing plants for a particular location. For example, when choosing street trees - their height, spread, and root systems should all be considered - thereby avoiding overhead wires and the buckling of sidewalks and streets in the future.

Guidelines for Landscaping:

- Buffer zone plantings should be maintained at no higher than three feet to allow sight distance for motorists and pedestrians.
- Trees with large canopies planted between the sidewalk and street should be trimmed to keep branches at least seven feet above the sidewalk.
- Plants and trees should be chosen to correspond to seasonal blooming and they should complement the culture and natural resources of the area.
- Landscape irrigation should be planned for and installed in the early phases of the construction process.

Landscaping Costs:

Landscaping costs can vary greatly. They may be supplemented by funds from community organizations or homeowners associations.

Roadway Lighting Improvements

Proper lighting quality, placement, and sufficiency can greatly enhance a nighttime urban experience as well as create a safe pedestrian facility. Two-thirds of all pedestrian fatalities occur during low-light conditions. Particular attention should be addressed at crosswalk locations so there is adequate lighting for motorists to see pedestrians.

Many times, street lighting is implemented along roadways to light the roadway and the sidewalk - allowing adequate lighting for motorists and pedestrians. In urban areas, low-level lighting can be implemented through decorative streetlights which offer pedestrian-scale lighting. This type of lighting should be placed where there is high pedestrian volumes to offer improved aesthetics. A variety of streetlight choices include mercury vapor, incandescent, or high-pressure sodium. High pressure sodium is more cost effective but does not have the best light quality. Roadway streetlights can range from 20-40 feet in height while pedestrian-scale lighting is typically 10-15 feet.

Decorative streetlight



When planning for lighting, it is not only important to have *sufficient* lighting; but also, prevent light pollution and glare. A qualified lighting expert should be consulted in order to properly plan for the wattage and placement with regard to area lighting.

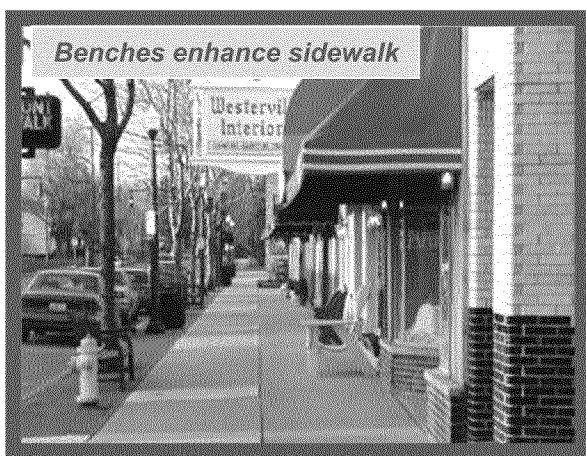
Guidelines for Lighting Improvements:

- Ensure pedestrian walkways and crosswalks are sufficiently lit.
- Consider adding pedestrian-level lighting in areas of higher pedestrian volumes, downtown, and at major intersections.
- Install lighting on both sides of the street in commercial areas.
- Use uniform lighting levels.

Roadway Lighting Improvements Costs:

The cost of roadway lighting varies depending upon the type of fixtures and the service agreement with the local utility company. The cost can range from \$10,000-\$20,000 per pole.

Street Furniture and the Walking Environment



Sidewalks should be continuous and be part of a system that provides access to goods, services, public transit, and homes. Well-designed walking environments are enhanced by urban design elements and street furniture such as benches, bus shelters, trash receptacles and drinking fountains. Carefully designed streetscapes enliven commercial districts and foster community life.

Sidewalks and walkways should be kept clear of poles, sign posts, newspaper racks, and other obstacles that could block the path of pedestrians or become tripping hazards. Benches, water fountains, bicycle parking racks, and other street furniture should be carefully placed to create an unobstructed path for pedestrians. Such areas must also be properly maintained and kept clear of debris, overgrown landscaping, tripping hazards, or areas in which water accumulates and causes problems for pedestrians.

Walking areas should also be interesting for pedestrians and provide a secure environment. Storefronts should exist at street levels and walking areas should be well lit and have good sight lines.

Street Furniture Guidelines:

- Good quality street furniture will show that the community values its public spaces; good furniture is more cost effective in the long run.
- Ensure proper placement of furniture and fixtures. Do not block pedestrian walkways or curb ramps.

Street Furniture Costs:

Benches: \$600 - \$1200

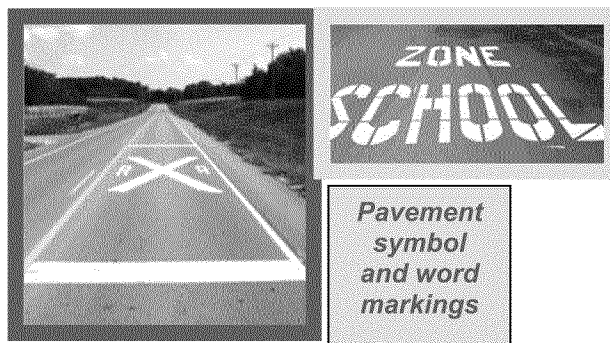
Trash Receptacles: \$500 - \$1000

Drinking Fountains: \$1,000 – \$4,000

Bollards: \$300 - \$1000

Pavement Word and Symbol Markings

The MUTCD allows for the use of pavement word and symbol markings such as SCHOOL XING or PED XING, as motorist warning devices. These may be helpful on high-volume or high speed streets with unusual geometrics (such as vertical or horizontal curves) in advance of a pedestrian crossing. Markings should be white and placed to provide an adequate motorist response. Their use should be kept to a minimum to retain effectiveness.



*Pavement
symbol
and word
markings*

- END OF SECTION -

Village of Pinchurst
FY 2016 Balanced Scorecard



MISSION: Promote, enhance, and sustain the quality of life for residents, businesses, and visitors. Target: 90% of residents who rate the overall quality of life as good or excellent							
	Strategic Objective	KPI Description	FY 13 Actual	FY 14 Actual	FY 15 Goal	FY 15 Est	FY 16 Goal
Customer	Safeguard the community	UCR index crime rate per 1,000 residents	12.08	10.24	12.00	11.50	12.00
		% of residents whose overall feeling of safety in the Village is good or excellent	96%	96%	96%	96%	96%
		% of emergency calls with reaction time of 90 seconds or less	69%	68%	75%	71%	73%
		# of public safety education programs	100	109	n/a	100	100
	Preserve the character of Pinchurst and the quality of neighborhoods	% of residents who rate the overall appearance of the Village as good or excellent	93%	96%	93%	94%	93%
		% of residents satisfied with the enforcement of Village codes and ordinances	59%	52%	68%	60%	65%
	Promote economic vitality	1st floor occupancy rate in the Village Center	77%	88%	85%	94%	90%
		% of businesses likely to recommend the Village as a business location	84%	87%	87%	85%	85%
		Median single-family home value	\$230K	\$233K	n/a	\$246K	\$251K
	Provide & promote multimodal transportation connectivity	Pavement condition rating	82.3	82.9	82.9	82.9	82.9
		# of lf of sidewalks constructed	1,830	17,935	1,450	1,450	1,000
		# of lf of greenways constructed	2,600	0	n/a	267	2,000
		# of lf of bike lanes constructed	0	0	5,550	2,640	2,640
		% of residents satisfied with the availability of sidewalks	35%	46%	36%	46%	47%
		% of intersections studied with a level of service (LOS) rating of "C" or higher	69%	76%	n/a	75%	75%
	Promote environmental sustainability	Kilowatts used per square foot in Village buildings	13.55	13.43	n/a	13.95	13.70
		% of refuse diverted from the landfill	33%	34%	33%	34%	34%
		Average GPD as a % of water system capacity	34.6%	37.3%	n/a	38.2%	40.0%
	Promote an active, healthy community	% of residents satisfied with P&R programs	72%	72%	75%	75%	77%
		% of residents satisfied with Village sponsored cultural arts events	63%	65%	65%	65%	66%
		% of residents satisfied with P&R facilities	78%	77%	80%	80%	81%
Internal	Professionally manage a high performing organization	% of residents satisfied with customer service provided by Village employees	80%	82%	82%	84%	85%
		% of residents satisfied with Village communications	78%	88%	82%	88%	90%
		Full time equivalents per million \$ of revenue	8.34	7.97	8.40	8.00	8.00
		# of process improvements implemented using the BIRDIE or ACE process	1	9	n/a	14	8
		# of new collaborative initiatives completed	n/a	14	15	20	20
Workforce	Recruit and develop a skilled and diverse workforce	% of volunteers satisfied with the volunteer experience	90%	86%	91%	88%	88%
		% of employees who agree they are recognized and rewarded for a job well done	80%	68%	n/a	70%	72%
		% of vacancies filled with internal candidates	n/a	36%	n/a	30%	30%
		% of employees who are satisfied with their job	90%	87%	90%	88%	90%
		Employee turnover rate	11.4%	7.9%	10.0%	10.0%	10.0%
Financial	Maintain a strong financial condition	Unassigned GF fund balance as a % of actual expenditures	28.5%	25.6%	27.0%	25.3%	15.0%
		Operating expenditures as a % of operating revenues	85%	89%	89%	89%	89%
		% of residents satisfied with the value received for taxes paid	71%	69%	70%	70%	70%
		Capital asset condition ratio	49.8%	48.9%	60.0%	48.5%	50.0%

SECTION FOUR: STRATEGIC PEDESTRIAN SYSTEM PLAN

Based on the objectives established earlier in this document – along with inventories of existing conditions and prior studies - McGill Associates has prepared recommendations for a Comprehensive Pedestrian Plan for the Village of Pinehurst. Section 4 describes these recommendations and/or proposals, which would expand the pedestrian facilities into a cohesive, safe, and usable network.

This section is separated into several components, which include: the *types* of recommended facilities, *specific* recommendations, and *users* of the pedestrian facilities. (The methodology utilized in the development of these pedestrian recommendations was described in Section 1.6)

This Pedestrian Plan serves as a guide for identifying and prioritizing safe pedestrian linkages within the Village; thereby, creating a viable pedestrian network. This guide is based on input from the public, Steering Committee members, and Village of Pinehurst staff. While enhancing and prioritizing capital improvements and maintenance projects for the Village, the plan will give special consideration to *critical* areas for pedestrian transportation and safety; as well as address the Americans with Disabilities Act (ADA) compliance issues.



Section 4 and Section 7 will include recommendations, the establishment of priorities, and implementation guidelines for proposed pedestrian facilities. In particular, Section 4 outlines the proposed pedestrian network and identifies areas of need and opportunity.

4.1 SYSTEM OVERVIEW

Overall Network

As previously noted, the Village of Pinehurst currently has a limited system of paths, greenway trails, and sidewalks. Many residential areas lack pedestrian connections to/from retail and civic destinations, and survey respondents repeatedly noted a desire for better connectivity.

Gaps in System

While the existing Greenway system extends from the trailhead parking lot on Forest Drive, through the Village, to the intersection of Linden/Foxfire Roads, most of the larger residential areas in Pinehurst do not have access to the pedestrian network. There are some connections to the Village Center from residential areas near downtown; however, these few existing connections are often in need of accessibility improvements, maintenance, or have large gaps.

In addition, many of the intersections along the main corridors (NC 2, NC 5, Hwy 211 and US 15/501) lack clearly marked pedestrian crosswalks and pedestrian signals.

Lack of Safe Connectivity

By far, one the greatest barriers to pedestrian travel in the Village is the lack of sidewalks and crosswalks along potential pedestrian corridors. While the sidewalk inventory map provided at the end of Section 2 indicates where sidewalks exist and where crossings are in need of improvement; new sidewalks and safe pedestrian crossings should be considered for any areas that generate walking traffic, now and in the future, as new development occurs.

Significant pedestrian corridors through the Village of Pinehurst have been identified as Highway NC 211, NC 5, and NC 2. These busy corridors support a large amount of vehicular traffic; and, with the exception of recent pedestrian facilities along NC 211, few marked pedestrian facilities are in place. These corridors link many pedestrian generators but, few pedestrian facilities currently exist to serve the non-vehicular population.

While recent portions of sidewalk have been constructed along Highway 211, there is still a crucial need for pedestrian signage, pedestrian refuge locations, and sidewalk connectors off of this large corridor to connect to the secondary roads.

The lack of connecting sidewalks, crossing locations, and other pedestrian facilities leading to the new NC 211 sidewalks, limit many people from being able to safely utilize this potentially significant pedestrian corridor.

Recently completed sidewalk on NC 211 offers opportunity for connectivity.



4.2 CORRIDOR IDENTIFICATION

Existing Pedestrian Corridors

NC Highway 211

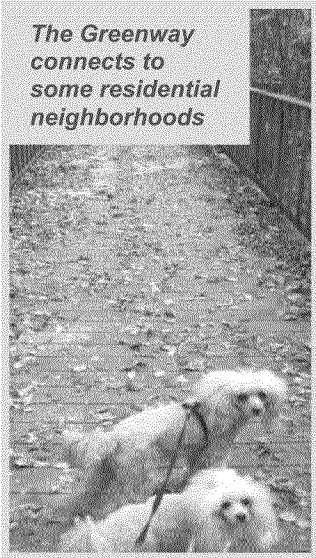


NC 211 is a very busy vehicular corridor that also supports pedestrian traffic. This major roadway through Pinehurst carries a high volume of traffic and is a major destination for residents and guests alike - with lodging, restaurants, schools, shops, and businesses spread out along the length from Murdocksville Road to the Traffic Circle. NC 211 also serves as the main route to FirstHealth Moore Regional Hospital. Recently constructed sidewalks along NC 211 have provided east/west pedestrian connectivity to which future sidewalks will be able to link. A node of the Pinehurst Greenway is accessible near Cannon Park with signal crosswalks at the intersection with Rattlesnake Trail and Gun Club Road.

Some people who access the new sidewalk along NC 211 drive to this location and park at Cannon Park. Although secondary sidewalks and other pedestrian facilities are lacking along this corridor, foot paths can be seen worn into the ground at various intersections.

Pinehurst Greenway

While the Pinehurst Greenway has become a destination unto itself, it should be emphasized that this corridor has increased the walkability, quality of living, and connectivity of Pinehurst. Pedestrians can now walk along approximately 6.8 miles of trail that stretches from Rassie Wicker Park, north, to NC 211. The greenway heads east on NC 211 to Cannon Park. From Cannon Park, walkers are led across NC 211 via recently completed pedestrian crosswalks, further east along the trail that is adjacent to the FirstHealth Fitness Center. This trail continues on to the northern edge of the First Health Hospital property. From this east/west route, greenway users can go either west to Gun Club Drive or east (1/4 mile) to a route parallel to Rutledge Lane, behind residential properties in Village Acres. This leg of the trail heads north (1/5 mile) before heading east and north to terminate at NC 15/501 and Forest Drive at the recently constructed trailhead parking lot.

A photograph showing a paved path leading through a residential area with houses and trees. Two small white dogs are in the foreground. A text box in the upper left corner of the photo reads: "The Greenway connects to some residential neighborhoods".

The Greenway connects to some residential neighborhoods

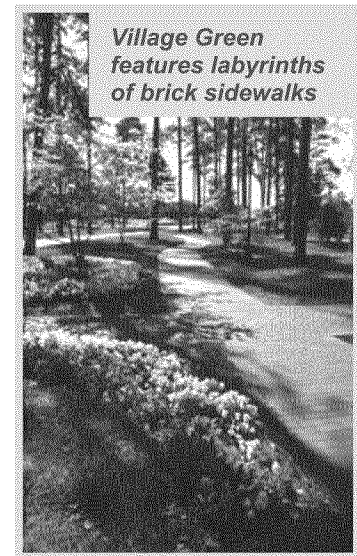
South of Rassie Wicker Park the Greenway heads in a southerly direction along Magnolia Road to Azalea Road where walkers are led towards the Carolina Hotel and Pinehurst Resort. The trail then turns southwest down Ritter Road to Shaw Road. This leg takes Pinehurst Greenway users to Linden Road and ends the Greenway trail at Fox Fire Road.

Village of Pinehurst officials and staff should be commended on their efforts and encouraged to maintain and expand the Pinehurst Greenway as possibilities arise. Many survey respondents praised the Village for their efforts to develop the Greenway, and noted their regular use of the system. This important pedestrian corridor could one day serve as the main “pedestrian highway” that links all of the main parts of the Village of Pinehurst together.

Brick Sidewalks within Village Center

The Village Center (the Downtown area) is a busy hub within Pinehurst. Emanating from Village Green and the nearby retail shops, offices, and dining establishments are brick sidewalks that serve to move foot traffic from Market Square and Chinquapin roads to brick sidewalks along Magnolia Road and Cherokee Road. Brick sidewalks have also been constructed along other residential streets in the Village Center area including those along:

- Orange Road
- Azalea Road
- Carolina Vista Drive
- Ritter Road
- Barrett Road
- Village Green Road West

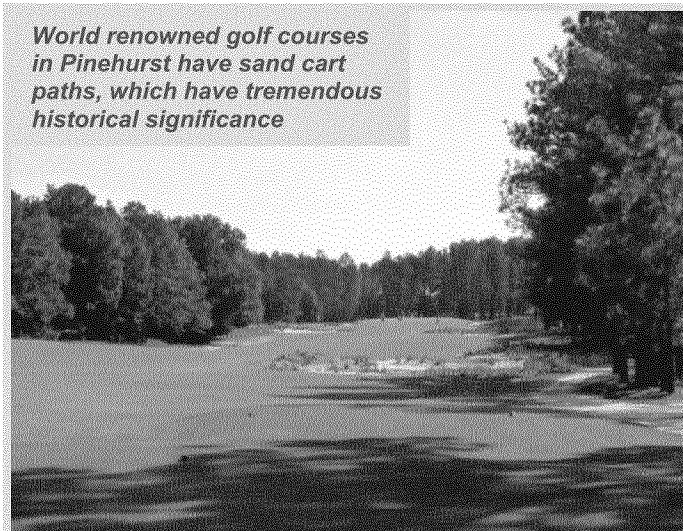


It should also be noted that a significant amount of brick sidewalk is also associated with the Village Arboretum, Rassie Wicker Park, and the Pinehurst Municipal Facility along Magnolia Road.

Historic Sand Clay Paths

Sand/clay paths originally laid out in the Fredrick Law Olmsted design for the Village of Pinehurst still function as originally conceived. They offer a unique character to the Village and are considered an important part of the Village landscape. These paths,

World renowned golf courses in Pinehurst have sand cart paths, which have tremendous historical significance



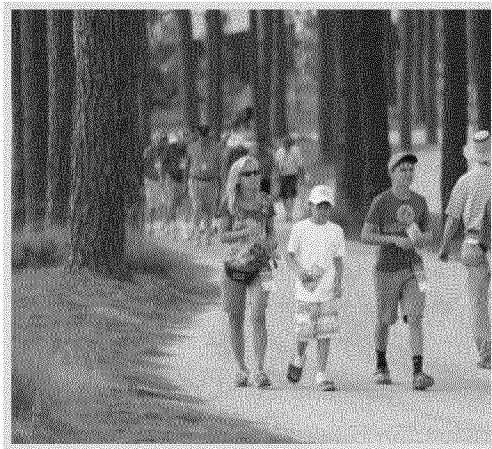
some restored or improved with marked street crossings and others overgrown or abandoned, have for years served as the primary pedestrian paths within the historic residential areas of Pinehurst. Debate on whether or not these paths can remain as they exist or must be updated to accommodate persons with disabilities (ADA standards) has yet to be settled. This Plan proposes that all pedestrian paths must meet ADA standards, but it also suggests that the solution does not include the

destruction of these significant landscape features. These paths help define the Historic District of Pinehurst and all efforts to restore these paths should be made. The following description from the Village of Pinehurst Standards and Guidelines supports the notion of maintaining these paths:

"The overall character of the Pinehurst Local Historic District is not only defined by the historic buildings and their sites, but also by the network of streets, sidewalks, planting strips, and alleys that interconnect and interrelate to those buildings and sites. Village, private, public utility, and/or NCDOT initiated projects in the public rights-of-way do not require approval from the Historic Preservation Commission."

The difficulty has been that sand is inherently loose and pedestrians with limited mobility or those persons dependent on using wheel chairs or walkers cannot safely use such a path; and therefore, the paths are not fully accessible. However, a number of strategies exist that would both provide for a firm and stable path that is both accessible and could maintain the intent of the natural paths with regard to the original Olmsted design.

These strategies are aimed at stabilizing the sand in the path surface similar to how clay has been used in the past for this purpose. Newer, approved surfacing additives should be considered and used where required. The North Carolina Department of Insurance should be consulted for guidance on the latest treatment options and strategies.



The existing sand/clay paths are located within the historic areas of the Village. These areas have been classified as significant to identifying the character of the Historic District of Pinehurst and should be preserved according to the standards set forth by the National Register of Historic Places and the Pinehurst Historic Preservation Commission. Any change to address ADA issues

must go through the appropriate review by these governing organizations.

Pedestrian Generators/Attractors

Typical pedestrian generators and attractors for the Village of Pinehurst area are noted as follows. Many of these are not currently served by pedestrian facilities and may not be attracting many pedestrians because of this deficiency.

Parks/Recreation

- Cannon Park and Camelot Playground
- Rassie Wicker Park
- Pinehurst Greenway System
- Arboretum
- Fair Barn
- Pinehurst Harness Track

The Spa at Pinehurst
Village of Pinehurst Area Golf Courses
Given Memorial Library
Tuft's Archives

Shopping

Olmstead Village,
Pinehurst Place
Sandhills Women's Exchange
Village Center Shopping
Historic Downtown Southern Pines
Area dining establishments
Area Lodging

Schools

Sandhills Community College
Pinecrest High School
Episcopal Day School
The O'Neal School
Pinehurst Elementary School
Sandhills Classical Christian School



Numerous boutiques and eateries attract pedestrians to the Village of Pinehurst.

4.3 SPECIAL FOCUS AREAS

High Pedestrian Use Areas

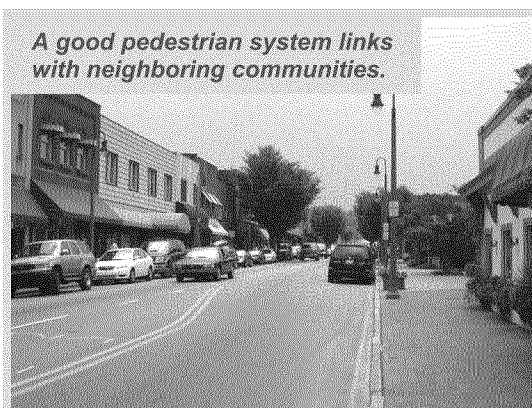
Corridors with the highest pedestrian usage in the Village of Pinehurst are located at:

- FirstHealth Moore Regional Hospital and Fitness Center
- Areas located at Village Center
- Areas near the Pinehurst Resort
- All parks and greenways
- Residential neighborhoods

4.4 POTENTIAL PROJECTS AND INFRASTRUCTURE IMPROVEMENTS

Pedestrian Network Methodology

As mentioned in previous sections of the Pedestrian Plan, the Village of Pinehurst has pedestrian facilities in some areas, but also has many areas that need improvements. Section 4 identifies both *general* and *specific* areas that need to be addressed. 'Connectivity' is a recurring theme within this portion of the comprehensive plan. Connecting pedestrian facilities to form a network of sidewalks and multi-use trails is a long-range project that requires extensive time and funding.



To create and develop a practical and feasible pedestrian transportation system for the Village, a network of pedestrian-friendly facilities should be implemented. The system should be part of the urban fabric of the Village, with the essential element being 'connectivity' that will allow pedestrians to reach their destinations. The pedestrian system must also be safe for users. If pedestrians have to risk their lives in order to walk to a destination, they will choose to travel by a different mode of transportation.

In addition to connectivity, repairing existing dangerous pedestrian areas is also a major concern with the system. Hazardous areas are priorities that need to be addressed immediately. The safety of pedestrians is obviously a significant concern, and as new projects are developed, connectivity and safety should be among the primary goals and objectives.

A number of factors were used to develop the pedestrian recommendations. The previous sections describe topics such as community input and planning documents that were used as information sources. In addition, the Steering Committee, Village of Pinehurst staff, and on-site field work were also integral parts of plan development.

Pinehurst Pedestrian Plan Input

- *Input from community workshops*
- *Input and recommendations from Steering Committee, Village of Pinehurst Staff and NCDOT*
- *Site visits*
- *Review of existing planning documents*
- *Evaluations of existing pedestrian facilities and gaps*
- *Evaluation of pedestrian trip generators (destination areas)*

Based on input from these groups, goals and objectives were established as guides for making recommendations. The following are the predominate themes that served as catalysts for development of the proposals:

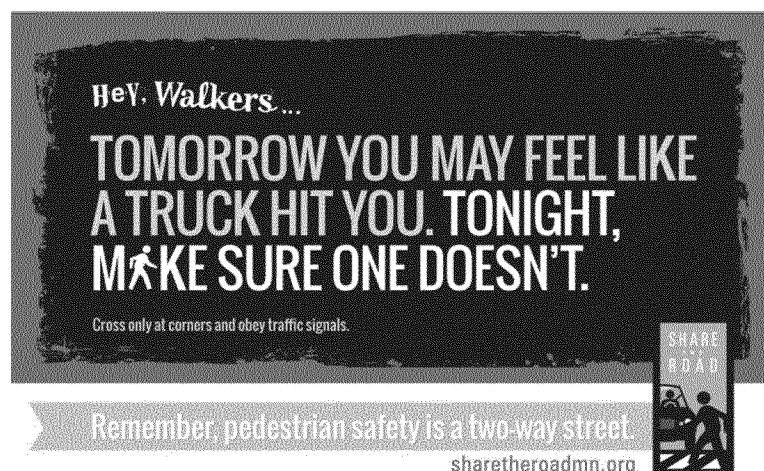
- *Increase connectivity from residential to destination areas*
- *Improve existing conditions and expansion of the pedestrian system in the Downtown areas*
- *Improve and repair existing non-compliant ADA pedestrian facilities*
- *Implement safe conditions for pedestrians where dangerous conditions exist*
- *Consider "future" development with regard to pedestrian facilities*
- *Connect pedestrian facilities where gaps and barriers exist*
- *Educate the public on fitness opportunities and walking benefits*

Recommended Pedestrian Facilities

Numerous methods were involved in developing recommendations and proposals for the Pinehurst Comprehensive Pedestrian Plan. The process can be broken down into these basic tasks:

- Demographics and Population Trends
- Existing Facilities
- Needs Inventory
- Goals and Recommendations
- Implementation

Contained in each of these tasks is detailed information used to help develop and justify the proposals within the total document. Meetings and site visits were conducted to ensure a better understanding of the needs and issues regarding pedestrian improvements. The proposals for ADA compliance and safety concerns are typical of most pedestrian plans. In addition to these *general* recommendations, the document identifies and makes proposals regarding issues that are *specific* to the Village of Pinehurst.



Many of the general proposals recommend connectivity, repair of existing facilities, and enhancement of future improvements; however, some of the future projects may not be facilities such as sidewalks or multi-use trails. Rather, the proposals may be goal-oriented – such as establishing creative partnerships, instituting safety programs, and/or coordinating special events. Proposed

programs such as these will promote pedestrian use within the Village, but are not project-based recommendations.

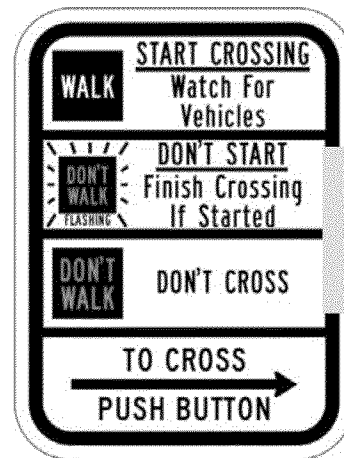
The Pedestrian Plan proposes a basic network of non-vehicular corridors. These corridors will allow pedestrians to use alternative transportation methods. The network will consist of both existing corridors and new corridors. Some of the existing pedestrian facilities within Pinehurst are in need of repair or improvement but the Village has made a number of recent improvements such as the painted crosswalks and brick sidewalks near the Village Center and Village Green. The Village should continue to maintain the existing pedestrian facilities while expanding the system to include new facilities.

Pedestrian Crossing Projects

There are numerous unsuitable pedestrian crossings that have been identified in Pinehurst (See Existing Conditions Map 1 in Section 2). Steps to improve these conditions range from, installing high visibility striping at crosswalks to the installation of pedestrian signals at high-volume traffic intersections. In extreme cases, intersection curb radii may be reduced to shorten crossing distances. Correcting potentially dangerous intersections will not only encourage pedestrians to use the facilities, but will also reduce potential injuries.

The intersections listed in the Intersection Improvements table seen below were chosen for improvements by means of field observation, public input, and Steering Committee input.

The following subsection lists intersections in need of practical improvements such as marked pedestrian crossings, pedestrian signal heads, pedestrian refuge islands, traffic lights, and/or a combination of the above. A larger version of the Intersection Crossing Projects Table can be found in the Appendix.



Recommendations will include highly visible marked crossings and additional pedestrian signaling at intersections.

Pedestrian Signals and Marked Pedestrian Crossings

Proposed locations for pedestrian signals have been restricted to areas where danger to pedestrians from vehicular traffic currently has been noted by the public. Locations for pedestrian improvements are shown on the Proposed Improvements Map. Regular evaluation of pedestrian traffic patterns should occur by Pinehurst to identify new or additional pedestrian crossing needs. Pedestrian crossings at any uncontrolled intersection should include NCDOT/MUTCD approved signage (Section 5.1) to warn approaching vehicles of the crossing ahead. All pedestrian crossing locations should include ADA compliant curb ramps and tactile warning devices.

Pedestrian crossing markings/ped-heads (crossing signals) are recommended at:



- US 15/501 and Spring Lake Drive (Hawk Signal)
- US 15/501 at Forest Drive and Juniper Creek Boulevard
- US 15/501 at Pinehurst Trace and Memorial Drive
- Page Road and Memorial Drive
- NC 5 at Lake Hills Drive and Monticello Road
- Linden Road and McKenzie Road (Hawk Signal)
- Monticello Drive and Morganton Road



Intersection Crossing Projects										
Type of Facility	Intersection of...	Crossing	Along	Pedestrian Signage (\$1,200)	Reduction of Curb Radii or refuge island (\$15,000)	Curb Ramps (\$1,500 ea.)	Crosswalks (including stop bar/relocate) (\$350 ea.)	Traffic Signals (\$40,000 ea.)	Ped Heads (\$2,400 ea.)	Probable Cost Estimate
Juniper Lake Road										
1 Painted Crosswalk	Juniper Lake Rd./US 15/501	Juniper Lake Rd.	US 15/501	2	0	0	1	0	0	\$2,750
Subtotal Intersection Improvements				2	0	0	1	0	0	\$2,750
Spring Lake Road										
1 Painted Crosswalk	US 15/501/Spring Lake Rd.	Spring Lake Rd.	US 15/501	2	0	0	1	0	0	\$2,750
Subtotal Sidewalk Improvements				2	0	0	1	0	0	\$2,750
US 15/501										
1 Hawk Signal/Crosswalk	US 15/501/Spring Lake Dr.	US 15/501	Spring Lake Dr.	3	0	2	2	1	2	\$52,100
2 Signalized Crosswalk	US 15/501/Forest Dr. and Juniper Creek Blvd.	US 15/501	Forest Dr./Juniper Creek Blvd.	4	0	0	2	0	4	\$15,100
3 Signalized Crosswalk	US 15/501/Pinehurst Trace and Memorial Dr.	US 15/501	Pinehurst Trace and Memorial Dr.	4	0	2	3	0	2	\$13,650
Subtotal Intersection Improvements				11	0	4	7	1	8	\$80,850
Page Road										
1 Signalized Crosswalk	Page Rd./Memorial Dr.	Page Rd. and Memorial Dr.	Page Rd. and Memorial Dr.	4	0	2	4	0	8	\$28,400
Subtotal Sidewalk Improvements				4	0	2	4	0	8	\$28,400
Spring Lake Drive										
1 Painted Crosswalk	Gun Club Rd./Spring Lake Dr.	Spring Lake Dr.	Near Porkchop	2	0	0	1	0	0	\$2,750
Subtotal Intersection Improvements				2	0	0	1	0	0	\$2,750
NC 5										
1 Painted Crosswalk	NC 5/McCaskill Rd.	McCaskill Rd.	NC 5	5	0	0	5	0	0	\$7,750
2 Signalized Crosswalk	NC 5/Lake Hills Dr. and Monticello	NC 5	Lake Hills Dr. and Monticello Drive	4	0	0	1	0	2	\$9,950
Subtotal Intersection Improvements				9	0	0	6	0	2	\$17,700
Linden Road										
1 Hawk Signal/Crosswalk	Linden Rd./McKenzie Rd.	Linden Rd.	McKenzie	4	0	0	2	1	2	\$50,300
Subtotal Sidewalk Improvements				4	0	0	2	1	2	\$50,300
Burning Tree Road										
1 Painted Crosswalk	Burning Tree Rd./Linden Rd.	Burning Tree Rd.	Linden Rd.	2	0	0	1	0	0	\$2,750
2 Painted Crosswalk	Burning Tree Rd./Diamondhead	Burning Tree Rd. and Diamondhead	Burning Tree Rd./Diamondhead Dr.	4	0	0	4	0	0	\$6,200
Subtotal Sidewalk Improvements				6	0	0	5	0	0	\$8,950
McCaskill Road										
1 Painted Crosswalk	McCaskill Rd./Magnolia Rd.	McCaskill Rd.	Magnolia Rd.	4	0	1	1	0	0	\$6,650
Subtotal Sidewalk Improvements				4	0	1	1	0	0	\$6,650
Palmetto Road (NC 2)										
1 Painted Crosswalk	Palmetto Rd./Fields/Muster Branch Rd.	Palmetto Rd.	Fields Rd. and Muster Branch Rd.	2	0	0	1	0	0	\$2,750
Subtotal Sidewalk Improvements				2	0	0	1	0	0	\$2,750
St. Andrews Drive										
1 Painted Crosswalk	St. Andrews Dr./Lake Forest Dr.	St. Andrews Dr.	Lake Forest Dr.	4	0	0	2	0	0	\$5,500
2 Painted Crosswalk	St. Andrews Dr./Pine Tree Rd.	St. Andrews Dr.	Pinetree Rd.	2	0	0	1	0	0	\$2,750
Subtotal Sidewalk Improvements				6	0	0	3	0	0	\$8,250
Pinetree Road										
1 Painted Crosswalk	NC 5/Pinetree Rd.	Pinetree Rd.	NC 5	2	0	0	1	0	0	\$2,750
Subtotal Sidewalk Improvements				2	0	0	1	0	0	\$2,750
Monticello Drive										
1 Signalized Crosswalk	Monticello Dr./Morganton Rd.	Monticello Dr. and Morganton Rd.	Monticello Dr. and Morganton Rd.	4	0	0	4	0	8	\$25,400
Subtotal Intersection Improvements				4	0	0	4	0	8	\$25,400
Morganton Road										
1 Painted Crosswalk	Morganton Rd./Forest Hills Dr.	Morganton Rd. and Forest Hills Dr.	Morganton Rd. and Forest Hills Dr.	4	0	0	5	0	0	\$6,550
Subtotal Intersection Improvements				4	0	0	5	0	0	\$6,550
Total Project Units				62	0	7	42	2	28	\$246,800

Crossing locations in need of marked/painted crosswalks and pedestrian signage without signalization include the following locations:

- NC 5/McCaskill Road
- NC 5 and Pine Tree Road
- Juniper Lake Road and US 15/501
- US 15/501 and Spring Lake Road
- Gun Club Road and Spring Lake Drive
- Linden Road and Burning Tree Road
- Burning Tree Road and Diamond Head Drive
- McCaskill Road and Magnolia Road
- NC 2 and Fields Road/Muster Branch Road
- St. Andrews Drive and Lake Forest Road
- St. Andrews Drive and Pine Tree Road
- Morganton Road and Forest Hills Drive

As with all pedestrian crossing projects there are potential constraints and barriers that must be identified and overcome prior to proceeding with design and construction. Constraints and barriers may include financial/economic deficiencies, politics, physical/mechanical obstacles, or other occurrences that may prevent action on pedestrian projects. Ensuring that all stakeholders involved with the project are involved and have an opportunity to take part in the planning and design process will help to avoid or plan to deal with most barriers encountered.

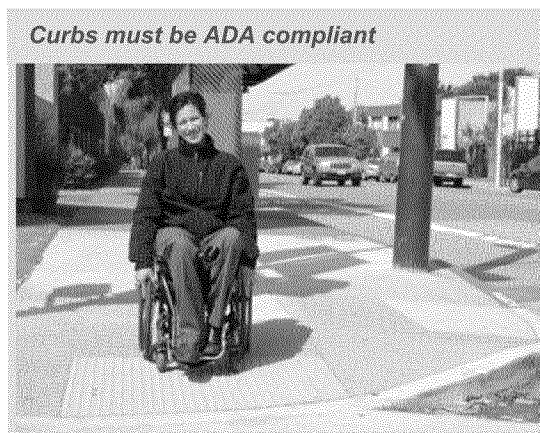
ADA Curb Ramps

Curb ramps that meet the ADA standards are a vital part of a good pedestrian system, ensuring equal access to the system for all mobile people. Several existing paths and/or intersections in Pinehurst do not currently have adequate curb ramps; thus, access to the sidewalk system for those in wheelchairs or strollers is not made available.

All existing curb ramps in the Village of Pinehurst should be regularly inspected for needed repairs and accessibility issues.

However, the following pedestrian paths and the intersections associated with these paths have been identified for further examination by the Village and if deemed necessary, brought into compliance with current ADA requirements as soon as possible:

- Dundee Road
- Page Road
- Everett Road
- Short Road
- Kelly Road
- Fields Road



- Cherokee Road
- Laurel Road
- Maple Road
- Woods Road
- Memorial Drive

All new sidewalks that are installed should have ADA compliant curb ramps at intersections and driveways. (See Section 5)

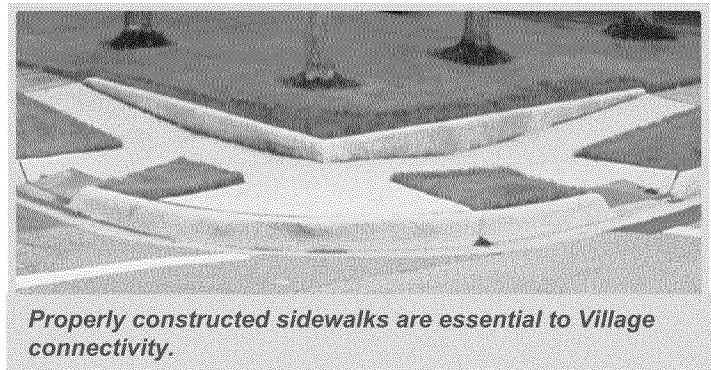
Sidewalk Projects

Sidewalk projects primarily range from the replacement of unsuitable facilities to the implementation of new sidewalks for connectivity to destinations or existing sidewalks. By implementing these recommendations, the Village of Pinehurst can provide a more safe, accessible, and usable pedestrian network.

Improvements are intended to connect to areas of high pedestrian volumes such as parks, commercial/retail centers, government/service centers, cultural amenities, and the existing sidewalk network. Intersections (having a high volume of vehicular traffic) should possess pedestrian crossing signals. These facility improvements should also be evaluated as future widening and roadway projects are constructed.

Sidewalk projects should include the following pedestrian-related amenities:

- Minimum of 5' in width
- ADA compliant curb cuts and ramps at all driveways and intersections
- Marked crosswalks at all intersections
- Pedestrian crossing signals at high-volume traffic intersections
- Sidewalks on one or both sides of the roadway



Currently sidewalks in Pinehurst cover a majority of the Downtown area with some sidewalks extending out from nearby residential areas and new commercial developments. The following proposed improvements enhance the connectivity of these existing corridors by filling gaps to extend the pedestrian network into new areas to help create a more cohesive, and pedestrian friendly walking environment in the Village. The plan calls for both the expansion of the existing network and the renovation of the portions needing repair and upgrades. A detailed outline describing the general location(s), priority, and construction/renovation costs of proposed sidewalk projects can be found at the end of Section 7.

Based on discussions with the community, Village Staff, the Project Steering Committee and review of the available existing pedestrian facilities within the Village; the following list of proposed pedestrian corridors has been compiled below.

Potential Pedestrian Network - Sidewalk Routes

NC 211 - recently, sidewalks have been added by NCDOT to both sides

Dundee Road - From NC 211 to Craig Road

NC Highway 5/Beulah Hill Road - NC 211 to Linden Road

Morganton Road - NC 5 to CCNC

NC Highway 2/Midland Road - Palmetto Road - Existing sidewalks are present in the Village Center, but areas to the east are more likely bike routes than sidewalk routes.

Monticello Drive - NC 5 to Morganton Road

Diamondhead Drive - Burning Tree Road to Lake Hills Drive

Lake Hills Road - Diamondhead Drive to NC 5

Rattle Snake Trail - NC 211 to Woods Road

Memorial Drive -

(a) End of existing sidewalk on 211 to Driveway of FirstHealth Fitness Center

(b) From driveway of FirstHealth Fitness Center to Main entrance of FirstHealth Hospital

(c) 100 Memorial Drive to Page Road

Juniper Creek Boulevard - From US 15/501 at Forest Drive to Spring Lake Road at US 15/501

McCaskill Road - Dundee Road to Highway 5

Page Road - (a) Memorial Drive to US 15/501 and (b) McLeod Road to Short Road

Burning Tree Road - Diamondhead Drive to Lake Forest Road

St. Andrews Drive - Linden Road to Lost Tree Road

Lost Tree Road - St. Andrews Road to McKenzie Road

Spring Lake Drive - US 15/501 to Gun Club Road

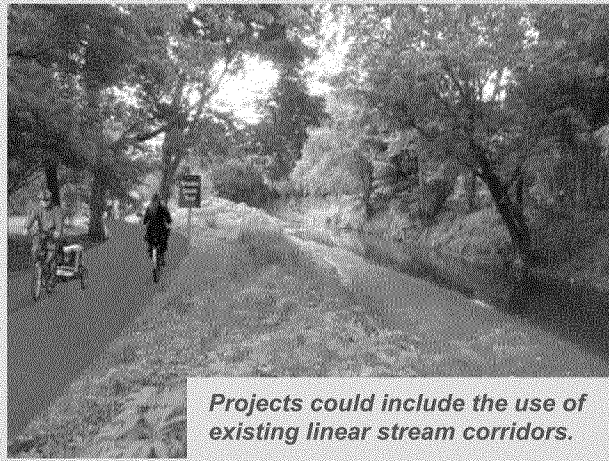
Cherokee Road - NC 5 to 556' up to Country Club driveway

The preceding sidewalk projects would include installation of a minimum 5' wide sidewalk on one (1) or both sides of the roadway (See the priority matrix, which is located in the Appendix). These projects would include curb ramps and tactile warning devices at all intersections as well as meet all established accessibility requirements.



Potential Greenway Corridor Routes

Greenway corridor projects include multi-purpose or off-road pedestrian facilities, which typically take advantage of the use of existing linear stream corridors, easements, and other open space areas. The Village's existing trails and greenways are very popular among residents and visitors.



Projects could include the use of existing linear stream corridors.

Visitors appreciate and often return to communities that provide places for bicycling and walking when they are safely removed from busy roads and streets. Trails offer scenic recreation opportunities suitable for a wide range of ages and abilities. These trails can have a tremendous impact on the economy, potentially providing additional tourist

dollars. Where popular trails exist, lodging providers can encourage extended stays among their guests, thereby increasing occupancy. For residents, investment in trails and greenways can increase property values and improve the overall livability of a community.

Recommended Greenway routes include the following:

- US 15/501 (west side of roadway) - Juniper Lake Drive to Spring Lake Drive
- US 15/501 (west side of roadway) - Spring Lake Drive to Forest Drive
- US 15/501 (west side of roadway) - End of existing greenway trail to Page Road
- Linden Road (east side of roadway) - Pine Tree Road to Sandy Woods Farm Road
- Linden Road (north side of roadway) - Sandy Woods Farm Road to Burning Tree Road
- Linden Road (north side of roadway) - Burning Tree Road to NC 5
- Chicken Plant Road (north side) - From Linden Road to West Pinehurst Community Park

Benefits of Greenways

- *Encourage people to enjoy the area from an outdoor perspective*
- *Provide opportunities for families to safely enjoy a healthy activity together.*
- *Encourage walking or bicycling to locations within a reasonable distance, such as school, work, and recreational areas.*
- *Enhance the safety and convenience of travel to many residential and commercial areas, recreational access sites, and other points of interest.*
- *Provide benefits to all road users by reducing congestion and enhancing motorists' safety.*
- *Reduce parking congestion at popular destinations.*
- *Increase safe and affordable options for recreation and exercise, thus helping to improve the health of visitors and residents alike.*
- *Increase economic benefits such as increased tourism, higher property values, additional residential and business growth, and job growth.*

Future Planning Efforts

Existing and future utility easements should be assessed to determine if they can be used for possible pedestrian connections. In many cases, utility lines can create a network of connectivity to neighborhoods. The associated public easements should include recreation and alternative transportation as uses for the public right-of-way, allowing trails to be constructed in the future.

4.5 SPECIAL POPULATION SECTORS

Many different user groups will make use of the increased pedestrian facilities in Pinehurst. A segment of this population will be visitors while the vast majority will be residents - many with special needs. It will be imperative that new and existing facilities provide safe, pedestrian-friendly corridors for all users to navigate within the Village, particularly for senior adults and children.

Senior Citizens

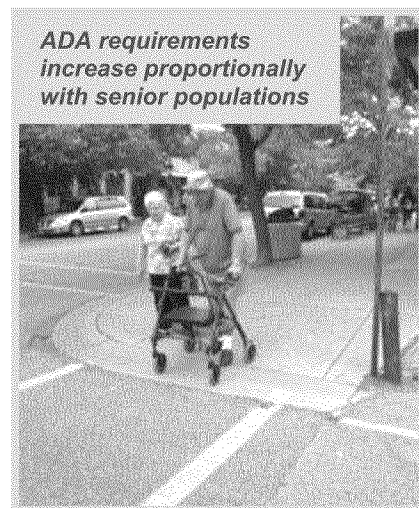
Senior adults are special populations that need particular consideration in pedestrian projects. The US Census reported that there were 40.3 million people 65 and older in the US on April 1, 2010, increasing by 5.3 million since the 2000 Census when this population numbered 35.0 million. The percentage of the population 65 and older also increased during the previous decade. In 2010, the older population represented 13.0 percent of the total population, an increase from 12.4 percent in 2000.

The senior population now represents the fastest growing and largest percentage group in the Country and will continue to grow in the foreseeable future.

Pinehurst has always trended high in the numbers of seniors that choose to live here and that trend shows no sign of diminishing.

As a general trend, seniors have the time and desire to participate in pedestrian activities. Seniors also tend to more regularly rely on alternate means of transportation rather than personal vehicles.

With the promotion of healthy lifestyles and a need for alternate transportation, this population will need safe pedestrian facilities to be offered by the Village of Pinehurst. Special attention is needed to ensure a community where this segment of the population can safely traverse the streets.



Children



The Walking School Bus promotes fitness

Children also require special safety procedures with regard to public safety. An equally important component in this equation is *safety education*. Many children are injured every year due to their lack of understanding of the utilization of a pedestrian system.

Education programs such as *Safe Routes to School, Walking School Buses, etc.*, should be promoted to assist children in learning how to

cross a street and to walk in safe areas. Promoting healthy lifestyles for children will encourage physical activity and the use of sidewalks for exercise. The encouragement of walking is very important; but at the same time, the pedestrian facilities must exist (sidewalks to schools) and be user-friendly. It has been noted in preparing this Plan that Pinehurst Elementary School currently operates a successful Walking School Bus program.

- END OF SECTION -

FY 2015 Proposed Sidewalk
Ritter Road



Light red - sidewalk constructed FY 2014
Dark red - sidewalk proposed for FY 2015

SECTION THREE: EXISTING PLANS, PROGRAMS, AND POLICIES

Numerous planning documents and recommendations have previously been prepared relating to issues addressing current and future pedestrian facilities for the Village of Pinehurst. Several of these documents, such as the Village Greenway Master Plan, Pinehurst Development Ordinance (PDO), Engineering Standards and Specifications Manual, and Historic District Standards and Guidelines were previously described in Section 1. However, additional such reports and documents represent important efforts that apply to this Pedestrian Plan. Many of these planning documents address greenways, transportation, public transportation, capital improvements, and land-use planning and also provide valuable insight and background information toward future decisions, for the Village. This section outlines the key documents and studies which already exist.

3.1 LOCAL, REGIONAL, AND STATE PLANS AND GUIDELINES

Transportation and Other Related Plans

Moore County Comprehensive Transportation Plan (CTP)

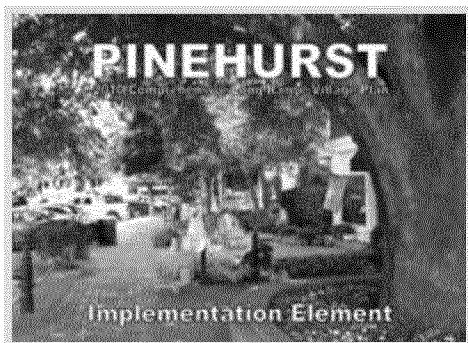


The CTP planning process for Moore County is a combined effort between the county, the participating municipalities and communities of Aberdeen, Cameron, Carthage, Foxfire Village, Pinebluff, Robbins, Southern Pines,

Taylortown, Vass, Village of Pinehurst, Whispering Pines and Woodlake, and the organizations of Triangle Area Rural Planning Organization (TARPO), and NCDOT. Once this plan is complete, it will provide recommendations on transportation improvements in Moore County that could be implemented over the next thirty (30) years.

Pinehurst 2010 Comprehensive Long Range Village Plan

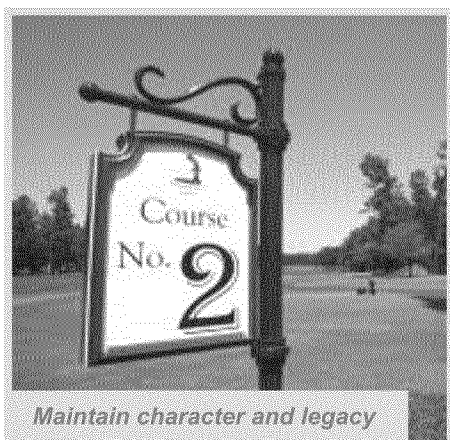
The 2010 Comprehensive Long Range Village Plan is divided into two main elements, including a "Strategic Element" and an "Implementation Element". The main part, known as the Strategic Element, is a statement of the overall strategic directions which are considered important for the Village to promote and pursue for the conservation and enhancement of the overall character, ambience, and quality of life in Pinehurst. This element shows the "big picture" and is strategic in nature so that Pinehurst residents will use it to discuss and refine the major directions of the community. It is envisioned that the Strategic Element will be reviewed every 5-10 years to ensure that the directions for Pinehurst are appropriate in addressing the issues facing the community.



The Implementation Element is a more detailed compilation of tasks and programs which will be considered to accomplish the overall strategies. This element identifies specific tasks to be completed, the entity responsible for completing the task, and the anticipated time-frame for completing the task. It is envisioned that the Implementation Element will be reviewed and updated every year to clear completed tasks and to add new tasks. In addition, this annual review will help to ensure that the work program for

the coming year (and beyond) reflects fiscal and operational capabilities and the evolving needs of the Village.

Based on community meetings and input, the two elements of the Plan are based on the following goals. The Village of Pinehurst intends to:



- *Preserve and enhance the unique character and ambience of the entire community, especially the historic Village Center*
- *Enhance the quality of life for present and future residents*
- *Guide growth or change in ways that complement the unique character and ambience of the community*
- *Address community needs in the most efficient and cost-effective manner*
- *Maintain the legacy of Pinehurst for future residents and visitors to enjoy*

The Comprehensive Long Range Plan was reviewed as part of the research that went into this Pedestrian Plan. With regards to pedestrian facilities, the Comprehensive Plan recommends a number of strategies to improve the walkability of the Village. Relevant recommendations from the Plan that are incorporated into this Pedestrian Plan include:

- *Reduce energy use by promoting walking & bicycling through site and building design*
- *Promote pedestrian activity by expanding street and path lighting*
- *Advocate that a raised median be constructed along 15/501 and that pedestrian and bicycle facilities be included in any future improvements to this corridor*
- *Align both sides of Spring Lake Road with sidewalks*
- *Ensure continuous brick sidewalk is constructed in business areas within Village Center*
- *Extend brick sidewalks from Village Center along major roadways*

- *Require sidewalks as part of all future development of outlying business areas*
- *Extend greenways to outlying residential areas*
- *Safely route trails/sidewalks across major Highways*
- *Facilitate connectivity to greenways via sidewalks from major streets within residential areas*
- *Provide an updated sidewalk/greenway trails map for residents of the Village*
- *Promote bicycle/pedestrian connectivity to surrounding communities*



Install new and extend existing brick sidewalks in Village

State Transportation Improvement Program (STIP)



NCDOT officials have developed a strategic plan for transportation decision-making that focuses on achieving the department's long-term goals of safety, mobility and infrastructure health. Reforms regarding transportation projects follow the 2040 Plan. The 2040 Plan outlines a 30-year Statewide Long-Range Plan which includes the State Transportation Improvement Program (STIP) projects per NCDOT Highway Division and County. It provides costs and schedules for each project. It is important to evaluate existing initiatives in order to appropriately incorporate

current proposed improvements into the pedestrian plan. STIP is important in establishing long range goals for improving pedestrian transportation.

Design Guidelines

ADA Design Guidelines

The Americans with Disabilities Act (ADA) states that cities and municipalities must construct, modify, or adapt pedestrian facilities to accommodate individuals with disabilities and accessibility limitations. The following are some basic topics that must be addressed for sidewalks to comply with ADA requirements.



- *Overgrown, broken, root laden, or otherwise rough conditions are not acceptable*
- *Curb ramps provide entry and exit to sidewalks*
- *Ramps also provide alternate routes around staircases*
- *Cuts in medians at crosswalks allow travel across divided roadways*
- *Slopes must be realistic for traveling*
- *Ramps provide access to buildings that are not ground level*
- *Adequate width provides sufficient passing*
- *Historic district exemptions should be taken into account*
- *Adjusted crossing times allow for safe travel across wide intersections*

3.2 PROGRAMS AND INITIATIVES

Safety and Education Programs and Resources



Parks & Recreation Department

Village Parks and Recreation Department

The Pinehurst Parks and Recreation Department offers a variety of programs geared towards all ages of residents, from children to senior adults. Programs vary from organized athletic leagues, to arts and crafts classes, exercise classes, special events, and festivals. Programs are designed with the residents of Pinehurst in mind, but are open to

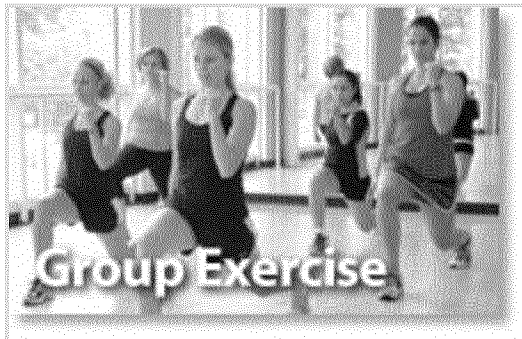
all Moore County residents. The department is also responsible for Cannon Park & Camelot Playground, Rassie Wicker Park, the Pinehurst Greenway System, the Arboretum, the Fair Barn and the Pinehurst Harness Track.

Village Planning Department

The Planning Department is responsible for formulating and enforcing planning policies and standards that will ensure a quality living and working environment for Pinehurst. This is done by establishing the regulations set forth in the Pinehurst Development Ordinance (PDO) and the Pinehurst Municipal Code. A major responsibility of the department is to review subdivision and site development plans to ensure compliance with the PDO. In addition, the Village's Code Enforcement Officer enforces the provisions of the Municipal Code and the PDO. The department also performs zoning inspections and provides support to the Community Appearance Commission, the Conservation Commission, the Planning and Zoning Board, the Board of Adjustment, the Historic Preservation Commission and Village Council. Another significant responsibility of the department is to oversee the Village's Long Range Comprehensive Plan, which was discussed earlier in this section.

FirstHealth Fitness

As a medical fitness center, FirstHealth Fitness in Pinehurst offers programs that are medically based and under the supervision of a medical doctor. The personal trainers and fitness coaches have college degrees in the fitness field and a licensed dietitian is on staff to guarantee quality information and guidance.



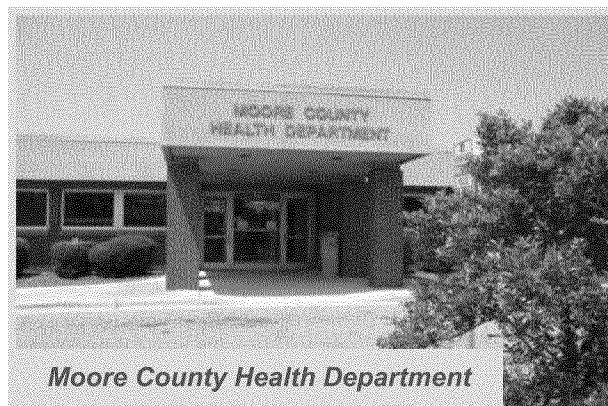
With more than 63,000 square feet, the flagship facility in Pinehurst offers the region's largest free-weight area, innovative group exercise, aquatic center, swimming lessons, children's programs, nutrition services, and massage therapy.

Moore County Health Department

The Moore County Health Department (MCHD) is located at 705 Pinehurst Avenue in Carthage and assists with promoting the wellness of individuals, families, and the community. Offering many services, the MCHD strives "*To Protect and Promote Health Through Prevention and Control of Disease and Injury*". Some of the following MCHD-sponsored programs, which contribute to the overall fitness of the local community include, but are not limited to, the following:

- WIC/Nutrition Services
- MooreHealth (Healthy Carolinians Task Force)
- Eat Smart, Move More Coalition

The Moore County Health Department currently employs a staff of over 70 professionals representing a wide variety of health related disciplines. Programs and services include community health assessment, health promotion, communicable disease, epidemiology, personal health/clinical services, and environmental health.



Today the department is involved in a wide range of collaborative community health activities designed to protect and promote health through prevention and control of disease and injury

MooreHealth (Healthy Carolinians Task Force)



MooreHealth is a volunteer community organization committed to developing cooperative planning that promotes health and improves the quality of life for the residents of Moore County. This organization, composed of representatives from a broad spectrum of the community, provides a mechanism for innovative, cost-effective and challenging approaches for a healthier tomorrow by coordinating resources of Moore County for the greater benefit of its residents.

The mission of MooreHealth is to collaboratively assess needs, raise awareness, and identify resources to address them. Their core purpose is to promote health and quality of life. Health priorities, which have been identified for 2014 to 2017 are:

- Obesity
- Substance Abuse
- Aging Issues

Eat Smart, Move More Coalition

The Eat Smart Move More Coalition encourages healthy eating and exercise habits for all North Carolinians. In addition to nutritional resources offered, the program encourages walking and biking initiatives that support accessibility and wellbeing. The following web address provides a wealth of resources on healthy habits and choices: <http://www.eatsmartmovemorenc.com>.



Moore Alive - Stress Less, Live Moore



Last year, Moore County Partners in Progress, the 501(c)(3) economic development organization serving all of Moore County, North Carolina, spearheaded the Moore Alive marketing and talent recruitment initiative to promote the local assets, amenities, and exceptionally healthy lifestyle in Moore County and its collective communities. Moore Alive wants people to know that Moore County is much more than a great place to retire or play golf. There are many opportunities for people of all ages to succeed in Moore County, while living more healthily and enjoying the quality of life. The foundation of the Moore Alive campaign is the Moore Alive website at, www.MooreAlive.com.

Moore County Department of Aging

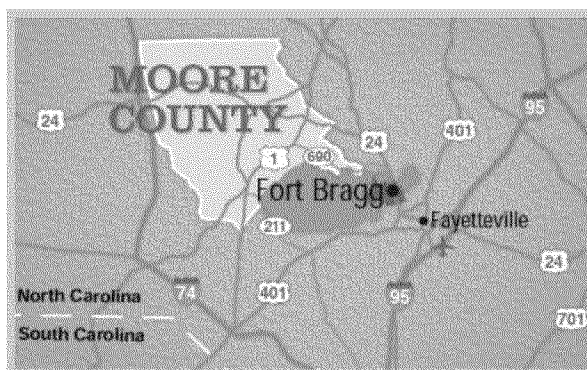
Many services and facilities are available to seniors and disabled adults (50 years of age and older) of Moore County, as well as their families and caregivers, through the

Moore County Department of Aging located at the Senior Enrichment Center (SEC). These include nutrition, recreation, transportation, wellness, in-home aid, and housing.

When clients of the Moore County Department of Aging come to receive guidance for any of the above listed services, they come in contact with a number of local resources and opportunities that may encourage them to become involved with walking for exercise.

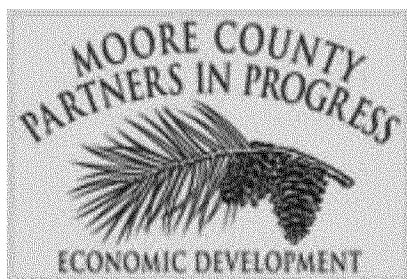
Military Families

Pinehurst and Moore County's outstanding quality of life and proximity to Fort Bragg, the nation's largest US Army base, combine to make the area a magnet for military families, who find great schools, excellent healthcare, low taxes, tons of great recreational opportunities, and other military families.



These families deal with issues civilians may never dream of, such as the hardships of having young children when your spouse is deployed for 6 months or more. To deal with these and other challenges, support systems comprised of friends, neighbors and church families are relied upon to maintain a sense of normalcy. One case in point is the Sandhills Military Wives Meetup Group. The group of more than 160 members is open to wives of active duty or retired military. They share their lives while involved in book clubs, wine tastings, and many recreational activities – either individually or with their families.

Economic Development – Moore County Partners in Progress



"When you want more, look for Moore". The Moore County Partners urge people to visit and relocate to Moore County, the heart of North Carolina. In efforts to accomplish this end, the Economic Development group stress the unique lifestyle, which is brought on by the County's geography, demographics, infrastructure, culture, commerce, education, and retirement living.

Village Center Enhancement Strategy

The Village Center has been the heart and soul of the historic Village of Pinehurst since 1895. The Center, a retail shopping destination with character and ambience like no other, is a place for residents to congregate and visitors to explore.



The Village Center, however, has been negatively impacted by the most recent economic recession and as a result faces many challenges in ensuring its economic viability.

In May 2010, The Village Council appointed the Village Center Enhancement Committee to develop strategies to “formulate actionable recommendations designed to enhance the health and vibrancy of the Village Center.” This Village Center Enhancement Strategy represents those recommendations.

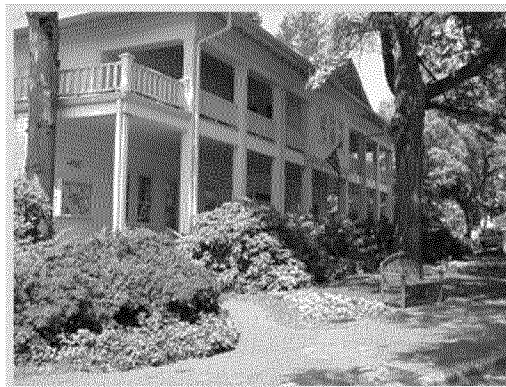
As a result of The North Carolina Downtown Development Association (NCDDA) report, the Village Center Enhancement Committee reorganized itself and formed three subcommittees to formulate work plans for the recommendations:

1. Business and Community Relations
2. Downtown Facilities
3. Business Recruitment and Retention

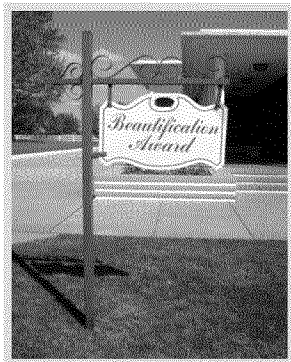
Community Appearance Grant Program

The Village of Pinehurst has a Community Appearance Grant Program that is intended to help businesses and property owners in commercial areas upgrade and improve the exterior appearance of their property.

Grant rebates of up to \$1,500 or 50% of the exterior/site-up-fit cost (whichever is less) are available for building and site improvements. Review and approval of the proposed improvement projects are based upon design guidelines, community plans, and streetscape plans for the area in which the project is located.



Warren H. Manning Beautification Award Program



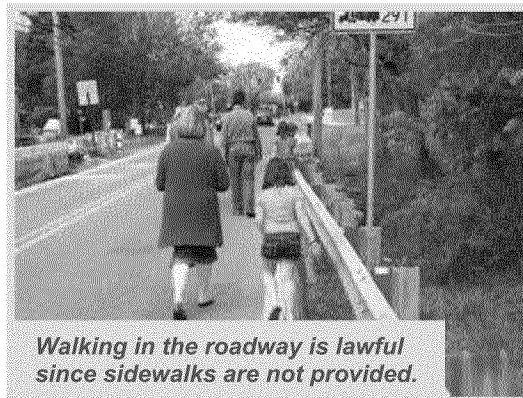
In response to a desire by the Pinehurst Village Council to develop an Award Program which would recognize the efforts of individuals and business owners for their contribution to the beautification of the Village, a program named after Warren H. Manning, who was instrumental in designing and planting over 200,000 trees and shrubs in the Village, has been developed. A former employee of the Olmsted Group, he went on to be a nationally renowned landscape architect. The program will have two distinct parts, residential and non-residential. Each part will

consist of awards for new development and remodeled projects.

3.3 PEDESTRIAN LAWS

The State of North Carolina follows a standard set of basic pedestrian laws, outlined in a guidebook published by the North Carolina Department of Transportation. Below, is a summary of these laws.

1. *Pedestrians need to obey traffic control signals*
2. *Pedestrians have the right-of-way in crosswalks where there are no traffic control signals*
3. *Pedestrians have the right-of-way at intersections without marked crosswalks*
4. *Pedestrians have the right-of-way in walkways at alleys, driveways, private roads and building entrances*
5. *Between adjacent intersections with traffic control signals, pedestrians may cross only in a marked crosswalk*
6. *Pedestrians must yield to vehicles, which have the right-of-way, if they are in the roadway but not at a marked or unmarked crosswalk (intersection)*
7. *It is unlawful to walk in the roadway if a sidewalk has been provided*
8. *If no sidewalk is provided, pedestrians should walk on the extreme left of the road, or the left shoulder, facing on-coming traffic*
9. *Standing, sitting, or lying upon highways or streets is prohibited*
10. *At any street, highway, road crossing or intersection that is not regulated by traffic control signals or officers, a blind or partially-blind pedestrian with a white cane or guide dog shall receive the right-of-way*
11. *At intersections with traffic control signals, if a blind or partially-blind pedestrian with a white cane or guide dog is partially across the street when the signal changes, that pedestrian shall have the right-of-way to finishing crossing the street*
12. *A person with a mobility impairment that is using a motorized wheelchair or similar conveyance shall be given all the rights and responsibilities of a pedestrian*
13. *Electric personal assistive mobility devices may be operated on public highways with speeds of less than 25 mph, sidewalks and*





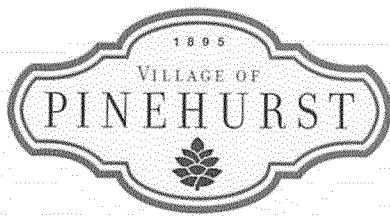
bicycle paths. They are required to yield to the right-of-way to pedestrians and other human-powered devices

These laws are available to the public in the NCDOT booklet, [A Guide to North Carolina Bicycle and Pedestrian Laws](#), and can be accessed at the NCDOT website, <http://www.ncdot.gov/bikeped/lawspolicies/laws/>.

Other relevant state and federal policies are listed below and can be accessed at the accompanying websites.

- NCDOT Pedestrian Policy Guidelines
http://www.ncdot.gov/_templates/download/external.html?pdf=http%3A//www.ncdot.gov/doh/preconstruct/altern/value/manuals/ppm/ppm28/ppm28-1.pdf
- NCDOT Greenway Policy
http://www.ncdot.gov/_templates/download/external.html?pdf=http%3A//www.ncdot.gov/bikeped/download/bikeped_laws_Greenway_Admin_Action.pdf
- NCDOT Board of Transportation Resolution for Bicycling and Walking
http://www.ncdot.org/transit/bicycle/laws/laws_resolution.html
- United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations (March 2010)
http://www.fhwa.dot.gov/environment/bikeped/policy_accom.htm
- FHWA Policy for Mainstreaming Non-motorized Transportation (FHWA Guidance – Bicycling and Pedestrian Provision of Federal Transportation Legislation)
<http://www.fhwa.dot.gov/environment/bikeped/bp-guid.htm>
- TND Guidelines
<http://www.ncdot.org/doh/preconstruct/altern/value/manuals/tnd.pdf>
- NCDOT Complete Streets Policy
(http://www.bytrain.org/fra/general/ncdot_streets_policy.pdf
And <http://www.nccompletestreets.org/>)

- END OF SECTION -



HISTORY, CHARM, AND SOUTHERN HOSPITALITY

SUMMARY FOR THE MONTH OF JANUARY 2015

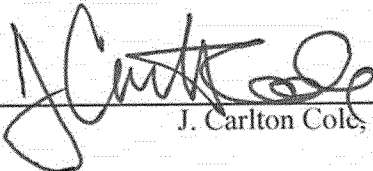
SUMMARY OF INCIDENT CALLS

TYPE OF INCIDENT	NUMBER THIS MONTH	NUMBER YTD	NUMBER THIS MONTH LAST YEAR	NUMBER YTD LAST YEAR	PERCENTAGE YTD
Fire	7	7	2	2	250%
Overpressure Rupture, Explosion, Overheat - no fire	2	2	0	0	200%
Rescue & EMS Incidents	5	5	8	8	-38%
Hazardous Conditions - no fire	9	9	11	11	-18%
Service Call	12	12	29	29	-59%
Good Intent Call	29	29	32	32	-9%
False Alarm & False Call	22	22	19	19	16%
Severe Weather & Natural Disaster	0	0	0	0	0%
Special Incident Type	0	0	1	1	-100%
TOTAL INCIDENTS	86	86	102	102	-16%

SUMMARY OF INSPECTION

TYPE OF INSPECTIONS	NUMBER THIS MONTH	NUMBER YTD	NUMBER THIS MONTH LAST YEAR	NUMBER YTD LAST YEAR	PERCENTAGE YTD
Residential	7	7	5	5	40%
Residential New Systems	0	0	0	0	0%
Residential Fire Sprinkler	0	0	4	4	-400%
Commercial	31	31	19	19	63%
Plan Review/Site Inspections	0	0	2	2	-200%
Reinspection	50	50	22	22	127%
Occupancy Certificates	0	0	0	0	0%
TOTAL INSPECTIONS	88	88	52	52	69%
Violations Found:	94	94	51	51	84%
YTD Violations to be Corrected:		0		0	
YTD Violations Corrected:		0		0	
Correction Percentage:		#DIV/0!		#DIV/0!	

February 4, 2015


J. Carlton Cole, Fire Chief

FIRE DEPARTMENT

395 Magnolia Road • Pinehurst, NC 28374 • Telephone (910) 295-5575 • Fax (910) 295-4861 • www.vopnc.org

SECTION TWO: EVALUATING CURRENT CONDITIONS

2.1 OVERVIEW

In Section 2, the existing pedestrian facility conditions in the Village of Pinehurst are inventoried and evaluated. To begin this process, information was gathered from a variety of sources, which included interviews, site analysis, a public questionnaire, community meetings, relevant planning documents and direction from the Project Steering Committee and Village staff. The information gleaned from this



Active, involved communities promote pedestrian-friendly environments

initial research was later used to develop the final Village of Pinehurst Comprehensive Pedestrian Plan.

In general, a pedestrian-friendly environment indicates a strong and actively-involved community. Improving the walkability between destinations within the Village of Pinehurst would serve, not only to support walking as a safe and healthy alternative to driving, but would enhance the vitality of the entire community.

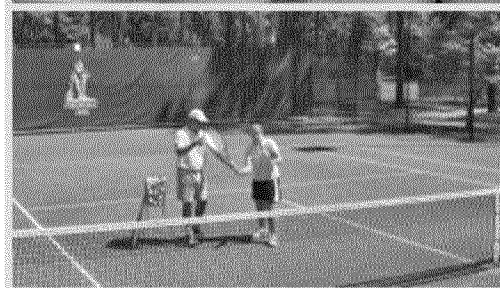
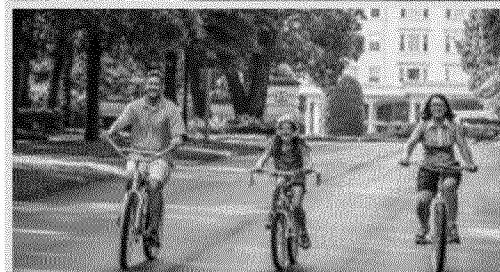
A viable pedestrian transportation network is essential to the economic and social welfare of a sizable population within the community. Functional pedestrian facilities strive for, but are not limited to, the following characteristics discussed in Section 1:

- (1) Healthy lifestyles
- (2) Alternative transportation
- (3) Reduction of environmental impacts
- (4) Safety
- (5) Community identity

User Demographics/Current Usage

According to the United States Census Bureau, the estimated population for the Village of Pinehurst in 2010 was 13,124 people. Census 2000 gauged the Village's population at 9,706, resulting in a growth between 2000 and 2010 of 35%. Recent data published by the North Carolina State Data Center estimates that the population increased to 15,525 in 2013, resulting in an 18% growth rate over a 3-year period. There are several suspected reasons for the rapid increase in population, such as:

1. The ever-increasing popularity of the resort area as both a sports mecca and a retirement community (with an extremely moderate climate) continues to lure residents.
2. The life expectancy of the retirement-aged citizens continues to increase.
3. Although an economic downturn occurred during this decade, many senior citizens received retirement packages earlier than planned, further increasing the number of possible retirees.
4. The closing of military bases in other parts of the country increased the military population of the Fort Bragg Army Base in nearby Fayetteville. The Village of Pinehurst is an attractive living area, on many levels, for those military families who can afford it.



The United States Federal Census gives a breakdown of the population of the Village of Pinehurst according to the following age groups:

Age Distribution of Population of the Village of Pinehurst

AGE	NO. RESIDENTS	PERCENTAGE
Under 5 years	560	4.3
5 to 9	610	4.6
10 to 14	622	4.7
15 to 19	452	3.4
20 to 24	236	1.8
25 to 29	406	3.1
30 to 34	533	4.1
35 to 39	709	5.4
40 to 44	658	5.0
45 to 49	689	5.2
50 to 54	684	5.2
55 to 59	844	6.4
60 to 64	1,174	8.9
65 to 69	1,255	9.6
70 to 74	1,080	8.2
75 to 79	944	7.2
80 to 84	835	6.4
85 yrs. and over	833	6.3

Source: U.S. Census Bureau, 2010 American Community Survey: General Profile of Characteristic at <http://factfinder.census.gov>

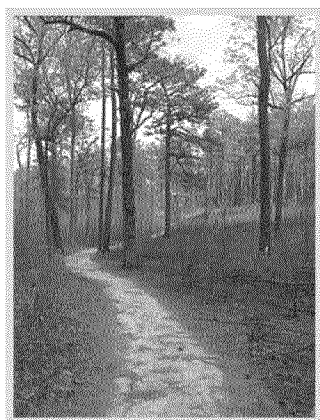
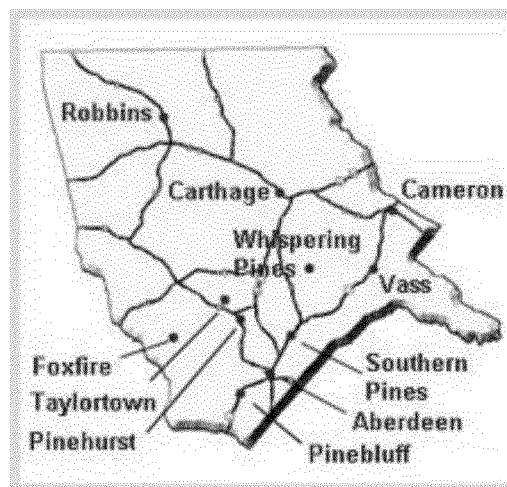
The age breakdown of the Village of Pinehurst's population is not typical to North Carolina. The "retired" population is by far the largest demographic for the Village, with adults between the ages of 60 and 85+ supplying almost 47% of the population. It should be noted that a percentage of the senior population often utilizes alternate forms of transportation other than a personal motor vehicle.

Other important statistics revealed about Pinehurst include:

- The population density is approximately 940 people per square mile
- The daytime population change due to commuting is approximately + 3,931
- Only 1.6% of the population report walking as the main way they get to work
- 4.1% of the population lives in poverty
- 69% of residences are considered "family households"
- There were only two (2) pedestrian fatalities between the years of 1975-2011

Physical Characteristics

The Village of Pinehurst is located in the "sandhills" of North Carolina. The Sandhills is a region in the interior of the states of North Carolina and South Carolina. It is a strip of ancient beach dunes, which generally divides the Piedmont area from the Coastal Plains and is the evidence of a former coastline (when the ocean level was higher or the land was lower). These beach deposits were formed approximately twenty (20) million years ago during the Miocene Epoch. Typically, beach fossils/deposits can be found near the front edges of the Sandhills. The Coastal Plains are also "terraced" from ocean levels; but, none have been as long-lasting and as large as the dunes in the Sandhills.



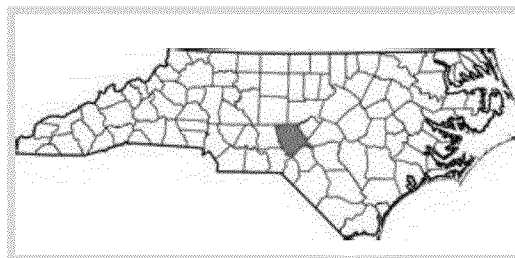
Dry, sandy soils amid scrubby forests are typical of the Sandhills Region. Because the soils in this area are predominantly porous and sandy, the Sandhills suffers from drought; therefore, irrigation is normally required for agriculture. Some areas within the Sandhills are noted for peach production, primarily because peaches need a well-drained soil to prosper.

Prior to agricultural use, most of the Sandhills were forested with Longleaf Pine, Loblolly Pine, Turkey Oak, and Blackjack Oak. In areas of extreme drainage, the forests are quite scrubby in appearance. Additionally, the Longleaf Pine begins to dominate in an area such as this – where frequent lightning-induced fires

are typical.

The Sandhills region of North Carolina most notably refers to the area in and surrounding the municipalities of Pinehurst, Southern Pines, and Aberdeen in Moore County. Sitting at an approximate elevation of around 561 feet, the Village of Pinehurst has a total area of 14.9 square miles (14.3 is land and 0.6 is water). There are no major rivers flowing through Pinehurst; however, there are several bodies of water, including Lake Pinehurst, and Pinewild Lake. Four (4) local thoroughfares are the predominant venues for transportation – US 15/501 (traveling north/south), NC 5 (traveling north/south), NC 2 (traveling east/west), and NC 211 (traveling east/west). The Village of Pinehurst is located approximately 68 miles from the state's capitol of Raleigh; and the Moore County Airport is situated approximately five (5) miles to the northeast.

The area is home to dozens of churches and synagogues representing most religions and denominations. Universities are also in close proximity to Pinehurst. Sandhills Community College is located approximately 4 miles from the Village, and major universities are within a two-hour driving distance including the University of North Carolina at Chapel Hill, Wake Forest University in Winston-Salem, North Carolina State University in Raleigh, and Duke University in Durham.



2.2 LOCAL TRANSPORTATION NETWORK ASSESSMENT

Public transportation plays a vital role in enhancing the productivity and the quality of life in the United States. It promotes access to employment, community resources, medical care, and entertainment in communities across America. Both those who *choose* to ride (and those who have no other choice) benefit from its presence. By reducing congestion, air pollution, and travel times; public transportation benefits pedestrians, as well.

In urban areas, public transit typically ranks as the second most used travel mode, after personal vehicles. North Carolina has one of the better Highway systems in the nation and it has supported the emergence of the state as an economic power and population center. However, in urban areas, congestion and travel delays are occurring more frequently due to vehicles; and even though North Carolina continues an aggressive Highway building program, it appears that the state will be unable to keep pace with the demands placed on its capacity. With this in mind, area planners have been leaders are trying to swiftly meet the current and future needs of transit.

Existing Non-Pedestrian Transportation Network

MCTS (Moore County Transportation Services)

Moore County Transportation Services (MCTS) provides transportation services on an advanced reservation basis. Services for senior citizens, persons with disabilities, limited general public individuals and human service agencies are provided on a county-

wide basis. Limited out-of-county services are provided for specialized care (for example: a trip to a specialized medical provider in the Triangle region).

MCTS is primarily controlled by an advisory board. The purpose of the Transportation Advisory Board (TAB) is to assist the MCTS in accomplishing its stated goal to provide safe and efficient transportation to the citizens of Moore County and promote community support for and participation in the MCTS department. The TAB functions include:

- Making recommendations to the Moore County Board of Commissioners regarding the MCTS system
- Overseeing transportation for the clients of the human service oriented agencies located in Moore County in order to fulfill the County's fiduciary responsibilities to citizens by the most effective means
- To provide advice and support to the MCTS Director regarding policy, planning and development of operational procedures and practices consistent with program policies

Members of the Transportation Advisory Board are appointed by the County's Board of Commissioners.

Community Concerns, Needs, and Priorities

In order to ensure a successful study, it is vital that the public user of pedestrian facilities be able to share their issues, needs, and desires. The methodology used in establishing a Pedestrian Plan for municipalities should always include citizen input.



To better understand the needs of facility users, three (3) different methods were used to identify specific concerns/demands of Village residents. The different methods offer options to local citizens and present additional information that, otherwise, could not be assessed from just one (1) method. These methods consisted

of conducting Steering Committee discussions, pedestrian surveys, and Community Workshops. While the surveys and map exercises were good tools to record participant responses to specific questions, open discussion with citizens also contributed a great deal of information regarding the desires and concerns of local pedestrians.

Steering Committee Discussions

To act as a *guide* for the development of the Pedestrian Plan, a Steering Committee was formed during the initial planning process to establish a vision and identify the needs and priorities of pedestrians. The steering committee acted as the principal advisory body to

McGill Associates, and was composed of members from the Village staff, Village Council, NCDOT and local citizens. The names of Steering Committee members can be found in the Acknowledgments at the beginning of this document. A total of five (5) Steering Committee Meetings were held during the preparation of this plan.

During an initial Steering Committee meeting to solicit input on the pedestrian environment in the Village, members were divided into small groups and given maps along with colored dots and markers. The members were asked to check the maps for inaccuracies and to mark pedestrian destinations, areas where heavy pedestrian traffic occurred, and problem intersections and gaps in the pedestrian network. They were also asked to draw where they would like to see new sidewalks and greenways. The results of this exercise led to the maps used for the Community Workshops.

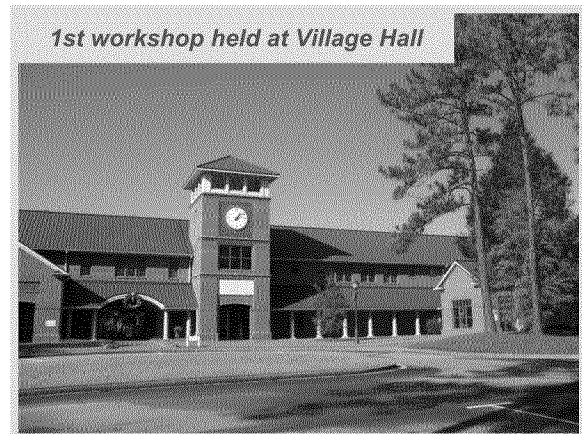
Community Workshops

Bicycle and Pedestrian Public Input was sought during both advertised, formal public workshops held at the Village Hall designed to provide drop in service for any Village resident that wished to attend and participate in either mapping exercises identifying needs and desires or open discussion to share opinions and suggestions.

Community workshops were also held during special events including a Live After 5 event and the Parks and Recreation Fall Festival to provide the public an opportunity to be involved in the pedestrian planning process. This also assured a good crowd from which to attract participants for the workshop exercises.

Community Workshop and Open House #1

Over 45 people participated in the initial pedestrian workshop held at Village Hall on September 16, 2014. Meeting participants could drop in during either morning (9 a.m.-Noon) or afternoon (5 p.m.-8 p.m.) meeting times. Participants were invited to fill out a pedestrian survey, to participate in a mapping analysis exercise and/or an open discussion. A copy of the combined Bicycle/Pedestrian Plan survey can be found in Appendix A. The map exercise was used to initiate discussions about existing pedestrian corridors, needed pedestrian facilities and dangerous conditions for pedestrians in Pinehurst.



The consensus at this workshop is that the Pinehurst Greenway should be expanded to connect with the Downtown, surrounding neighborhoods and common destinations. Other popular ideas included having paved sidewalks in the residential areas tie to the Greenway. Additional pedestrian paths in which people were concerned with included the existing sand/clay paths in the historic Village area and the possibility of improving these paths. The major concern for participants during the workshop was if proposed

improvements would follow the existing Pinehurst Greenway Plan recommendations calling for a wide cross-section for gravel paths. The most popular idea from participants was for narrower sidewalks (5'-6') to be installed where appropriate within neighborhoods that should connect with the larger Greenway trails.

Dangerous Intersections that were identified by the community included:

- Numerous intersections along NC 211, NC 5/Beulah Hill Road, and NC 2
- Juniper Creek Road and US 15/501
- Pinehurst Trace and US 15/501
- Monticello Drive and Morganton Road

Community Workshop #2

The second community meeting took place during a Live After 5 event on October 10, 2014 in Downtown Pinehurst. Approximately 40 participants stopped by the Pedestrian Plan booth and shared ideas and concerns for the Pedestrian system in Pinehurst. Participants were asked to review, comment, and share their ideas about the existing and proposed pedestrian facilities and conditions. Participants were also asked to complete a survey to collect more detailed information regarding their pedestrian experience in Pinehurst and their suggestions for improving the system.



Community Workshop #3

The third community meeting took place at the Pinehurst Parks and Recreation Fall Festival on October 24, 2014 at Cannon Park. Participants were asked to review, comment, and share their ideas about the existing and proposed pedestrian facilities and conditions. Participants were also asked to complete a survey to collect more detailed information regarding their pedestrian experience in Pinehurst and their suggestions for improving the system. Approximately 30 people participated in the open discussions, mapping exercise and/or completed a survey.



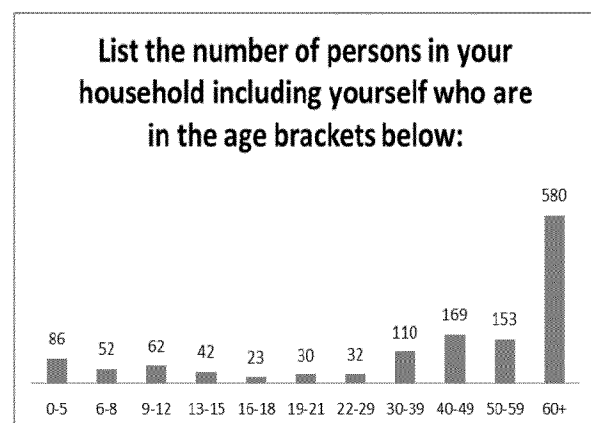
Community Workshop and Open House #4

The fourth and final community meeting was also held at Village Hall on December 4, 2014. This meeting was attended by roughly 50 residents, who were provided with the current results of the survey/questionnaire, given the opportunity to fill out their own



survey, and provided with preliminary recommendations and future pedestrian corridors to be included within the plan. Attendees were also given the opportunity to express comments and/or concerns regarding existing facilities, ask questions about the plan and recommendations, and view various maps that are intended to be included within the plan.

Pedestrian/Bicycle Survey

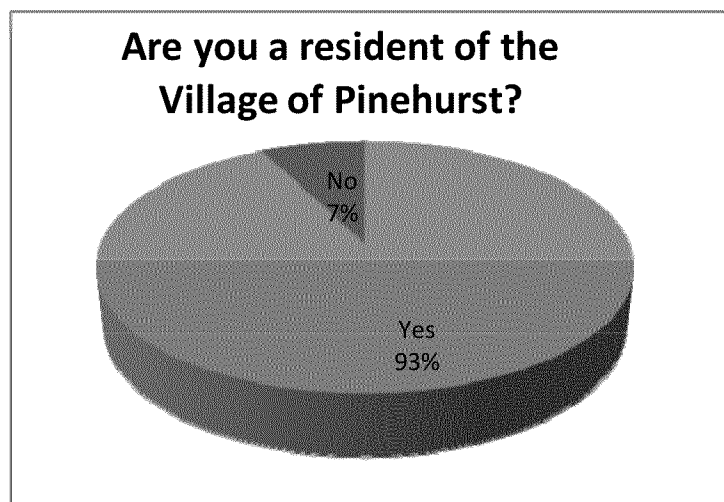


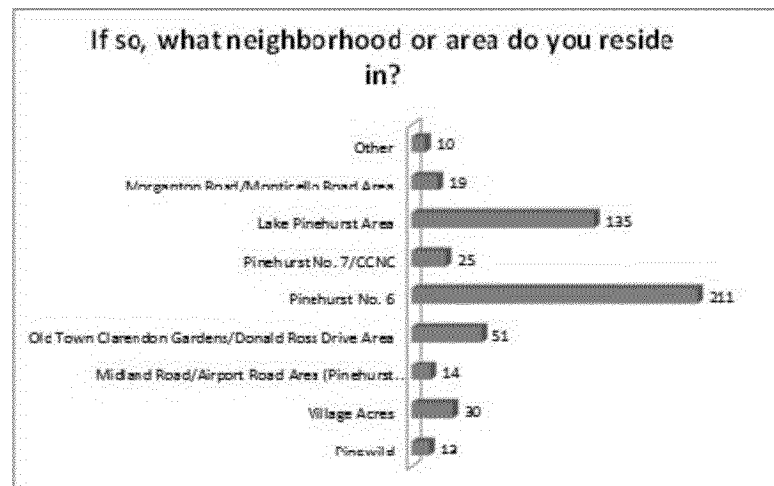
To further solicit input from the public about the pedestrian system in Pinehurst, a public survey was conducted by means of a questionnaire, which was made available to residents via Community Meetings, by pick-up at Village Hall, and via the internet from a link on the Village's main web page. The pedestrian survey, which can be found in the Appendix, was designed to solicit opinions on both *general* and *specific* pedestrian concerns in the Village of Pinehurst. Approximately 600 people, representing approximately

1,250 individuals, filled out the Pinehurst Pedestrian & Bicycle Plan Survey. The survey questions and a summary analysis for each are pictures in the next few pages.

As indicated in the graphic above, the majority of survey participants were adults age 60 and above (approximately 48%). While all age groups were represented, this outcome reflects the typical profile for Pinehurst (47% of residents are age 60+).

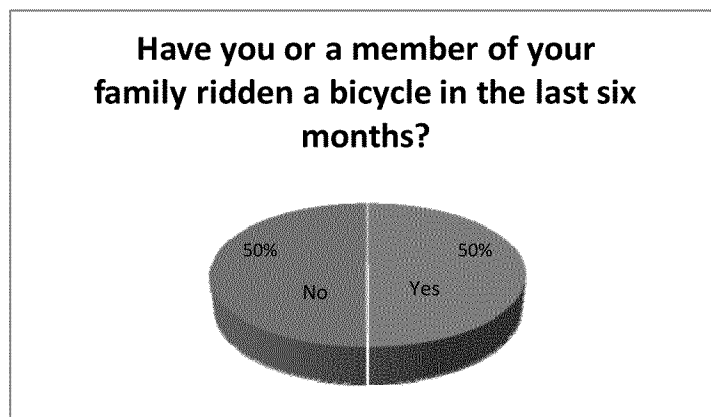
The Majority of survey participants were residents of Pinehurst.





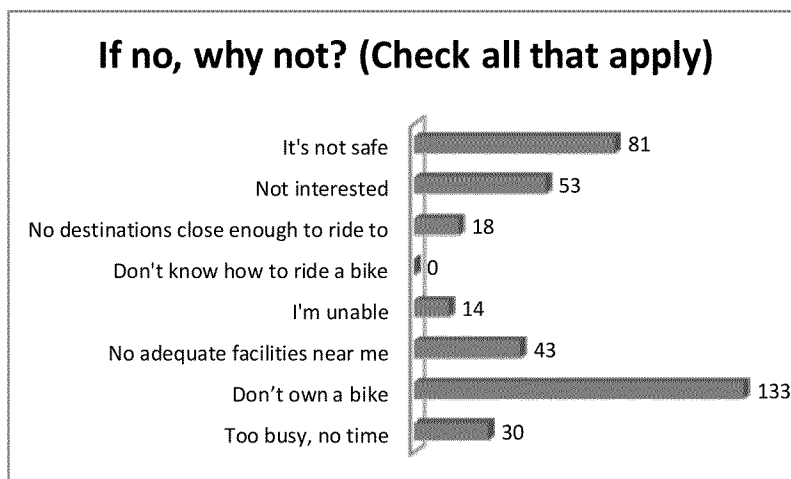
Participants from all of Pinehurst chose to participate in the survey, however, the majority of surveys were provided by residents identifying with Pinehurst Number 6 and the Lake Pinehurst Area.

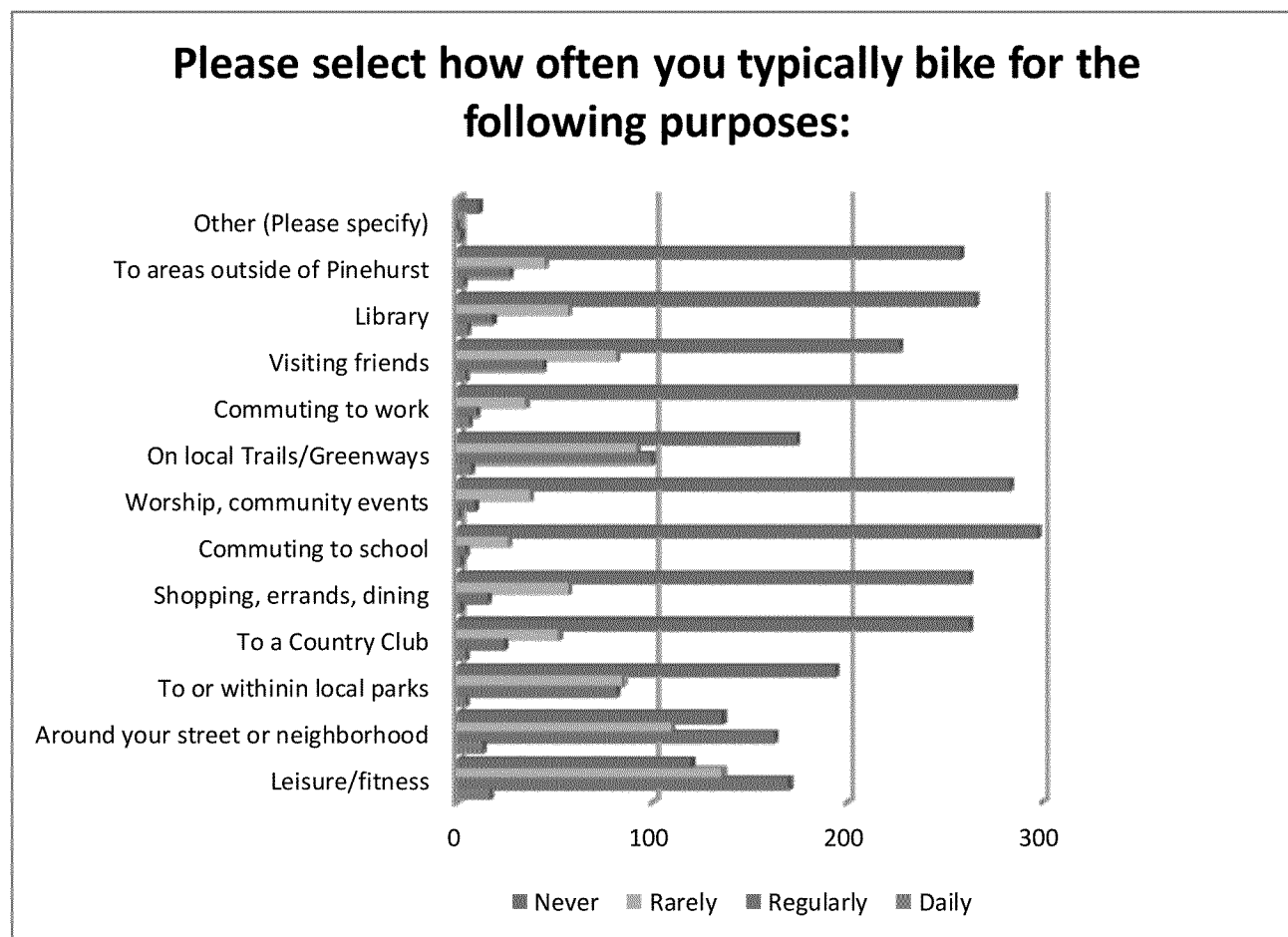
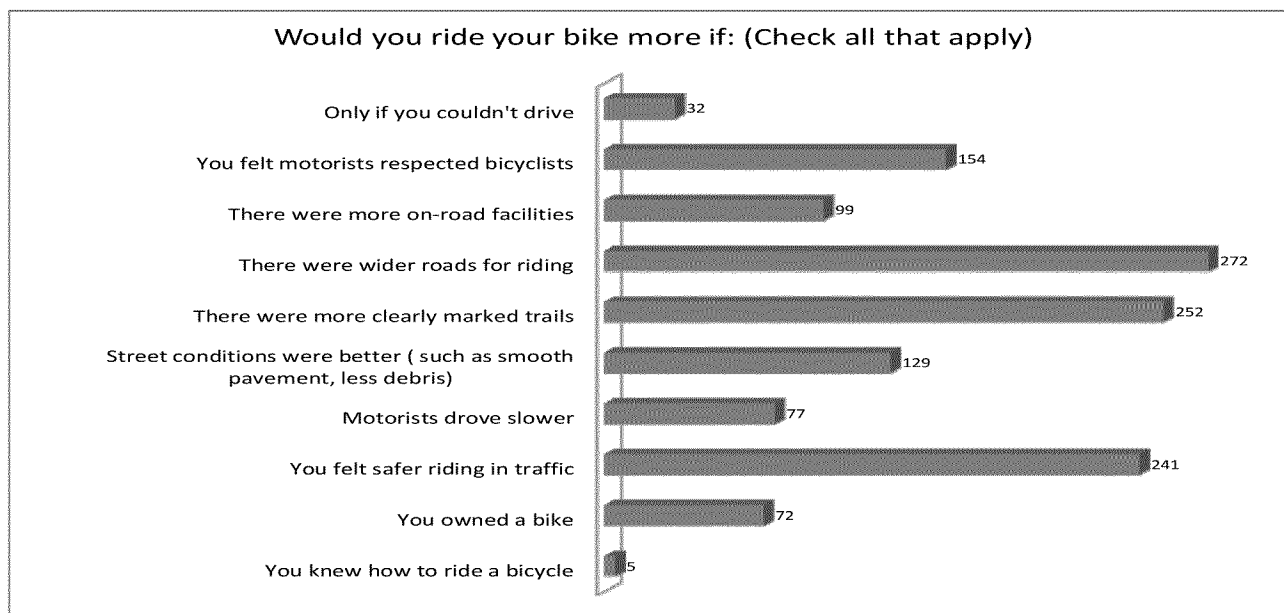
The next four (4) questions pertain to the Comprehensive Bicycle Plan, but are being included for reference in this Pedestrian Plan.



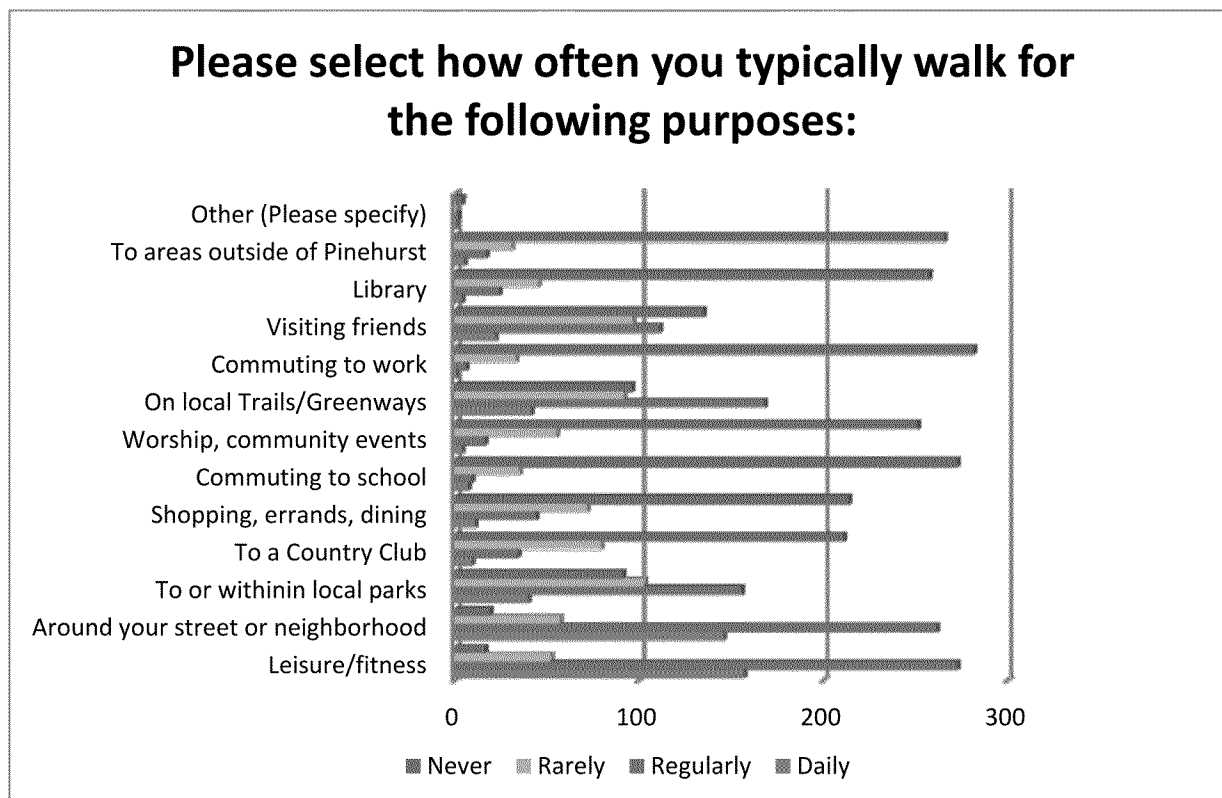
Half of survey responses indicated riding a bike within the last six months, those that hadn't ridden reported not doing so either because they didn't own a bike or felt riding in Pinehurst was not safe, were not interested in riding or didn't feel adequate facilities were located near them.

Other reasons included a lack of time, inability to ride or the perception that desired destinations were not close enough in proximity to ride to.

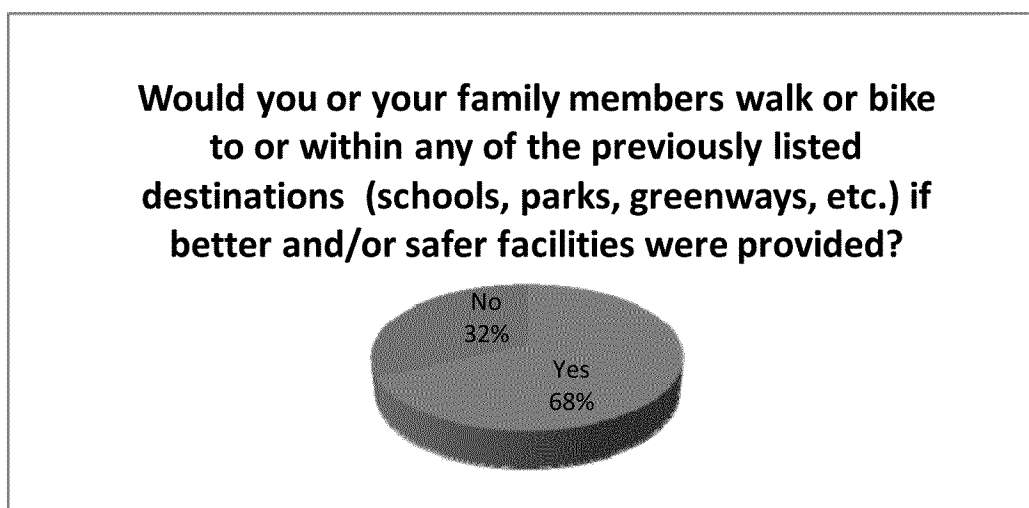




Survey responses indicate that riding for leisure/fitness and riding around neighborhood streets were the major reasons for riding a bike in Pinehurst.

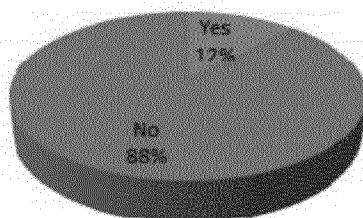


Survey participants reported walking for leisure/fitness and walking around their neighborhood streets as being the most common reason for walking in Pinehurst. Other common reasons included walking to parks, the Greenway and to visit friends.



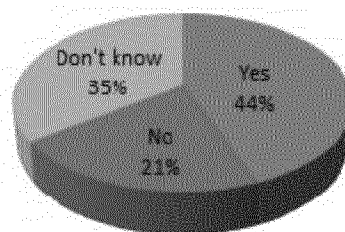
The majority of survey participants reported not having participated in the Pinehurst Walking School Bus program. This is not surprising, considering the age distribution of survey participants.

**Have you or anyone in your family
ever participated in the Walking
School Bus Program at Pinehurst
Elementary School?**

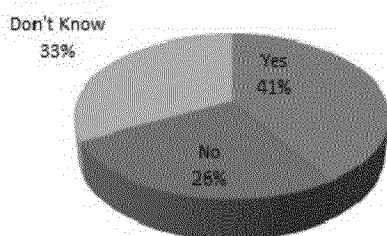


While 44% of those surveyed were in favor of restoring the historic sand/clay paths within the Village, 21% were not in favor of restoration. However, 35% of survey participants were not certain whether or not the historic paths should be restored. This level of uncertainty should be further explored by the Village prior to deciding a course of action regarding the restoration of the historic sand/clay paths.

**Are you or anyone in your
household in favor of the restoration
of the historic sand/clay paths
within the Village?**

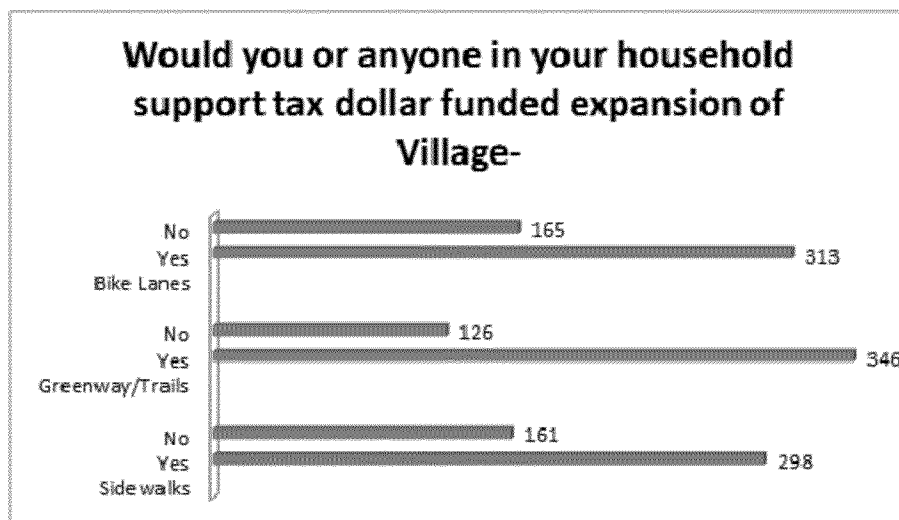


**Do you think there are enough
signalized pedestrian crosswalks in
Pinehurst?**

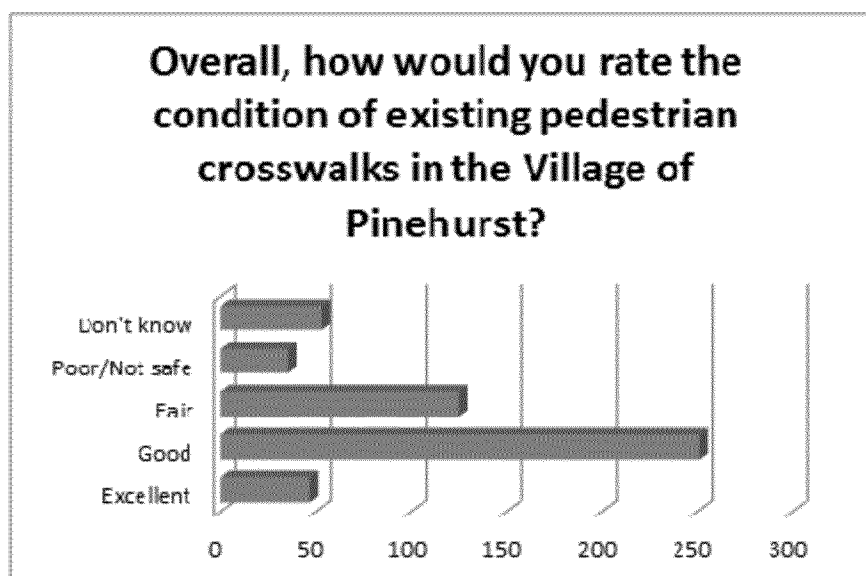


Most of the survey participants either think there are enough signalized crosswalks or don't know.

The majority of survey respondents reported being in favor of tax dollar funded expansion of the bike lanes, Greenways/Trails, and Sidewalks in the Village, with Greenway/Trails being the highest percentage.



Most of the survey participants reported the condition of existing pedestrian crosswalks in the Village as being good.



Additional Comments

The survey/questionnaire also gave participants the option of providing additional written comments related to bike and pedestrian facilities in Pinehurst. Questions were asked about suggested bike lane and trail routes, physical barriers that prevent the safe use of the existing system, the Village's best investment in walking/bicycling facilities, and any additional comments that the respondent had. Common themes associated with the written comments include:

- More connectivity is needed between residential areas and destination points, such as Downtown Pinehurst, and neighboring communities



- Praise to the Village for the existing greenway system, trails at the Arboretum, and trails at Rassie Wicker Park
- A desire for more sidewalks in residential neighborhoods, and the opinion that existing roads are too narrow and that walking/biking in residential areas is generally unsafe. Some resistance to sidewalks in front yards was noted due to small lot sizes.
- A preference for off-street biking opportunities in lieu of bike lanes within existing streets
- The current greenway system is generally good for walking but not for biking (particularly with training wheels) or pushing a stroller
- Safety concerns for walkers and cyclists along Linden Road, particularly those that utilize the roadway in lieu of the greenway
- A need for signalized crosswalks across major highways (15-501, 211, etc.)
- Many respondents don't like the idea of having to drive somewhere to safely walk or bike

Pinehurst Crash Data

When pedestrian paths cross vehicular pathways there is always the possibility of collision, injury, and/or death. According to NCDOT data, only two (2) incidents have occurred in Pinehurst within the last twenty (20) years and both incidents were located on major roadways. The residential areas of Pinehurst do not have a history of accidents involving pedestrians, but with the lack of pedestrian facilities available for jogging, running, walking or riding a bike; the numbers may indicate a lack of pedestrians having access or confidence related to using Pinehurst roads for non-vehicular transportation.

With the rise of fitness minded residents looking to improve their health by getting out more and walking or biking as alternative means of transportation on the rise, the need for providing safe ways for pedestrians to get around will continue to grow.

Analysis

The survey results indicate that people are using the existing pedestrian facilities that have been put in place in the Village. However, many feel there is a lack of connectivity to common destinations within the Village and that not enough biking/walking facilities exist to safely access these destinations. The public outreach efforts have also indicated that support for expanding the pedestrian/bicycle system exists in a major way. This survey has established both the need for improvements to the existing pedestrian/bike system in Pinehurst as well as the need for expanding these systems in the future.

Other reasons for improvements to the pedestrian system include the growing trend of healthy living and fitness as they relate to improving quality of life. Access to pedestrian

facilities was a common theme coming from the responses and many comments were made related to the need for expanding both pedestrian and bicycling facilities.

2.3 ASSESSMENT OF THE PEDESTRIAN COMPATIBILITY OF THE LOCAL TRANSPORTATION SYSTEM

Pedestrian System Access

The current pedestrian system in Pinehurst mainly consists of formal sidewalks on busy thoroughfares, Greenway trails traversing the Village, and informal sand/clay paths mainly located within the historic downtown area. Some isolated side-of-the-road foot paths worn from frequent use exist between common destinations, such as Rattlesnake Trail from 211 to Cannon and Camelot Parks.

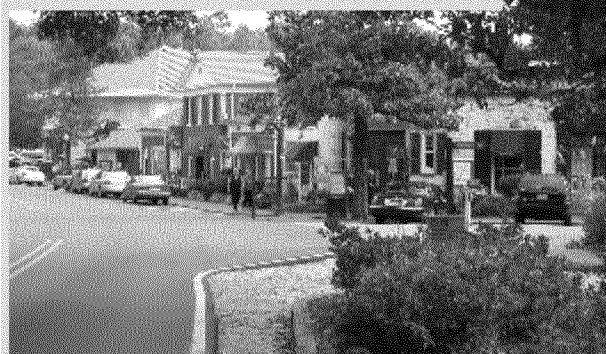
Most of the sidewalks were noted to be in good condition at the time of this study. There is a limited network of sidewalks from the Market Square retail area to nearby residential areas but many of the adjoining paths are sand/clay, and are therefore not ADA compliant. Many areas of development just outside the Historic Village area either are without any sidewalks or do not connect with the existing system of sidewalks.

Some residential areas within the Village of Pinehurst, primarily Village Acres, benefit from the recent development of the Pinehurst Greenway. These areas along the Greenway now have access to recently completed sidewalks along Highway 211.

The historic Village areas offer the best pedestrian facilities within the Village. Unfortunately, there is poor connectivity to get to the Village Center from residential and business areas just outside the historic Village area.

Hotels and restaurants which serve tourist traffic in the area are not accommodated by a

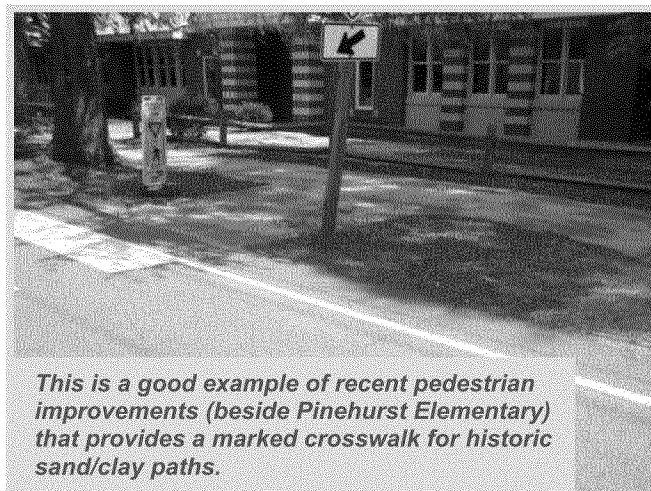
There is poor connectivity from individual residential neighborhoods to local recreation and retail destinations.



planned pedestrian network. Village businesses may benefit by being accessible via a planned pedestrian network linking the various tourist attractions, resorts, government facilities, hotels, restaurants, residential areas and the hospital, etc.

As previously stated, many pedestrian destinations in Pinehurst are not served by sidewalks at all, while others are not accessible via ADA approved accessible sidewalks. Cannon and Camelot Parks are located adjacent to the Greenway but these paths are not made of a material that is approved as suitable by the ADA. Other than Pinehurst's historic village area, the Village Green, there are almost no pedestrian paths from residential neighborhoods into shopping/retail areas.

Walking Trip Accessibility Characteristics



This is a good example of recent pedestrian improvements (beside Pinehurst Elementary) that provides a marked crosswalk for historic sand/clay paths.

Walking trips are typically broken down into two (2) main categories: walking for recreation and walking to reach a destination.

Most residential areas within the Village (Pinehurst No. 6, Pinehurst Lake Area, Village Acres, etc.) are without street side sidewalks. Pedestrian travel is often along the edge of or within a roadway. A number of residents voiced frustration during community meetings about the safety of walking within the roadway, or for having to use their car to drive to a

separate location to access the Greenway. The common idea shared by participants of the community meetings, is that all residential areas within the Village need access to at least one major sidewalk within their immediate neighborhood that connects to the Greenway. Areas within close proximity of the Village Green do have pedestrian paths that connect with the Greenway; and some of the sand/clay paths did show evidence of ongoing improvements and recent repairs taking place (near Pinehurst Elementary). However, a large number of these paths consist of sand/clay and pose a barrier to some individuals accessing the pedestrian network.

The Pinehurst Greenway is currently gravel/sand in most locations, limiting accessibility for some users. Some sections of this system are paved due to steep slopes and/or ADA compliance, and this important asset to the Village will serve as a critical unifying component linking neighborhoods and resort areas with shopping areas, job sites, schools, parks, doctors' offices, the local Hospital and other nearby communities.

Sites generating Pedestrian traffic include:

- **FirstHealth Moore Regional Hospital & Fitness Center** – Sidewalks currently exist along the perimeter of this property, which connect with the recently completed sidewalk along Highway 211. Several of the existing crosswalks are not ADA compliant, lacking curb ramps and/or signage. (See inventory map in Appendix).
- **Pinehurst Greenway** – The Greenway currently extends from a trailhead parking lot along Forest Drive in Village Acres to the intersection of Linden Road and Foxfire Road. The Greenway also connects to Rassie Wicker Park, Cannon and Camelot Parks, Given Memorial Library, Carolina Hotel, Sidewalks on Highway 211 and eventually moves past the FirstHealth campus and adjacent residential properties.

- **Rassie Wicker Park** – There are brick sidewalks leading to the park from the Village Hall and Arboretum, and the existing Greenway system extends through the park.
- **Village Arboretum** – Both paved and non-paved paths traverse this park which is accessible from the Village Hall.
- **Village Hall** – There are brick sidewalks leading to this municipal center from Rassie Wicker Park and the Fire and Police Stations.
- **Given Memorial Library** – The Library is accessible via brick sidewalk adjoining the Village Green. These paths are connected to the sidewalks in Market Square which are accessible to some paved sidewalks and sand clay paths in the adjacent residential area.
- **Pinehurst Elementary School** – A recently updated portion of sand/clay path provides pedestrian connectivity from the adjacent residential community and Camelot Park. The school utilizes the paths as part of their Walking School Bus program in warmer months of the year.
- **Sandhills Community College** – There are no sidewalks or bike lanes leading to the College along Airport Road.
- **Harness Track/Fair Barn** – No pedestrian paths lead to these locations.
- **Various resorts/country clubs within the Village** – Some areas do not have pedestrian access, though the Village installed a new brick sidewalk along Highway 2 to link the Village Center with Pinehurst Resort prior to the 2014 U.S. Opens. Pedestrian access to Pinehurst Resort will likely increase in the future as a result of the new Members Club Pool Complex scheduled to open in the summer of 2015.
- **Residential neighborhoods** – As previously noted, most do not have access to pedestrian paths or sidewalks within the neighborhood.



Brick sidewalk near the Arboretum with marked crossing along McCaskill Road

Shopping destinations are scattered throughout the Village and adjacent areas, but the main areas that generate pedestrian traffic are:

- **Market Square/Downtown Pinehurst Retail Areas** – This symbolic downtown within Pinehurst has a mix of fair to good condition sidewalks that extend from the center of the square to nearby residential areas. The paved sidewalks typically lead to historic sand/clay paths.
- **Olmsted Village** – This popular destination is not located within the Village limits but is frequently used by Pinehurst residents. The recent widening of Highway 211 included the construction of new concrete sidewalks on both sides of the road that terminate at Olmsted Village near the intersection of Highway 211, NC Hwy 5 and Central Park Avenue.

Busy roadways pose a major barrier for pedestrians trying to walk from one point to another. According to NCDOT, the roadways with the highest Annual Average Daily Traffic (AADT) counts for 2013 in the Village of Pinehurst include:

- **US Highway 211** – 11,000 to 12,000 AADT
- **NC5/Beulah Hill Road** – 11,000 to 17,000 AADT
- **US 15/501** – 16,000 to 26,000 AADT
- **NC2/Midland Road/Palmetto Road** – 8,700 to 18,000 AADT
- **Linden Road** – 3,600 AADT

An NCDOT map showing Average Annual Daily Traffic Counts for the Village of Pinehurst can be found in the Appendix at the end of this document.

There are a number of intersections along these typically busy corridors that have a perception of being unsafe because of the volume and/or speed of vehicular traffic that pedestrians must navigate. Most of these intersections do not have pedestrian signals or crosswalks.

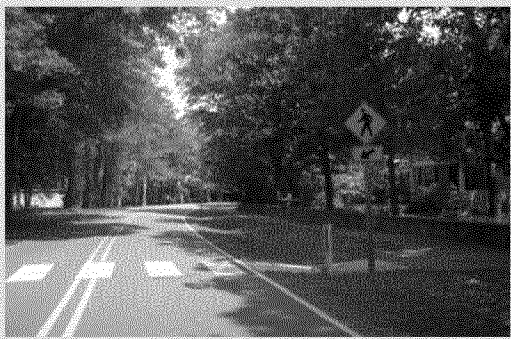
The exceptions are the intersections on Highway 211 that were recently improved by NCDOT. These intersections are equipped with pedestrian crosswalks and ped-heads.

To create a pedestrian-friendly transportation system in Pinehurst, existing pedestrian corridors should be strengthened by filling in gaps, repairing existing facilities, and providing safe and efficient paths across busy vehicular corridors. Additional pedestrian corridors need to be provided to connect major portions of the Village (east to west and north to south) and to serve as neighborhood connectors. New connectors need to be provided to reach important destinations, especially near public schools, parks, and popular commercial areas.

2.4 INVENTORY AND ASSESSMENT OF EXISTING PEDESTRIAN FACILITIES

In generating this plan, McGill Associates conducted an inventory of existing pedestrian facilities to delineate the location(s) of existing sidewalks and their condition(s). These facilities are shown on the *Inventory* map, found at the end of this section.

Pedestrian Crossing with ramp in drain



This inventory includes the existing condition of Village sidewalks, greenways, suggested locations of crosswalk and curbs ramp improvements as well as suggested signalized crossings. The inventory was developed to identify needed linkages that would improve connectivity and to assess both the condition of facilities and ADA compliance.

In addition to the visual survey, interviews were conducted with appropriate staff and agencies within the Village government. These interviews

were designed to solicit information from knowledgeable staff about departmental issues and concerns with the existing pedestrian network and how it currently serves the needs of the citizens of Pinehurst.

Visual Survey Results

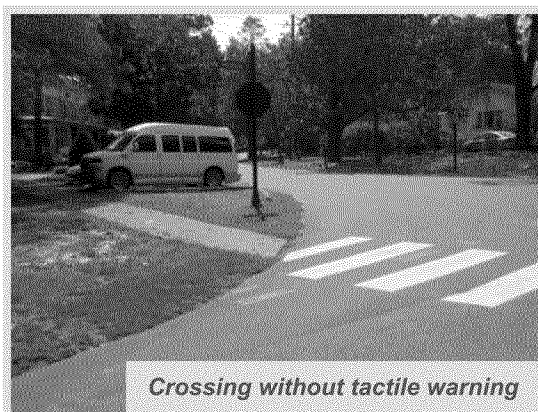
Sidewalks

The locations and conditions of existing sidewalks are shown on the Inventory Map at the end of this section. Existing sidewalks in the pedestrian network were rated as good, fair, or poor.

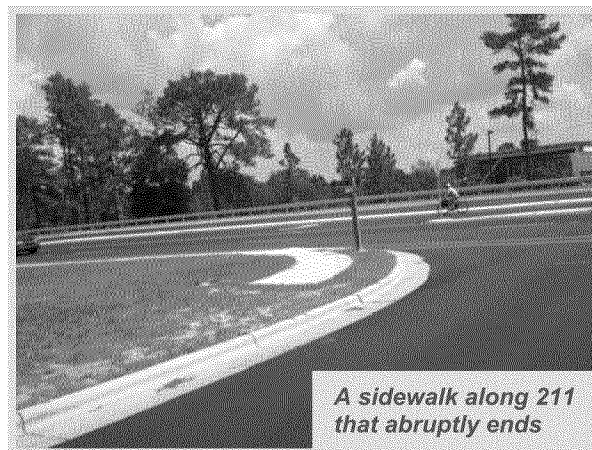
- Good – overall good, usable condition. Sidewalks must be at least four feet wide. A few minor cracks, small amount of spalling, and/or discoloration is acceptable.
- Fair – usable condition. Any sidewalk less than four feet in width, moderate number of cracks, minor settling or uplifting, spalling, and/or intrusive vegetation.
- Poor – dangerous or unusable sidewalks. Major cracks and breakage, major uplifting or settling, crushed concrete, missing segments, and/or excessive vegetation intrusion.

Overall, most of the existing sidewalks in Pinehurst are in good condition. The major issues for the overall pedestrian system are:

- ADA accessibility: Sand/clay paths and portions of the Greenway are not in compliance with Federal/State accessibility standards. Curb ramps, tactile detection pads, and paved paths would improve the existing system.
- Lack of sidewalks: While many of the residential areas in or near Downtown have access to pedestrian pathways, a number of residential areas within the Village limits do not have pedestrian paths of any kind.
- Lack of Connectors: A number of neighborhoods and popular destinations in the Village lacked a connecting sidewalk to the next destination, adjacent residential area or to shopping areas.
- Debris: Some sidewalks were obstructed by cars parked improperly (Parked at the end of a driveway where a path was located). This is a parking enforcement issue. Other sidewalks had trash cans or vegetative overgrowth blocking the safe accessibility of these paths.



- Poor repair: Many of the existing sand/clay paths in the Village needed repairs to correct rilling/erosion, root intrusion, etc. A number of intersections needed curb ramp improvements (to meet ADA requirements).



Pedestrian Intersections

There are several busy intersections serving both vehicular and pedestrian traffic within the Village. Some intersections offer safe pedestrian facilities such as those in the Market Square/Chinquapin Road area. However, there are many other intersections within the Village that will require safety upgrades like pedestrian signals, marked crosswalks, areas of refuge, tactile warning devices, curb ramps, paved path or a combination of these needs in order to protect pedestrians as they navigate near vehicular traffic.

The following list describes intersections in need of safe pedestrian crossing improvements. All intersections listed require further assessment for ADA compliant curb ramps, tactile warning devices, etc. The recommended crossing treatment is in parentheses (See Proposed Trails, Sidewalks and Greenways map in Appendix):

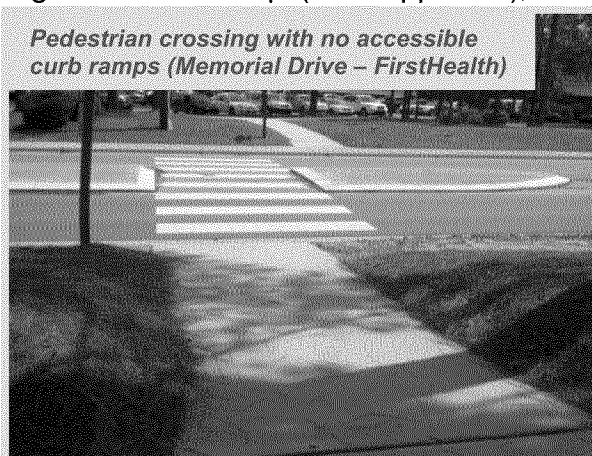
- Memorial Drive mid-block crossing near FirstHealth of the Carolinas (ADA Curb cuts/ramps)
- Memorial Drive/1st Village Drive (Crosswalk markings re-painted)
- Memorial Drive/Driveway to FirstHealth Fitness Facility (Crosswalk marking re-painted)
- Memorial Drive and Page Road (Signalized Crosswalk)
- NC 211/Rassie Wicker (ADA connectivity from existing sand path to new sidewalk)
- NC211/Driveway to First Health Fitness Facility (Painted Crosswalk)
- Dundee Road and NC 211 (Painted Crosswalk)
- NC5/McCaskill Road (ADA Sidewalk and Crosswalks)
- Hilliard/McDairmid Road (Painted Crosswalks)
- Pinehurst Trace and US 15/501 (Signalized Crosswalk)
- Juniper Creek Boulevard and US 15/501 (Signalized Crosswalk)
- Juniper Lake Road and US 15/501 (Painted Crosswalk)

- Spring Lake Drive and US 15/501
(Painted Crosswalk)
- Gun Club Road and Spring Lake Drive
(Painted Crosswalk)
- McCaskill Road and Magnolia Road
(Painted Crosswalk)
- NC 2 and Fields Road/Muster Branch Road
(Painted Crosswalk)
- McKenzie Road and Linden Road
(Painted Crosswalk)
- Cherokee Road and Country Club Driveway
(‘HAWK’ Signalized Crosswalk)
- Chicken Plant Road and Pine Vista Drive
(Painted Crosswalk)
- Pine Vista Drive and Burning Tree Road
(Painted Crosswalk)
- St. Andrews Drive and Lake Forest Road
(Painted Crosswalk)
- Lake Hills Drive and Sugar Gum Lane
(Painted Crosswalk)
- Lake Hills Drive/Monticello Road and NC 5
(Signalized Crosswalk)
- Morganton Road and Monticello Road
(Signalized Crosswalk)
- Diamondhead Drive and Linden Road
(Painted Crosswalk)
- Morganton Road and entrance to CNCC
(Painted Crosswalk)

Barriers

In addition to the lack of safe and complete sidewalks, curb ramps, and pedestrian crossings shown on Sidewalk Inventory/Existing Conditions Map (See Appendix), other obstacles and barriers may prevent safe walking trips. Barriers consist of objects located on sidewalks which prevent a safe lateral clearance. Typical sidewalk barriers include utility poles, traffic signs, fire hydrants, and intrusive vegetation.

The biggest barrier within the pedestrian system is the absence of sidewalks and pedestrian crossings within neighborhoods. Features such as cul-de-sacs pose a limitation to pedestrian travel within the Village of Pinehurst. However, some local





foot and bicycle traffic does move across undeveloped properties in some cul-de-sacs.

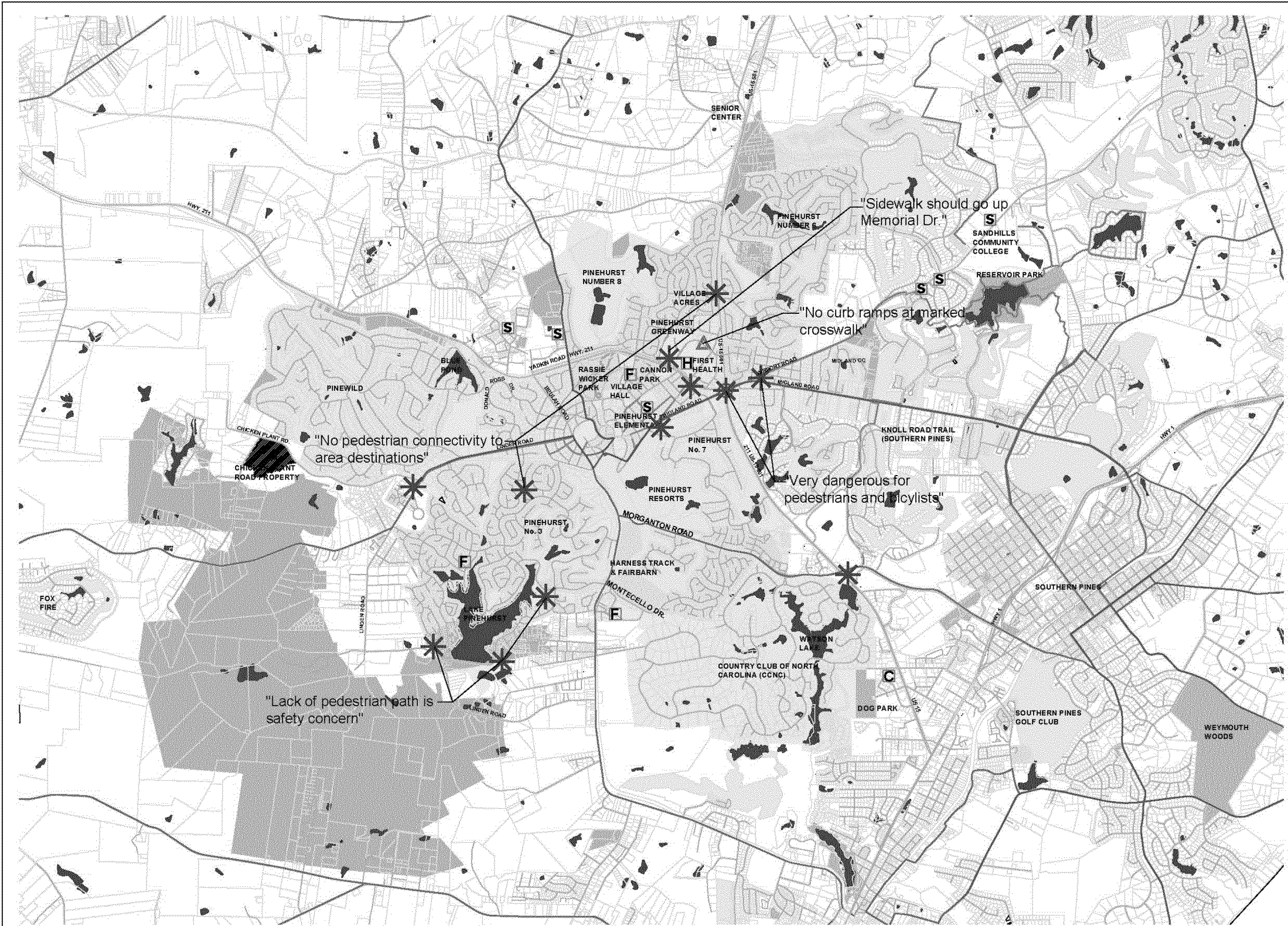
There are few tactile warning devices for visually-challenged pedestrians at existing intersections within the Village of Pinehurst.

Other potential barriers for pedestrian traffic in Pinehurst include utility poles, trash containers, parked vehicles, traffic signs, poles, and/or boxes. In the Village of Pinehurst, these objects are typically placed either near a building or by the curb, which keeps them out of the pedestrian pathway. However, this is not always the case on some of the narrower sand/clay paths located in residential areas.

Path surfacing may also be considered a barrier if the surface is not firm and stable. Bicycles, strollers, and wheel chairs may have difficulty traveling on sand covered or other natural surfaced paths.

Pinehurst Sidewalk Inventory Map

A visual assessment and inventory which exhibits existing sidewalk and other pedestrian facility conditions in Pinehurst is provided on the following page.

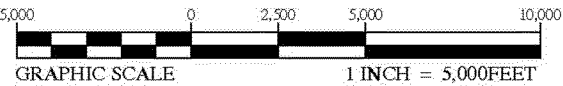


Village of Pinehurst
North Carolina

Pedestrian & Bicycle Plan
2014-2024

Map 1
INVENTORY

- Existing Park Facility
- Future Park Property
- Golf Course
- Existing Pond/Lake
- Existing Greenway Trail
- Existing Sand/Clay Path
- Existing Sidewalk Good Condition
- Existing Sidewalk Poor Condition
- Existing State Bike Route
- Moore County Bike Touring Route
- Moore County Potential Greenway Corridor
- Existing Southern Pines Greenway Trail
- Village of Pinehurst
- Pinehurst ETJ
- Existing School
- Existing Hospital
- Existing Fire Station
- Existing Place of Worship
- Problem Area (Sidewalk Ends, ADA issue, Lack of connectivity, Etc.)
- Crosswalk Issue (Needs Pedhead, needs maintenance, etc.)



SECTION ONE: INTRODUCTION

1.1 VISION STATEMENT



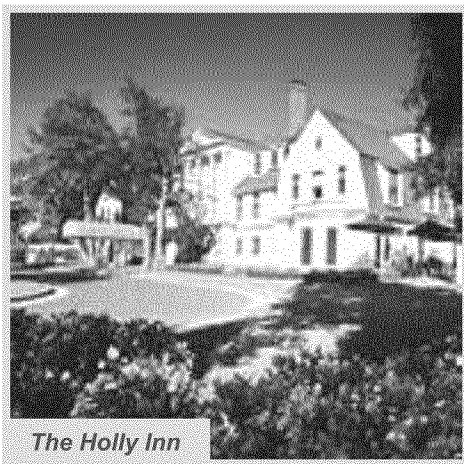
The Village of Pinehurst, North Carolina, is committed to providing its citizens with a safe community in which to live, work, and play. Part of this commitment includes the future improvement and/or construction of pedestrian-friendly transportation corridors throughout the Village. Consequently, the Village of Pinehurst hired McGill Associates to develop a Comprehensive Pedestrian Plan, and assist with these efforts.

On June 3rd 2014, McGill Associates held a “kick-off” meeting with members of the Pedestrian Plan Steering Committee to define their vision for the proposed Pinehurst pedestrian network. After a brief introduction, the Steering Committee participated in an exercise designed to elicit their perceptions of the needs and desires for a pedestrian system in the Village. Throughout the development of this plan, the Steering Committee provided valuable input and guidance to McGill Associates.

In addition, the production of this Comprehensive Pedestrian Plan was preformed concurrently with a North Carolina Department of Transportation (NCDOT) funded Comprehensive Bicycle Plan. The project Steering Committee guided both efforts and established the vision for developing bicycle and pedestrian facilities within Pinehurst.

1.2 HISTORY

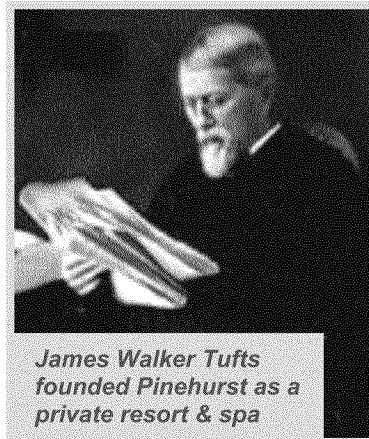
The History of the Village of Pinehurst



The Holly Inn

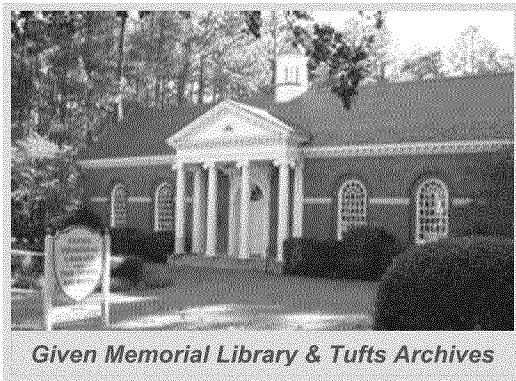
The Village of Pinehurst is situated in what is often referred to as the Sandhills of North Carolina. The Sandhills consist of a strip of ancient beach dunes in the interior of North and South Carolina (evidenced by a former coastline when the ocean level was higher, or the land was lower) and divides the “piedmont” and the “coastal plain”. Approximately 60 miles southwest of Raleigh, the state capitol, Pinehurst is also approximately 75 miles east of the Charlotte metro area. The Village spans approximately 14.9 square miles, having 14.3 square miles of land and 0.6 square miles of water. Major thoroughfares to Pinehurst include NC Highway 5, NC Highway 2, NC Highway 211, and US Highway 15-501.

The Village of Pinehurst is the largest municipality in Moore County and is regionally recognized as an outstanding residential community; and internationally, as a major golf resort. Incorporated in 1980, the Village was founded in 1895 by soda fountain magnate James Walker Tufts who purchased 598 acres of land for \$1.25 per acre to create a health resort in the Sandhills. Mr. Tufts wanted a first-rate, private resort; and thus, hired Frederick Law Olmsted (designer of Central Park in New York and the Biltmore Estate in Asheville) for the project dubbed "Tuftstown".



*James Walker Tufts
founded Pinehurst as a
private resort & spa*

Tuft dreamed of building a beautiful, healthful village – where those suffering from respiratory (and other) ailments could recuperate in the land of abundant sunshine and (thought to be) the medicinal qualities of the pine-scented air. As patients' needs varied, Tuft built an assortment of cottages, rooming houses, and hotels, later followed by a livery stable, fire department, laundry, markets, department stores and poultry/dairy farms. Tuft finally named the Village "Pinehurst" ("pine" for the trees, and "hurst" for a rising plot of ground). Most of the original buildings are still in existence and can be toured today. The Tufts Archives is open to the public



Given Memorial Library & Tufts Archives

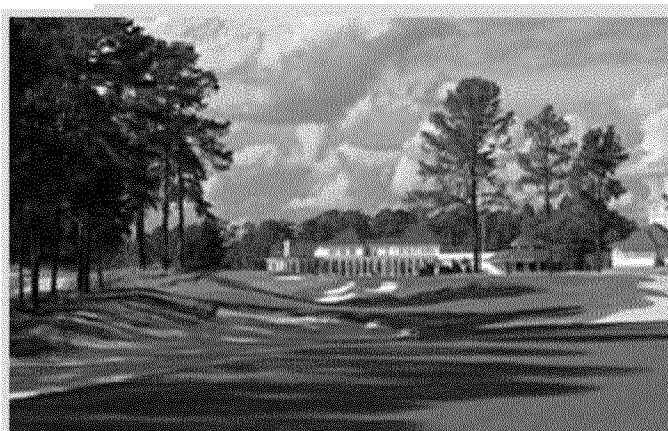
and free of charge.

In 1900, Donald Ross was hired as the developer for golf at the Pinehurst Resort. Pinehurst Resort remained privately-held by the Tufts family until 1920 when a corporate form of ownership, Pinehurst, Inc., was obtained. By the late 1960's, the shareholders of Pinehurst, Inc., sold the property to the Diamondhead Corporation, who created 7,000 "membership" lots to sell, accompanied by the appropriate infrastructure – roads, water, sewer, etc. In 1980, pursuant to an Order of Incorporation, the Village of Pinehurst became an incorporated municipality. The resort property has changed hands several times over the years and world-renowned golf courses have been developed and expanded under each owner. Donald Ross eventually designed four (4) golf courses that would mark their places in history, as would famed golfers such as Ben Hogan, Sam Snead, Byron Nelson, Arnold Palmer, Jack Nicklaus, Payne Stewart, and many more.



*Statue memorializes
Payne Stewart's
1999 US Open win*

In 1996, the Village of Pinehurst and Pinehurst Resort had the distinct pleasure of being given National Landmark status for their historical, significant role in United States golf history. Since then, the Village of Pinehurst has become the home of the North & South Golf Amateur (since 1901), PGA Championships, Ryder Cup matches, US Amateurs, Senior Open, and the 1999/2005 US Opens. In 2014, Pinehurst was the first venue in history to host the men's and women's US Open in back-to-back weeks.



Though known as the "Home of American Golf" (with more than 41 courses, most being playable year round), Pinehurst is rich with history, artists, pottery, architecture, and beautiful horse country. Unlike other burgeoning golf communities, Pinehurst retains a true small town atmosphere. It also hosts world championship matches in clay court tennis, croquet, and yard bowling; and is the home of superior equestrian and dog

facilities. Each fall, equestrian owners from the North and Midwest bring their jumpers, hunters, and dressage horses to the area to take advantage of the mild climate and soft sand footing.



Pinehurst has enjoyed its resort status, boasting world-renowned golf facilities and a Village Center filled with the charm of the New England area. Shopping in the Village of Pinehurst, the Town of Southern Pines, and Aberdeen offers quaint boutiques and specialty shops, as well as numerous restaurants

and cafes. The quiet and tranquil atmosphere makes Pinehurst an excellent vacation destination as well as a wonderful place to live. Committed to offering top quality services to residents and visitors alike, the Village of Pinehurst strives to ensure that residents enjoy a wonderful quality of life and visitors have a memorable experience.

Several factors have contributed to major demographic and economic changes to the Village of Pinehurst in recent years. The close working proximity to the Research Triangle (Raleigh, Durham, and Chapel Hill), Charlotte Metro, and Fort Bragg, have made Pinehurst an extremely desirable place to live and raise a family. From 1990 to 2000, the US Census Bureau indicated that Pinehurst's population grew by 91%, as compared to 27% for Moore County and 21% for North Carolina. This population growth is expected to continue, especially with changing demographics. While

Pinehurst remains largely a community based on retirement, there is a growing population of families with children relocating to the Village.

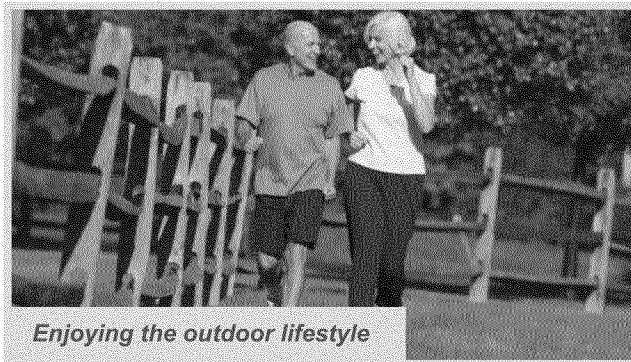
The Village's unique Sandhills location with its moderate year round climate has led to a large number of tourists and sports enthusiasts traveling through or visiting the area each year; and consequently, some out-of-state tourists have begun to build summer/vacation homes in the area. In addition, the



Family activities around in Pinehurst

resort area has become a very popular retirement community. The influx of residents during 2008 to 2012 has resulted in the median household income being \$66,436 in Pinehurst as compared to the state average of \$46,450. Likewise, persons living below the poverty level are only 4.1% as compared to the 16.8% statewide. It is noteworthy that, typically, children and the elderly population are generally in the greatest need of pedestrian facilities and/or use them more frequently. With senior citizens representing almost half of the population of the Village of Pinehurst, certainly health and wellness opportunities are in great demand.

Because of year-round tourism and rapid population growth, the leaders of the Village of Pinehurst have recognized the need for a Comprehensive Pedestrian Plan that addresses both the current and future needs of their residents and visitors. This Pedestrian Plan will provide direction and purpose as the Village strives to meet the



Enjoying the outdoor lifestyle

daily pedestrian needs of their community, as well as impact the citizenry of the Village and its surrounding area for many years to come. The *Village of Pinehurst Comprehensive Pedestrian Plan 2015* addresses their vision by identifying specific goals and objectives; and, makes recommendations for achieving them.

1.3 OVERALL GOALS

The purpose of the Comprehensive Pedestrian Plan is to create a document to guide the Village of Pinehurst with development criteria for the following phases of its proposed comprehensive pedestrian system: (1) Planning, (2) Design, (3) Financing, (4) Implementation, and (5) Maintenance.

While enhancing and prioritizing capital improvements/maintenance projects for the Village, the Plan will also include special consideration given to critical areas for

pedestrian transportation and safety; as well as address compliance issues with Americans with Disabilities Act (ADA).

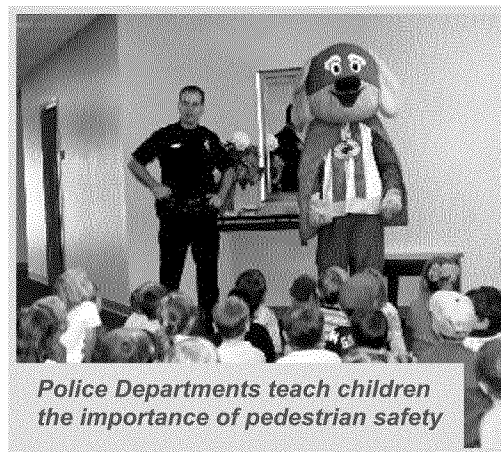
The goals of the Village of Pinehurst Comprehensive Pedestrian Plan 2015, which were developed with input from the study's Steering Committee, are as follows:

Goals and Objectives

- Increase “walkability” in the Village of Pinehurst
 - Plan pedestrian routes with input from the community in mind.
 - Increase and improve the pedestrian infrastructure.
 - Provide aesthetically pleasing landscaping and resting places along commonly used paths and routes.
 - Connect the pedestrian network to common destination points.
 - Promote a “walking/biking culture” in Pinehurst.
- Create a pedestrian network that is an important part of the urban structure.
 - Provide attractive, yet safe, pedestrian *connections* from Village residential areas to nearby destinations.
- Promote walking as a healthy exercise
 - Develop and/or participate in more healthy walking programs such as “Eat Smart, Move More North Carolina”, etc.
 - Partner with health and recreation providers to create healthy living programs and events that encourage and promote walking as a form of alternative transportation.
- Create a pedestrian environment that is friendly to all users - including seniors, disabled persons, and children
 - Provide ADA compliant sidewalks and curb ramps.
 - Increase pedestrian safety with regard to vehicular traffic.
 - Provide facilities for sitting/resting opportunities.



- Improve connections between disparate parts of the Village
 - Provide pedestrian connections between downtown Pinehurst and surrounding areas/destinations.
 - Promote neighborhood connectivity.
 - Provide equitable access to the pedestrian network(s).
 - Provide pedestrian access to schools, shopping areas, and work places.
- Promote pedestrian safety
 - Promote pedestrian safety through educational programs both inside and outside the schools.
 - Design a pedestrian network that can be safely traversed by all.



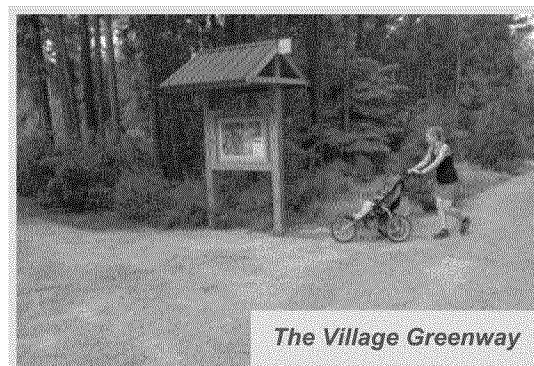
1.4 Previously Completed Planning Studies and Documents

Current planning studies include several on-going efforts by state and local entities, which were taken into consideration as the Comprehensive Pedestrian Plan for the Village of Pinehurst has evolved. These are discussed in greater detail in Section 3 and include, but are not limited to the 2003 Long Range Comprehensive Plan and the latest Village Greenway Plan. Other programs and/or initiatives that are either currently underway or being planned involve resources from the Transportation Improvement Program (TIP) and various Safety & Education Programs.

Past and Current Municipal Efforts

Village Greenway Master Plan

Pinehurst maintains an existing Greenway trail that is approximately six (6) miles long, and represents the first three (3) phases of the Village Greenway Plan. The previously completed plan ultimately proposed 24 miles of planned trail. Part of the Greenway Project included the formation of the Village Greenway Habitat Committee. This group is working to



make the Pinehurst Greenway a place where people can learn about the native plants and animals. The Committee has conducted frequent surveys along the Greenway in order to catalog the diverse flora and fauna that can be found along the path.

Bridge along the Village Greenway



The Greenway Master Plan consists of a system of several loops and endpoints, which meander through a suburban landscape of parks, homes, open areas, recreation facilities, and wooded tracts. The Greenway accommodates runners, walkers, and cyclists. Currently golf cart use of the trail is prohibited. However, there has been public interest in possibly accommodating golf cart travel on certain parts of this multi-modal pathway system.

Village of Pinehurst Engineering Standards and Specifications Manual

In August 2004, the Pinehurst Village Council adopted an Engineering Standards and Specifications Manual that specifies the minimum design standards for all new development within the jurisdiction of the Village. Section 4.0 of this Manual includes technical specifications for both sidewalks (minimum thickness of 4-inches, minimum clear-width of 5-feet) and for greenways (minimum 6-inches compacted, stone screenings, minimum clear-width of 6-feet). Standard details are also included in the Manual for Concrete Sidewalk, Brick Sidewalk, and Greenways. The Manual has been amended on several occasions since its original adoption, and continues to serve as the primary engineering reference document utilized in development within the Village.

Pinehurst Development Ordinance (PDO)

The Pinehurst Development Ordinance, commonly referred to as the PDO, was recently updated and adopted by Village Council in October 2014. This document establishes various rules and regulations associated with development within the Village, including requirements for sidewalks and greenways. The current PDO requires sidewalks to be installed on one side of all new streets in new residential developments that serve 8 or more dwelling units, and on both sides of all new streets in non-residential developments. The PDO also establishes the definition of a greenway as “a linear open space, either privately-owned or owned by the Village or another unit of government, which may contain a trail for walking, bicycling, horseback riding or other passive recreation, but not for use by vehicles for purposes other than maintenance of the greenway.”

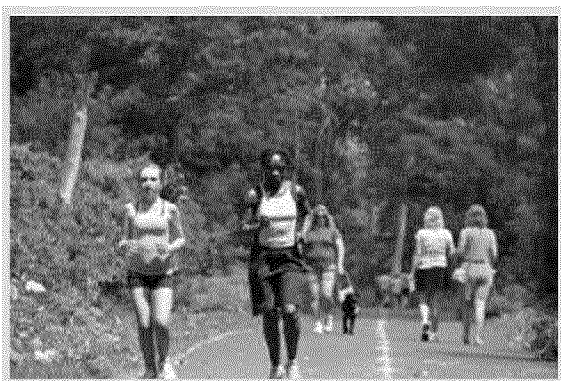
Historic District Standards and Guidelines

The Village’s Historic District and Guidelines were originally adopted by Village Council in September 2006, and provide “design principles and standards” for structures and

landscaping within the local historic district. The document is also utilized by the Village's Historic Preservation Commission (HPC) in reviewing proposed changes and new construction within the District. While the document does not provide design standards for sidewalks or walkways, it does reference that "original sand-clay and patterned brick sidewalks contribute to the character of some streetscapes in the District." Projects within the public right-of-way do not require approval from the HPC according to the Standards and Guidelines document.

1.5 Benefits of Pedestrian Facilities

For centuries, the pedestrian has been a constant presence in the human environment.



Most individuals walk to some destination every day. The environment which facilitates walking is different for every pedestrian in that it varies from urban settings to linear parks running along creeks. Pedestrian environments are created either by being deliberately planned; or, they can develop as a result of natural landscape characteristics, with no particular forethought of the pedestrian. To better understand what makes a pedestrian-friendly environment, it is necessary to study and

analyze the places where people travel most comfortably as pedestrians. For instance, the addition of a random sidewalk may not encourage people to walk; unless it connects pedestrians to places they want to go. This example reinforces the need for a pedestrian plan *prior* to the actual realization of the plan.

A "walkable" community is defined by its ability to enhance the lives of all its citizens through a variety of measures, which include the following:

- Community Health
- Transportation Alternatives
- Environmental Benefits
- Safety
- Community Identity

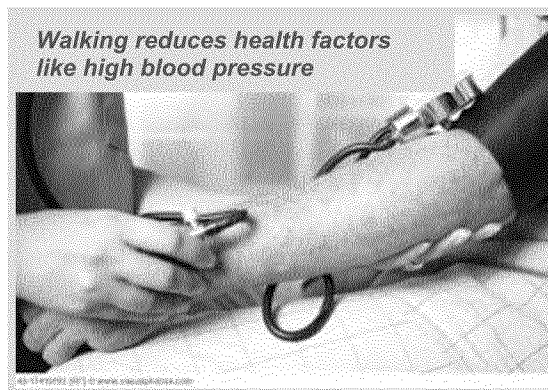
A walkable community needs connecting pedestrian corridors that are conveniently located in close proximity to homes, schools, entertainment/shopping meccas, and places of employment.

Community Health

There are numerous benefits to be gained by walking - the most prevalent being the acquisition of healthier lifestyles. Unhealthy eating habits, which are primarily due to the increased consumption of fast food, continue to contribute to rising obesity rates in Americans of all ages. Walking is a preventive measure for heart disease, cancer,

diabetes, and mental health diseases. 'Walkable communities' encourage people to walk, thereby, increasing physical activity and decreasing television or computer time, which propagate sedentary lifestyles.

By providing accessible, inviting pedestrian facilities, the Village of Pinehurst can provide equal opportunities for everyone to improve health and prevent disease through routine or planned walking exercise(s). This, in turn, saves governments and local employers the money in health care costs and the lost productivity due to sick days that would otherwise have occurred.



Studies show that walking increases:

- Energy, stamina, and metabolism
- Wellness, fitness, and psychological well-being
- The reduction of risk factors (such as high blood pressure, anxiety, obesity, etc.), which contribute to coronary artery disease, some cancers, and other chronic diseases
- HDL – the 'good' cholesterol
- Muscle development and bone density

Additional information regarding aspects of walking/biking and health can be found in the 2015 Pinehurst Comprehensive Bicycle Plan.

Transportation Alternatives

Walking also creates an alternative to vehicular transportation. Nationally, traffic congestion in urban areas is getting worse and the cost of owning/operating an automobile is rising astronomically. Pedestrian facilities are necessary to provide a means whereby people may choose to walk instead of drive; thus, reducing the number of vehicles on the road.

Walking is a cost-effective means of transportation. There are no fees, taxes, or licenses required as compared to the average annual cost of operating an automobile - which can easily exceed \$5,000 per year. Economically speaking, walking is by far the most affordable mode of transportation available to anyone.

For some segments of the population, walking is the *only* means of transportation available. Such a cross section of the community primarily includes people, whose incomes prohibit them from purchasing/maintaining automobiles, and senior citizens, who eventually become unable to drive. These members of our society rely heavily on walking in order to work, shop, exercise, and/or participate in other social activities.

Environmental Benefits

Walking is not only the most affordable mode of transportation; it also has the least negative impact on the environment. Choosing to walk to destinations as an alternative to using a vehicle will reduce air pollution. Improving air quality is a major concern across the United States. During the 1996 Olympics in Atlanta, Georgia, some Atlanta thoroughfares in the area were closed to vehicular traffic in order to relieve traffic congestion. During this period of time, the local, environmental air quality monitoring indicated a significant decrease in various air pollutants as when it was compared to periods of normal traffic flow. It is a well-known statistic that air pollutants will escalate in direct proportion to the increased vehicular miles that are traveled each year in this country.

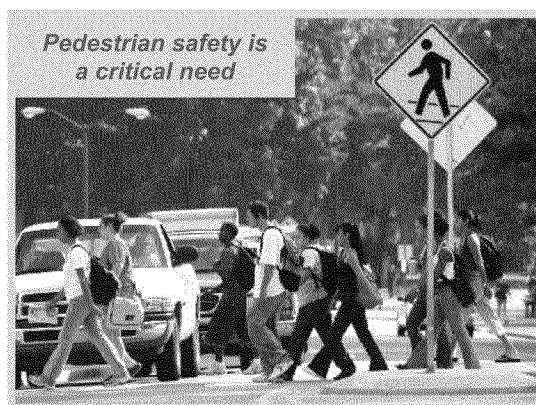


Walking, as opposed to driving vehicles, also positively impacts the availability and conservation of our natural resources. Reducing the consumption of petroleum (specifically in cars and asphalt) will be increasingly beneficial in the years to come. Although sensitive populations should *decrease* walking during ozone-active days, an overall *increase* in the amount of walking done on a regular basis could actually reduce mobile emissions/ozone. As more walking occurs, lesser emissions are produced; thus, creating a cyclic phenomenon, which is naturally and environmentally friendly.

Some pedestrian facilities (such as greenways) are often developed along rivers and streams. Often, these facilities create “buffers”, which separate drainage areas from new development; thereby improving the water quality for watersheds. As an added benefit, greenways help provide connectivity for wildlife habitats and natural ecosystems.

Safety

The walking community needs to be safe and comfortable. Any area, which seems dangerous or has obstacles, discourages people from walking; and consequently, the would-be walkers resort to other methods of transportation. Pedestrian routes need to be designed to minimize vehicular conflict by providing pathways, which are safe and free of hazards. Safety is a *major* component in all phases of this Comprehensive Pedestrian Plan, and was a significant concern expressed by residents during community input events.





Community Identity

Pedestrian facilities are also an important medium for maintaining and enhancing the public and social interaction of a community. The pedestrian experience should be aesthetically inviting and elicit feelings of pleasure and comfort. Open spaces, parks, the downtown area, convenient retail, and other similar destinations - all enhance the pedestrian environment. In addition, the ideal pedestrian environment should possess amenities such as landscaping, benches, specialty paving, safety factors, and other elements that create a safe environment that pedestrians enjoy. The restoration or construction of new sidewalks should be an important aspect in the Village of Pinehurst - as sidewalks often serve as *catalysts* for walking, outdoor dining, window shopping, sitting areas (benches) for social interaction, business engagements, and tourism.

1.6 SCOPE, METHODOLOGY, AND PURPOSE OF PLAN

McGill Associates, P.A., was retained by the Village of Pinehurst to prepare a village-wide pedestrian plan as a guide for identifying and prioritizing safe pedestrian linkages; thereby, creating a viable pedestrian network. Many areas within the Village limits lack sufficient pedestrian facilities. The Village recognizes the need to plan for the future by developing a pedestrian network, which provides connectivity for its users. Using a proactive approach (such as this) is imperative in establishing priorities for future pedestrian facilities, reducing construction costs, and implementing facilities in a logical manner.

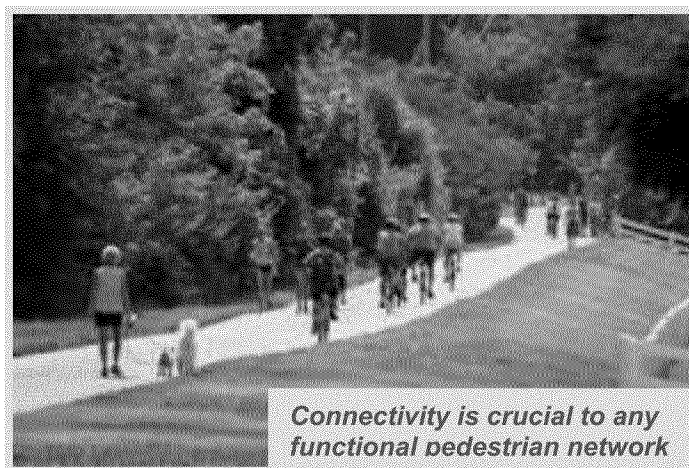
The study area spans the Pinehurst Village limits and the immediate, surrounding extraterritorial jurisdiction (ETJ). Although the research will be focused primarily within the Village limits, it is important to understand the existing pedestrian patterns into and out of Pinehurst and their destination points.

In order to comprehend the existing conditions, identify user needs, and be able to recommend appropriate improvements in the pedestrian plan, the following processes were used:

1. ***Inventory of the existing pedestrian system:*** A sidewalk, greenway, and crosswalk inventory of the Village's pedestrian facilities was conducted - identifying existing safety issues.
2. ***Assessment of the needs of the pedestrian:*** The needs of pedestrians and the apparent lack of connectivity to destination points were identified and evaluated through data collected via public meetings, surveys, and direction provided by Village Staff and the Project Steering Committee.
3. ***Formulation of objectives and recommendations:*** Guidelines for the future development of facilities, repair of existing facilities, and maintenance were created. Probable costs for all recommendations were provided.

4. **Implementation of improvements by action-oriented method:** Key pedestrian linkages and sidewalk needs were identified and prioritized. Possible funding sources for the Village to pursue were identified.
5. **Examination and possible revision of current policies/programs:** Guidelines and implementation of current policies and existing pedestrian programs were identified and addressed.

These components provide justification for the proposed improvements. Also, any time that recommendations for improvements or new construction are made, these recommendations must be prioritized. Implementing all of the proposed improvements at one time, or in a short time frame, would be both cost-prohibitive and overwhelming. It is important that the most immediate necessities be recognized first as the implementation of capital improvements begins. In addition to facility needs, the formation of an implementation plan is an important short-term goal in establishing long-term objectives.



Connectivity is crucial to any functional pedestrian network

Pedestrian facility-related needs – which are considered to be of the highest priority – are called critical needs. The critical facility needs for the Village are all focused on improving safety conditions for pedestrians. In addition to sidewalk improvements, other emphasis should be placed on immediately addressing unmarked crosswalks and inappropriate signage. The safety of pedestrians is critical; it is the most important component of the

pedestrian facilities.

Pedestrian facilities are the primary focus of this plan - in particular, sidewalks (located on Village streets and state roads) and pedestrian safety at intersection and crosswalks. In addition, off-street pedestrian facilities such as greenways and multi-purpose trails are examined. Thus, the Village Pedestrian Plan delineates the (current and future) location, implementation, and maintenance of the proposed facility improvements; thereby, creating a pedestrian network that allows for connectivity within the Village as well as with its neighboring communities.

The improvements recommended in this Pedestrian Plan are intended to be implemented over a period of time and will require creative funding mechanisms. Therefore, another significant short-term goal will be to identify improvement costs and funding opportunities, as well as prioritizing the improvements and projects.

- END OF SECTION -

ORDINANCE #15-03:

AN ORDINANCE AMENDING CHAPTER 91 ANIMALS OF THE VILLAGE OF PINEHURST MUNICIPAL CODE.

THAT, WHEREAS, the Village Council of the Village of Pinehurst adopted an ordinance dated October 20, 1980, establishing and implementing certain authorized police powers for the purpose of prescribing regulations governing conditions detrimental to the health, safety, and welfare of its citizens; and

WHEREAS, on September 13, 2011 the Village Council of the Village of Pinehurst adopted Ordinance 11-25 which adopted the general ordinances of the Village of Pinehurst as revised, amended, restated, codified, and compiled in book form and declared that these shall constitute the "Village of Pinehurst, North Carolina Municipal Code;" and

WHEREAS, the Municipal Code will be subsequently amended from time to time as conditions warrant; and

WHEREAS, the Moore County Animal Operations Ordinance is adopted by reference to enforce regulations prohibiting abuse of animals and regulation of domestic animals; and

WHEREAS, the Village of Pinehurst Municipal Code has additional animal regulations and it would be in the best interested of citizens of Pinehurst to amend Chapter 91 Animals Section 91.01 of the Pinehurst Municipal Code.

NOW, THEREFORE, BE IT ORDAINED AND ESTABLISHED by the Village Council of the Village of Pinehurst, North Carolina in a regular meeting assembled this 10th day of February, 2015 as follows:

SECTION 1. That the following amendments be made to § 91.01:

§ 91.01 COUNTY ANIMAL CONTROL ORDINANCE ADOPTED BY REFERENCE.

Pursuant to authority contained in G.S. § 160A-182 and § 160A-186 for the purpose of prohibiting abuse of animals and regulation of domestic animals, there is hereby adopted by reference the Moore County Animal Control Ordinance and all subsequent versions/changes, the same as if set forth herein verbatim and the same is hereby made and hereinafter shall be applicable and enforceable within the corporate limits of the village and the areas within its extraterritorial jurisdiction. **Any ordinance adopted by the Village of Pinehurst shall be in addition to the Moore County Animal Control Ordinance and shall supersede in the event of a discrepancy between this code and the Moore County Animal Control Ordinance.**

SECTION 2. That this Ordinance amendment shall be and remain in full force and effect from and after the date of its adoption.

THIS ORDINANCE passed and adopted this 10th day of February, 2015.

VILLAGE OF PINEHURST
VILLAGE COUNCIL

(Municipal Seal)

By: _____
Nancy Roy Fiorillo, Mayor

Attest:

Approved as to Form:

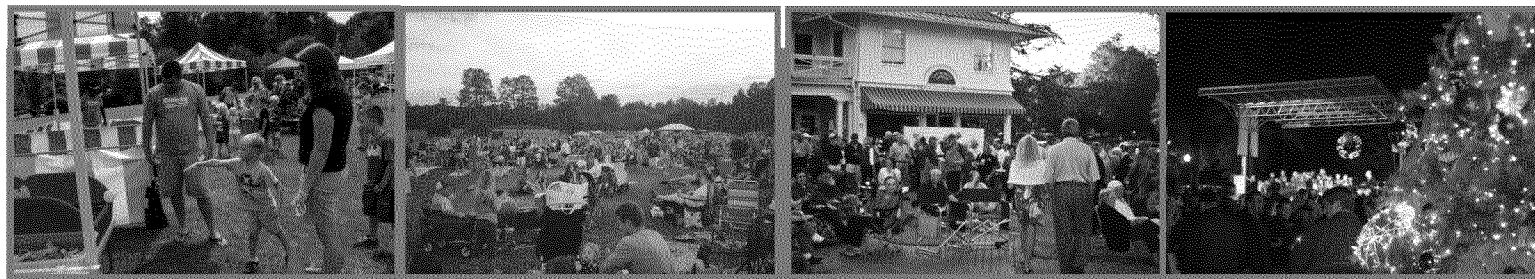
Lauren M. Craig, Village Clerk

Michael J. Newman, Village Attorney

DRAFT

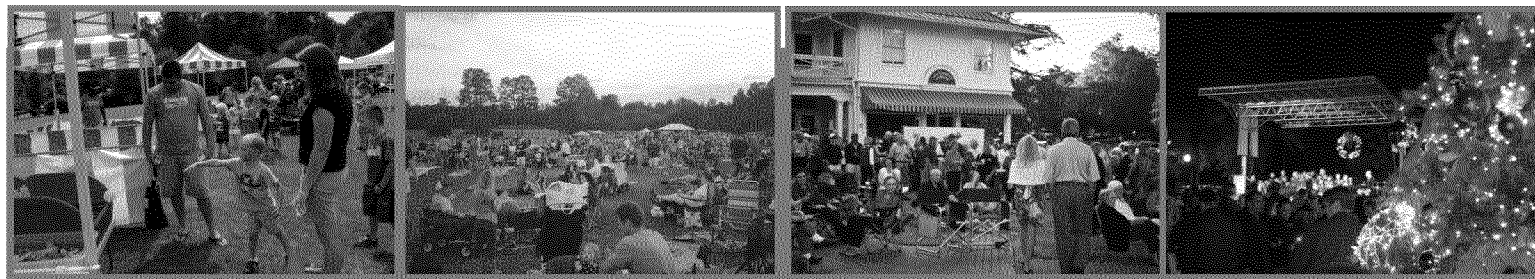
2015 Spring/Summer Special Events

Date	Event	Location
February		
7	Winter Fest (<i>Village Sponsored</i>)	Cannon Park
20	Harness the Roaring 20s	Fair Barn
March		
14	St. Patrick's Day Parade	Village Center
28	Arts in the Arboretum (Part of Palustris Festival)	Arboretum
April		
4	Easter Egg Hunts	Cannon Park
10	Live after 5 w/The Band Punch	Tufts Park
12	Spring Matinee Races & Centennial Exhibit	Harness Track/Fair Barn
17	Family Movie Night	Rassie Wicker Park
18	Military Child Celebration	Arboretum
24	Xtreme Game Night for Teens & Tweens	Rassie Wicker Park
May		
2	Concours d'Elegance (<i>Village Sponsored</i>)	Pinehurst Resort
8	Live after 5 w/The Carolina Breakers	Tufts Park
15	Family Movie Night	Rassie Wicker Park
16	Relay for Life of Moore County (<i>Village Sponsored</i>)	Harness Track
29	Family Movie Night	Rassie Wicker Park
June		
25	Prom for Special Needs Adults	Fair Barn
July		
4	4th of July Parade	Village Center
4	4th of July Fireworks Celebration	Harness Track
17	Arts in the Park	Camelot Playground
21	Arts in the Park	Camelot Playground
28	US Kids Golf Parade of Nations	Village Center
31	Arts in the Park	Camelot Playground



2015 Fall/Winter Special Events

Date	Event	Location
September		
11	Live after 5 w/The First Responders Band & Grammy Nominated Blues Guitarist Bobby Messano	Tufts Park
11-13	Patriot's Festival w/Army Ground Forces Band	Tufts Park
17-18	Oktoberfest	Arboretum
26	Antique Car Show (<i>Village Sponsored</i>)	Arboretum
October		
9	Live after 5 w/The Extraordinaires Band	Arboretum
10-11	Annie Oakley Boom Day	Harness Track/Fair Barn
23	Fall Festival Co-sponsored w/Pinehurst Elem. PTA	Cannon Park
24	Scarecrows in the Arboretum	Arboretum
November		
21	Pinehurst Turkey Trot (<i>Village Sponsored</i>)	Cannon Park
30	Harness Track Centennial Ceremony & Plaque Installation	Harness Track
December		
4	Christmas Tree Lighting	Tufts Park
11	Holiday Golf Cart Parade	Village Center



SECTION SEVEN:

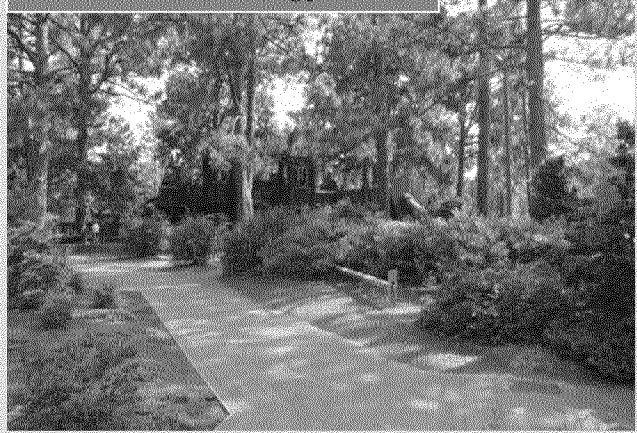
PROJECT DEVELOPMENT

Section 4 of the Pinehurst Pedestrian Plan provided a *vision* for a comprehensive pedestrian system for the Village of Pinehurst. Section 7 of the Plan provides a *blueprint* for the Village of Pinehurst to assist them in implementing that vision. Section 7 identifies specific opportunities/strategies and provides a series of action steps to guide the Village as it begins to execute the Plan. The projects proposed in Section 4 are prioritized in this section in order to present the Village with a project schedule that is manageable. This section closes with ideas and sources for funding the projects.

7.1 OPPORTUNITIES AND STRATEGIES

An opportunity is a situation or condition that is favorable for the attainment of a goal. The most obvious of the opportunities for the Village of Pinehurst in attaining the goals set out in this Plan is the already existing network of pedestrian facilities. The existing

Pedestrians use existing facilities



facilities consist of a well maintained network of pedestrian pathways, sidewalks and trails with numerous potential destination points, which are already attracting pedestrian traffic. The fact that people continuously use the existing facilities makes it easier to promote the expansion of the network into a safer and more comprehensive, connected, pedestrian system.

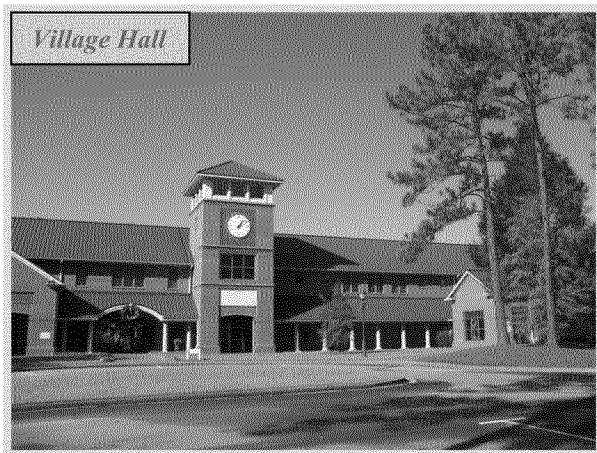
A strongly committed group of individuals interested in the development of a pedestrian network for

the Village of Pinehurst yields another opportunity for attaining the stated goals of this plan. Members of the Steering Committee, Village staff, and users of the existing pedestrian network provide Pinehurst with a core group of advocates, who can promote the plan and recruit needed volunteers and supporters.

Previous initiatives such as those undertaken by the Pinehurst Greenway Committee have provided Pinehurst with a network of trails that can be linked to by via sidewalk projects and serve to facilitate future connectivity within the Village. By embracing these past initiatives and working with other regional organizations, the Village of Pinehurst can connect to the regional pedestrian trail and greenway systems of neighboring communities and increase the walkability and quality of life for Village residents.

7.2 ACTION STEPS

In order to implement the Pinehurst Comprehensive Pedestrian Plan, the following steps need to be taken:



- Adopt the Plan The first step in implementing the Pedestrian Plan is the adoption of the plan by the Village Council. Adoption of the plan will allow the Village of Pinehurst to effectively influence regional decisions, so that the Village and region concur with the goals set forth in the plan. Adopting the plan will also provide the Village with greater authority to shape local land-use decisions.
- Create an Oversight Committee An Oversight Committee consisting of Village Staff and representatives from various other staffs (such as Moore County, Triangle J Council of Governments, etc.) can be used to oversee the implementation of the plan.
- Develop a funding strategy In order to undertake the proposed projects and secure adequate funding, it will be necessary to develop a funding strategy. The strategy should allow the community to incrementally complete each of the suggested pedestrian facility improvements over a ten-year (10-year) period. Opportunities are listed below:
 1. *The Capital Improvement Plan (CIP) needs to include yearly appropriations for sidewalk, crosswalk, and greenway development.*
 2. *The annual operating budget needs to include monies for minor construction and maintenance of pedestrian facilities.*
 - a. *The Village should consider issuing a local municipal bond with monies allocated towards the pedestrian system.*
 3. *Actively pursue the addition of roads within the Village via NCDOT's TIP program for sidewalk and greenway development and improvement.*
 4. *Pursue funding from potential sources listed in See section 7.6 Funding Opportunities.*
- Begin improvements and/or new construction The work on the project(s) should begin with those listed as High Priority in Section 7.6

- Develop education and awareness programs These programs will help to inform the public about the proposed projects and increase public support for them while strengthening enforcement and encouragement programs (See section 6 and 7.4).
- Acquire property and/or easements Develop a plan for acquiring the land and easements necessary for future portions of the Pinehurst Greenway System.
- Coordinate with other governing entities Work with other government agencies such as with Moore County, the RPO, and the State of North Carolina to integrate the Village of Pinehurst's Pedestrian Plan with other transportation, land use, economic development, parks and recreation, environmental, and community planning efforts.
- Modify policies Update the Pinehurst Development Ordinance as necessary to contain strong, carefully-considered policies and goals that will promote the development of pedestrian facilities as part of any *new* development or redevelopment.
- Connect to adjacent facilities Schedule road or utility work to include improvements and additions to the adjacent pedestrian network, where possible.
- Identify supporting policies and guidelines The NCDOT Division of Bicycle and Pedestrian Transportation has published a guidebook on General Statutes, Ordinance, and Resources with regard to bicycle and pedestrian laws. This is a great resource, which pertains - not only to responsibilities for bicyclists and pedestrians - but also, for motorists. This guide should be incorporated into the standards for the Village of Pinehurst. It is particularly valuable for teaching public safety to school children.



As mentioned in previous sections of this document, the street design guidelines need to conform to NCDOT standards. In addition to NCDOT standards, the Manual on Uniform Traffic Control Devices (MUTCD) should also be a reference for projects, particularly existing roadways that have not conformed to these standards. Areas such as traffic intersections will need to incorporate these guidelines for future improvements.



The American Association of State Highway and Transportation Officials (AASHTO) have published the 'Guide for the Planning, Design, and Operation of Pedestrian Facilities'. The purpose of this guide is to provide assistance with the planning, design, and operation of

pedestrian facilities along streets and highways. Specifically, the guide focuses on identifying effective measures for accommodating pedestrians on public right-of-ways. This useful tool can be used to provide user-friendly pedestrian facilities along roadways.

- Develop an evaluation/monitoring process
Each year the Village should evaluate the progress made in implementing proposed improvements suggested in this Pedestrian Plan. This evaluation should not only include new facilities; but also, repair to existing facilities, and evaluation of program and policy recommendations. At the beginning of the budget process for the next fiscal year, the



Schedule projects simultaneously

Village should determine the projects to be implemented for that year. In some cases, there may be large projects that will limit the number of tasks the Village of feasibly commit to implementing.

The listed action steps should be considered annual tasks and projects stemming from these recommendations should be scheduled for annual review. Village of Pinehurst staff should work closely with the NCDOT, Moore County, the Triangle J Council of Governments.

7.3 PRIORITIZATION OF THE PROPOSED PEDESTRIAN NETWORK

Proposed projects are listed within the Priority Matrix table which is located in the [Appendix](#). The Recommended Facilities map (also found in the [Appendix](#)) graphically provides the locations of the proposed projects listed in the Priority Matrix table. The proposed projects are listed by priority and the location; the length, and opinion of probable cost are also provided. As mentioned earlier in this section, sidewalk improvements make up the majority of project costs for the proposed improvements.

The projects listed in the Priority Matrix table are also listed in the priority calculator which is also in the [Appendix](#). The priority calculator which can be found in both the [Appendix](#) and in this section helps to analyze and compare important factors of each project which lead to each project's ranking from High to Low.

The Village of Pinehurst and NCDOT are the primary agencies that will be involved with these pedestrian improvements. Many of these facilities are located on NCDOT public right-of-ways and are eligible to receive funding for NCDOT improvements. As new development or redevelopment occurs, it will be important for the Village of Pinehurst to require the owners to implement the appropriate pedestrian facilities, as necessary.

Prioritization of Projects



The priorities of the pedestrian plan are divided into three (3) different categories of priorities: high, medium, and low. A priority calculator was used to help determine the priority ranking of each project.

The priority calculator was based on three (3) factors: Safety, Connectivity, and Recommendations from the Steering Committee. Each factor was broken down into categories. The categories were given a scale of numeric values.

Pedestrian corridors were then given a numeric value in each category. The total number of points provided a ranking to each corridor. The corridors were then grouped by thirds (approximately) to determine high, medium, or low rankings.

Priority Calculator Results

High Priority Projects

Some of the needed facilities or improvements that received high priority rankings were:

- A lack of sidewalks - forcing pedestrians out onto roads with medium to high volumes of traffic
- A lack of crosswalks and/or pedestrian signals at busy intersections that are commonly traversed by pedestrians
- Sidewalks that are in poor condition - creating hazards for pedestrians
- Lack of safety and accessibility amenities at intersections
- Lack of connectivity to high priority destinations, such as medical facilities and schools

Moderate Priority Projects

Moderate priority projects are designed to create a cohesive pedestrian network – with the use of the *existing* system. Some of the projects involve filling in missing gaps; others, additional safety issues that arise from the expansion of the network.

Low Priority Projects

The final category contains the low priority corridors. These areas are important to the Village- but due to economic factors, may not be feasible to implement the facilities within the 10-year time frame. These facilities are located primarily in residential neighborhoods and connect to other existing/proposed sidewalks that are of high or moderate priority. A long-range time period will be allowed for the implementation of pedestrian facilities in the low priority areas. As different areas in and around the Village of Pinehurst develop, priorities may change in the coming years.



The corridor priority calculator is shown below.

**Village of Pinehurst
Comprehensive Pedestrian Plan 2014
Corridor Priority Calculator**

Point Range	Existing Corridor Ped. Facility Condition	Accessible Ped. Facilities	Bicycle Facilities	Traffic Volume	Traffic Speed	Pedestrian Crashes	Vehicular Crashes	**SC/ Public Recommendation	Safety Score	Schools	Medical Facilities	Recreation/ Leisure	Retail Center	Downtown	Connectivity Score	Total Score
	1-3	1-2	1-2	1-4	1-4	#	1-5	1-2		#(4)	1-3	1-3	1-3	1-2		
NC Hwy 211	1	1	1	4	4	0	0	0	10.0	4	3	1	3	1	12	22.0
US 15/501	3	2	2	4	4	0	0	0	13.0	0	3	2	3	1	9	22.0
Airport Road	3	2	2	4	4	0	0	0	13.0	4	1	2	1	1	9	22.0
Dundee Road	2	2	1	2	2	0	0	0	8.0	8	1	1	2	2	14	22.0
NC Hwy 5/Beulah Hill Road	3	2	2	3	3	0	0	0	11.0	0	1	3	1	2	7	18.0
Morganton Road	3	2	2	3	4	0	0	0	12.0	0	1	3	1	1	6	18.0
Linden Road	3	2	2	3	4	0	0	0	12.0	0	1	3	1	1	6	18.0
NC Hwy 2/Midland Road	3	2	2	3	3	0	0	0	11.0	0	1	2	1	1	5	16.0
NC Hwy2/Palmetto Road	3	2	2	3	3	0	0	0	11.0	0	1	2	1	1	5	16.0
Monticello Drive	3	2	2	3	2	0	0	0	10.0	0	1	3	1	1	6	16.0
Diamondhead Drive	3	2	2	3	2	0	0	0	10.0	0	1	3	1	1	6	16.0
Lake Hills Road	3	2	2	2	4	0	0	0	11.0	0	1	2	1	1	5	16.0
Rattlesnake Trail	3	2	2	2	2	0	0	0	9.0	0	1	3	2	1	7	16.0
Memorial Drive	3	1	2	3	2	0	0	0	9.0	0	3	1	1	1	6	15.0
Juniper Creek Blvd.	3	2	2	2	2	0	0	0	9.0	0	1	3	1	1	6	15.0
McCaskill Road	3	2	2	2	2	0	0	0	9.0	0	1	1	2	2	6	15.0
Page Road	3	2	2	2	2	0	0	0	9.0	0	3	1	1	1	6	15.0
St. Andrews Drive	3	2	2	2	2	0	0	0	9.0	0	1	3	1	1	6	15.0
Burning Tree Road	3	2	2	2	2	0	0	0	9.0	0	1	2	1	1	5	14.0
Glasgow Drive	3	2	1	3	2	0	0	0	10.0	0	1	1	1	1	4	14.0
Devon Drive	3	2	1	3	2	0	0	0	10.0	0	1	1	1	1	4	14.0
Chicken Plant Road	3	2	2	2	2	0	0	0	9.0	0	1	2	1	1	5	14.0
Pine Wild Drive	3	2	1	3	2	0	0	0	10.0	0	1	1	1	1	4	14.0
Sugar Gum Lane	3	2	2	2	2	0	0	0	9.0	0	1	2	1	1	5	14.0
Cherokee Rd.	3	2	2	2	2	0	0	0	9.0	0	1	2	1	1	5	14.0
Parallel to NC5 on west side of Clubhouse property	3	2	2	2	2	0	0	0	9.0	0	1	2	1	1	5	14.0
Spring Lake Drive	3	2	2	2	2	0	0	0	9.0	0	1	1	1	2	5	14.0
Lake Forest Drive	3	2	2	2	2	0	0	0	9.0	0	1	1	1	1	4	13.0
Lost Tree Road	3	2	2	2	2	0	0	0	9.0	0	1	1	1	1	4	13.0
Pine Tree Road	3	2	2	2	2	0	0	0	9.0	0	1	1	1	1	4	13.0
Stoneydirk Drive	3	2	1	2	2	0	0	0	9.0	0	1	1	1	1	4	13.0
Edinburgh Lane	3	2	1	2	2	0	0	0	9.0	0	1	1	1	1	4	13.0
Hilliard Road	3	2	1	2	2	0	0	0	9.0	0	1	1	1	1	4	13.0
Pinehurst Trace Drive	3	2	1	2	2	0	0	0	9.0	0	1	1	1	1	4	13.0
McDairmid Road	3	2	1	2	2	0	0	0	9.0	0	1	1	1	1	4	13.0
Pine Vista Drive	3	2	2	2	2	0	0	0	9.0	0	1	1	1	1	4	13.0
Gun Club Road	3	1	2	3	2	0	0	0	9.0	0	1	1	1	1	4	13.0
Low Priority																
Medium Priority																
High Priority																

* = Sidewalks may have been divided by side of street, low priority automatically given to less prominent side of street

** SC = Steering Committee

Point Range Key

Safety

Existing Ped. Corridor Facility Condition

1=Good, 2=Fair/incomplete, 3=None/Poor

Accessible Ped. Facilities

1=Exists, 2=None

Bicycle Facilities

1=Exists, 2=None

Traffic Volume

1=0-4,999, 2=5,000-9,999, 3=10,000-11,999, 4=12,000+

Traffic Speed

1=Under 25mph, 2=25-34mph, 3=35-44mph, 4=45+mph

Ped. Crashes

Number of reported pedestrian crashes from January 2000-June 2012

Vehicular Crashes

1 = 0-39, 2 = 40-79, 3 = 80-119, 4 = 120-159, 5 = 160+ (10 year time frame from City Police and NCDOT)

Other

POG/Public Recommendation

1=Not from POG or public recommendations, 2=A POG or Public Recommendation

Connectivity

Schools

The number of schools located along the corridor X (4)

Medical Facilities

1=None, 2=Clinics, Private Med. Offices, 3=Hospital or EMS station

Recreation/ Leisure

1=None, 2=(1) park/rec. facility, 3=(2+) park/rec. facility

Retail Destinations

1=None, 2=(1-4) retail locations, 3=(4+) retail locations

Near "Downtown"

1=Not in Downtown, 2=Within downtown

The higher the overall score the higher the need for pedestrian facilities, thus higher the priority rating.

The proposed improvements incorporate planning initiatives from other agencies (NCDOT) that affect the Village of Pinehurst. It will be essential to continue cooperation with NCDOT and other entities that can enhance the pedestrian network within the Village of Pinehurst and the surrounding communities. As additional needs are identified in the future, communication with these agencies will help with the coordination of future projects.

The Pinehurst Pedestrian Plan proposes numerous pedestrian projects composed mainly of sidewalks, natural surface trails, and intersection improvements. In order to develop an action plan that is manageable, the recommendations have to be separated into projects that will be implemented on an annual basis. Each fiscal year, the Village should identify specific projects and allocate funding for them. There are numerous funding mechanisms to assist with costs. The acquisition of funds will be an important component in the completion of the identified projects.

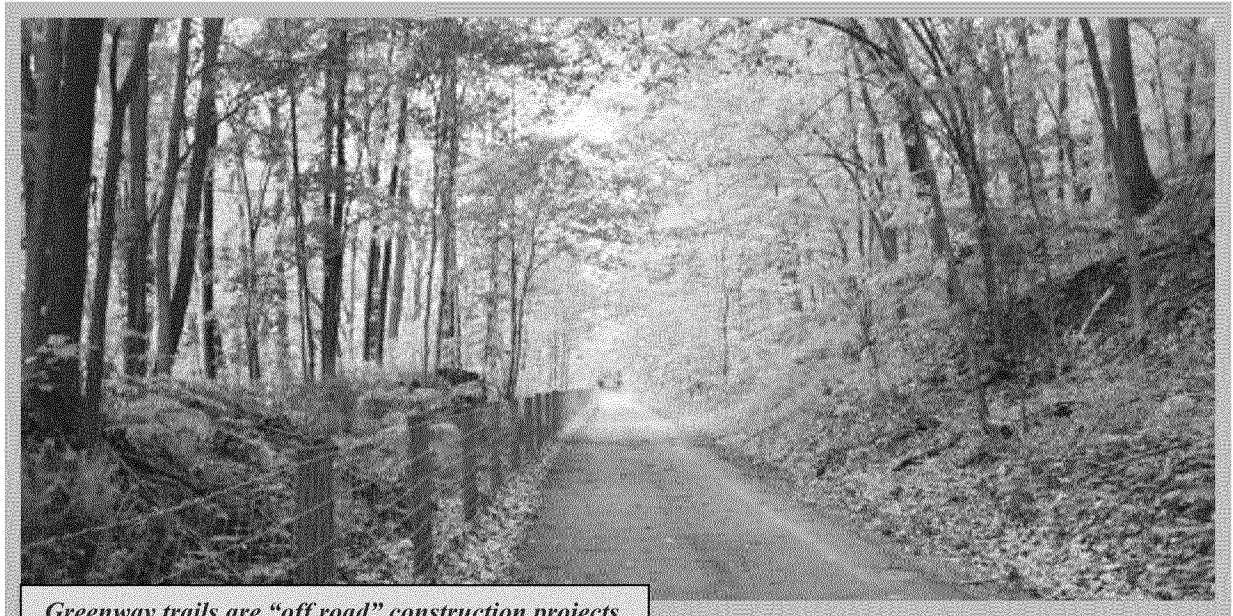
Sidewalk Projects



Many of the proposed improvements for the Pinehurst Pedestrian Plan consist of the either new sidewalks, or accessibility improvements. These are considered to be *on-road construction projects*. A priority list identifying pedestrian corridors/sidewalks can be found above. Standards for the construction of the sidewalk projects can be found in Section 5: Design Guidelines and the Village Engineering Standards and Specifications Manual..

As many of the proposed facilities are located on NCDOT roadways, the Village of Pinehurst will need to receive an approval for all permitting and construction documents for this work *prior* to construction.

The Pinehurst Greenway



Greenway trails are “off road” construction projects.

Multi-purpose trails such as the proposed and future portions of the Pinehurst Greenway Network are designated as *off-road construction projects*. These trails are typically 8 to 10 feet wide and allow for biking, which is not permitted on downtown sidewalks.

This pedestrian plan proposes expanding the existing greenway corridor - creating a network that can connect into similar projects initiated by immediate neighboring communities. The completion of these projects would prove to be an important asset to both the Pinehurst and neighboring communities by providing clear and safe routes between area towns, extra-territorial planning jurisdictions, and the Village - as well as creating a possible attraction that could increase the number of visitors to the area. In order to proceed with such projects, the Village should seek out and cooperate with local land owners and research possible routes along utility easements or other available land before further developing these kinds of multi-purpose pathways.

7.4 ANCILLARY FACILITIES AND PROGRAMS

There are many ancillary facilities and programs that Pinehurst can initiate or participate in. Many of these initiatives are relatively inexpensive. Signing/mapping projects and safety/enforcement programs can be performed through in-house services. Partnering with other organizations such as the Moore County Public Health Department, and the Moore County Transportation Services (MCTS) as well as the Moore County School System, the Triangle J Council of Governments, FirstHealth Hospital, other civic groups,

and health-based companies will allow promotional programming and transit interface programs.

Expanded Transportation Options

The Village of Pinehurst should work with Moore County and MCTS to expand the existing transportation service to increase needed services for the citizens of the Village. An expansion in the transit system should correspond with the needs of residents.

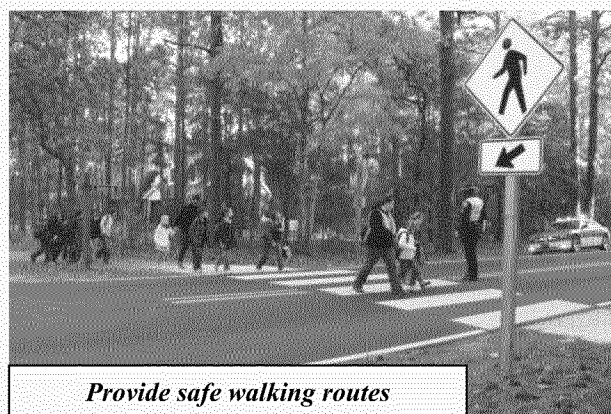
Education Programs

Several state and national program guidelines are available for educating the public about pedestrian safety (see Section 6.4). These programs focus on law enforcement, pedestrians, and drivers. The Village of Pinehurst should work with the Moore County School System and the Pinehurst Police Department to provide safe walking programs for the children and adults of Pinehurst. Some of the resources available for use are:

National Center for Safe Routes to School – The Center offers a number of resources and information on how to start a Safe Routes to School program.

Walking School Bus – A program under the auspices of the National Center for Safe Routes to School, the Walking School Bus combines safety, community awareness, healthy exercise, and fun to help educate children and adults on pedestrian safety.

A Guide to the North Carolina Bicycle and Pedestrian Laws – This guide is intended for use by law enforcement officials, educators, planners, and citizens for education/enforcement of North Carolina pedestrian laws.



Provide safe walking routes

Healthy Communities Program

The Village of Pinehurst, the Moore County Health Department, and FirstHealth Hospital should join together in promoting and furthering the Health Department's wellness goals and programs. A Healthy Communities program encourages walking as healthy exercise. This program should recruit churches, civic organizations, and neighborhood associations to organize and promote walking for better health. The program should also include pedestrian education.



Way-finding

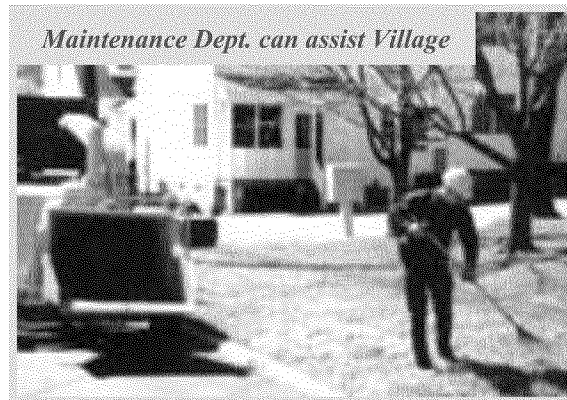
As pedestrian facilities are completed, they need to be incorporated into the way-finding system for the Village. Updated walking maps that highlight pedestrian routes should be developed as needed to educate pedestrians as to the various routes available. Maps of primary pedestrian

corridors can be made available at local government and retail centers. A uniform system of signage should be installed to direct pedestrians to destination points. Traffic signs should be installed that alert motorists to the pedestrian network (see Section 5: Design Guidelines.)

Spot Improvement and Maintenance Program

A Spot Improvement and Maintenance Program is recommended and would most likely be the responsibility of the Village of Pinehurst Public Services Department. The Department needs to develop a regular schedule of inspection and repair to the various elements of the pedestrian network - including sidewalks, crosswalks, signage, and street furniture. In addition, the Department (itself) can make several of the spot improvements on the proposed project list. Some of the tasks that can be undertaken by the Maintenance Department include:

- Repair retaining walls
- Install, repair, or replace signage
- Remove (or supervise removal) of litter
- Maintain landscaping
- Inspect/repair pedestrian amenities (benches, trash receptacles, etc.)
- Repair/install small areas of sidewalk or multi-purpose trail.



7.5 STAFFING

The Village Manager, Planning Department staff, Public Works staff and Parks and Recreation staff will serve as the major catalysts for the development of Pinehurst's pedestrian system. These departments will guide the Village in the planning, design, construction, and funding of pedestrian facilities. They will also facilitate cooperation between the various agencies, which were mentioned in Section 7.4



The Village Public Works Department will be a vital component in the implementation of projects and in the maintenance of those facilities that are the Village's responsibility. The Planning Board and Village Council will need to be advocates of pedestrian planning. Each fiscal year the Village should implement pedestrian improvements as part of the Village's general budget.

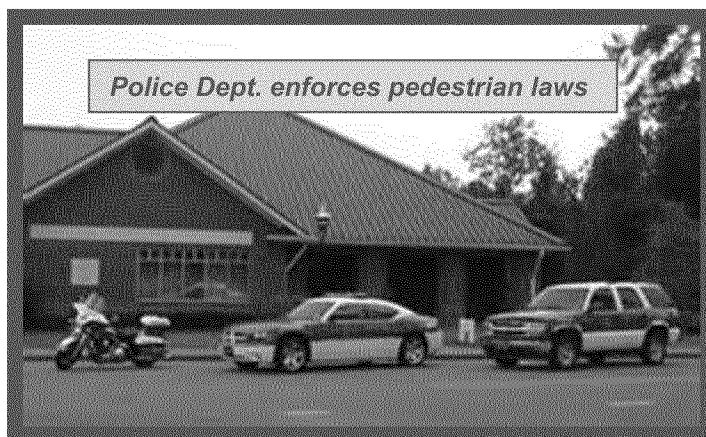
The Pedestrian Plan Steering Committee was an integral component in developing recommendations for the Pedestrian Plan. It is recommended that an ongoing Oversight Committee be created to evaluate the

pedestrian facilities and programs on an annual basis. An evaluation program is too comprehensive for just one individual to perform; such a program will require a group working together to conduct the evaluation. The Oversight Committee could also be responsible for recruiting volunteers and civic groups to assist with programming and simple maintenance tasks (such as litter removal). Maintenance issues and problems can often be addressed through the Oversight Committee and it, in turn, can inform the Village of complaints from local residents and visitors.



The Pinehurst Police Department will continue to assume tasks related to pedestrian safety. This includes total enforcement of traffic and pedestrian laws, and, education, and

crime prevention. The Department should also continue to maintain a record of all accidents involving pedestrians in order to address necessary improvements to the pedestrian network that might develop after the adoption of this plan.



7.6 FUNDING OPPORTUNITIES

Funding for the implementation of proposed projects can be overwhelming - particularly with increasing construction costs. Therefore, prioritization will aid in the completion of the proposed tasks. The projected construction cost estimates for all the proposed sidewalk projects is summarized in the table below.

Prioritized Facility Cost Estimates

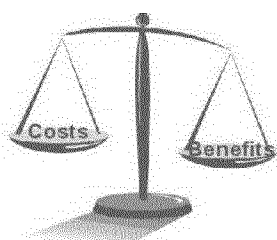
Priority	Sidewalk Projects
High	\$1,389,650
Medium	\$4,289,200
Low	\$731,050
TOTAL	\$6,409,900

A more detailed listing of the sidewalk projects, their priority status and approximate costs can be found in the Appendix under “Preliminary Cost Estimates”.

The function of the “Priority Matrix” is to help determine what pedestrian projects may be most needed or have the most positive impact on existing pedestrian circulation. The projects with the highest priority rankings should be considered as the initial improvements made by the Village. However, as economic, environmental, and political changes will inevitably occur in the future, the calculator results should only serve to guide the Village in deciding what projects to pursue.

With a very talented and capable Village Staff, Pinehurst has the ability to accomplish many of the proposed improvements within their department(s). Spot improvements such as ADA compliant curb ramps, repair to damaged sidewalks, and small sidewalk projects can be accomplished by Village Staff, which will dramatically decrease the costs of these projects.

The cost of the sidewalk applications will vary depending upon the choice of contractor, the scope of the project, and the cost of materials. The probable costs associated for implementing the high priority projects is \$1,389,650.



Funding will be a large component in the process of developing Pinehurst’s pedestrian facilities. The Village will need to be aggressive in applying for funding every year for individual projects. Monies can be a combination of grants, contributions, bonds, and other methods. The cost of curbs, ramps, crosswalks, pedestrian signals, and traffic signals can be shared with NCDOT. In addition, proposed improvements that are a part of a larger NCDOT project can be funded as an “incidental” project by NCDOT. The Village will work with NCDOT to have them install the proposed sidewalks and intersection improvements as approved by the Village.

Grants, in particular, will be an important mechanism for funding. The projects, which are to be submitted for grants, need to reflect the



objectives specified with each individual grant. Grants are typically oriented toward connectivity to a specific arena – such as education, recreation, or safety.

A variety of funding opportunities are available to Pinehurst as the Village prepares for future improvement/development of its pedestrian system. Among these opportunities includes, the Village of Pinehurst's Capital Improvement Program, Triangle Area RPO/Triangle J Council of Governments, BlueCross Blue Shield of NC Foundation and the Robert Wood Johnson Foundation. The list below shows funding sources that have been utilized by other communities for pedestrian projects. Each of these will be addressed in this section.

- Taxation
- Bonds
- Grants
- User Fees
- Contributions
- Foundations
- Homeowner Assessments

Taxation

Traditionally, *ad valorem tax revenue* has been the primary source of funding for the pedestrian facilities of properties/facilities owned by municipalities and counties. 'Pedestrian opportunities' are considered a public service and often are *standard line items* on general fund budgets. Creative financial opportunities are possible; however, ad valorem taxes will continue to be the major revenue source to support the system. As such, communities often vote to raise their local tax rate temporarily in support of their pedestrian systems. Some possible tax funding strategies are:



Sales Tax – local county governments are authorized to implement a local sales tax. These taxes are typically used for a variety of projects within the county. The increase in local sales tax must be approved by the state government. The sales tax may be implemented for a fixed period of time and then expire.

Property Tax - because of concern by local home owners, increases in property taxes should be addressed with care. *Property Tax Increase* must have wide public support for the resulting project. Such funds are often used to pay debt service on general obligation bonds that were issued for land acquisition(s).



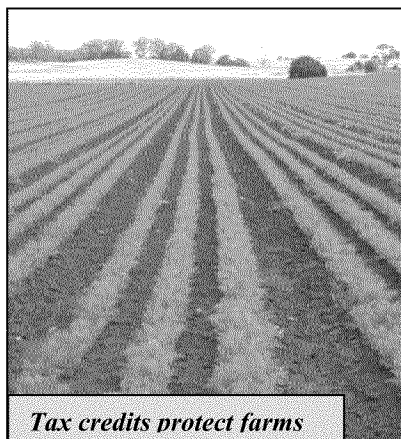
Excise Taxes - excise taxes are levied on specific goods and services and are to be used for specified purposes. In general, these taxes are levied to achieve funds for the

promotion of tourism or transportation, which include pedestrian facilities.

Occupancy Tax – occupancy taxes are levied by local governments on hotel and motel rooms. The funds are typically used for the promotion of tourism and related activities.

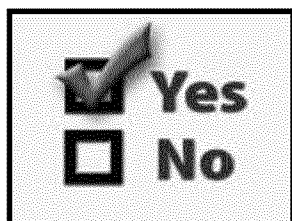


North Carolina Conservation Tax Credit (NCTC)



This program provides an incentive (in the form of an income tax credit) for landowners that donate interests in real property for conservation purposes. Property donations can be fee simple or in the form of conservation easements or bargain sale. The goal of this program is to manage stormwater, protect water supply watersheds, preserve working farms and forests, and set aside greenways for ecological communities, public trails, and wildlife corridors. The website is <http://ncctc.enr.state.nc.us/>.

Bonds



Many communities issue *bonds*, which are typically approved by the shareholders, to finance site development and land acquisition costs. The State of North Carolina grants municipal governments the authority to borrow funds through the issuance of bonds - the amount of which is not to exceed the cost of acquisition or the cost for improvement of pedestrian facilities.

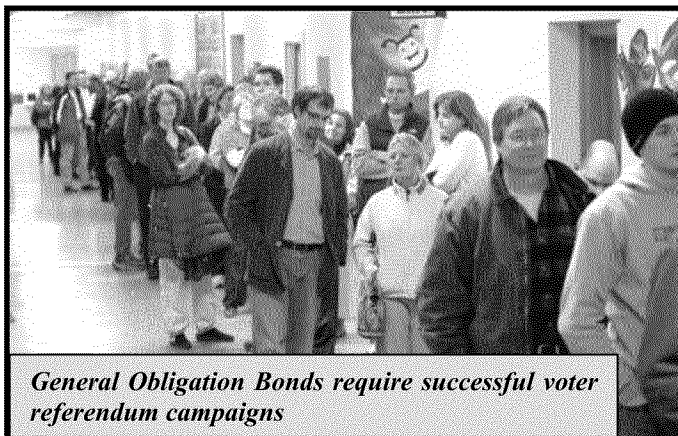
Total bond capacities for local governments (for pedestrian facilities) are limited to a maximum percentage of assessed property valuation. Since the issuance of bonds relies on the support of the voting population, the implementation of awareness programs is absolutely essential *prior* to a referendum vote. This method can be used for specific projects such as the creation of multi-purpose trails within a greenway.

Revenue Bonds – Revenue Bonds are issued by government agencies or funds that generate operating revenues and expenses, much like a business. Repayment of the bond is limited strictly to revenues generated by the agency associated with the purpose of the bonds. Only the revenues specified in the contract between the bond holder and bond issuer are subject to use for repayment of the bond principal and interest.

General Obligation Bonds - General Obligation Bonds are the preferred financing approach by the North Carolina Local Government Commission

and the general securities market - because these instruments are backed by the full faith and credit of the issuer – which simply means that the bonds are representative of an encumbrance against the property tax base of the issuing jurisdiction and therefore offer the best available security to the bond holder.

The State of North Carolina gives the issuance of bonds that are not to



General Obligation Bonds require successful voter referendum campaigns

exceed the total cost of improvements, including land acquisition. In view of the recommended capital improvements suggested in this plan, the borrowing of funds to develop new facilities may be necessary. Total bonding capacities for local governments is limited for parks and recreation to a maximum

percentage of assessed property valuation.

The following are key factors to consider when evaluating the use of General Obligation Bonds for financing:

- In North Carolina, the issuance of General Obligation Bonds requires a referendum of the voters within the issuing jurisdiction.
- The term of the debt may be extended to 20-30 years.
- The debt is publicly sold. Therefore, there are costs associated with the sale that generally total 3% to 5% of the total bond principal. The issuance costs offset the lower interest rate so this instrument becomes more attractive as the size of the issuance increases and the issuance costs are spread over the larger debt. It has been found that this financing option becomes financially superior as the debt principal exceeds \$10-\$12 million.
- Prepayment of the debt can generally not be accomplished until reaching a call date, which is generally around 75% of debt retirement.
- Failure of the General Obligation Bond to be ratified by referendum could mean that the County could not go forward with an alternative approach to financing without substantially changing the scope of the project.

Special Assessment Bonds – Special Assessment Bonds are municipal bonds used to fund a project that benefits a specific neighborhood or community. The neighborhood or community then repays the bond through the levy of additional taxes or fees on the property owners who have benefited from the improvements.

Grants

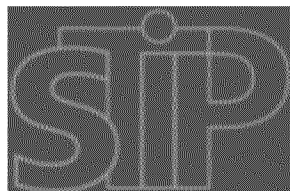
State and federal agencies offer funding opportunities to assist municipalities in the financing of their pedestrian projects - including greenway trails. These sources of funding should definitely be investigated and pursued by the Village of Pinehurst for present and future improvements.

State Agencies

North Carolina Department of Transportation Grants

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

NCDOT has established priorities that are addressed in the 2006-2012 Traffic Improvements Program (TIP). The projects are identified within the "Region E" thoroughfare plan, which includes Moore County. The program identifies long-range projects of varied scopes, small to multi-million dollar facility improvements. The projects identify location, phase, and schedule.



Pedestrian facility projects are divided into two (2) categories within the TIP - *independent* projects and *incidental* projects. Independent projects are those which are not related to a 'scheduled' highway project. Incidental projects are those related to a 'scheduled' highway project.

- NCDOT annually sets aside funding dollars for the construction of bicycle and pedestrian improvements that are independent of scheduled highway projects in communities throughout the state. Types of projects include shared-use paths, wide-paved shoulders, bike lanes, and sidewalks. These independent projects are funded through the Strategic Prioritization/State Transportation Improvement Program (STIP) process.
- The strategic prioritization process serves as the primary input source for the STIP. Metropolitan Planning Organizations, (MPOs), Rural Planning Organizations (RPOs), NCDOT Divisions, and the Division of Bicycle and Pedestrian Transportation (DBPT) as well as other units at NCDOT may submit projects through the prioritization process. For bike and pedestrian projects, the DBPT utilizes a project prioritization methodology with defined criteria to rank all

bike/pedestrian projects. This process occurs every two years. Priority projects are included in the developmental STIP (years 6 to 10) and the 10-year Program & Resource Plan.

- Bicycle and pedestrian accommodations such as bike lanes, widened paved shoulders, sidewalks and bicycle-safe bridge design are frequently funded as incidental features of highway projects. Most pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of federal and state roadway construction funds or with a local fund match.
- NCDOT's Sidewalk Program – Each year, funding dollars for STIP-Enhancement projects (sidewalk construction, maintenance and repair) are made available. Each of the 14 highway divisions across the state typically receives \$100,000 annually for this purpose. Funding decisions are made by the district engineer. Prospective applicants are encouraged to contact their district engineer for information on how to apply for funding.

Governor's Highway Safety Program (GHSP)

Upon approval of specific project requests, GHSP funding is provided through an annual program to undertake a variety of pedestrian and bicycle safety initiatives. Amounts of GHSP funds vary from year to year, according to the specific amounts requested. The GHSP plans and supports several highway safety programs annually. 'Click It or Ticket' began in 1993 and has become the national model for an enforcement and education campaign (bearing the same name), which is operated by the National Highway Traffic Safety Administration. All funding from the GHSP is allocated for highway safety purposes only. The funding provided for this program has been described as 'seed money', which is money that is needed to get programs started. The grantee is expected to provide a portion of the project cost and is expected to continue the program after GHSP funding expires. <http://www.ncdot.gov/programs/GHSP/>



Safe Routes to School Program (Managed by NCDOT, DBPT)



Safe Routes to School (SRTS) is a program that enables and encourages children to walk and bike to school. The program helps make walking and bicycling to school a safe and more appealing method of transportation for children. SRTS facilitates the planning, development, and implementation of projects and activities that will



improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The North Carolina Safe Routes to School Program is supported by federal funds through SAFETEA-LU and MAP-21 legislation.

Different types of reimbursable funding opportunities are available through this program which include; Action Plans or School Travel Plans, Non-Infrastructure Program funding, Infrastructure Program funding, and Highway Division Funds. Please note that all SRTS projects "shall be treated as projects on a Federal-aid system under chapter 1 of title 23, United States Code." Although no local match is required and all SRTS projects are 100% federally funded, agencies are encouraged to leverage other funding sources that may be available to them, including grant awards, local, state, or other federal funding.

The following provides information about the program.

- **Action Plans or School Travel Plans:** These are plans to improve pedestrian and bicycle safety within a two-mile radius of schools that are grades K-8. The Action Plans provide a framework for identifying projects, programs and activities that will make walking and bicycling to school safer and more appealing.
- **Non-Infrastructure Funds:** are used for pedestrian and bicycle education, encouragement, evaluation and enforcement. These grants are good for developing programs that inspire children to walk and bike to school.
- **Infrastructure Funds:** are funds that are awarded for the planning, design, and construction of pedestrian and bicycling facilities within a 2-mile radius of a school. Funding requests typically range from \$100,000 to \$300,000 per project. Types of projects may include sidewalk improvements, crossing improvements, on-street bike and pedestrian improvements, bike parking, traffic calming, and traffic separation devices among others. An adopted Comprehensive Transportation Plan or other type of pedestrian and bicycle plan that identifies needed infrastructure improvements is helpful in obtaining these grants.
- **Highway Division Funds:** are funds that are allocated by each of NCDOT's 14 Highway Divisions and the SRTS office to fund infrastructure projects on state-maintained roadways. The projects must be within 2-miles of a school serving grades K-8 to be eligible. The funding amounts can be used to improve conditions for walking and biking to school.
<http://www.ncdot.gov/doh/preconstruct/traffic/congestion/cm/msta/docs/SRTS.pdf>

Powell Bill Program

The Powell Bill or the North Carolina Street-Aid Allocations to Municipalities is a program of the North Carolina Department of Transportation. Allocations are made annually to municipalities that establish their eligibility and qualify as provided by G.S. 136-41.1 through 136-41.3. These funds can be used for planning, construction, and maintenance of sidewalks along public streets and highways. http://www.ncdot.org/programs/Powell_Bill/

North Carolina Department of Environment and Natural Resources

Land and Water Conservation Fund – North Carolina (LWCF)



A federally-funded program, LWCF was established for local and state governments in 1965 as a funding source for outdoor recreation development and land acquisition. LWCF monies are derived from the sale or lease of nonrenewable resources, primarily offshore oil/gas leases and surplus federal land sales. Acquisition and development grants may be used for a wide variety of outdoor projects such as bike trails, Village parks, tennis courts, outdoor swimming pools, and support facilities (roads, water supply, etc.). Facility design must be basic in nature (as opposed to elaborate) and must remain accessible to the general public. No more than 50% of the project cost may be federally funded by LWCF, although all or part of the project sponsor's matching share may be obtained from certain other federal assistance programs.

<http://ils.unc.edu/parkproject/lwcf/home1.html>

North Carolina Ecosystem Enhancement Program

The NC Ecosystem Enhancement Program (EEP) combines a wetlands-restoration initiative by the N.C. Department of Environment and Natural Resources with ongoing environmental efforts by the Department of Transportation to restore, enhance, and protect its wetlands and waterways. EEP provides:

- High-quality, cost-effective projects for watershed improvement and protection
- Compensation for simply unavoidable environmental impacts associated with transportation, infrastructure, and the area's



economic development

- Detailed watershed-planning and project-implementation efforts within North Carolina's threatened or degraded watersheds
http://www.enr.state.nc.us/html/tax_credits.html

North Carolina Division of State Parks

NC Adopt-A-Trail Grant Program

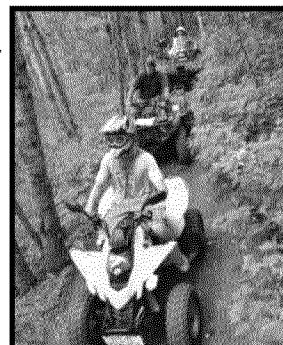


The North Carolina Division of State Parks awards \$108,000 each year to government agencies, nonprofit organizations, and private trail groups for trail projects, through the Adopt-a-Trail program. Funds may be used for building trails, signage and facilities, brochures, and maps.
http://www.ncparks.gov/About/grants/trails_grant.php

Recreational Trails Program (RTP)

The Recreation Trails Program (RTP) is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA). RTP makes recreation funds available for state allocation – in the development and maintenance of recreation trails and trail-related facilities for both non-motorized and motorized recreation trail users. RTP funds are distributed to states by a legislative formula: half of the funds are

distributed equally among all states and half are distributed in proportion to the estimated amount of non-highway recreational fuel used in each state. *Non-highway recreational fuel is the type that is typically used by snowmobiles, all-terrain vehicles, off-road motorcycles, and off-road light trucks.*



RTP assists with development of motorized recreation trails

North Carolina Parks and Recreation Trust Fund (PARTF)



PARTF was established for local governments and the North Carolina Division of Parks and Recreation in 1994 as a funding source for the development and/or improvement of parks and recreation facilities, as well as for the purpose of land acquisition. A state-funded program, PARTF matches

monies spent by municipalities on parks and recreation, with each sharing 50% of the cost. In 2004, the fund request was elevated from a maximum of \$500,000 to \$1,000,000. The Recreational Resources Service should be contacted for additional information at (919) 515-7118. www.ncparks.gov/About/grants/partf_main.php

North Carolina Division of Forest Resources

Urban and Community Forestry Grant Program

This program is designed to assist local governments in preserving existing tree cover in communities and to effectively and efficiently manage urban and community forests. Tree planting projects need to be part of a larger project aimed at promoting and enhancing the existing tree cover in a community. Projects with pedestrian network elements include:

- Development of a pocket park
- Greenway development
- Tree planting in low-income neighborhoods
- Master Tree Plans
- Neighborwoods

http://www.dfr.state.nc.us/Urban/urban_grant_overview.htm

North Carolina Division of Water Resources

Water Resources Development Grant Program

This grant is designed to provide cost-share grants and technical assistance on projects related to water resources. There are seven (7) different project categories. The category which describes *the establishment of a greenway in close proximity to a body of water* is eligible for the Land Acquisition and Facility Development for Water-Based Recreation grant. http://www.ncwater.org/Financial_Assistance/



*Lake
Pinehurst
offers
greenway
opportunity*

North Carolina Division of Commerce

Community Revitalization Grants

The purpose of the Community Revitalization Grant is to revitalize low or moderate income residential areas through improvements, preservation, or development. Eligible activities include housing, street improvements, public water service, public sewer service, community centers, and recreation facilities. Other activities may be eligible with pre-approval. Maximum grants are one million dollars.

<http://www.nccommerce.com/en/CommunityServices/CommunityDevelopmentGrants/CommunityDevelopmentBlockGrants/>

Miscellaneous State Funding Organizations

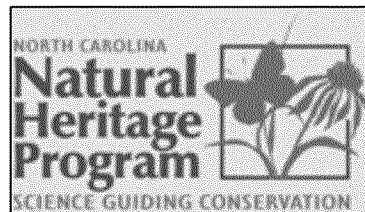
North Carolina's Clean Water Management Trust Fund (CWMTF)

Created in 1996 by the North Carolina General Assembly, the Clean Water Management Trust Fund (CWMTF) grants monies to local governments, state agencies, and not-for-profit conservation groups to help finance projects that specifically address water pollution issues. CWMTF will fund projects that contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits. There is no match required from local municipalities for CWMTF funds; however, the "suggestion" of a match is highly recommended. <http://www.cwmtf.net/>



North Carolina Natural Heritage Trust Fund (NHTF)

Monies from the NHTF must be accessed through state agencies such as DENR, the Wildlife Resources Commission, the Department of Cultural Resources, and/or the Department of Agriculture and Consumer Services (NCDA&CS). Funds are meant for the acquisition and protection of land with significant habitat value and/or cultural heritage value. <http://www.ncnhtf.org/>



North Carolina Health and Wellness Trust Fund (HWTF)

The NC Health and Wellness Trust Fund was created by the General Assembly as one of three (3) entities to invest North Carolina's portion of the Tobacco Master Settlement Agreement (MSA). HWTF receives one-

fourth of the state's tobacco settlement funds, which are paid in annual installments over a 25-year period.

The Fit Community Program was designed to address the growing obesity problem in North Carolina. In 2004, HWTF partnered with Blue Cross and Blue Shield of North Carolina to launch a statewide campaign designed to raise awareness of the danger of being overweight and provide communities and individuals with the information and tools they need to address this problem.

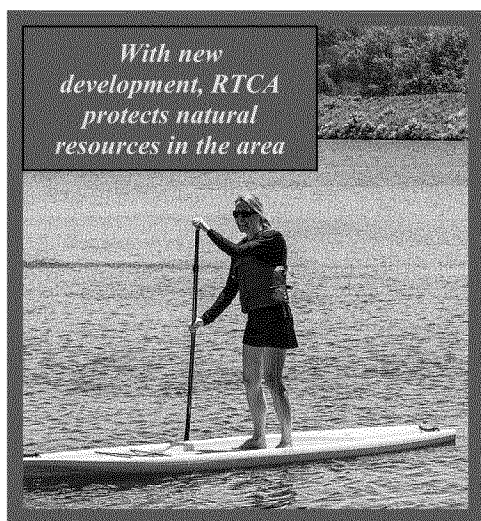


Fit Community Grants are funded for two (2) years, for a maximum of \$60,000. Applicants must first submit a Fit Community

designation application and then apply for a Fit Community grant. Funding is for policy changes that will influence the public by promoting physical activity and changes to the physical environment; and, that encourage more physical activity. <http://www.healthwellnc.com/>

Federal Agencies

Rivers, Trails, and Conservation Assistance Program (RTCA)

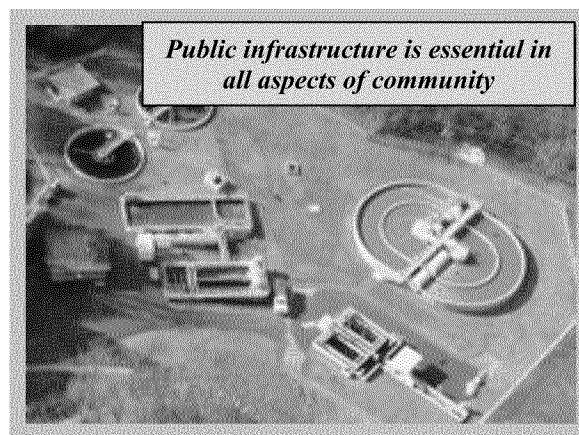


The National Park Service (NPS) provides this program of advisory services and counseling. The NPS works with community groups and local and state governments to conserve rivers, preserve open space, and develop trails/greenways. No fixed amount is established for these services. Candidates must demonstrate a commitment for cost-sharing, which may include donations of time, cash, and services. RTCA has played a major role in community conservation/recreation through citizen-led partnership approaches to river protection, trail development, and land conservation. www.nps.gov/ncrc/programs/rtca/

Public Works and Economic Development Program

This program is administered by the Economic Development Administration for the US Department of Commerce. Public Works and Economic Development investments help support the construction or rehabilitation of essential public infrastructure and facilities necessary to generate or retain private sector jobs and investments, attract private sector capital, and promote regional competitiveness.

This includes investments that expand and upgrade infrastructure to attract new industry, support technology-led development, redevelop brownfield sites, and provide Eco-industrial development.



<http://www.eda.gov/AboutEDA/Programs.xml>

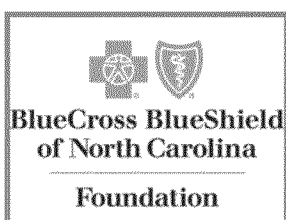
Contributions

The solicitation of *contributions* is an acceptable method of fund-raising for pedestrian improvements. These donations - typically in the form of land, cash, labor, or materials - can be solicited to assist the Village of Pinehurst with the enhancement of its pedestrian system. Corporations, civic organizations, individuals, and other groups generally donate to a specific pedestrian project; however, donations may also be solicited for multiple project improvements or additions. Private, nonprofit, tax-exempt foundations, such as the North Carolina Community Foundation (NCCF), are often used as a means of accepting and administering *private* gifts to a *public* entity.

Foundations

Foundations are another source of financing that allows direct contributions to be made within communities, states, or the nation. These types of funds are usually described as special program foundations, general-purpose foundations, or corporate foundations. Foundations generally have very few restrictions or limitations and are typically received from local entities.

Blue Cross Blue Shield Foundation



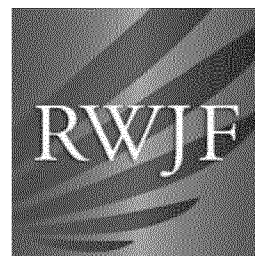
The Blue Cross Blue Shield partners with its grantees to make a difference in the health of its constituents. The foundation supports policies and programs across the state and nation to better the lives of citizens – wherever they live, work, and play. It connects the community with experienced leaders, who provide

financial and program support for active lifestyles for all North Carolinians.

Robert Wood Johnson Foundations

As the world's largest philanthropic organization devoted to public health, the Robert Wood Johnson Foundation works to improve the health and health care of all Americans. The foundation is dedicated to building a Culture of Health that enables this diverse society to lead healthier lives – now and for generations to come. It focuses on:

- Child and Family Well-Being
- Childhood Obesity
- Health Insurance Coverage
- Healthy Communities
- Health Leadership and Workforce
- Health System Improvement



Partnerships

To implement the recommendations contained in the comprehensive pedestrian plan, Pinehurst will most certainly have to expand their partnership agreements with other public agencies and private-sector organizations. There are many different types of partnerships that can be formed to achieve the goals established by the Village. In fact, many local governments throughout the nation are utilizing partnerships with public and private-sector interests to accomplish community goals.



Health systems typically partner with counties and municipalities to promote wellness programs

Listed below are the various types of partnerships that the Village should consider in its efforts for the improvement of pedestrian facilities:

- Programming partnerships to co-sponsor events and facilities or to allow qualified outside agencies to conduct activities on properties, which are municipally-owned.
- Operational partnerships to share the responsibility for providing public access and use of facilities.
- Development partnerships to purchase land and/or build facilities.
- Management partnerships to maintain properties and/or facilities.
- Elected officials should become advocates for pedestrian facilities and promote the development of future improvements.

The Village of Pinehurst is currently “partnered” with several entities in other Village-related endeavors/functions and should evaluate forming additional partnerships, which address the needs of the pedestrian system.



NCDOT will be a very important partner as more facilities are developed in the area. Proposed improvements often involve NCDOT. It will be imperative that this partnership has good communication and coordination for the efficient implementation of projects.

Direct requests should be made to potential partners, asking them to meet to evaluate the possible benefits of partnering. This step should be made to generate interest and agreement *prior* to solidifying any responsibilities for each participating party.

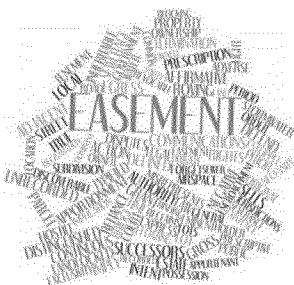
Land Acquisition and Development

There are many different types of *land acquisition* available to the Village of Pinehurst for the pedestrian system expansion and/or future development. Due to the land costs and availability, it is recommended that the Village prioritize the property to be acquired for facilities regarding multi-purpose trails, which are typically off-street facilities. Listed below are several methods for acquiring/developing these trails:



Donations of land, money, labor, or construction can have a significant impact on the acquisition and development of pedestrian facilities. The solicitation of local gifts is highly recommended and should be organized thoroughly, with the utilization of very specific strategic methods. Often untapped, this source of obtaining funds requires the contacting of potential donors - such as individuals, institutions, foundations, service clubs, etc.

A *life estate* is a gift whereby a donor retains the land during his/her lifetime and relinquishes title of the property after his/her death. In return, the owner (or family) is relieved of property tax for the given land.



An *easement* is the most common type of “less-than-fee” interest in land. An easement seeks to compensate the property owner for the right to use his/her land in some way or to compensate for the loss of his/her privileges to use the land. Generally, the land owner may still use the land and therefore continues to generate property tax revenue for the municipality.

Fee simple purchase is the most common method used to acquire municipal property for pedestrian facilities. Although it has the advantage of simplifying justification to the general public, fee simple purchase is the most difficult method to pursue, due to limited monetary resources.

This method allows municipalities to acquire land by fee simple purchase, yet allows them to either sell or lease the property to prospective users with restrictions that will preserve the land from future development. The fee simple with lease-back or resale method of development commonly results from situations in which land owners who have lost considerable monetary amounts in property value, determine that it is more economical to sell the land to the municipality (with a lease-back option) than to keep it.

Long-term options allow municipalities to purchase property over a long period of time. This method is particularly useful because it enables the municipality to consider particular pieces of land that may have future value, though it is not currently desired or affordable at the time. There are several advantages to this method of property

acquisition: the Village of protect the future of the land without purchasing it upfront; and meanwhile, the purchase price of the land will not increase, with the Village having the right to exercise its option. The disadvantage to the Village is that all privileges relinquished by the land owner require compensation in the form of securing the option.

Identify Special Funding Opportunities for High Priority Projects

The funding sources listed above can be used for numerous projects proposed in this plan as well as future projects. Many of these projects can be funded as enhancement projects of TIP. The improvements along the major corridors (that have substantial construction cost) should be strongly considered. Funding for mapping and signage can be allocated through the Governor's Highway Safety Program.



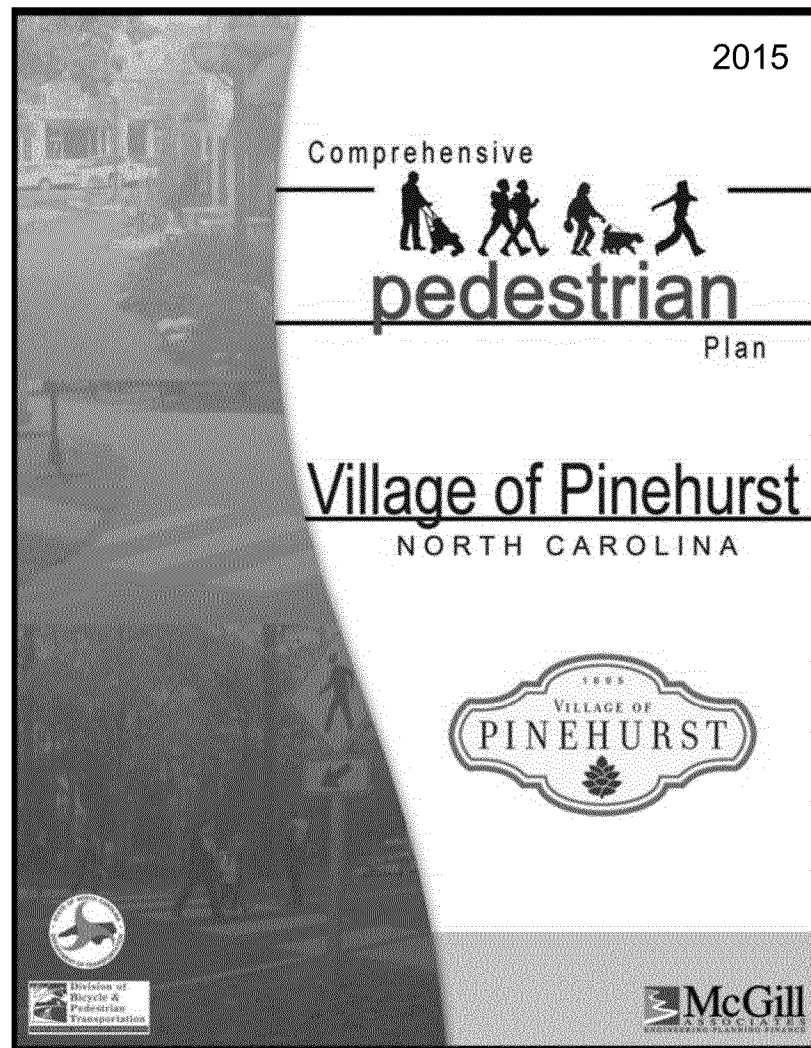
County should set aside money for construction of new facilities – over and above monies obtained through grants or gifts.

It will be important to incorporate the future facilities with incidental highway projects. This document will be used by NCDOT to determine areas where pedestrian improvements should be incorporated into the proposed roadway improvements. Major construction projects may require more than grants. Although grant funding is a great resource, the amount of money available can limit the size of the project. A bond referendum could help to determine whether the Village's residents are willing to accept the cost for construction of major facilities.

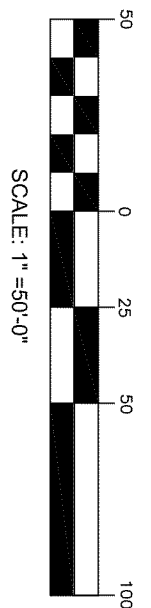
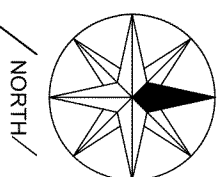
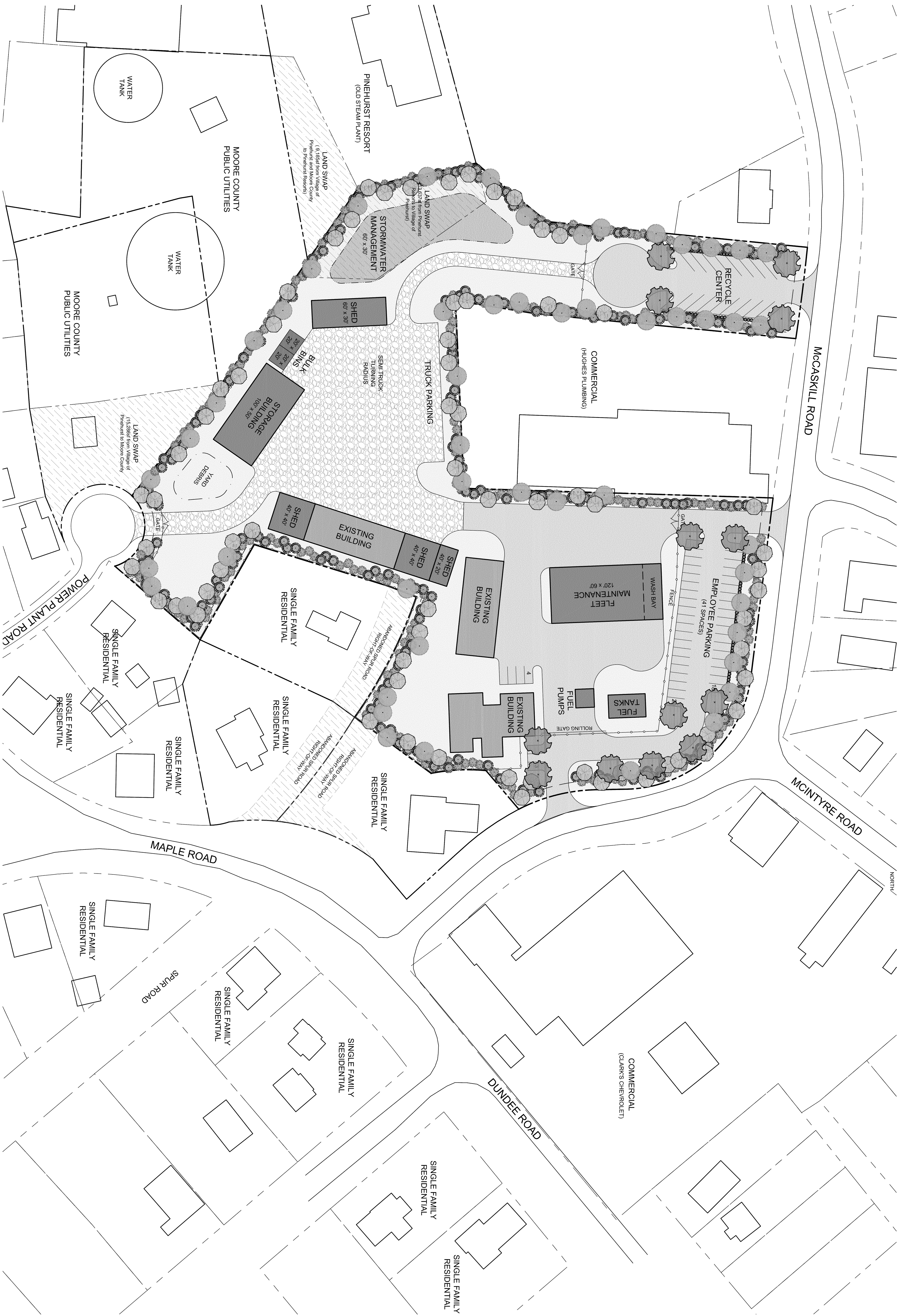
The grants available for funding pedestrian facilities will evolve in the future. The funding amount for many grants may not be as much as others, while some may be very competitive because of the monies available. Partnering with other organizations typically lends more project significance when applying to funding agencies. Having multiple organizations applying for a grant, shows unity within a community; this, in turn, supports the grant application. In addition, having multiple partners will allow for more monies to be used for matching funds.

7.7 THE VILLAGE OF PINEHURST COMPREHENSIVE PEDESTRIAN PLAN

The Village of Pinehurst Comprehensive Pedestrian Plan 2015 is merely a guide for the future. As new development and growth occurs in Pinehurst, new priorities may develop. The Village should continually evaluate and update the plan in order to meet the primary needs of the community. As the projects are implemented, the Village should take steps to update all involved parties in the progress being made. Additions to the plan should be formalized in order to insure continuity as stakeholders change.



- END OF SECTION -



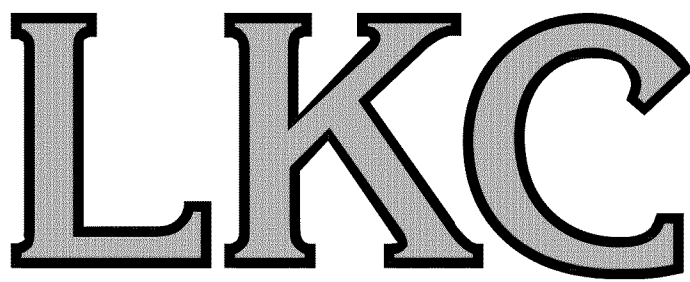
REVISIONS			
SYM.	DESCRIPTION	DATE	BY

PRELIMINARY — DO NOT USE FOR CONSTRUCTION

Village of Pinehurst
Public Works Department
Service Yard

Pinehurst, North Carolina

Conceptual Site Plan



Engineering
Landscape Architecture
Planning

LKC Engineering, plc
140 Aqua Shed Court
Aberdeen, NC 28315
O: 910.420.1437
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lkceengineering.com
License No. P-1095

DATE: February 2, 2015

DESIGNED: KSH

DRAWN: -

CHECKED: -

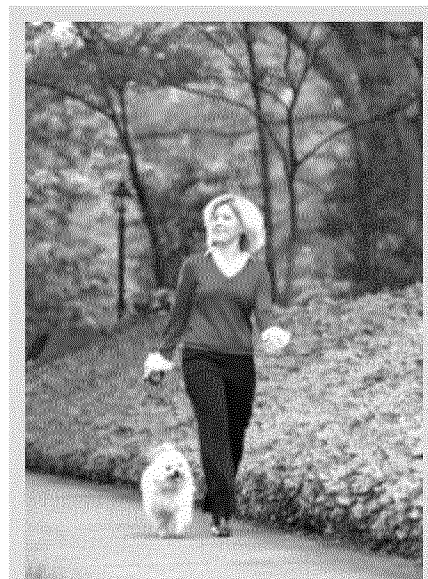
NO.

SECTION SIX: PROGRAM AND POLICY RECOMMENDATIONS

A variety of programs and facilities (designed to increase walking and promote pedestrian safety in the Village of Pinehurst) are outlined in this section. Policies are included, which recommend that the Village to help with the development and maintenance of the pedestrian network outlined in Section 4.

The following sections describe policies, programs, and action steps. These elements were developed using and evaluating existing planning documents mentioned in Section 3. The Steering Committee also assisted in developing the plan's overall goals which include the following:

- Increase walkability in the Village of Pinehurst
- Create a pedestrian network that is an important part of the urban structure
- Promote walking as a healthy exercise
- Create a pedestrian environment that is friendly to all users including seniors, the disabled, and children
- Improve connections between disparate parts of the Village
- Promote pedestrian safety



Walking contributes to overall fitness

6.1 ANCILLARY FACILITIES AND PROGRAMS

Maintenance

Safety should be a high priority with existing and new facilities. Continual maintenance will be required to have a functional pedestrian network. Pedestrians typically aspire to use a facility that is in a good and safe condition; otherwise, it will not be used effectively. In addition to sidewalks, crosswalks at traffic intersections and mid-block crossings need to conform to the Manual of Uniform Traffic Control Devices (MUTCD). As crosswalks are installed, it will be important to place crosswalk warning signs to caution motorists where required.

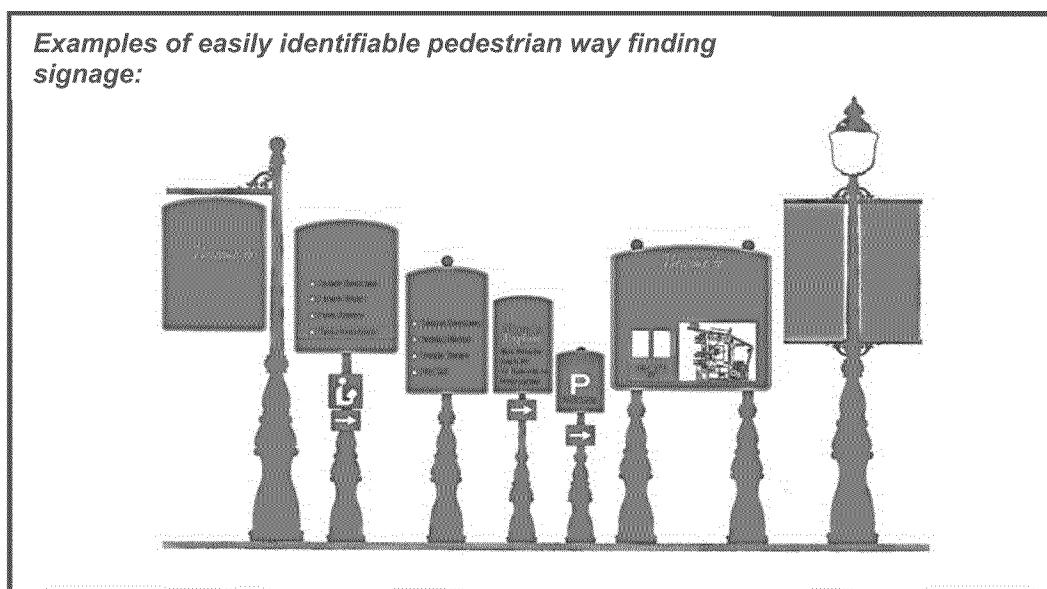
With an aging population, it is imperative that accessibility and user needs be addressed at all street crossings. In order to effectively address these issues, it is recommended that the Village staff conduct an inspection of existing pedestrian facilities within the Village on a quarterly basis to, not only address previously identified maintenance issues, but also to inventory any additional areas where issues have arisen.

Signage and Way-finding

A map of existing facilities in the Village of Pinehurst can be found at the end of Section 2. Not only does the map delineate the conditions of existing pedestrian facilities, they also address crosswalk needs and the lack of curb ramps. A number of destination areas such as schools and parks are shown in order to better understand the relationship of existing pedestrian facilities to their uses.

Proper signage is an important part of any transportation system - whether it is pedestrian or vehicular in nature. Signs in schools zones, parking lots, and other areas alert drivers to the presence of pedestrians in the area. Signage for *pedestrian* facilities is equally as important as signage for *roadways*. Often, pedestrian facilities lack signage directing pedestrians along a designated route. It is hard to imagine having to walk to a specific destination without knowing the exact route to use; but, this is often the case with pedestrians - especially visitors to the area.

There are many different way finding signs pedestrians may find helpful depending on the reason for the pedestrian trip. However, most pedestrian facilities should have a clear and concise system of signage to direct users to various destinations such as Village Center shopping, Given Memorial library, FirstHealth Hospital and Fitness Center, area parks/trails, and other pedestrian generators. Various types of way finding signage are illustrated below.



Spot Improvement Programs

The Village of Pinehurst will be responsible for most of the spot improvements within the Village. Spot improvements are small projects such as the maintenance of curb ramps, the repair of damaged sidewalks, and the removal of debris. These improvements should be performed on a case-by-case basis with special consideration given to hazardous areas. The Village should (annually) inventory and inspect areas requiring

spot improvements, prioritize these locations, and proceed with the proper implementations.

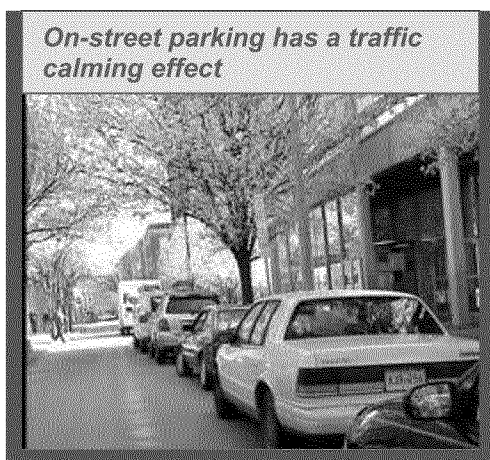
One potential, *specific* project for such funding is the upgrade of existing curb ramps. Many of the curb ramps in the Downtown area do not have ADA-approved, tactile, detectable warning devices.



Traffic Calming

There are many areas within the Village where vehicular and pedestrian traffic could potentially interfere with one another. Areas where traffic speed may conflict with pedestrian routes include: The parking areas and streets near Village Green as well as those areas near FirstHealth and medical offices along both Memorial Drive, and Page Road.

Some areas of conflict, which have previously been identified, are Memorial Drive and 1st Village Drive, Carolina Vista Drive, and NC 2; they have received traffic calming treatments (marked cross walks, ramps, striping, and signage).



A more comprehensive assessment of possible pedestrian/vehicular conflicts should be conducted for areas near schools, parks, greenways, shopping, eating establishments, residential areas, and where areas of future development are known to be sited within the Village of Pinehurst. These areas may meet standard roadway criteria; however, they are dangerous locations from the perspective of the pedestrian, creating unsafe situations. High pedestrian traffic areas need safe traffic speeds in order to reduce the possibility of vehicle/pedestrian accidents. Pedestrians want to be in *secure* areas where they feel comfortable and

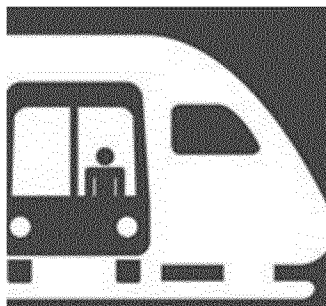
vehicular traffic is controlled.

There are many simple and effective methods used to achieve traffic calming. These techniques can be as simple as lane striping or on-street parking. Subconsciously, a driver feels the need to travel slower in areas where the traffic lane is *visually* narrower. Methods such as street trees, bulb-outs, and crossing islands may not narrow the actual traffic lane; but, will create a constricted visual corridor of the roadway, causing most drivers to decrease speed.

Other techniques such as speed tables, raised crosswalks, and specialty pavement - all attract the driver's attention, causing an immediate slow down. Although many speed tables and similar measures have been used successfully throughout the State, it is

imperative that proper planning, evaluation, and engineering occur before these devices are implemented. The Village should consider "street narrowing" techniques as a way of creating more pedestrian oriented corridors.

Transit Interface



Moore County Transportation Services (MCTS) offer Subscription Service, Demand Response Service, and General Public Service by utilizing conversion and lift-equipped vehicles. For a small fee, they also provide transportation for the general public. The system runs regular routes with transit stops. MCTS provides transportation services on an advanced reservation basis.

Services for senior citizens, persons with disabilities, limited general public individuals and human service agencies are provided on a County-wide basis.

Limited out-of-county services are provided for specialized care (for example: a trip to a specialized medical provider in the Triangle region).

The Village of Pinehurst should consider including facilities for future MCTS stops in and around parks, schools, and medical areas. These should include bus stop shelters, benches, and other street furniture to reduce the discomfort of standing by a busy street waiting for a bus. It will be important to place these stops where they can be easily accessed by pedestrians. The provision of crosswalks and signals for safely crossing the street, sidewalks or paving (which is wide enough to accommodate a group of people), and clearly-marked signage leading to identifiable bus stops will be critical, as well.

Identify Countermeasures

The Village of Pinehurst should continue to stay aware of what measures may be used to mitigate pedestrian accidents. National statistics indicate that nearly one-third of all pedestrian-related vehicular accidents occurred within 50 feet of a street intersection. Even though crosswalks at intersections may be properly marked with appropriate signage, accidents still occur. At times the pedestrian does not take the proper precautions when crossing intersections. Sometimes the driver is at fault by failing to yield to pedestrians.

Drivers and pedestrians should both take a defensive attitude toward pedestrian/vehicular safety when approaching intersections. NCDOT has published the handbook, *A Guide to North Carolina Bicycle and Pedestrian Laws: Guidebook on General Statutes, Ordinances, and Resources* (<http://www.ncdot.gov/vikeped/lawspolicies/laws/>). This document serves as an educational tool for pedestrians, drivers, and the general public.

Statistically, less than ten percent (10%) of pedestrian fatalities in the nation involved a pedestrian walking along a road and not on a sidewalk. Most of these incidents involved

the pedestrian walking “with” the traffic and being struck from behind. Safety guidelines suggest that pedestrians “face” the traffic when walking. More than one-fourth (1/4th) of all pedestrian accidents occurred at mid-blocks. This type of accident is typically associated with a pedestrian *darting* across the road. Prior to establishing a marked mid-block crossing, proper evaluation should be done to ensure the safety of the public.

These two noted types of pedestrian accidents represent over 65% of pedestrian fatalities in the nation. Over the past several years, countermeasures have been developed to mitigate pedestrian accidents. Countermeasures are generally “site-specific” improvements, which hopefully provide immediate solutions. The most effective countermeasures include roadway design, intersection design, traffic calming, traffic management, signals, signage, and pedestrian facility design. These planning and engineering methods are instrumental in reducing pedestrian accidents. Education and enforcement are also countermeasures that must be implemented in the prevention of pedestrian accidents. The following are examples of countermeasures that are related to pedestrian safety in the Village.

Roadway Design

Roadway Narrowing
Lane Reduction
Driveway Improvements
Raised Medians
Curb Radius Reduction
Improved Right-Turn Slip-Lane Design

Intersection Design

Modified T-Intersections
Intersection Median Barriers

Traffic Calming

Curb Extensions
Chokers
Crossing Islands
Chicanes
Mini-Circles
Speed Tables
Raised Intersections
Raised Pedestrian Crossings
Gateways
Landscaping
Specific Paving Treatments
Serpentine Design

Traffic Management

Diversers
Partial Street Closure
Pedestrian Street/Malls

Signals and Signage

Traffic Signals
Pedestrian Signals



Chicanes are a set of 2 or 3 bulb-outs or curves that alternate from one side of the street to the other. They are designed to slow the speed of drivers – in this case, by creating a narrower lane.

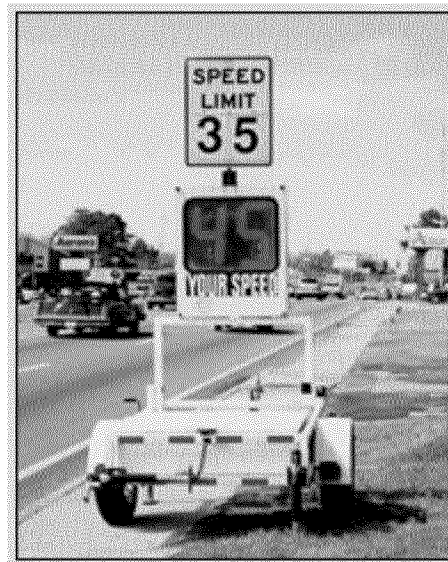
*Pedestrian Signal Timing
Traffic Signal Enhancements
Right-Turn-on-Red Restrictions
Advanced Stop Lines
Signing*

Pedestrian Facility Design

*Sidewalks and Walkways
Curb Ramps
Marked Crosswalks and Enhancements
Roadway Lighting Improvements
Street Furniture/Walking Environment
Pedestrian Railroad Crossings*

Education and Enforcement

*Neighborhood Identity
Speed-Monitoring Trailer
On-Street Parking Enhancements
Pedestrian/Driver Education
Police Enforcement*



Speed-Monitoring Trailer

6.2 POLICY RECOMMENDATIONS

The design and planning of pedestrian facilities are important components of roadway design. Fundamentally, both modes of transportation (pedestrian and vehicular) should acknowledge each other in matters of safety, accommodation, and relationship. Pedestrian movement has become an important focus for the Village of Pinehurst. The public requests connectivity, safer routes, and more walking opportunities. Although public meetings do not capture a *complete* synopsis of the Village's pedestrian needs, they do identify concerns and issues. Based on information from the general public, there is also a perceived need for an expanded pedestrian network in the Village of Pinehurst.

Village staff and the Steering Committee also recognize other important issues. Many areas within the Village were acknowledged as safety concerns that need to be addressed with regard to reducing potential pedestrian accidents. Increasing public safety (with devices such as pedestrian signals, signage, and the removal of existing barriers) will create a user-friendly pedestrian network and thereby, increase the number of pedestrians.

Land Use

Land-use policies and regulations have a strong influence on promoting walkable communities. If pedestrian facilities are not *required*, developers may be discouraged from incorporating these facilities in future projects. The recent updated Pinehurst Development Ordinance considers this issue, and requires sidewalks on one side of all new streets in residential developments serving eight or more dwelling units and on both sides of new streets in non-residential developments and subdivisions.

As part of this Comprehensive Pedestrian Plan, the Village should continue to promote pedestrian facilities, particularly within new developments - both residential and commercial. Sidewalks should always be required for new streets, improved streets, or street extensions. Although developers may argue that this requirement increases development costs, this requirement will continually enhance and promote the pedestrian network established by the Village.

This allows the Village to have control over current and future construction and maintenance of the pedestrian facilities. It also allows the Village to develop facilities in a continuous and efficient way, preventing the pedestrian facilities from being removed by the developer.

Although the Village of Pinehurst should be flexible with development opportunities, the Village must require the developer to provide right-of-ways or easements for pedestrian facilities, including proposed greenway trails. All development approved by the Village must include the accommodation of pedestrians by the developer(s).

Developers should incorporate sidewalks in all future plans



6.3 FACILITY RECOMMENDATIONS AND ACTION ITEMS

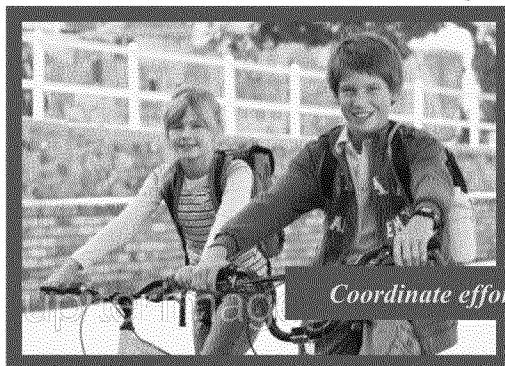
Pedestrian Network

The following recommendations are intended to help create and maintain a pedestrian route network that strengthens the local communities of Village by connecting to existing and future parks, shopping centers, government offices, and businesses.

Recommendation #1 – *Enforce the language in the PDO requiring sidewalks in new developments. Exceptions may be considered on a case-by-case basis due to such considerations as difficult terrain, inadequate width, or exponential costs.*

Recommendation #2 - *Village ordinances and plans should be updated to reflect pedestrian plan recommendations and proposals.*

Recommendation #3 – *The Village should work with the Moore County School System to ensure that future schools in the Village have a strong emphasis on non-vehicular transportation, such as walking, bicycling, skating, etc. In choosing locations for future schools, emphasis should be placed on orienting the main entrance toward residential neighborhoods rather than at major thoroughfares. School programs should promote non-*



Coordinate efforts with Moore County School System

motorized means for transportation for students, when applicable.

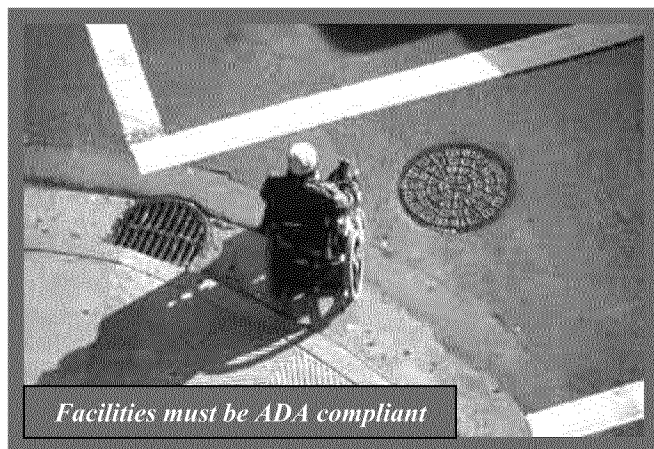
Recommendation #4 - Provide pedestrian connectivity along existing thoroughfares such as NC5 and McKenzie Road.

Recommendation #5 - Develop a system of way finding signage for pedestrian facilities and greenways that is consistent with the Village standards.

Recommendation #6 - New commercial and residential development should be oriented to the pedestrian and include internal pedestrian walkways connecting the development to the external sidewalk network in the public right-of-way as well as future development. If a planned residential or commercial development is located on a planned pedestrian project, an easement must be dedicated for the future shared-use.

Recommendation #7 - Construct pedestrian facilities as identified on the Proposed Pedestrian Facilities Map and according to the prescribed guidelines. Alignment for facilities may require adjustment in order to meet necessary requirements

Recommendation #8- Maintain and repair existing sidewalks to current standards - ensuring that facilities are safe and free of obstacles and debris.



Recommendation #9 - Repair all noncompliant pedestrian facilities and ensure all new facilities should provide ADA accessibility to the maximum extent possible.

Recommendation #10 – All maintenance should follow NCDOT standards, including the removal of unused or non-conforming driveway cuts.

Recommendation #11 - Coordinate planning efforts with County and nearby jurisdictions to provide regional pedestrian facility connectivity.

Recommendation #12 – Work closely with the local RPO to ensure sidewalk projects are included in all NCDOT roadway projects.

Recommendation #13 – Continue to require developers to provide pedestrian connectivity to adjacent developments and destination areas.

Safety and Health

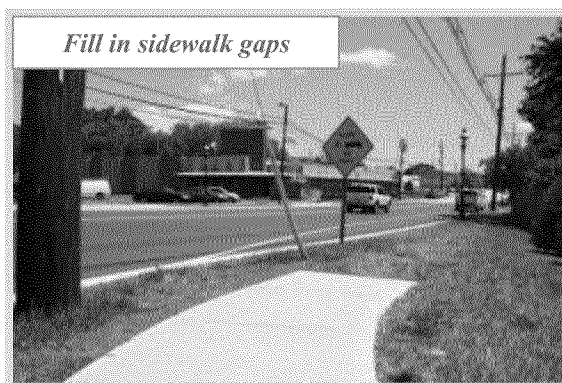
Create, implement, and maintain safe pedestrian facilities which allow for a “walkable” community.

Recommendation #14 - Continue to partner with the Moore County School System in the initiation and implementation of school safety programs for school children.

Recommendation #15 - Install and/or replace all damaged and noncompliant pedestrian facilities as noted in the network recommendations, Items 6 and 7.

Recommendation #16 - Prioritize sidewalk implementation where gaps are located and where there is a high volume of pedestrian activity.

Recommendation #17 - Ensure that all sidewalks are extended across driveways at safe and usable cross slopes.



Recommendation #18 - Create a maintenance program which monitors existing sidewalks for damage and fills in gaps in the pedestrian system that meets current standards.

Recommendation #19 - Establish regular reviews for the annual budget for sidewalk repair and expansion to obtain connectivity goals.

Recommendation #20 - Provide pedestrian scale lighting at regular intervals where there is pedestrian activity at remote areas and traffic intersections.

Recommendation #21 - Connect local businesses to the public sidewalk system.

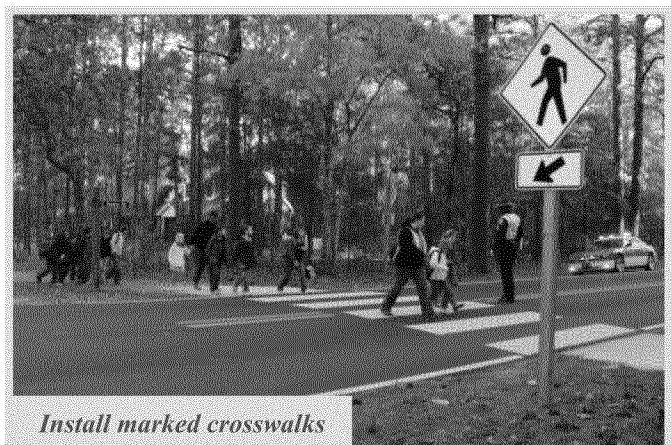
Recommendation #22 - Ensure that new construction projects are installed and meet all Village design requirements.

Recommendation #23 - Work with local organizations such as the Moore County Health Department and Moore County, Services for Seniors to educate and encourage citizens to include walking as a part of a healthy living plan.

Recommendation #24 - Continue to coordinate walking programs with schools to promote healthy exercise amongst their pupils.

Crossing Safety

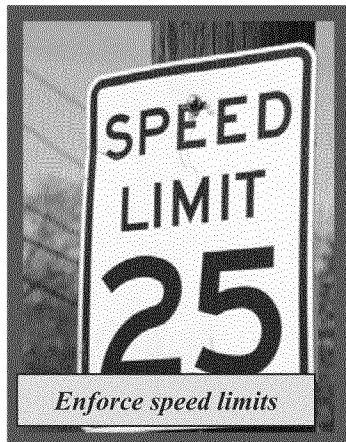
Improve and construct all pedestrian crossings in areas where there is a high volume of pedestrian activity or where safety is an issue.



Install marked crosswalks

Recommendation #25 - Install marked crosswalks at all major intersections.

Recommendation #26 - Evaluate traffic intersections for possible design elements such as extended curbs and refuge islands for pedestrian safety.



Recommendation #27 - Update local traffic intersection guidelines to meet current state and federal requirements.

Recommendation #28 - Enforce the lower speed limit of 25 M.P.H. that was recently implemented for all Village roads. Make sure that all speed reductions are clearly marked and enforced. Roads within the Village Center area should be designated as 20 mph or less. It is recommended that residential areas in Village be studied further for traffic calming and speed reduction.

Recommendation #29 - Ensure that traffic intersections with pedestrian facilities are well lit.

Recommendation #30 - Evaluate pedestrian facilities annually for safety issues and implement solutions.

Traffic Signals

Implement traffic signals at unsafe and dangerous intersections which improve pedestrian conditions

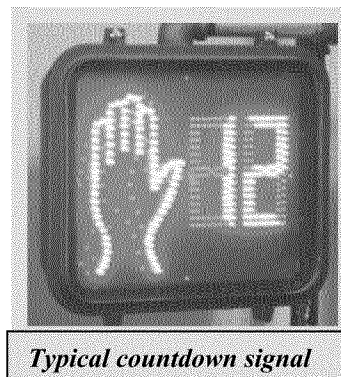
Recommendation #31 - Install pedestrian signals at all major intersections.

Recommendation #32 - Seek funding opportunities which help with design assistance and implementation of traffic and pedestrian signals.

Recommendation #33 - Review the signal timing to ensure that pedestrians have adequate crossing times at intersections.

Recommendation #34 - Consider audible pedestrian signals near senior centers and other high volume pedestrian attractors.

Recommendation #35 - Consider using “countdown” pedestrian signals near high pedestrian volume locations such as those along NC5, McKenzie, and Linden Roads.



Typical countdown signal

Community Strengthening

Provide amenities and elements that enhance the pedestrian environments and create a desirable place to live and work.

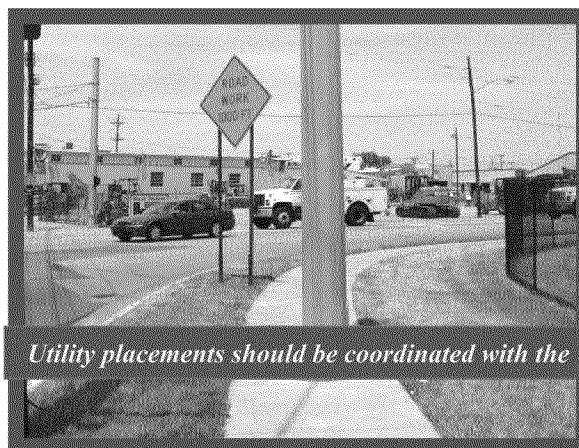
Recommendation #36 - Continue to implement sidewalk and sand/clay path improvements in the historic residential neighborhoods that include A.D.A. accessibility, marked crossings and pedestrian safety signage.

Recommendation #37 - Develop environmental education and interpretive facilities, particularly along greenway corridors.

Recommendation #38 - Provide a planting strip between sidewalks and roadways for street trees and low plantings, where possible.

Recommendation #39 – Enforce design standards for the placement of utilities (power poles, telephone poles, sewer inlets, etc.) so that they do not impede pedestrian traffic.

Recommendation #40 – Coordinate the placement of all traffic and pedestrian signs with Moore County and the NCDOT. Such coordination should include the replacement and/or repair of damaged or aged signs.



6.4 PROGRAM RECOMMENDATIONS

Education, encouragement, and enforcement programs should be in place to teach and promote safety and ensure the success of Village's pedestrian network for the future. The recommended programs will be successful in serving the Village's need to support pedestrian activity.

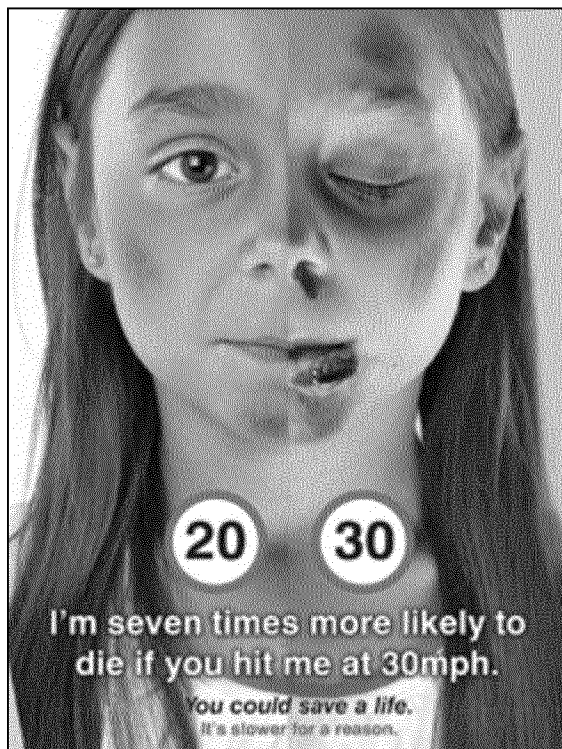
Pedestrian Safety Efforts

Speed enforcement is particularly important in areas of high pedestrian traffic, as small differences in vehicle speed make dramatic differences in survivability for the pedestrian. Officers patrolling areas of high pedestrian activity can also step up enforcement for distracted driving violations, unsafe lane changes, failure to signal, aggressive driving, DUI, and other unsafe motorist behaviors that create a particularly grave danger for vulnerable road users and also discourage individuals from choosing walking as their mode of transportation for short trips because a car gives them more protection from dangerous drivers.

Officers patrolling near unprotected crosswalks, intersections with unmarked crosswalks, or signalized intersections where there is heavy turning traffic should pay particular attention to the crosswalks and ticket or warn motorists who fail to yield the right-of-way. In addition, crosswalk enforcement actions, often referred to as "stings,"

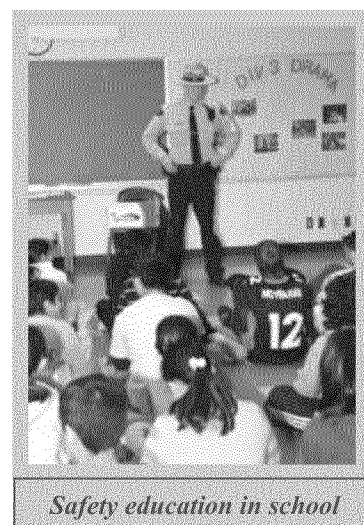
provide a targeted way to increase public awareness of the requirement to yield to pedestrians in crosswalks.

Figure 6-4a: The Impacts of Vehicle Speed on Pedestrian Fatalities



Safety Education Programs

School-based programs that stress safety should be implemented regularly, particularly for young children. The promotion of 'walking to school initiatives' will raise public awareness of child safety and instruct children in the proper usage of sidewalk and other pedestrian facilities, whether walking to school or to the school bus stop. The local police departments typically provide such programs as this. Police officials go to the schools and educate children on the proper use of sidewalks and street crossings. In particular, young pedestrians need instruction on how to cross streets safely and how to interact properly with vehicle traffic.



Traffic Safety

The National Highway Traffic Safety Administration (NHTSA) has a web resource for promoting traffic safety, including pedestrian safety. The site provides research and information on these related topics:

- preventing pedestrian casualties
- a walkability checklist

- child safety
- walking to school
- other topics that are of use in developing a safety education program.

<http://www.nhtsa.gov/portal/site/nhtsa/menuitem.dfedd570f698cabbbf30811060008a0c/> is the website for NHTSA.

Pedestrian Safety Action Plan

The Pedestrian and Bicycle Information Center (PBIC) has materials to help communities and organizations develop Pedestrian Safety Action Plans (PSAP). There are several safety training courses available on their website. These courses are designed to help communities develop and implement safe pedestrian networks. The website is <http://www.walkinginfo.org/training/pdps/>.

Safe Routes to School



Safe Routes to School (SRTS) is a program meant to encourage students to walk or bike to school safely. Information can be found at NCDOT's website and at the National Center for Safe Routes to School website. According to the website, "the program is designed to "improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools." The NCDOT grant program provides federal funds for the construction of infrastructure, such as sidewalks and bike lanes, within two (2) miles of a school. The program also provides for the education and encouragement of communities in the planning and construction of pedestrian facilities for their neighborhoods. For additional information visit the SRTS website at <http://www.saferoutesinfo.org/>.

Safe Kids Walk this Way

A program sponsored by Safe Kids, USA, Safe Kids Walk this Way strives to teach safe behavior to both motorists and children; and to promote safe, walkable communities. The program promotes safe walking events for children, provides research, participates in the International Walk to School Day (IWSD) in October each year, and promotes school-based pedestrian safety committees. Go to <http://www.usa.safekids.org/wtw/>.



Other Education Resources:

- Turner-Fairbank Highway Research Center – Pedestrian and Bicycle Safety: Articles, facts, issues, publications, research, resources, and links to other sites. <http://www.tfhr.gov/safety/pedbike/index.htm>



- Federal Highway Administration (FHWA) Pedestrian and Bicycle Safety. Materials, research, facts, and information on a variety of topics dealing with pedestrian safety. http://safety.fhwa.dot.gov/ped_bike/
- PedNet: Pedestrian advocacy group in Missouri. Their website is a useful tool for creating other groups like them at <http://www.pednet.org/>.
- The National Center for Bicycling and Walking (NCBW): Publications for promoting walking as a healthy lifestyle at <http://www.bikewalk.org/>.
- The Active Living Resource Center has a website to encourage the development of active neighborhoods by increasing the walkability of the community. The website, <http://www.activelivingresources.org/index.php>, has information on community involvement in developing active, pedestrian facilities.

Encouragement and Promotion

There are many initiatives that can be implemented by the Village of Pinehurst to promote pedestrian activity. Likewise, health-based organizations, employers, and civic organizations should offer incentive programs to encourage walking and physical fitness in general. Programs such as 'walk to school days' and 'visiting area walking facilities' can not only encourage walking, but also allow residents to use areas they may not know are available.

Other means to encourage and promote Village as a walkable community include:

- Publish and distribute a Village walking guide brochure that covers the area's highlights, safety tips, suggested walking routes, and pedestrian rights and responsibilities.
- Promote neighborhood walks and nature walks.
- Promote walk-for-health programs with local churches, businesses, and recreation centers.
- Organize walk-to-work/school days and/or weeks.
- Promote the various walking tours in Village by providing historical and/or directional maps.

Eat Smart Move More North Carolina

The Eat Smart Move More (ESMM) North Carolina program is a statewide promotion to encourage healthier lifestyles for North Carolinians.



Encouraging residents to walk more is just one part of this multi-disciplinary program, which some residents of Village have participated in. However, the Village should continue to encourage residents to take part in this program. Healthy walking programs such as this can be put in place by a wide variety of organizations, including the health department, local hospitals, senior centers, local businesses, schools, churches, and recreation departments.

Walk to School Initiative

The National Center for Safe Routes to School and the NCDOT Safe Routes to School encourage “walk to school” events every October. These events are seen as a preliminary step in changing the attitude of people towards increased pedestrian activity. The *International I Walk to School in the USA* website has suggestions for events and classroom lesson plans for promoting the walk to school initiative. Visit <http://www.walktoschool.org/eventideas/index.cfm>.

Mature Adults: Be Healthy, Walk Safely

A resource for mature adults by the National Highway Traffic Safety Administration (NHTSA), this web brochure provides tips for developing a personal walking exercise program and safety guidelines for dealing with traffic at <http://www.nhtsa.dot.gov/people/injury/olddrive/steppingout/index.html>.

Enforcement Programs

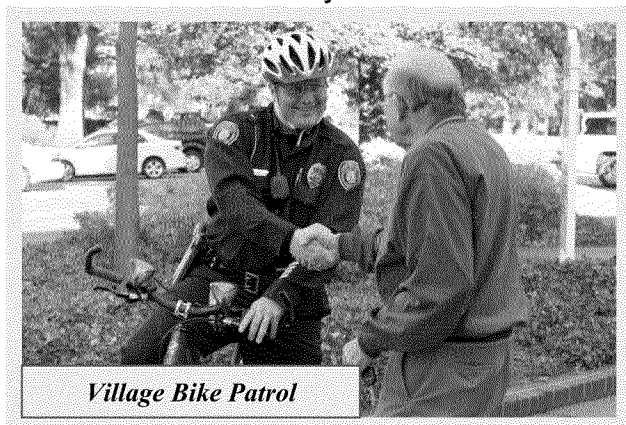


A prominent issue that the Village of Pinehurst faces with *vehicular* versus *pedestrian* traffic is with regard to enforcement. For decades, the law has stated that **pedestrians have the right-of-way**; but many drivers ignore this law. To ensure safety, this law must to be enforced; as well as the enforcement of speed limits. It is also recommended that local law enforcement organizations ensure that all officers are fully knowledgeable on pedestrian laws. Studies have proven that motorists’ speeds are directly proportional to the number of pedestrian deaths that occur. Reduced speeds give pedestrians more time to see and react in a timely manner. Pedestrians feel unsafe and will opt not to use sidewalks in areas where traffic laws are not enforced.



The Pinehurst Police Department has initiated a Village Bike Patrol program consisting of (8) eight Bike Patrol officers. The Pinehurst community has donated at least five of the bikes used by the Department. The bikes allow officers to get face-time in Village neighborhoods.

Police officers on bicycles should remain a major factor in ensuring safe pedestrian practices on the streets of Downtown, during community and school events, and as a part of a possible future greenway system.



As the pedestrian network expands to include the schools within the Village, it will be necessary to ensure safety oversight as school crossings and within the school zones. Crossing guards should be present at all official school crossings, along with approved school

crossing signage and signals. The crossing guards should be trained using NCDOT's Crossing Guard Training Program. The police department needs to provide a regular schedule of oversight of traffic during school hours in school zones. Any infractions within the school zone must be penalized to discourage future infractions and help to ensure the safety of the children.

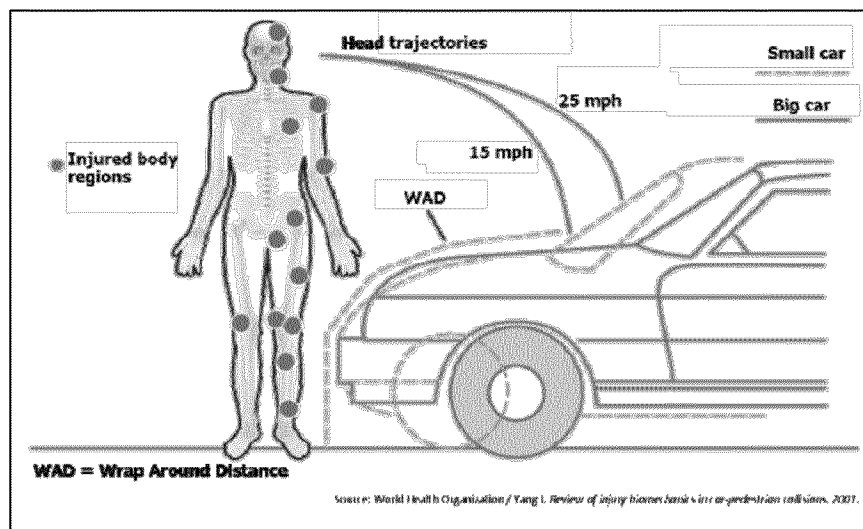
Crosswalk Enforcement Actions

Police departments in jurisdictions participating in the Watch for Me NC campaign have received specialized training in conducting crosswalk enforcement actions. In these targeted operations, officers set up around a marked, unsignalized crosswalk and have an officer, usually wearing highly visible clothing but not a police uniform, cross the street. The decoy officer is trained to begin crossing when an approaching vehicle is far enough away to easily stop but close enough to see him/her.

Other officers intercept drivers who fail to yield and issue citations or warnings, along with educational material. When these actions are held, they are typically accompanied by press releases to maximize educational impact. Campaigns usually begin less aggressively, issuing warnings to all but the most egregious violators or those who are committing multiple traffic violations, and move toward issuing tickets instead of warnings after the campaign has received news coverage.

In some jurisdictions nationally, creative decoys are used to further attract public attention. For example, Las Vegas has had the plainclothes officer serving as decoys dress up as Santa Claus in December and in the small town of Mechanicsburg, PA, the mayor has gone through training with the police department and frequently serves as the decoy instead of a police officer. Support for planning crosswalk enforcement actions, including accompanying educational handouts, is available through the Watch for Me NC program.

Figure 6-4b: Injured Body Regions of Pedestrian Hit by a Car



What about enforcement for pedestrians?

While motorists ticketed for failure to yield to pedestrians often demand “equal treatment,” it is important to remember that motorists and pedestrians are not equal in their vulnerability, their potential to cause harm to others, or their requirements for being on the road. Whereas all legal motorists are licensed, theoretically responsible adults operating machines that have the potential to kill or maim, pedestrians include the very young and very old and people incapacitated by illness or disability who may not be able to fully understand the rules of the road.

Educational efforts to reduce problematic pedestrian behaviors have value, but enforcement focus is most effectively used on ensuring that licensed road users are prepared to respond to obstacles and control their vehicles even in adverse circumstances. Additionally, enforcement of “jaywalking” laws has historically occurred disproportionately in minority and low-income communities, serving to strain police-community relations and lead to a disproportionate financial burden on residents who are forced to walk in less than desirable traffic conditions because they can’t afford safer options.

Practically speaking, because most people have a survival instinct, the majority of “jaywalking” or technically illegal street crossings by pedestrians take place in circumstances where a crash is not likely to occur. Therefore, issuing tickets to pedestrians who disobey signals or cross between adjacent signalized intersections typically does not have any significant impact on pedestrian crash rates.

As documented by the District of Columbia Department of Transportation and Metropolitan Police Department in their Street Smart Pedestrian and Bicycle Safety Enforcement Training Manual (2007), the city of Seattle conducted an aggressive “jaywalking” enforcement campaign throughout the 1990’s, but found that it had no impact on the city’s rate of pedestrian crashes. Crosswalk actions and general



enforcement of speeding, distracted driving, and other motor vehicle safety laws have proven far more effective in reducing crash rates. Officers who witness particularly dangerous pedestrian law violations can issue tickets, but a concentrated effort of forcing pedestrians to wait for signals or go out of their way to use crosswalks is of limited safety value.

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. According to NCDOT, Watch for Me NC involves two key elements:

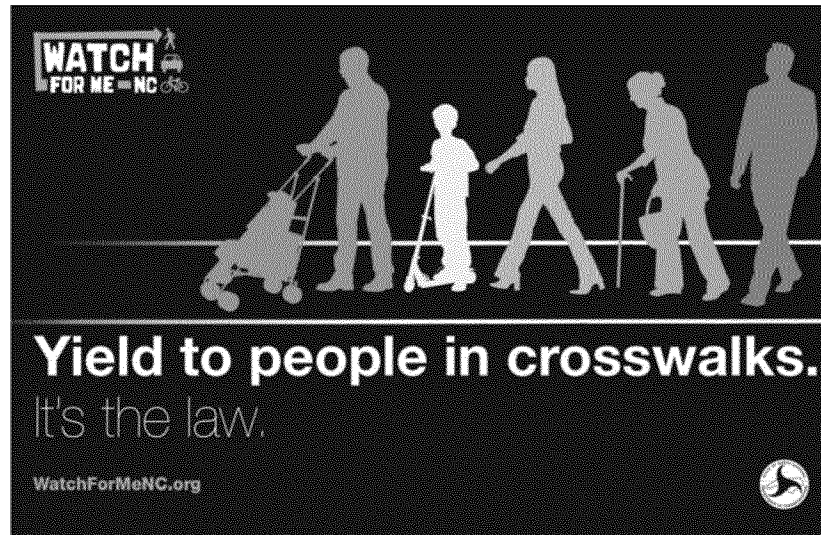
- Safety and educational messages directed toward drivers, pedestrians and bicyclists, and
- Enforcement efforts by area police to crack down on some of the violations of traffic safety laws.

Local programs are typically led by municipal, county, or regional government staff with the involvement of many others, including pedestrian and bicycle advocates, city planners, law enforcement agencies, engineers, public health professionals, elected officials, and others. NCDOT piloted the program Wake, Durham, and Orange counties (Triangle Area) in 2012. In 2014, communities were asked to apply for Watch for Me NC funding to become partner communities. Any community is allowed to use the materials developed for the program, which are available at <http://www.watchformenc.org/>.

Based on the community's awarded campaign funding for 2014, Pinehurst should work with Moore County and other Towns within the County, as well as Sandhills Community College to submit during a future grant cycle. Some partnerships that were awarded during the 2014 campaign are:

- Chowan County/Edenton (pop. 14,800)
- Craven County/New Bern (pop. 104,000)
- Jackson County/Sylva/Western Carolina University (pop. 40,500; enrollment 10,300)
- New Hanover County/Wilmington/UNC-Wilmington (pop. 209,000; enrollment 13,900)
- Pitt County/Greenville (pop. 172,600)
- Watauga County/Boone/Appalachian State University (pop. 51,900; enrollment 17,900)

Figure 6-4c: Watch for Me NC Promotional Materials



- END OF SECTION -