

Kenansville Pedestrian Plan



Town of Kenansville, North Carolina “Proud of its Past – Pride in its Future”



Kenansville Pedestrian Plan
December 2007
Prepared for
The Town of Kenansville, North Carolina

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Section 1 Introduction

1.1 Purpose of the Pedestrian Plan

This Plan provides the Town of Kenansville a guide for pedestrian infrastructure investment. The Plan identifies needs and issues important to current and future residents, businesses, schoolchildren, parents, and visitors to Kenansville. It includes an inventory of sidewalks, streets capable of accommodating sidewalks, and off-road locations or opportunities to provide trail and sidewalk connections among a number of identified places where people have expressed interest in seeing improved pedestrian access. The Plan addresses a range of information identified by the NC Division of Bicycle and Pedestrian Transportation as important for communities to address in developing and sustaining pedestrian improvements. The Plan describes related plans and policies affecting or supportive of programs helpful in creating a walkable community. Suggestions for making Kenansville a better walking environment came from citizens involved in developing the plan along with residents surveyed and those participating in public forums. Finally, the plan presents recommended policy changes and recommendations for implementing the projects and activities identified in support of the vision, goals and objectives. We want to improve pedestrian mobility to meet the needs of children and adults. Implementing this plan will do this and in turn, we will improve the health of our citizens and make our town an even better place for all.

1.2 Planning team

In 2005, the Town Board of Commissioners appointed the Kenansville Pedestrian Planning Steering Committee (Steering Committee) to provide oversight and local guidance in soliciting public ideas, studying pedestrian issues, establishing goals, and formulating recommendations. The membership on this diverse Steering Committee (see Credit Page) is reflective of a large segment of the residents, businesses, and Town and County agencies. Steering Committee members provided a substantial insight about the community from a range of viewpoints. The Steering Committee was critical to the development of the plan and perhaps as important they will help carry on the special focus needed to champion implementation of the plan's recommendations. Clark Planning & Associates, LLC prepared the plan while facilitating Steering Committee work in arriving at consensus on the issues, possible solutions, and recommendations. The Steering Committee and consultant received guidance in the planning process from Bob Mosher of the NC Division of Bicycle & Pedestrian Transportation.



Figure 1-1 Steering Committee meeting

1.3 Scope

For pedestrian facilities to function for the maximum numbers of users the plan addresses facilities, programs and policies.

Improving pedestrian transportation begins by examining the conditions of existing sidewalks and their immediate environment. This information is introduced in Section 2 of this plan, Discovery & Evaluation of Existing Pedestrian Environment. Moreover, Appendix D details the types, conditions and locations of sidewalks. The plan addresses extending and connecting sidewalk segments and removal or avoidance of obstacles present on some sidewalks within the public right-of-ways of the town's streets. Maps in Section 8 show locations of sidewalks and recommended connections and locations for upgrades. One of the opportunities to address will be the addition of routes for off-road trails. Potential trails and greenways appear on these maps as well. Guidelines for new walks and pathways include consideration for adequate and preferred separation of vehicular and pedestrian traffic. People walking should not feel as if they are on the edge of fast moving trucks and cars. The street environment designed and built or modified to accommodate bicycles, motorized vehicles, and pedestrians should offer advantages of safety and a welcoming setting for people strolling along.

The town's core needs special attention. For a relatively small community, Kenansville has a number of busy state highways converging at the center of town. This road network has advantages and disadvantages for pedestrians. Currently the vehicle traffic on these main streets serves as pedestrian barriers around the downtown where there is a sense of isolation created by a hard-edged highway street system. While at first sight there are adequate and plentiful sidewalks along Main Street, closer examination reveals some inadequacies. The town is developed into segments or parts connected on their edges by streets designed for vehicles and not pedestrians. Sidewalks, although present in the downtown commercial area, do not exist in more recently developed residential subdivisions. Sidewalks need to connect commercial and residential areas.

The current sidewalk or pedestrian zone is generally treeless and sterile—lacking pedestrian amenities (narrow or no grass or tree lawn separating the concrete walk from the street, benches, trees, wastebaskets, distinctive pedestrian scale lighting, high-grade crosswalks or signage). This is an active small town but sidewalks do not appear to get much use. What could be a ten-minute walk instead is a four-block journey by car from home to store.

Further, the Plan promotes safe and convenient pedestrian and bicycling transportation facilities that will better serve children and parents by connecting schools to neighborhoods. Kenansville's state highways provide convenient vehicular access to Kenansville Elementary and E. E. Smith Middle School, yet these same roads challenge walkers and concern residents over safe passage of students. Funding to address these concerns is available through participation in the North Carolina Department of Transportation Safe Routes to School Program (SRTS).

Special focal areas include the Duplin Commons/James Sprunt Community College (JSCC), the downtown, the historic district, the Duplin Memorial Hospital, and Golden Grove Cemetery/Brinson Field vicinity. Additionally, Kenansville's natural setting presents opportunities to introduce off-road trails and a greenways network linked to special interest destinations. Corridors crossing and following Grove Swamp and Indian Grave Creek courses may be connected to each of these special focus areas. With development of additional external and internal walkways and trails, better pedestrian access connections are possible to Liberty Hall, Cowan Museum and Kenansville Park with its children's playground, tennis courts and ball field. These tourism and recreational resources serve as destinations for locals and visitors. Introducing pedestrian transportation and recreational walking and running paths among these uniquely Kenansville assets will undoubtedly increase their use.

Future projects to elevate Kenansville to a truly walkable town need to include human scale in the mix. Where the road right-of way will accommodate safety improvements, medians with "refuge" zones and tree lawns or wide grass strips placed between the sidewalk and street travel lane should offer a better sense of separation than sidewalk placed immediately behind curbing. Street design affects pedestrian usage and the town's policies affect design. One notable area of policy change consideration will affect how pedestrian friendly the expanding town will become. Most of the town's residential streets have side swales or ditches serving as barriers to pedestrians. This Plan suggests local policy changes whereby new developments would be required to incorporate sidewalks with equal importance along with other necessary infrastructure to form streets that are more accommodating to pedestrians. This is because retrofitting neighborhood roads and commercial areas with sidewalks after development occurs is more expensive than including walks as part of the necessary and required infrastructure as new development happens. When retrofitting does not occur, residents, especially children and seniors, face safety issues and obstacles to walking; driving everywhere becomes necessary even when walking is preferred.

Improved public health is another area of special interest. Extremely high rates of obesity in North Carolina are resulting in prevalence of chronic diseases such as heart disease, diabetes, and several types of cancer. The Center for Disease Control (CDC) estimates that obesity-related expenses in North Carolina exceed \$2.1 billion.¹ Walking for improved health as a means of tacking obesity is recognized in the Steering Committee's make-up that includes, among others, representation from the Duplin County Health Department and Duplin General Hospital.

1.4 Study area

There are three mapped views of differing scales presented in Section 8 of the plan to depict the existing and potential pedestrian network. (1) The "*Kenansville Plan Overview*" map presents a very large study area inclusive of the corporate limits and an area of a mile or two outwards. Revealed within this expanded geographic area are the expansive Grove Swamp and Mill Creek flood plain, notable NC Highway 24 and state highways (NC

¹ NC Health and Wellness Trust Fund sponsored Fit Together NC (Obesity Initiative) 2006

11, NC 50, and NC 903) that form the primary corridors for transportation. The Duplin Commons and James Sprunt Community College anchor a busy area on the southwest while Duplin Memorial Hospital, Kenan Auditorium, and environs give focus to the northern quadrant of town. (2) The *“Kenansville Town Center Pedestrian Plan”* map closes in on the denser portion of the town surrounding and inclusive of the downtown. Duplin Memorial Hospital, Duplin County Health Department, Kenansville Park, Liberty Hall, Liberty Square Shopping Center and the US Post Office and Town Hall are among the ring of activity, fringed by neighborhoods depicted on these maps. (3) An enlarged aerial map of the central business district, entitled, *“Kenansville Downtown Pedestrian Plan”* serves as a base for a detailed plan showing buildings, walkways, parking, and streets supporting the downtown.

Photographs of local scenes illustrate current conditions and the remarkable variety of environments presented to the pedestrian, whether friendly or not. These photographs accompany the inventory of current conditions and are appended digitally (CD) to the plan.

The Town’s 2005 Pedestrian Planning Initiative Grant application stated: “Kenansville is ready for growth following more than a decade of activity, including completion of I-40, US Hwy. 24 bypass, and the Duplin Commons Event Center which anchors the 126 acre Duplin Commons Complex. Growth evidenced by increasing enrollment at James Sprunt Community College, greater staff and patient services at Duplin General Hospital, and expanding County Government functions located in Kenansville. As the County Seat, the Town of Kenansville would like to be the leader in Duplin County for pedestrian planning, and provide support for other towns in the future.

Recognizing the need to advance planning for change with a goal toward supporting “smart growth” principles, the Town set forth a “Vision Plan” in October 2004. Creating a “walkable community” was set forth as one of the goals to reach the vision statement: *“Kenansville will continue to foster its small town values and strengthen and sustain the community.”* (Strategies supporting this Vision Statement and others are found in Appendix C).

1.5 Community Vision 2025

The Pedestrian Plan Steering Committee prepared the following vision statement for the Town of Kenansville in February 2007. The Steering Committee members’ statement captures what they would say about transported twenty years in the future and given the opportunity to look around and comment on what they saw. This pedestrian friendly vision of Kenansville serves as a challenge to present and future elected and appointed town officials, residents and interested partners to carryout the vision.

“The way we see it in 2025: “Kenansville is a pedestrian friendly town with interconnected full-service streets. People move easily and safely by foot, car, and bicycle. Children routinely walk from home to school and adults regularly walk within and between neighborhoods. Radiating from downtown is an interconnected network of sidewalks. Nature trails provide a welcome respite. Pedestrian-friendly streetscapes boast generous

sidewalks crowned by shade trees and lined with attractive pedestrian-scaled streetlights. People of all ages benefit from Kenansville's past investments in creating a walkable environment." Kenansville Pedestrian Plan Steering Committee (February 2007).

1.6 Goals

Over the course of several initial meetings with the project consultant, the Pedestrian Plan Steering Committee identified seven goals that once achieved will advance the stated vision of Kenansville. These goals are important statements, recommended by the Steering Committee and adopted by the Town Board of Commissioners to frame the direction for Kenansville's citizens, elected and appointed officials, in approaching the identified policies and projects established in this plan.

- Goal 1. Improve connectivity of key destinations
- Goal 2. Establish and enforce pedestrian regulations
- Goal 3. Improve pedestrian signage
- Goal 4. Promote quality design and beautification
- Goal 5. Address pedestrian safety
- Goal 6. Address maintenance
- Goal 7. Enhance quality of life

The Steering Committee gathered insight in recommending actions supporting these goals by sharing opinions, listening to resident's needs, and their advisors' suggestions. Section 9 presents actions determined important for immediate and long-term projects and policy changes.

1.7 Plan Elements

The structure of this Plan is organized in nine sections and supporting appendices.

Section 1. presents the purpose and scope of the plan, defines the study area, and introduces the planning team and planning process including a guiding vision for achieving a walkable town through determined goals

Section 2. contains a brief account of the history of Kenansville and an assessment of current pedestrian conditions, public concerns, and land use patterns

Section 3. provides highlights of existing related plans, policies and regulations covering the town

Section 4. presents an overview of the current pedestrian system and potential pedestrian corridors setting the framework for an idealized network shown also through concept maps illustrating connections to points of interest and primary destinations possible through closing gaps in the current walkway system

Section 5. describes facilities standards, recommended policies, planning and illustrated design guidelines to characterize Kenansville's desired improvements

Section 6. suggests promoting use of existing facilities, improved signage, maintenance, speed controls, safety education and health education

Section 7. presents potential projects and suggested treatments through a series of tables for easy reference to locations for system improvements and cost estimates

Section 8. presents the recommended pedestrian system through a series of maps including a broad overview of the entire community, an enlarged aerial photographic background map view of Kenansville's core, and an aerial enlargement of the downtown area

Section 9. presents recommendations of specific steps for achieving the plan's key elements including phasing and observations about implementation of the pedestrian system

The appendices provide a range of reference information about public participation, results of the Kenansville Walkability Survey, sidewalk inventory, potential funding sources, and sample trail easement. Additionally, the appendices include information about NC DOT pedestrian policies and guidelines, the Safe Routes to School initiative, illustrations, excerpts from Kenansville—A Vision for the Future (2004), and a references section.

Section 2 Discovery of Existing Pedestrian Environment

2.1 History¹ and Overview of Current Conditions



Figure 2-1-The historic "Spring" is near Duplin St.

In 1735, Irish and Swiss German immigrants first settled the area known then as Golden Grove and later became the Town of Kenansville. The village became the Duplin County seat and site for construction of a courthouse in 1784. Golden Grove grew as a trading center for the County having the benefit of a spring fed clear water supply. Kenansville was laid out and incorporated in 1818. The new name was in honor of General James Kenan, a prominent local resident who served as the commander of the Duplin Militia during the Revolutionary War and later served as a North Carolina State Senator and member of the State Constitutional Convention.

The Town of Kenansville was a processing and shipping point for cotton, lumber, and turpentine. Following its construction in 1840, the Wilmington and Weldon Railroad served farmers and tradesmen, spawning economic growth with transportation of agriculture and forestry products exported through Wilmington, NC. The Kenansville

Spur Line ran from Warsaw parallel with current day NC 24 and terminated at warehouses and depot then located just south of Main Street in downtown near the present day Liberty Square Shopping Center.² Abandoned in the 1940's, portions of the former rail bed are visible west of S. Main Street and follow the Duplin Commons' northern property fence line.

During the Civil War, a Confederate arsenal operated in Kenansville for the purpose of manufacturing cavalry swords and other military equipment. On July 4, 1863, a Federal cavalry detachment burned the arsenal along with another factory and some storehouses. The sword factory, which was the centerpiece of the



Figure 2.2-Abandoned rail bed is potential multi use trail

¹ Kenansville Land Use Plan—2020, p 4-5

² February 2007 interviews Lynn Davis and Sonny Sykes

Confederate arsenal, had been constructed at the beginning of the Civil War by a German immigrant named Louis Froelich, who had previously operated a factory in London that manufactured the motors for the steamship 55 *Great Eastern*, which was the largest steam ship in the world for 40 years.

In 1896, the Wilmington Presbytery founded James Sprunt Institute as a boarding school for the education of female students in Duplin County. The Institute changed its name in 1918 to the Grove Institute in recognition of the former seminary that had operated in Kenansville from 1785 until after the Civil War. The Grove Institute continued ceased operations in the mid-1920s.

Following the passage of the Community College Act in 1963, the Duplin County Commissioners and Board of Education held a series of meetings, deciding that the County needed an institution of higher learning to provide skill based training to workers in the county. Therefore, in 1964, the James Sprunt Institute was founded and a site for the new campus selected off S. NC 11 at Kenansville. The first buildings were constructed in 1966 and over the years, it has grown greatly in both size and attendance. The Institute changed its name twice since its founding, first to James Sprunt Technical Institute, and for the final time in 1987 to James Sprunt Community College in order to more accurately reflect its emphasis on providing a wide range of educational opportunities, including both vocational training and traditional college courses.

Kenansville serves as the governmental, legal, medical and educational center of Duplin County. The Duplin County administrative offices are located in Kenansville, as well as the Duplin County Sheriff's Department, Health Department, Social Services, and Board of Education. The Duplin County Courts are located in Kenansville as well, operating out of an historic building that serves as the anchor to Kenansville's central business district. The present day courthouse, a fine example of Neo-Classical architecture, was constructed in 1913 to replace the previous courthouse that had been in use since 1818.



Figure 2.3-Courthouse



Figure 2.4-Duplin Commons asphalt path near the Events Center

The State of North Carolina also maintains a strong presence in Kenansville. The NC Department of Transportation County Maintenance Yard and State Department of Corrections facility housing over 300 inmates are located near the southern edge of town. In 2005, the new Cooperative Extension Building, in Duplin commons opened opposite the James Sprunt Community College. Cooperative Extension provides support services and technical assistance to farmers and residents throughout the County. Kenansville is also the home of Duplin General Hospital, founded in 1955. The hospital is a 101-bed facility that provides a full range of medical services, including surgical care and obstetrics to the citizens of Duplin County. In 2005, Duplin County completed the construction of a 74,000 square foot multi-use events center in Kenansville. Known as Duplin Commons, the center anchors the 126-acre site where the facility serves as a central location for agricultural exhibitions and other events in the County.

Roads influenced the evolution, function, and look of the town. Following WWII the increase in use of automobiles and over the road truck transport began reshaping the country and in large and small towns alike. The town's historic core remains a community focal point with the Duplin County Courthouse and compact grid street system; from there, major state roads radiate in four principal directions.

The core shopping and office area remains downtown where on street parking stalls and off-street parking lots dominate the street scene. Space for on street and off-street parking lots is a premium, as visible on the enlarged aerial view of downtown (3rd map in Section 8).

The history and livability of Kenansville are evident in the dozens of antebellum buildings and historic district. As newer neighborhoods and schools have emerged outward, pedestrian, and bicycle transportation needs have not kept pace. Kenansville's neighborhoods generally lack sidewalks. This is typical of post WW II auto-oriented suburban style residential development pattern. These neighborhoods are isolated from activity centers such as downtown, highway commercial oriented business strips, and the shopping center. Rarely do developers expect to install sidewalks and buyers have gotten used to not seeing them because the fundamentals for encouraging compact design are not present. Because pedestrians in the typical development are not addressed, everyone going to and from these developments, even for short trips, is expected to drive or be a passenger of a motorized vehicle. Some residents have gotten accustomed to walking the road shoulders or sharing the asphalt with vehicles. Sidewalks run from the driveway to the home entrance or off-street parking lot to building front.



Figure 2.5-Left to Right: (1) S. Main St. at Mallard St. looking north—no place to walk; (2) US Post Office—no place to cross; (3) Front Street sidewalk blocked

Kenansville has the potential to experience significant subdivision development, how this development occurs will either continue the vehicle dominated form or emerge with a balanced approach including pedestrian usable infrastructure. Unless there are alternatives to large lot auto-oriented suburban style subdivisions, this pattern will continue. The cost of sidewalks increases per home when each subdivision lot's frontage gets bigger. Intersections are fewer as block lengths increase. Adding sidewalk to one side of the street satisfies some need but deprives all residents of the safety and convenience of the same level of service.



Figure 2.6—Typical Kenansville residential scene—pedestrian walks in street

In spite of the lack of sidewalks within its neighborhoods, elsewhere Kenansville has 20,343 linear feet or 3.85 miles of sidewalks. With exception of side streets surrounding the Duplin County Courthouse, these sidewalks exist along state highways converging on the downtown. A detailed catalog of sidewalks appears in Appendix D. This inventory presents data on the widths, types, conditions and locations of sidewalks. These facilities are an important part of the town's public transportation system. Although, when constructed these sidewalks met design criteria, maintenance and upgrades are needed in some instances to meet current safety and functional requirements.

The half-mile long and 8 feet wide asphalt trail at Duplin Commons represents an important investment for users interested in walking and running for improved health. The nearby JSCC campus is a logical future connection to enable college students, faculty and visitors access to an otherwise convenient walking track. Excepting this trail, built in 2005, the entire southern third of Kenansville is lacking pedestrian facilities.

Fortunately, according to NCDOT, no pedestrian/vehicle collisions have occurred in the past ten years in Kenansville. Although the Police Chief confirmed this, he expressed need for better lighting, continued attention to motor vehicle laws, and concern for any pedestrian trying to cross several dangerous streets, including:³

- in front of the US Post Office at S. Main St. and Routledge Rd.
- near EE Smith Middle School (NC 24—Mallard St.) and Kenansville Elementary School (NC 50--Limestone Rd.)
- around S. Main Street near Kenansville Park all the way to E.E. Smith Middle School

³April 28, 2006 interview Police Chief Mike Webster



Figure 2.7—Pedestrians must obey Law & cross at signal and crosswalk

- the large intersection surrounded by businesses at S Main St (NC 11/NC903) and Mallard St.(NC 24) This area is of particular concern as pedestrians adults and students crisscross the intersection frequented by semi tractor trailers.

As the town grows, new activity centers emerge and traffic conflicts inevitably are possible. The Public Works Department oversees contracted services for the maintenance of sidewalks, signage, and pavement markings. Contracted as well are right-of-way mowing, park, cemetery and grounds maintenance and tree-trimming services. The Police Department and Highway Patrol, each located on Routledge Road, enforce pedestrian and traffic laws. Having well-established and maintained walkways reduces the likelihood of pedestrian-vehicle accidents. Enforcement of speed limit and motor vehicle operator and proper equipment laws lower the chance that a pedestrian will face injury from a motor vehicle.

Good health is another concern the plan addresses. The Health Community has long known the benefits of exercise. Walking from place to place helps people burn fat, lose weight, and lower cholesterol, among other benefits. Healthier people make fewer expensive medical insurance claims. At the same time, a safe route and environment for walking will limit or prevent injuries to pedestrians. The Duplin County Recreation Department is another partner in promoting recreational activities and better health. The addition of multi-use paths, greenways, and sidewalks lends greater opportunities for recreational walking and running and helps serve a larger number of people—complementing existing parks in the area. The public wants safe usable pedestrian routes between active destinations. The Town and local agencies are constrained by budgets and time; this Plan helps identify projects, set priorities, aids in the acquisition of funds, and establishes timelines for projects.

What are the public's interests and how were they determined? Essentially, the Steering Committee led the effort to gather public concerns about walking needs, using public forums and town-wide opinion surveys. The Steering Committee hosted public forums in February 2006 and May 2007. The Town advertised these forums in the *Duplin Times* and by use of posters and brochures circulated throughout the community. Appendix A provides additional background about public participation effort. A meaningful source of information came from soliciting information from a cross section of Kenansville's residents via conduct of a survey. The Town included a Walkability Survey with its water bill distribution. Every Town water customer received a Walkability Survey questionnaire. Residents returned seventy-nine completed questionnaires of 400 distributed (For results, see Appendix B). At a public forum held on February 21, 2006 the participants were presented with initial assessment of needs and priorities for improved and new pedestrian infrastructure, initial concept sidewalk and trail maps. The Town Board and public received a preliminary plan at a Town Hall public forum held May 15, 2007. The Town Board received a final plan at its meeting of November 5, 2007 and adopted it on December 3, 2007. The *Duplin Times* covered these meetings.

Section 3 Existing Plans, Programs and Policies

Town, county, regional and state plans, programs, and policies may influence the development of a local pedestrian system. Plans and policies at every level of jurisdiction should be reviewed and considered to determine how best they support or challenge implementation of the goals and objectives of this plan. Following are highlights of plans and policies that may affect Kenansville's approach to developing and implementing pedestrian improvements.

3.1 Local plans

Throughout 2006, the Planning Board with the assistance of the North Carolina Division of Community Assistance developed a comprehensive land use plan to further catalog past and current development trends and set forth a plan for the town's future. Early in 2007, the Town Board of Commissioners adopted the "Town of Kenansville Land Use Plan – 2020" as the official comprehensive land use plan for the town. The land use plan contains a number of goals influencing the style, type and direction of the town's future growth. Some of these land use goals, listed below, will influence and support development of a pedestrian friendly community.

- Goal 1: Develop, adopt and enforce well thought-out land use regulations.
- Goal 2: Respect the history of Kenansville by ensuring that future development in historic areas is compatible with the surrounding architecture and development patterns.
- Goal 4: Make downtown Kenansville a prime location for business and ensure its long-term viability.
- Goal 6, calls for "developing and annually updating a capital improvement plan" to match infrastructure with the town's development.
- Goal 8: Work to enhance the safety, effectiveness and efficiency of the existing transportation network and provide alternative forms of transportation for the Town's residents. *Adopt a comprehensive pedestrian plan and fund the construction of sidewalks and greenway trails.*

Throughout 2006, the Planning Board with the assistance of the North Carolina Division of Community Assistance developed a land use plan to further catalog past and current development trends and set forth a plan for the town's future, resulting in the Town Board of Commissioners adopting the plan early in 2007.

Work to enhance the safety, effectiveness and efficiency of the existing transportation network and provide alternative forms of transportation for the Town's residents. *Adopt a comprehensive pedestrian plan and fund the construction of sidewalks and greenway trails.*

Kenansville Land Use Plan – 2020
Goal No. 8; page 58

The Town of Kenansville does not have a Thoroughfare Plan, Master Recreation Plan, Downtown Revitalization Plan, Capital Improvements Plan, or Historic Preservation Plan. These are among a range of specialty plans that could, if prepared; further advance the sustainable development goals and policies reflected in this plan.

3.2 Pedestrian statutes and ordinances

Local regulations should address a range of pedestrian facility design, construction, and placement standards as is found for vehicle circulation. The Town of Kenansville adopted Subdivision Regulations effective April 1, 2005 that regulate the development and subdivision of land. A central purpose of these regulations is to enable the coordinated development of new streets and highways within the town's jurisdiction, currently limited to areas within the town limits. Should the town adopt extraterritorial jurisdictional authority, these regulations may be extend by ordinance and be applicable within that area as well. Currently, the street development standards controlling design, construction methods, street widths, drainage, and pavement and right-of-way widths follow the NC Department of Transportation Secondary Road Construction Guidelines. Essentially, a developer constructing streets to these standards will be able to sell lots where the streets will eligible for acceptance for public maintenance by the town or State of North Carolina. The use of these guidelines is satisfactory for streets generally developed without sidewalks. One of the policy recommendations of this plan is for the Planning Board and Town Board of Commissioners to update the Subdivision Regulations to include directly or by reference, the pedestrian infrastructure policies, standards, or guidelines suggested in this plan.

Further, these regulations provide design controls for a range of residential and commercial development styles, including town homes, condominiums, planned unit developments, and non-residential subdivisions. Article IV, Section 404 Subdivision Design, includes the following requirements regarding walkways and sidewalks:

- 404.1 D. *Where deemed necessary by the Planning Board, a pedestrian crosswalk at least fifteen (15) feet in width may be required to provide convenient public access to a public area such as a park or school, to a water area, or to areas such as religious or transportation facilities.*
- 405. 11 A. *Streets shall be designed or walkways dedicated to assure convenient access to parks, playgrounds, schools, or other places of public assembly.*
- 405.11 B. *Sidewalks may be required by the Planning Board on one or both sides of the street in areas likely to be subject to heavy pedestrian traffic such as near schools and shopping areas. Such sidewalks shall be constructed to a minimum width of four (4) feet, and shall consist of a minimum thickness of four (4) inches of concrete. All sidewalks shall be placed in a right-of-way, unless the development is platted as a planned unit or group development. Sidewalks shall consist of a minimum of six (6) inches of concrete at driveway crossings.*
- 405.11 G. *In accordance with Chapter 136, Article 2A, Section 136-44.14, all street curbs in North Carolina being constructed or reconstructed for maintenance purposes, traffic operations, repairs, correction of utilities, or altered for any other reason shall provide wheelchair ramps for the physically handicapped at all intersections where both curb and gutter and sidewalks are provided and at other major points of pedestrian flow.*
- 510. G (In Planned Unit Developments, PUD). *The PUD shall provide pedestrian ways adequate in terms of safety, separation, convenience, access to points of destination and attractiveness.*

The Kenansville Zoning Ordinance has eight zoning districts, establishing varying development standards for the town and its potential extraterritorial area. The ordinance lacks illustrations and there are few specific references to sidewalks, walkways or pedestrian environment within the Zoning Ordinance. The following table summarizes current zoning dimensional standards some of which are supportive of a pedestrian environment. For instance, the CB Central Business District regulations complement a human scale street scene by encouraging retention of existing buildings and allowing new construction without setbacks.

Current Zoning Dimensional Requirements			
Zoning District	Min. Lot Size (sq. ft.)	Min. Lot Width (ft.)	Min. Building Setback (ft.) ¹
R-15 Residential	15,000	100	35
R-85 Residential	8,500	75	30
R-6 Residential	6,000	60	30
CB Central Business	none	none	none
B-1 Business	7,000	60	20
B-2 Business	10,000	60	20
O&I Office & Institutional	7,000	60	20
I Industrial	50,000	100	40

The district permits buildings to front the property line or pedestrian zone. Parallel and angled on-street parking are expected. Unless proposed as a planned residential development or part of a PUD, there is little design clarity or guidance to address the front yard and nearby street.

3.3 Programs and initiatives currently underway or planned

Kenansville does not currently have road projects scheduled in the most recent Transportation Improvement Plan (TIP). The Town, using Powell Bill Funds is not waiting and has moved ahead to install sidewalk in two locations due to their identified priority in the draft plan. One project is the construction of five feet wide sidewalk along the north side of Seminary Street from the Library to the Health Department the other project is pending easements, utilities relocation and encroachment clearance for installation of 5 feet wide concrete sidewalk along the western side of S. Main Street from Stokes St. to CVS Pharmacy. Both sidewalks will provide much needed pedestrian travel connections, especially for children and seniors.

3.4 Policies and institutional framework

More funding will move other projects forward as suggested in the pedestrian plan. Appendix F summarizes potential sources of funds that may be available for recommended pedestrian facilities. Funding categories are grouped by type of source, namely: Federal, State, local, business/land owners and private foundations.

¹ Residential setbacks may be reduced to the average distance homes on either side of the street are set from the front property line.

Sidewalk repairs and new sidewalk installations within the town come periodically through appropriations in the Public Works Department, streets budget. State shared Powell Bill Funds (including Highway Trust Fund allocations) provide approximately \$43,000 for the maintenance of 8.9 miles of Town streets. Street paving, pothole repairs, street drainage features, regulatory signs, and sidewalk construction and maintenance items are eligible uses for these funds. The Town has used these funds to construct sidewalks; most recently the segment of recommended sidewalk from the Library to the Health Department on Seminary St. NCDOT also permits Towns to use Powell Bill funds to match Enhancement funds (when available) for sidewalk construction. Typically, the local share of these sidewalk projects is 20 percent with the state picking up the other 80 percent. DOT Enhancement Grant was obtained by Duplin County for a walking trail at the Duplin Commons Agribusiness Complex. Educational information includes the "Get Moving ... Physical Activity" flyers for adults and children. There is also a "Strive for 5 Challenge" brochure funded by USDA printed in English and Spanish, and a package for teachers entitled "North Carolina Walks to School."

3.5 Regional or State Plans

Pedestrian needs in North Carolina received increasing attention since the 1996 when the North Carolina Board of Transportation adopted *Bicycling and Walking in North Carolina: A Long-Range Transportation Plan*. Recreation trails were envisioned as part of a series of interconnected hiking, canoeing, equestrian, and bicycling connections under the concept of a Mountains-to-the-Sea Trail corridor (MST) identified in the 1970's as a component of the State Comprehensive Outdoor Recreation Plan.

More recently, communities have taken up walking and pedestrian needs as an integral part of sustainable personal community health initiatives. Greenways and trails in Raleigh are among the most extensive and well used in the country. Smaller communities and rural places have joined neighbors in securing former railroad right-of-ways for pedestrian and bicycle use.

The NC Department of Transportation programs transportation improvements for eligible bicycle and pedestrian projects statewide under the Transportation Improvement Plan or TIP. The TIP Eligible projects in this category include providing bicycle and pedestrian facilities for safe accommodation, either through construction of new facilities or modifications to existing facilities. Construction of new sidewalks, separate walking trails/paths, bike paths are pedestrian facilities eligible for the competitive grants. The facility must comply with American Association of State Highway Transportation Officials (AASHTO), Americans with Disabilities Act (ADA) and NCDOT standards.



Section 4 Develop Pedestrian System Plan

4.1 System overview

Kenansville has 3.85 miles of existing sidewalks serving the downtown and radiating outward along state highways (Figure 4-1). These sidewalks were inspected, categorized, and inventoried (Appendix D). With exceptions, most of these sidewalks are adequate in width at five feet and include ramps. The downtown core has sidewalks on most streets although some upgrades are needed. Installing ADA handicapped ramps and improved crosswalks will help. Measures to halt parking cars across the sidewalk on Front Street are noted in Section 7. Sidewalks are absent in neighborhoods away from these main arteries. Particularly troublesome are the absence of sidewalks along S. Main Street and NC 24 where traffic is great and strip commercial development dominate the land use pattern. There are no off-street interconnecting trails between significant destinations. A complete web of multi-use trails and sidewalks will connect major areas of Kenansville with implementation of the recommendations set out in this plan.

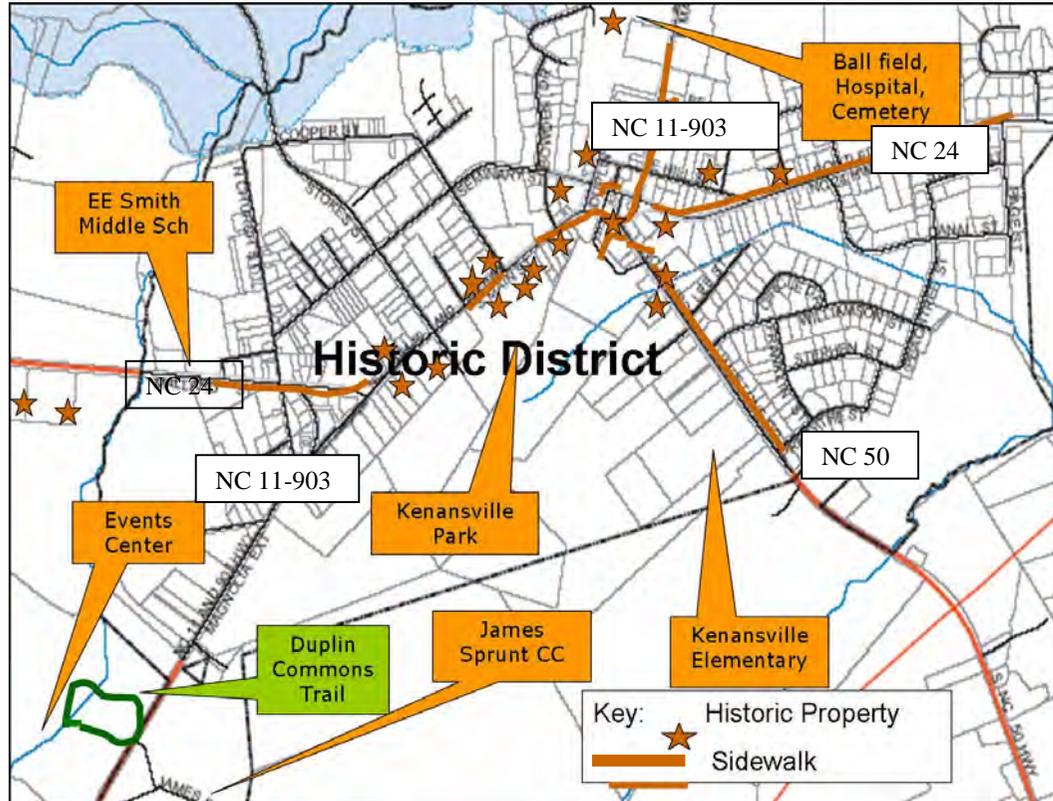
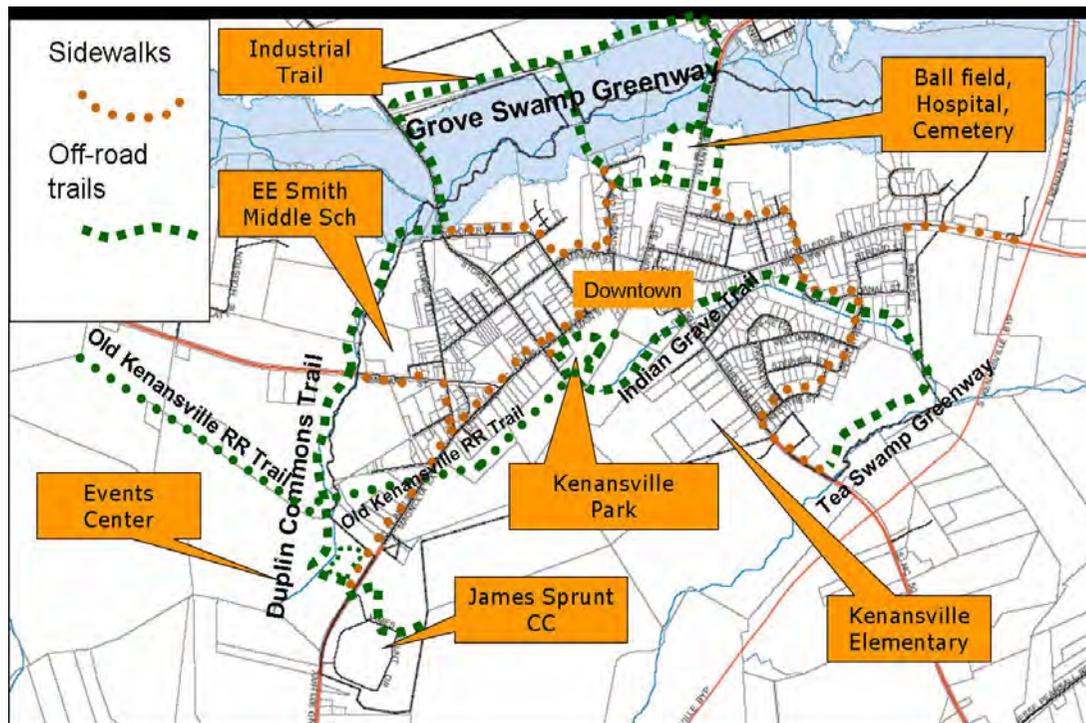


Figure 4-1 Generalized Map of Existing Sidewalks, Trails, & Attractors/Destinations

4.2 Corridor identification: Attractors and Destinations



The entire town and proposed planning area have potential for connectivity by sidewalks, greenways, trails, and paved multi-use paths. There are several pedestrian trip generators and attractors in Kenansville. Attractors and generators include the businesses and institutions in the downtown, James Sprunt Community College, parks, Kenansville Elementary and E. E. Smith Middle Schools and other places as illustrated on the concept pedestrian corridors map (Figure 4-2). Residential neighborhoods, business areas, and Duplin General Hospital are other significant generators or destinations. Section 8 presents more refined mapping of routes within these general corridors of connectivity. Priority should go toward interconnecting these places through construction and upgrading on street sidewalks and off-road pedestrian facilities.

Figure 4-2 Concept Map of Trail Corridors/Attractors/Destinations

4.3 Identify Opportunities

The new Duplin Events Center in Duplin Commons is a significant landmark currently open opposite James Sprunt Community College. The regional impact of these major attractors, presents an opportunity to link them using pedestrian facilities within the entire southern sector of Kenansville. The real potential exists for developing multi-use trails and greenways in addition to adding sidewalks from these institutions to EE Smith Middle School and Kenansville Park and Liberty Hall and on to downtown. The natural off road corridors are present in a number of locations without substantial obstacles, these include: (1) The Duplin Commons Trail extension; (2) portions of the Old Kenansville Railroad corridor near Duplin Commons and behind Kenansville Park; (3) the Golden Grove Cemetery perimeter road and a potential connector trail running between Brinson Field and Kenan Auditorium on past the Amphitheater and Duplin General Hospital and (4) Grove Trail following Industrial Drive north of the Grove Swamp Greenway.



Figure 4-4 Proposed section of Grove Trail follows Industrial Dr.



Figure 4-5 Meadow view near Duplin Commons Trail & old Kenansville RR line



Figure 4-6 Potential off road trail near Brinson Field and Kenan Auditorium

Kenansville is the perfect size for pedestrians. All over town, there are opportunities to expand pedestrian facilities. It will be important too to include pedestrian crosswalk striping and pedestrian signal heads at intersections. Kenansville's rich array of historic landmarks and potential off-road trails will warrant a good pedestrian signage program too.

Section 5 Facility Standards and Design Guidelines

This Section presents standards and guidelines derived from and meeting adopted design standards provided by the NCDOT,¹ and by the American Association of State Highway Transportation Officials (AASHTO), the Federal Highway Administration (FHWA) Pedestrian Facilities Users Guide, the Manual on Uniform Traffic Control Devices (MUTCD), and MUTCD, Part 7, Traffic Controls for School Areas, and the Americans with Disabilities Act (ADA). These guidelines are may be modified from time to time at the national and/ or state level and may need revisions accordingly. The project descriptions and possible treatments elsewhere in this plan suggest preliminary or conceptual treatments for further more detailed design and specification by licensed NC engineer or landscape architect.

5.1 Sidewalks

Sidewalks are extremely important public right of-way components often times adjacent to, but separate from automobile traffic. In many ways, they act as the seam between private residences, stores, businesses, and the street. Sidewalks are spaces where children play, neighbors meet and talk, shoppers meander casually, parents push strollers, and commuters walk to transit stops or directly to work. Because of the social importance of these spaces, great attention should be paid to retrofit and renovate areas with disconnected, dangerous, or otherwise malfunctioning sidewalks.

Sidewalk design criteria, crosswalk design, and ramps shall meet the Americans with Disabilities Act (ADA) requirements. These standards recommend all crosswalks to flow parallel to two pedestrian ramps per street corner. Although the minimum ramp width is three feet, a wider ramp is better, allowing passage at once of two senior walkers. The objective is to enable less-mobile pedestrians to clear the intersection ahead of traffic, especially when signal light timing is less than optimal. Essentially sidewalk design and installation guidelines need to address the following standards:

The American Association of State Highway and Transportation Officials (AASHTO) recommend the construction of sidewalks on all town streets, including those in rural areas. The Institute of Transportation Engineers (ITE) recommends sidewalk installation on both sides of the street whenever



Figure 5.1 Sidewalk 5 feet wide and wide tree lawn or buffer zone

¹ NCDOT Design Standards are available online at http://www.ncdot.org/doh/construction/ps/std_draw/06english/default.html

possible for new urban and suburban streets, especially in commercial areas, residential areas with 4 or more units per acre, or residential areas on major arterials and collectors. If sidewalks on both sides of the road are not possible, lower density rural residential areas might adequately serve its pedestrians with a sidewalk on only one side and with four-foot wide shoulders.

1. Sidewalks are part of the street, not an add-on, with a minimum of 2 feet, recommended 6 feet wide or more buffer, lawn, or utility zone to separate the street from walk zones. An alternative sidewalk placement may be behind the swale or drainage ditch where curb and gutter street sections are absent or stormwater retention is a priority and/or where very low-density residential subdivisions occur.

Figure 5.2 Consider where curb & gutter is not appropriate and right-of-way allows

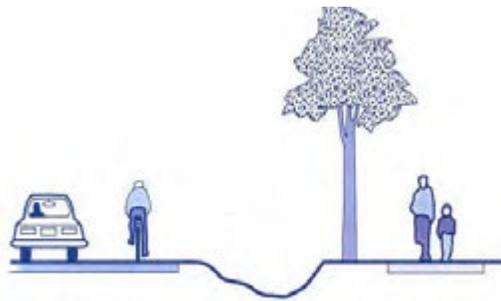


Figure 5.3 This sidewalk cost little to install without curb (NCDOT)

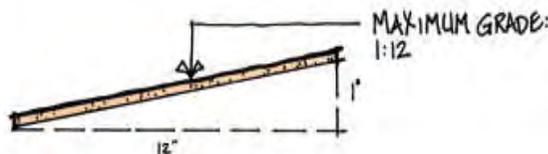


2. Sidewalk width should be 5 feet minimum and wider where pedestrian traffic is greater, especially in downtown areas, near schools, transit stops, or other areas of high pedestrian activity call for much wider sidewalks in the range of eight- to ten-feet wide. Sidewalks are typically placed where there are built in curb and gutter sections. Pedestrians need clearances without which the effective width is compromised (watch for obstructions; keep light poles, mailboxes, guy-wires away).
3. Surfacing (concrete preferred); smooth brick, pavers or stamped concrete for interest, brick or pavers when appearance or pervious pavement for stormwater retention is an objective improvements for new, retrofitted, and repair to sidewalks throughout town should be constructed using the following methods and materials:

- Materials — Sidewalks should be constructed of Portland Cement Concrete (PCC) with a 14-day flexural strength that is not less than 3,000 pounds per square inch (psi).
- Subgrade Preparation — Subgrade should be thoroughly compacted and finished to a smooth, firm surface, and should be moist at the time the concrete is placed.
- Subgrade Compaction — Except in areas where it is impractical to use standard type rollers, compaction should be by means of vibratory hand compactors.
- Final Finish — Surface finish for sidewalks should be completed by brushing (with brooms) or by another approved method to provide a uniform non-skid surface.
- Inspections and Performance — Sidewalk forms should be inspected by engineering and inspections personnel prior to the placement of concrete. Concrete that does not meet minimum mixture and strength standards or settles after placement should be removed and replaced by the installer.
- Alternative Materials Usage — Use of materials for sidewalks other than concrete and the construction methods used therewith must be approved by the town or town engineer or designated representative on a case by case basis. There are some successful examples where other materials such as asphalt, crushed stone, or other slip resistant material works.

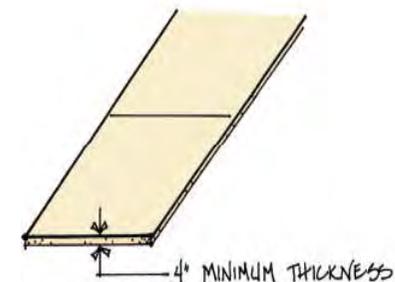
4. Minimum sidewalk thickness (or depth) of 4 inches of concrete is required for all new sidewalks except as noted. To accommodate the additional loading caused by pedestrian density or by vehicles crossing a sidewalk, a thickness of 6 inches is required where sidewalks intersect at wheelchair/crosswalk ramps, and at driveways that use a ramp or apron-type access to cross the sidewalk from the adjacent public street.

Figure 5.5 Sidewalk grade



5. Continuous sidewalk grades should not exceed 5% (1:20). However, in areas where the existing topography or the adjacent street cause grades of more than 5%, sidewalk grades of up to 8.33% (1:12) may be used for a rise of no more than 2.5 feet, provided that level landings (grades less than 0.5%) are provided at the end of such grades and are at least 5 feet long. In cases where grades greater than 8.33% (1:12) must be negotiated, switchbacks or other approved ramping techniques must be provided and will conform to ADA requirements.

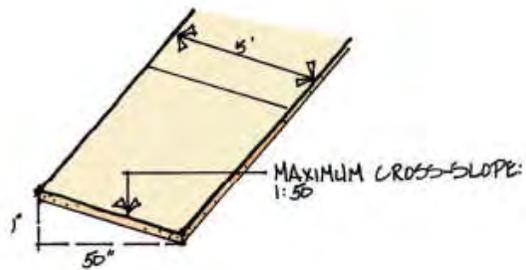
Figure 5.4 Sidewalk thickness



Additional right-of-way and/or easements necessary to accommodate these features will be obtained by the applicant and legally dedicated to the town.

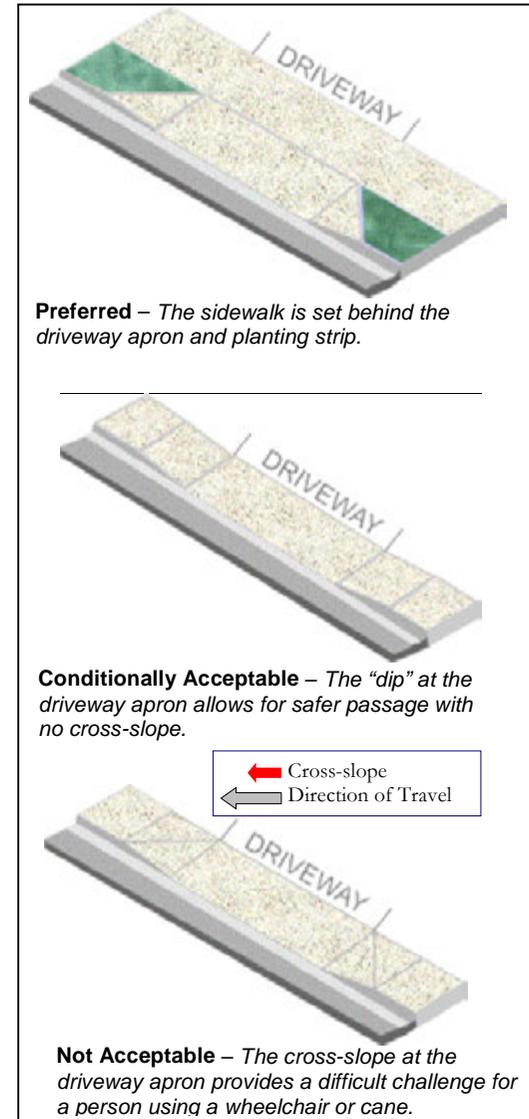
- The cross-slope of sidewalks and walkways should be designed such that grades and cross slopes are minimized to allow those with mobility impairments to negotiate with greater ease. The maximum allowable cross-slope for sidewalks is 2% (1:50). At driveways, curb cuts, and both marked and unmarked crosswalks,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

Figure 5.6 Sidewalk cross-slopes



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

Figure 5.7 (at right) Keep sidewalks level at driveways



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

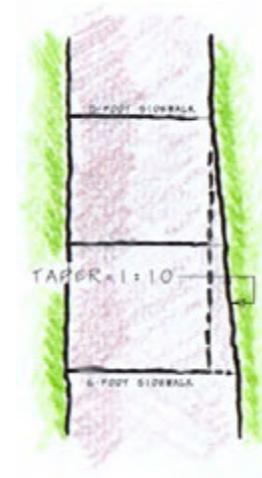


Figure 5.8 (right) Tapes—
Transitioning narrow to wide
sidewalks

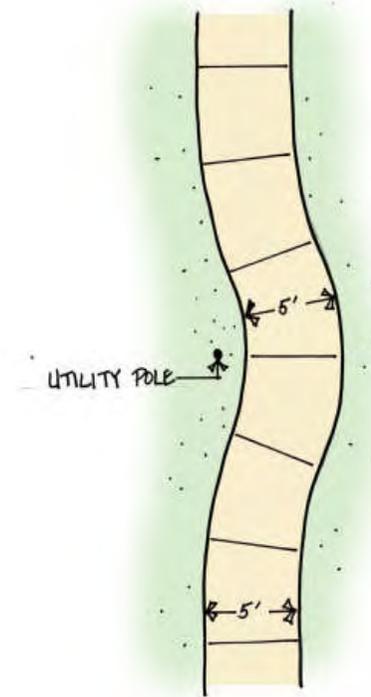
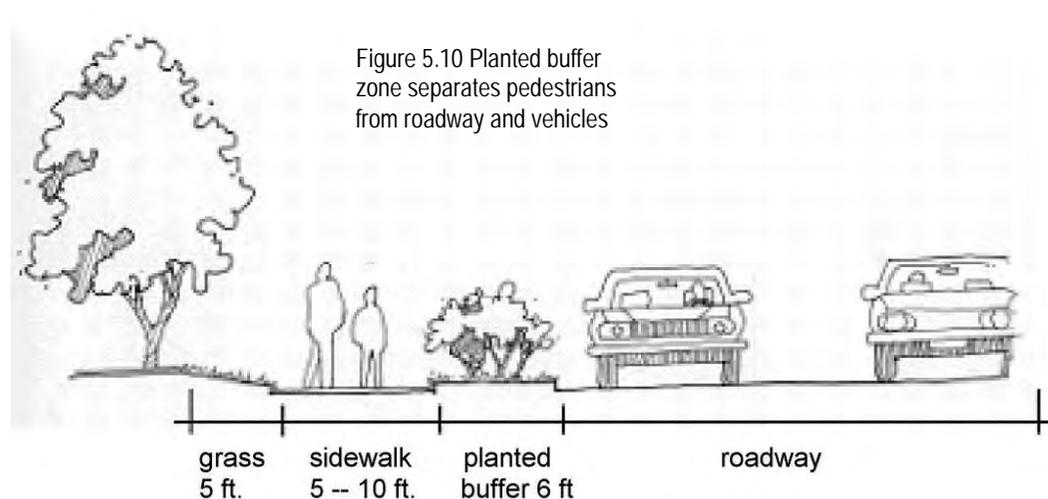


Figure 5.9 (left) Avoiding
obstructions—curve sidewalk
path

8. Sidewalk Path—Sidewalks should parallel the roadway, and all exceptions to this must be approved by the town or town. Typical exceptions include:
- Horizontal Curve Sections on Roadways — In situations where a roadway curves at an angle greater than 60 degrees (and where right-of-way permits), the designer is permitted to adjust the curve of the sidewalk to more easily accommodate pedestrians.
 - Presence of Obstructions — The 5-foot minimum width of the travel path must be free of obstructions. The designer is permitted to alter the sidewalk path to avoid significant obstructions including but not limited to: transformers, utilities and utility poles, fire hydrants, street trees, and traffic signal hardware. Sidewalk path exceptions should be evaluated and approved on a case-by-case basis by the town.

- Meanders — Sidewalk meandering is strongly discouraged. In order to avoid obstructions, meanders are acceptable after evaluation and approval from the town. Meanders must meet minimum ADA requirements unless otherwise approved by the town.
9. Buffer zones between pedestrian paths and vehicular traffic provide a sense of security to those on foot or in wheelchairs and give the path a comfortable scale and clear definition. Buffers can also provide other benefits to pedestrians depending on the type used. Much like the sidewalk itself, the form and topography of this buffer may vary greatly. The two types of sidewalk buffers discussed in this section are grass or planting strips (also called tree lawns) and paved buffer zones.

- Planted buffer zones— Continuous zones of landscape, located between the sidewalk and the street curb or the edge of road pavement, perform a multitude of essential tasks. Planting strips contribute to the walkability of a street by providing shade. This element alone can often clinch the decision for a potential pedestrian on whether a route is “walkable” or not, particularly in the hot summer months. In addition to providing shade,



street trees - along with turf and other plantings - help reduce urban temperatures, improve water quality, lower stormwater management costs, and add beauty to the street for the pedestrian, the driver, and the adjacent land use. The recommended planting width to permit healthy tree growth is 6 to 8 feet measured from the back of curb. Planting strips are the preferred means of providing a buffer, but are not feasible or appropriate in all pedestrian situations. Areas of high foot traffic may preclude landscaping due to maintenance considerations. The width of the planting strip shall increase with a greater plant density as the intensity of development increases. This separation from motorized traffic decreases road noise while increasing a pedestrian’s sense of security and comfort. Added benefits of this separation include space for signage, utilities (fire hydrants), and vegetation.

- Paved buffer zones—In some situations, continuous planting strips are not feasible, particularly where there is a high degree of foot traffic between the sidewalk and the street. Grass and other plantings would simply be trampled. In these cases, a buffer zone of some other kind should be provided between the travel path of the sidewalk and the curb. Though a constant width is preferred for this buffer zone, the width may vary as long as the buffer does not interrupt the pedestrian travel path. Items located in the buffer zone can include street furniture, planters, trees planted with tree grates, streetlights, street signs, fire hydrants, etc. Such items are placed in the buffer zones so as not to restrict pedestrian flow in the travel path.
- Native street tree plantings have historically proven to work successfully within these buffer zones. They regulate microclimate, create a desirable sense of enclosure, promote a local ecological identity and connection to place, and can act as a pleasant integration of nature into an urban environment. In the event that a paved or vegetative buffer zone is not possible, a row of parked cars or a bike lane can be used to create this buffer.
- Textured pavements can be used to add significant aesthetic value and help define a unique place. Using pervious materials for parking, sidewalk furniture areas, and for frontage zones could reduce environmental concerns. A change in paving type can help distinguish the pedestrian buffer zone from the pedestrian travel path. Sand-set pavers are recommended in the buffer zone for ease of utility maintenance.



Figure 5.11 Distinctive use of patterned pavers and elements of a downtown sidewalk buffer zone: street trees in grated tree pits, lampposts, and sand-set brick pavers placed next to curb in Downtown New Bern, NC.

10. Additional design considerations for on-street sidewalk facilities ought to be taken into account. Though the buffers described above each provide some sort of physical barrier from moving vehicular traffic, it is vital for pedestrians on the sidewalk to have a clear view of drivers and vice-versa. This is a particularly important consideration in designing and maintaining planting strips. It is important to eliminating both high and low contact points with tree branches, mast-arm signs, overhanging edges of amenities or furniture. In addition, it is necessary a clear space of one to three feet should be provided between walls [on one side of the walkway] and amenities, parking overhang, or plantings on the curb side of the walkway.

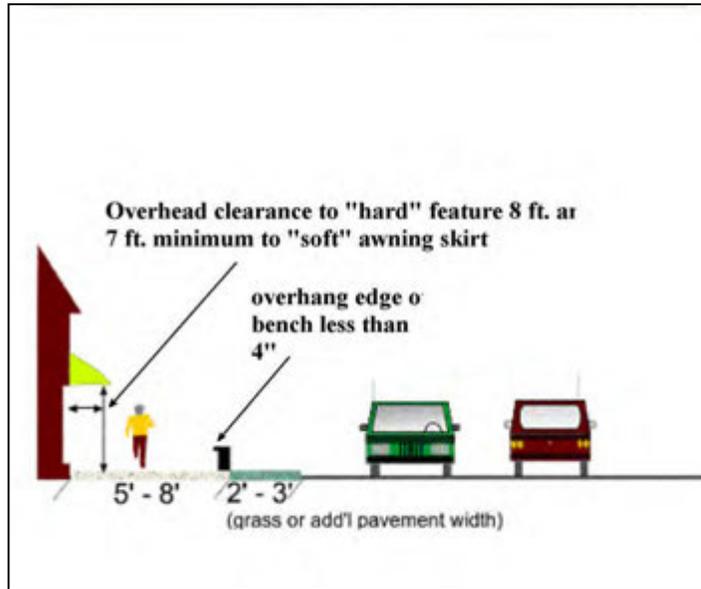


Figure 5.12 Profile view of building, clear pedestrian sidewalk zone, buffer zone, and street

11. Figure 5.12 indicates the relationships between pedestrian features, building faces, and roadway. Street furniture, lighting, vegetation and other amenities can create accessibility problems for those with impaired vision. Overhang should be limited to less than four inches when objects are post- or wall-mounted in the walking space of pedestrians. Special attention should be paid to not locate seating, plantings, or other enhancements in the unloading space that may interfere with the operations of a lift-equipped vehicle. This is also true for opening car doors. In addition, other access points along a pedestrian street should be kept to a minimum, in order to reduce the risk of vehicle to pedestrian crashes.

5.2 Paths and Greenways

1. Multi-Use Paths on Independent Alignments

Multi-use trails are road-like facilities designed for use by pedestrians and bicyclists as well as others, including those on roller blades, skateboards and other alternative modes of transportation. Greenway trails can be paved or unpaved, and can be designed to accommodate a variety of trail users, including those confined to wheelchairs.

2. Design Criteria

Multi-use paths are, in effect, little roads and should be designed with clearance requirements, minimum radii, stopping sight distance requirements, and other criteria — similar to the criteria for roadway design. High standards should be observed when designing these paths. Designers must comply with the AASHTO *Bicycle Guide*, *MUTCD*, ADA and FHWA requirements when designing these facilities.

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

Trails of 12'-14' in width are preferred for areas with difficult terrain or where heavy traffic is expected. Parks and greenway corridors tend to be popular sections of these trails. Therefore, trails near parks and greenway corridors should possibly be wider than 10

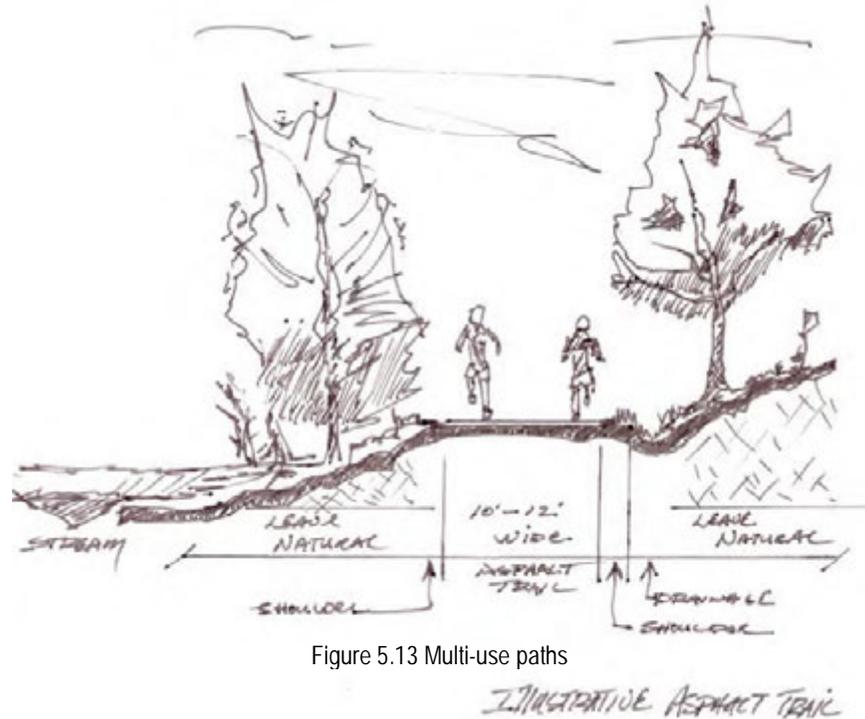


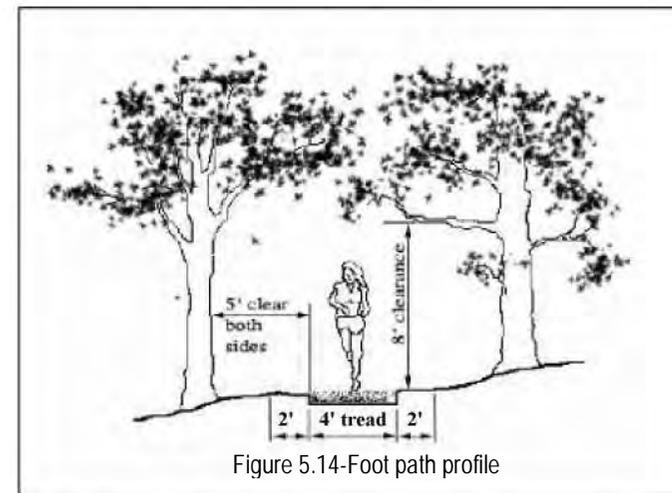
Figure 5.13 Multi-use paths

feet. If it is not possible to increase the width, consider including a divider line down the center for bi-directional traffic as a means of increasing safety for trail users. Width of a trail may be reduced to 8 feet, depending upon physical or right-of-way constraints.

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

Possible conflicts between user groups must be considered during the design phase of multi-use trails, as cyclists often travel at a faster speed than other users. Radii minimums should also be considered depending on the different user groups.

Use of foot paths is appropriate in environmentally sensitive areas, such as stream banks and lowlands. Foot paths need a minimum 4 ft. wide soft to firm surface tread composed of crusher fines (recommended), with 2 ft. improved shoulders. These paths need a vertical clearance minimum of 8 ft. and a consistent 5 ft. cleared area from the edge of the trail on each side. Pitch trails beds to drain with a 2% minimum grade. Path tread materials may vary in specific locations (crusher fines or soil with leaf litter).



3. Vertical and Horizontal Clearance

Selective thinning of vegetation along a trail increases sight lines and distances and enhances the safety of the trail user. This practice includes removal of underbrush and limbs to create open pockets within a forest canopy, but does not include the removal of the forest canopy itself. Multiple-use paths require 10 feet vertical clearance and 5-foot wide or more graded shoulders. Structures and shrubbery should not extend horizontally into the corridor. The alignment of these corridors should avoid road right-of-way whenever possible to minimize intersection and driveway crossings. Because these paths typically do not cross roads at signalized intersections, they should include pedestrian crosswalks, underpasses, culverts, or overpasses at each road crossing for safety.

4. Surface Types

Each trail is unique in terms of its location, design, environment, and intended use. For each segment of the trail, care should be given to selecting the most appropriate pavement type, considering cost-effectiveness, environmental benefit, and aesthetics. Pavement types may vary between conventional or pervious concrete, asphalt, crusher fines, dirt or boardwalk.

- Asphalt – Asphalt is a flexible pavement and can be installed on virtually any slope. Asphalt is smooth, joint free and softer than concrete, preferred by runners, rollerbladers, cyclists, handicap users, and parents pushing baby buggies. Construction is quicker and costs significantly less than a concrete. Install a minimum 2-inch 1-2 asphalt thickness with 4-inch aggregate base course. Installation of a geotextile fabric beneath a layer of aggregate base course (ABC) can help to maintain the edge of a trail. Pavement can last up to 20 years with periodic maintenance. One important concern for asphalt trails is the deterioration of trail edges. It is important to provide a 2' wide graded shoulder to prevent trail edges from crumbling.
- Crusher fines – Crushed marl rock is excellent for running trails, as well as walking, bike and equestrian use can be constructed to meet ADA requirements. The surface is composed of small, irregular and angular particles of rock crushed into an interlocking tight matrix. Typically costs about 1/3 the price of concrete paths, installed.
- Boardwalk – A path made of wooden planks constructed for pedestrians or vehicles through wetlands and other sensitive environments.
- Concrete–. Concrete surfaces hold up well against the erosive action of water, root intrusion and sub grade deficiencies such as soft soils. Areas subject to frequent flooding concrete is recommended because of its Most often, concrete is used for intensive activity applications. Of all surface types, it is the strongest and has the lowest maintenance requirement, if it is properly installed. Installation of concrete is more

costly than most surface types, but requires less periodic maintenance than asphalt or crusher fines. Install 4-inch thickness on compacted 4-inch aggregate base course.

5. Trail Amenities and Accessibility

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

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

Figure 5.15 Include nice places to sit

These trails should be open at all hours so that it can serve as a reliable transportation route. Lighting is not necessary and not recommended except through underpasses and culverts, and near safety hazards such as curbs, sharp directional changes, obstacles, or ending points. A reflective stripe or markers would help to make this trail navigable in limited light. Lighting the trail itself can restrict the visibility of areas beyond the trail. Existing street and structure lighting may be sufficient for an adjacent trail. For safety reasons, requiring that all bicycles and roller-bladers carry lights and all pedestrians wear reflective clothing during non-daylight hours would be useful.



6. Security & Safety

Safety concerns, such as minimizing accidents and exposure to risk should be addressed during the design process of any off-road trails. Safety design elements to consider include:

- Lighting and emergency phones
- Elimination of obstructions
- Clear sight lines by selective vegetation removal
- In addition to standard police patrol, Adopt-A-Trail programs should be considered that encourage local residents to police trails much like Neighborhood Watch. Trails are typically accessible during daylight hours only, and violations after dark are viewed as trespassing.- Emergency access points for Police, Fire, and EMS should be signed and have restricted-access bollards that allow emergency vehicles into the site while prohibiting access by unauthorized vehicles. Most maintenance access points also suffice as emergency access points.

- When extreme weather is expected, efforts should be taken to close the trail to protect the safety of the public. Access Points & Linkages to private property
- Access opportunities to off-road trails should be maximized. Although off-road trails will typically follow stream banks and utility corridors, they should often be designed as “front yard elements” whenever possible, connecting to existing sidewalks, as well as civic, residential and commercial destinations. This arrangement will maximize the transportation value of the trail, and increase visibility and safety for users.

7. Maintenance & Operations

Facility inspections are an essential part of maintaining any facility. Planning and design of all off-road trails should include management plans that help gauge operational funds for various maintenance projects. Proper maintenance must address both the performance condition of the trail preserving the environmental integrity and character of any environmental areas that are adjacent to the trail. Maintenance and repair projects can be managed either through annual service contracts put out to bid, or become an integral part of the Facilities Management maintenance program. Annual budgets for trail maintenance and operations should document maintenance items, facility improvements, and other related costs to ensure the long-term health of trail facilities, the environment, and safety for users. Three tiers of maintenance programs should be included in the management plan:

- 1) Long-term maintenance programs - includes renovation of facilities and trail resurfacing. Comprehensive inspections should occur twice a year to record user impacts, general wear and tear, and other factors that may affect safety, environmental features, or structural integrity of the facility. If long-term maintenance programs are deferred, the safety of the trail is compromised and costly capital improvement funds to renovate damaged areas will be required. Typical long-term maintenance activities include:
 - Annual vegetation clearance (June and September)
 - Annual inspection by engineer to identify potential repairs needed for bridges and structures, drainage structures, pavement, railings, and fences
 - Revegetation during planting seasons
- 2) Routine maintenance – includes safety and repair issues that occur throughout the life of the facility. Frequency of routine maintenance should take place on a monthly basis, dependent upon the amount of usage and availability of funds. Typical routine maintenance activities include:
 - Removal of litter and general cleaning
 - Sweeping and leaf removal
 - Mowing and weed control
 - Pruning and removal of encroaching/fallen branches
 - trail edging
 - Route signage maintenance
 - Graffiti control
 - Regular presence of volunteers to report faults

- Emergency repairs - necessitated when storm damage makes the trail unsafe for daily use. Severe weather may occasionally cause damage to the facility through wind, erosion, or fallen trees. Volunteer programs for greenway maintenance can be organized through "Adopt-A-Park" program. Volunteer labor can yield a substantial savings for labor costs on routine maintenance and repair. Materials can be donated by a group, provided through a corporate sponsor, or purchased by the Town.

5.3 Marked Crosswalks

A marked crosswalk designates a pedestrian right-of way across a street. It is often installed at controlled intersections or at key locations along the street (a.k.a. mid-block crossings). Crosswalks are prescribed for the downtown, school areas, and key residential and commercial areas where pedestrian activity is greatest. A study should be completed prior to placing crosswalks to determine the need and the best type and location of that crosswalk. The District NCDOT Traffic Engineer can help with these studies and design choices.



Although marked crosswalks provide strong visual clues to motorists that pedestrians are present, it is important to consider the use of these elements in conjunction with other traffic calming devices to fully recognize low traffic speeds and enhance pedestrian safety. In general, "marked" crosswalks should not be installed in an uncontrolled environment where speeds exceed 40 mph. Crosswalks alone may not be enough and should be used in conjunction with other measures to improve pedestrian crossing safety, particularly on roads with average daily traffic (ADT) above 10,000. Every attempt should be made to install crossings in places where pedestrians are most likely to cross. A well-designed traffic calming location is not effective if pedestrians are using other unmodified and potentially dangerous locations to cross the street.

Marked pedestrian crosswalks may be used under the following conditions: 1) At locations with stop signs or traffic signals, 2) At non-signalized street crossing locations in designated school zones, and 3) At non-signalized locations where engineering judgment dictates that the use of specifically designated crosswalks are desirable.

There is a variety of form, pattern, and materials to choose from when creating a marked crosswalk. It is important however to provide crosswalks that are not slippery, are free of tripping hazards, or are otherwise difficult to maneuver by any person including those with physical mobility or vision impairments.

1. Crosswalk Width and Marking

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

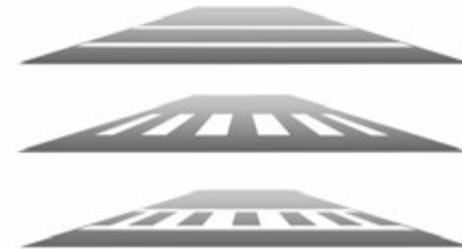


Figure 5.16 Drivers view: bolder crosswalk lines and hatching are more visible

inexpensive but is considered more slippery than other devices such as inlay tape or thermoplastic. A variety of patterns may be employed as detailed in Figures 5.16 and 5.17. Crosswalk markings should be white, per MUTCD (Section 3B.17--2003). Crosswalk markings should extend the full length of the crossings. Crosswalk lines of 12-24 inches of width are the recommended minimum. Curb ramps and other sloped areas should be fully contained within the markings.



Figure 5.17 (Left) Standard parallel style at Main & Limestone (Center) Diagonal or zebra style cross-hatching (Right) Longitudinal or Ladder Style

2. Pavement Treatment

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

3. Raised Crosswalk

In areas with a high volume of pedestrian traffic, particularly at mid-block crossings, a crosswalk can be raised to create both a physical impediment for automobiles and a reinforced visual clue to the motorist.

5.4 Pedestrian Signage: Regulatory

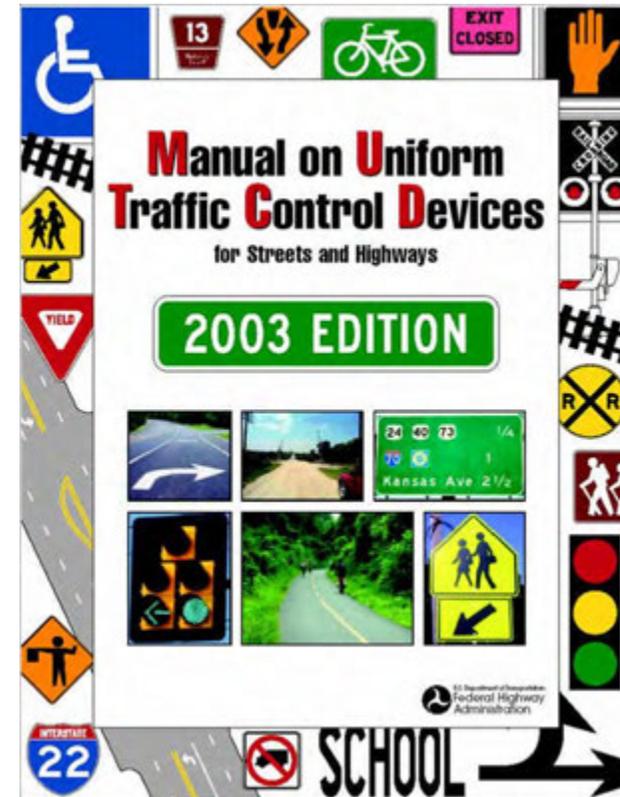
Regulatory signage should meet the warrants set forth in the FHWA's "Manual on Uniform Traffic Control Devices" (MUTCD). The manual is available in both PDF and HTML format online at <http://mutcd.fhwa.dot.gov/kno-2003r1.htm>.

1. Pedestrian Signals

Traffic signals assign the right of way to motorists and pedestrians and produce openings in traffic flow, allowing pedestrians time to cross the street. When used in conjunction with pedestrian friendly design, proper signalization should allow for an adequate amount of time for an individual to cross the street. The suggested amount of pedestrian travel speed recommended in the Manual on Uniform Traffic Control Devices (MUTCD) is 4ft/sec. However, a longer crossing time may be necessary to accommodate the walking speed of the elderly or children. Therefore, it is suggested that a lower speed of 3.5ft/sec be used whenever there are adequate numbers of elderly and children using an area.

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

There are a host of possible traffic signal enhancement opportunities that can greatly improve the safety and flow of pedestrian traffic. Some include: international symbols for WALK and DON'T WALK, providing large traffic signals, the positioning of traffic signals so that those waiting at a red-light cannot see the opposing traffic signal and anticipate their own green-light, installing countdown signals to provide pedestrians information on how long they have remaining in the crossing interval, automatic pedestrian sensors, and selecting the proper signal timing intervals.



International Pedestrian Signals - According to the MUTCD, international pedestrian signal indication should be used at traffic signals whenever warranted, as opposed to early signalization that featured "WALK" and "DON'T WALK", international pedestrian symbols should be used on all new traffic signal installations as illustrated in Figure 5.18. Symbols should be of adequate size, and clearly visible to make crossing safe for all pedestrians.



Figure 5.18 Pedestrian signals: Walk, Don't Walk, Don't Walk with Countdown Signal Head (MUTCD 2003 Sec. 4E.04)

5.5 Pedestrian Signage: Wayfinding/Specialty

Wayfinding or directional signage and specialty signage provides tourists information about parking, places to rest, walk, and enjoy. Designation of local historic landmarks, scenic places, or events provide useful information to visitors. Wayfinding signage may be linked to self-guided maps to further introduce tourists to unique town features.

Signage provides important safety and wayfinding information to motorists and pedestrians whether residents or tourists. From a safety standpoint, motorists should be given advance warning of upcoming pedestrian crossings or of traffic calming areas. Design and placement of signage (size, color, graphics, and their locations and numbers) should avoid creating visual clutter. Under such a condition, important safety or wayfinding information may be ignored resulting in confusion and possible pedestrian/vehicle conflict. Regulations should also address the orientation, height, size, and sometimes-even style of signage to comply with a desired local aesthetic.



Figure 5.19 Specialty signage may include use of distinctive historic district street signs

Wayfinding signage should orient and communicate in a clear, concise and functional manner--enhancing pedestrian circulation and directing visitors and residents to important destinations. In doing so, the goal is to increase the comfort of visitors and residents while helping to convey a local identity.



Figure 5.20 Illustration of signage for Historic walking tour



Recommendations:

1. Non-regulatory pedestrian oriented signing guidelines should be adopted
2. Signage should mark interesting features (historic landmarks, historic district, walking and bicycling routes)
3. Use chevrons instead of arrows for direction
4. Use blocks instead of miles for distance
5. Provide signage such as "brown loop" for historic, "green loop" for agriculture," yellow loop" for gardens, etc.
6. Walking trail signs to link sites
7. Continue to improve town welcome signs
8. Establish "wayfinding" signage



Fig. 5.21 Wayfinding signs promote aesthetics as well as provide important information.

5.6 Pedestrian-Scale Illumination:

1. Use pedestrian-scale lighting is effective in maintaining sidewalk activity at night
2. Cobra-style lighting that is 30 or more feet above the street can cast shadows where there are trees
3. Cobra-style lighting is needed to illuminate intersections
4. 12-25 feet lighting with shielded or glare proof lenses is more appropriate for sidewalks
5. Decorative lampposts come in many styles to best fit the setting, whether along a trail, in a park, or in downtown
6. Street and/or pedestrian light poles should be aligned with and centered between street trees.

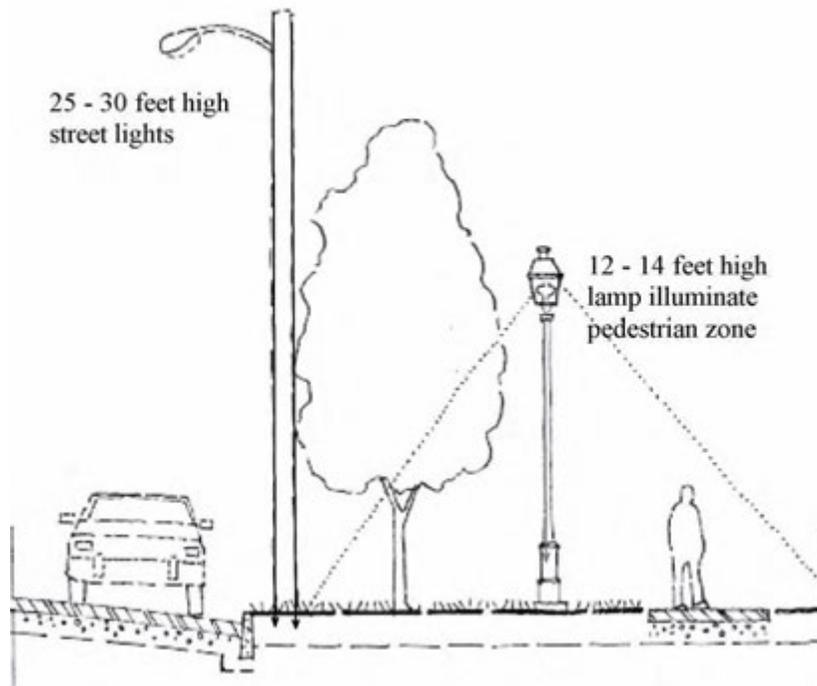


Fig. 5.22 The options for lighting include a range of styles all adaptable to state-of-the-art photo metrics that will provide suitable light levels and qualities for both street and sidewalk.

Section 6. Ancillary Facilities and Programs

Pedestrian improvements are not exclusively construction projects involving hundreds of feet of new walkways. Other activities are important as well; these include promoting use of existing facilities, improved signing, maintenance, speed controls, safety education programs, health education, and many other activities. Kenansville may benefit from a range of these improvements. This section introduces these types of facilities and programs as important elements of a comprehensive walkable community program and makes new program recommendations.

6.1 Tours & route mapping projects

The Kenansville Area Chamber of Commerce and Kenansville Action Group offer a "Walking Tour of Historic Homes and Sites." The Town has an historic tour and visitor's center at the Cowan Museum and Liberty Hall. Self-guided tour brochures highlight these landmark resources and other National Register Historic Places Kenansville offers.

Mapping presented in Section 8 of this plan identifies potential on-street sidewalks and off-street trails. A coordinated signage program would highlight interesting sites along trails. Walkers and runners could benefit from a certified one-mile, three-mile and/or five kilometer walk/run route.



Figure 6.2 Install distinctive trail markers

A significant new trail would follow the former Kenansville Railroad Line, a route that skirts the northern edge of the Duplin Commons acreage and terminates near Kenansville Park and Liberty Hall. Placement of an historic marker where the old line crosses Magnolia St. Ext. is one of the recommendations associated with establishing the Duplin Commons Trail Extension and (see Table 7.1).



Figure 6.1-Historic Grove Church

6.2 Maintenance programs

Maintaining facilities is less exciting but less expensive than constructing new projects. Yet, without scheduled maintenance, good facilities soon become a liability, potentially unsafe, and unattractive. The Public Works Department should use the inventory (see Appendix D) as a base for establishing a routine inspection and maintenance schedule. Property owners need reminding of their responsibility to keep the sidewalks clear of debris and other obstacles. This should also include trimming overhanging branches to approximately eight feet and trimming sidewalk encroaching vegetation. Repairing trip hazards may be as simple as edging a walk or removing vegetation from between sidewalk cracks. Replacing broken or heaved sections of sidewalk is part of the on-going sidewalk maintenance program. One resident commented on the Walkability Survey about a fire hydrant leak water and causing a slippery section of sidewalk. The inventory (See Appendix D) revealed several places where low tree branches were a concern to local walkers. Walkers should routinely report such obstacles to Town Hall. Some improvements may be costly or too involved to achieve immediate results. Installing car stops to prevent vehicles from blocking the Front Street sidewalk is one example.



Figure 6-4 Replace heaved pavement

Existing marked crosswalks are worn. These should be repainted or replaced (see examples in Figure 5.17) to improve their visibility to drivers and pedestrians. Such improvements gives everyone evidence that maintenance matters. The inventory identifies ADA non-compliant curbs on existing sidewalks. The short stretch of sidewalk between the Court House and the Library has several. Walkers surveyed indicated this area needs attention in addition to the recommendation to install a new sidewalk from the Library to the Duplin County Health Department. Piggybacking several curb-cut ramp upgrades with a nearby project often saves money because the contractor is already present.



Figure 6.3-Replace missing car stops to prevent blocking sidewalk



Figure 6-5 Install ADA ramp instead of replacing missing or broken curbing

6.3 Enhancing the pedestrian experience

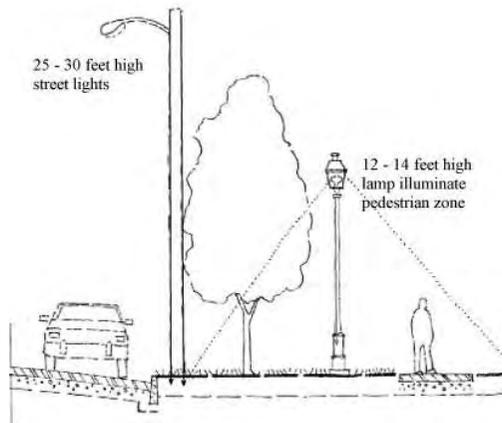


Figure 6-6 Install pedestrian scale lighting for safety and appearance

independent spans are more costly (and therefore less likely to occur) than incorporating sufficient widths in new replacement bridges as segments in the proposed Grove Trail. These bridges should be designed and built similarly to one constructed by NC DOT over Rainbow Run in the Town of Hookerton, NC.¹ The bridge in Hookerton bridge includes 4' bike lanes either side of two 12' travel lanes, grade separated sidewalk on one side and open-style guardrail design.

¹ Replacement bridge No. 43 on Main Street/Dixon Farm Road (SR1438) over Rainbow Creek (TIP Project B-4127)

Pedestrian scaled lighting at intersections and along walkways will be noticed and help overcome concerns expressed by some of the residents questioned about their reasons for not walking at night. Residents are encouraged to report dim or dark lights to Town Hall. The Town leases power company poles to provide street lighting at intersections. Some communities supplement or replace these standard cobra head wood pole streetlights by leasing decorative pedestrian-scale lighting.

The bridges on N. Main Street (NC 11) and Bowden's Rd. (SR1301) lack sidewalks or bicycle lanes. Neither bridge is wide enough to accommodate share the road bike lanes or separate sidewalks. Both locations offer potential linkages for the proposed Grove Trail mapped in Section 8, illustrated on the Overview Pedestrrian Plan Map (Section 8), and mentioned elsewhere. Eventually NCDOT will replace these two older spans of Grove Swamp Creek. Separate pedestrian/bike bridges are possible alternatives but funding



Figure 6.7-Repalcement bridges shall include bicycle land, sidewalk, and 42" open style safety railings

Future Grove Trail bicycle/pedestrian usage of these road corridors and potential regional bike routings justify placement of bicycle style open two-rail aluminum guardrails on both sides of these bridges. "Jersey style" concrete railings shall be discouraged as they wall-in the roadway and reduce the natural aesthetic scenery of Grove Creek.

6.4 Safety education programs

Over the last dozen years, several organizations have implemented wellness programs for a specific audience. Installation of pedestrian-oriented signage should promote greater safety and use of the walkways. Promotional information is available through the National Center for Safe Routes to School (SRTS) (www.walktoschool.org). Pilot SFTS projects are underway in Asheville and High Point North Carolina. The stated purpose of the SRTS program is to:

- Enable and encourage children, including those with disabilities, to walk and bicycle to school
- Make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age
- Facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools

See Appendix I and go to www.ncdot.org/transit/bicycle/safety/programs for information about the 2008 N. C. Safe Routes to School call for proposals.

6.5 Encouragement and promotion

Duplin General Hospital provides a wellness program for their employees and patients. Walking is emphasized along with education on health issues. Lucinda Maready is the contact for these programs. Participants may use existing sidewalks along N. Main Street in front of the hospital and those in nearby downtown. Improved connectivity of these walkways and proposed new Golden Grove Trail will improve opportunities to expand walking programs in this portion of town. Further south James Sprunt Community College (JSCC) promotes a wellness plan for students, faculty and staff. JSCC currently uses the roads around the college campus for walking because there is no pedestrian connectivity into town or connections from campus to the new multi-use asphalt trail that loops around the Duplin County Cooperative Extension offices in Duplin Commons. Cooperative Extension conducts safety, health and well-being seminars on an on-going basis for the community. Examples of such educational information include the "Get



Figure 6.8-Duplin General promotes walking

Moving, Physical Activity" flyers for adults and children, a "Strive for 5 Challenge" brochure funded by the USDA printed in English and Spanish, and a package for school teachers entitled "North Carolina Walks to School" distributed by the NC Division of Public Health. There are many useful walking promotional materials available for public education. Expansion of these or similar programs town wide is now possible. There is access to a growing network of organizations and communities using educational material to promote the benefits of improved health through walking. The "smart growth" movement for sustainable communities includes the notion of children having convenient and safe walking environments from their neighborhoods to schools, parks, library, and other community facilities.

Section 7 Network Development

The Plan's main goal is to establish a future pedestrian network to overcome a lack of pedestrian facilities and connectivity between pedestrian facilities and trip attractors. This section identifies potential projects and suggested treatments based on study of the existing conditions and adopted goals and vision (Section 1, p.1-5) for Kenansville. In building the network there should be an understanding of how walking is a means of transportation, thus the proximity of potential pedestrian trip attractors is a consideration in route selection and enhancement. The diagram in Figure 7-1 also illustrates not only Kenansville's pedestrian attractors but also potential partners in development of the network.

Moreover, a series of tables describe current conditions, likely benefits of suggested improvements, and cost estimates by locations. Maps following in Section 8, show locations of improvements, from intersection treatments, installing sidewalk linkages along streets, and potential routes for off-road multi-use trails.

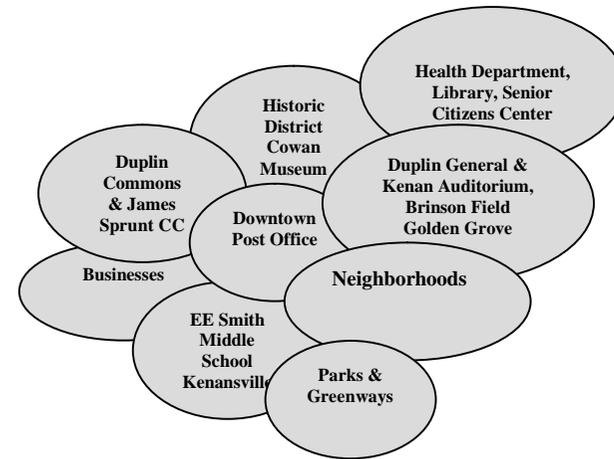


Figure 7.1—Pedestrian Attractors

7.1 Identify potential projects and preferred treatments

Table 7.1 details potential projects and suggested treatments with three columns of information about the street or location of each project, issues the treatments address, and potential benefits. The right hand column presents cost estimates. The range of information sources used to develop the pedestrian network includes the inventory, Walkability Survey, public comments in workshops, and ideas the Steering Committee members offered. The Police Chief provided the consultant information about public safety, motor vehicle traffic controls and truck routing issues. While the Public Works Director added information about maintenance issues.

Table 7.1 Potential Projects and Preferred Treatments

Street/Location	Issues/Recommendations/Benefits		Cost Considerations
<p>A. Front Street</p> 	<p>Short-term: Correct the problem of vehicles blocking the 6 ft sidewalk on the south side of Front St. Adding curb-stops will provide an initial low cost solution.</p> <p>Long-term: Improve the walking experience and safety by introducing curb bulb-outs at corners with distinctive crosswalks, installing tree pits, trees, lampposts, running brick edging and relocating overhead utilities underground. Retain angle parking on Front Street to slow traffic.</p> <p>Angled parking with bulb-outs at corners will maintain slowest speeds and increase on-street parking efficiency; consider acquiring open triangle lot for town common or develop a portion commercially under downtown building infill design guidelines emphasizing limited off-street parking and storefronts meeting the sidewalk. Shade trees will also add to the pedestrian environment and invite more downtown activities.</p>		<p>Curb stops and rebar anchors @ \$20 each.</p> <p>Unknown at this time: Similar retrofits and enhancements elsewhere run: 4" concrete 10 ft walks \$40/lf; \$9/ft curb & gutter removal; \$18-25/lf new c/g; roadway repair/pave \$33/SY; curb extensions with 8 ft corner ramp \$2500 ea., lamp posts \$390 plus monthly lease; large sized trees \$250-700 with grates \$425 for visual impact; trash receptacles \$500 ea; benches \$600 ea.</p>
<p>B. South Street</p> <p>This one-way street has parallel parking and an extra-wide intersection at Main St. with a signal.</p>	<p>Same as above with additional attention to widening street converting parallel parking to angled parking; add 10 feet wide sidewalk along east side of street; some drivers go wrong way and park illegally</p>	<p>Diagonal parking: increases 30-60% (based on angle) over parallel; reduces travel speed; gives space for deep curb extensions for pedestrian safety and visual, not real, narrowing of street</p>	<p>Costs will vary depending on design details, in-house work capabilities. Utilities relocations, fittings, storm water grates, relocation increase costs</p>

Table 7.1 Potential Projects and Preferred Treatments

Street/Location	Issues/Recommendations/Benefits	Cost Considerations
<p>C. W. Hill St.</p> 	<p>Exit drive & tel. pole conflicts next to intersection; landscaped lawn; sidewalk on north side of street starts at the Sheriff's Department and ends at Duplin St. Install curb & gutter, tree lawn and 5 ft sidewalk in front of the parking lot at the NE corner of Main and W. Hill. Redesign lot parking lot layout with access points distant from the intersection; plant trees and lawn.</p> 	<p>\$140 per tree allowance 1 3/4" caliper B&B with town or volunteers; 160 lf 30" c/g @ \$25/lf; & 5' sidewalk @ \$24/lf street repair= \$11,000</p>
<p>D. Duplin St.</p>	<p>Lacking mid-block ramps & crosswalks at park entrance opposite W. Hill St.; remove four parking stalls on west side of Duplin at the park and at Seminary St. intersection, install marked crosswalks and curb extension ramps</p>	<p>Remove four parking stalls; \$1000 per ramp and \$7.00/lf painting crosswalks</p>
<p>E. Seminary Street to Cooper St.</p>  <p>Seminary St. -- east from Bowden Dr.</p>	<p>Pedestrians use the close-by buildings, park, library and Senior Center, traversing to and from the Cooper St. area and western neighborhoods near downtown. The walkers' survey indicated courthouse workers desire additional sidewalks in this area. Sidewalk should extend from Bowden St. past the Health Department to Cooper St.</p> <p>Drop curbs are in place at the intersection of Cooper St. and Seminary for future ramp-sidewalk extensions. Speeding along Seminary and a wide street intersection in front of the Library at Bowden Dr. suggests priority for marked crosswalks with ramps.</p>	<p>Replace several sections of broken sidewalk; add 8 ramps at \$1,000 each; then extend 895 lf 5 ft sidewalk on north side of Seminary St. with grass strip @24 lf = \$21,500. Add marked crosswalks @ \$7/lf</p>

Table 7.1 Potential Projects and Preferred Treatments

Street/Location	Issues/Recommendations/Benefits	Cost Considerations
<p style="text-align: center;">F. S. Main St.</p>  <p>View from Bostic north, Liberty Hall fence to right and Duplin County Courthouse ahead</p>  <p>View from Mallard St. signal north</p>	<p>A high priority of the Committee and surveyed residents is to close the sidewalk gaps along S. Main Street from Lodge St. to Mallard Street. (1) The first priority for this area is completion of a 560 foot section of 5 ft. concrete sidewalk along the West side of S. Main St. from Stokes St. at Texas Tee to the existing walk at CVS Pharmacy. This will enable E. E. Smith Middle School students and unimpeded sidewalk route along one complete side of this high trafficked commercial area.</p> <p>Visitors to Kenansville Park, Liberty Hall join with nearby residents, and tourists to frequent this busy arterial highway as it passes through the National Register Historic District. (2) There is opportunity to install sidewalk on the east side of S. Main behind a the curb line with a varying grass strip of 2 to 7 feet wide while avoiding trees, power poles, historic marker and fencing at Liberty Hall. (3) An alternative and grander plan would entail narrowing the street to slow traffic while gaining room for an ample tree lawn. (4) A variation of alternative no. one involves installing wide curb extensions at Stokes and Cooper Street intersections.</p> <p>Main St. should also be marked for a bike lane and route. Design considerations need to include accommodations for cyclists, motorized vehicles, and pedestrians.</p>	<p>(1) Connect 5 ft. concrete sidewalk from Stokes St. at Texas Tee to existing section at CVS Pharmacy drive 560 lf @ \$24 plus driveways = \$14,500,</p> <p>(2) East Side: 2,090 lf 5 ft. wide concrete, including drives and ramps, seeding and mulching @ \$24 lf = \$50,160;</p> <p>(3) Narrow road: no est. available;</p> <p>(4) S. main St. ant Cooper St.: add 4 ample curb/ramp extensions into the parking lane and use continental-style crosswalks = \$10,000; the design should accommodate bike lanes;</p>

Table 7.1 Potential Projects and Preferred Treatments

Street/Location	Issues/Recommendations/Benefits	Cost Considerations
<p data-bbox="432 384 748 440">G. S. Main St. at Mallard (signal) intersection</p>  <p data-bbox="340 799 696 823">Businesses surround this intersection</p>  <p data-bbox="340 1203 842 1289">Consider roundabout at the intersection as illustrated above (NCDOT Pedestrian Module 6; Wilber Smith & Associates)</p>	<p data-bbox="875 384 1576 799">Pedestrians are not welcome at the signaled intersection of S. Main St (NC 11/ 903) and Mallard St. NC 24/50. Left and right turning movements are provided at right angles to S Main, inducing slower speed right and left turns. The one pedestrian accommodation is the sidewalk along the wide curve of the westbound lane in front of the CVS Pharmacy parking lot. Pedestrians are not welcome at this intersection: The intersection is at the focal point of strip commercial development with wide driveways. The Dollar General Store, CVS Pharmacy and convenience store draw middle school students and residents walking from nearby neighborhoods. Pedestrian traffic will increase as sidewalks connect along both streets. The plan responds to Committee members and residents desires for sidewalks along both sides of the intersection. The intersection geometry complicates safe placement of pedestrian crossings. Tractor-trailer rigs represent more than 10 percent of traffic movements at this intersection.</p> <p data-bbox="875 834 1563 920">Countermeasures to study include narrowing driveways or adding bulb-outs with ramps, crosswalks placed at distance from the intersection with introduction of refuge islands, and pedestrian activated signals.</p> <p data-bbox="875 956 1570 1070">Introducing a roundabout would be a major redevelopment of this intersection. A roundabout would provide a managed gateway to the southern Kenansville growth corridor, equidistant between Downtown and Duplin Commons/JSCC campus.</p>	<p data-bbox="1606 384 1839 408">Not available at this time</p> <p data-bbox="1606 443 1991 647">An engineering study of traffic calming modifications to the existing intersection, including additional access controls, and signal management will determine the most suitable means of introducing organized traffic control and pedestrian movements at this intersection.</p> <p data-bbox="1606 956 1991 1129">A roundabout would involve right-of-way acquisition, access controls, and relocation of one or more businesses. This would be a significant TIP enhancement project. No cost estimates provided.</p>

Table 7.1 Potential Projects and Preferred Treatments

Street/Location	Issues/Recommendations/Benefits	Cost Considerations
<p data-bbox="432 400 770 459">H. Limestone Rd. near Kenansville Elementary School – Main St.</p>  <p data-bbox="340 810 770 869">Looking northwest toward downtown from the school crossing</p>	<p data-bbox="813 400 1480 756">Add sidewalk to NE side of Limestone St from Peachtree St. back to Main St. Two phases of construction would complete this 2,520 feet long project, the first being Peachtree St. to Lee St. This section will enable students to travel from the neighborhoods to school on either side of Limestone Rd. A second phase would continue sidewalk from Lee St. to Main Street. A priority consideration is traffic separation, which is lacking on the south side of Limestone. The wide-open straight road encourages speeding. This sidewalk plan includes a 4-7 feet wide planting strip next to the travel lane. A continental-style crosswalk is located at the school's entrance drive, providing improved driver sight line attention. Similar crosswalks will be included further along this route with the additional sections of sidewalk.</p>	<p data-bbox="1503 400 1980 459">Phase I- Peachtree to Lee St.-- 1,664 lf @ \$24/lf = \$39,940;</p> <p data-bbox="1503 491 1966 550">Phase II – Lee St. to Main St. -- 856 lf @ \$24/lf = \$20,540</p>

Table 7.1 Potential Projects and Preferred Treatments

Street/Location	Issues/Recommendations/Benefits	Cost Considerations
<p>I. Routledge Road</p>  <p>View from the westbound parking lane looking west toward downtown</p>  <p>View of angled E. Hill St. intersection with Police Department opposite</p>	<p>The inventory reveals sidewalks along both sides of this impressive artery connecting downtown with the by-pass. Routledge Rd. (NC-24) traffic tends to speed along this stretch of road where the town has done well by placing sidewalk along much of this route.</p> <p>There are three recommendations for this road: (1) Install the remaining 570 feet of 5 feet concrete sidewalk on the south side of Routledge Rd. westward from Page Street.</p> <p>Design guidelines suggest using a minimum of five feet width with a grass strip to match the completed walkway. This grassed area is wide enough to allow placement of regulatory, newspaper drops, and mailboxes. Placed immediately behind the curb, the easternmost and newest segment of sidewalk is too narrow at 4 feet especially with mailboxes taking up a portion of this width.</p> <p>(2) Consider installing a curb extension to pinch the wide acute angled intersection of Routledge Dr. and E. Hill Street along with accompanying crosswalk.</p>	<p>These parallel sidewalks will remain in good condition with routine maintenance. Most intersections need ADA compliant ramps (12 ramps @ 1,000 ea.).</p> <p>(1) 570 ft. 5 ft sidewalk (including 6" drives) @ \$24 = \$13,680;</p> <p>(2) The curb extension at this risky intersection may qualify as a spot safety or pedestrian enhancement project with NCDOT. Replace 75 ft curb & gutter with 110 ft. relocated curb & gutter; 2 ramps; crosswalk = \$10,800</p>

Table 7.1 Potential Projects and Preferred Treatments

Street/Location	Issues/Recommendations/Benefits	Cost Considerations
<p>J. S. Main St. to Duplin Commons and James Sprunt Community College</p>  <p>Looking north along Magnolia Street Extension</p>  <p>Duplin County Events Center</p>	<p>This southern growth area off NC Highway 11 (Magnolia Ext.), boasts Duplin Commons a 126-acre complex with its centerpiece the new Duplin County Events Center and new Duplin County Agricultural Service Center, located opposite the 4,500-student James Sprunt Community College campus. Development here will intensify as other county functions and potential businesses (perhaps a hotel), fairgrounds, and parks & recreation complex. The internal walkway and bicycle system should connect with three proposed routes in southern Kenansville, namely:</p> <p>(1) Duplin Commons Trail Extension to E. E. Smith Middle School</p> <p>(2) Extend sidewalk along the west side of S. Main St. linking both campuses with the town's business districts, neighborhoods, and historic sites. This sidewalk would extend to the existing trail at the entrance to the Duplin County Agricultural Service Center. Additional right-of-way or walkway easement may be needed to avoid overhead power line poles and provide ample separation from the highway.</p> <p>(3) A third potential trail link would involve routing a multi-use path along the former Kenansville Railroad Line along the northern edge of the Duplin Commons acreage, crossing with the Duplin Trail Extension and to the S. Main sidewalk. This could start Phase I of a looped route to a point east of Kenansville Park.</p>	<p>(1) Not including easement acquisition costs: 2,690 lf of 10 ft wide 1 1/5" I-2 asphalt over crush & run base @\$21/lf = \$56,490 (say \$60,000) assumes route over sandy soil base with minimum grade change. Materials and labor (mostly volunteer) for an alternative natural soil-based trail could be possible for about \$5/lf, say \$14,000.</p> <p>(2) Overhead (west side) and buried (east side) utilities extend the entire 3,850 feet length of Magnolia St. Ext. from Duplin St. to the entrance at JSCC & Duplin Commons.</p> <p>(3) Phase I-RR route: est. 1550 ft. segment (no est. provided). It appears the route in this section follows near the northern property line of the Duplin Commons tract.</p>

Table 7.1 Potential Projects and Preferred Treatments

Street/Location	Issues/Recommendations/Benefits	Cost Considerations
<p data-bbox="432 403 819 491">K. Main St. from Hill St. to Kenan Auditorium; Golden Grove Cemetery; Brinson field. Establish Grove Trail.</p>  	<p data-bbox="853 403 1518 523">North Main Street has parallel 5-foot wide sidewalks connecting downtown with Duplin Memorial Hospital (DGH) the passing in front of Kenan Auditorium, the Duplin county Department of Social Services, and on to Brinson Field and Golden Grove Cemetery.</p> <p data-bbox="853 616 1525 730">Grove Trail: Golden Grove Cemetery Outer Loop: Phase 1. Place signage at N. Main Street access points from sidewalk, one at trail entrance opposite Brinson Field and the second at the service entrance just south of Golden Grove Cemetery.</p>	<p data-bbox="1554 467 1966 582">Maintenance of existing sidewalk and installation of handicapped access ramps along N. Main at Hill Street, Beasley Street; mark intersection crosswalks.</p> <p data-bbox="1554 675 1995 730">Phase 1: Signage: \$500-1,200; (2) ramps and two crosswalks: \$6,500</p> <p data-bbox="1554 767 1989 970">The surface of this 1200 feet section of trail is useable in its current soil, grass and rock condition. There is a mature stand of mixed hardwoods and pine trees lending interest and shade along portions of this trail segment. Costs: maintenance and publicize, especially to workers and visitors to DGH</p> <p data-bbox="1554 1007 1973 1177">Phase 2: Sign, shape, stabilize and install 6 feet wide crush & run trail along existing terrace above Brinson Field to connect with asphalt path to extend past Kenan Outdoor Theater to the Hospital grounds picnic area. Costs: To be determined.</p>

7.2 Project Development

The ultimate pedestrian system may be accomplished one project at a time. Sidewalks, street trees, crosswalks installed from one intersection to the next and so on. The recommended action plan in Section 9 outlines a systematic approach to the desired pedestrian system. However, even the suggested short-term projects as they move to reality may seem to come too slowly to maintain momentum. It is very important for people in the community to see some immediate results. A new section of sidewalk, a freshly painted crosswalk, and a dozen trees planted are tangible and visible clues something is happening. Projects do not just happen. Be opportunistic. Take advantage of funding if it becomes available to implement projects or activities that may be further down the list of priorities. This understood it is critical to set priorities considering locations used by greater numbers of people, seniors, and children. Collaborate with others to accomplish goals.

Section 8. Maps

The "***Pedestrian Plan: Overview Map***" that follows is the first of three foldout maps of the pedestrian system of the Town of Kenansville. This first map covers an area approximately a mile beyond the town limits. At this backed away view of the area the larger system of existing and proposed sidewalks and trails are discernable. Inset photographs and prominent features depict important landmarks or destinations. The map shows the radiating and crossroads patterns of highways that converge historically on the County Seat in the downtown. Regional and state truck routes show up in orange dashed pattern. The overview map illustrates existing facilities and proposed multi-use trails. Priority corridors follow primary highways with existing sidewalks in solid red and proposed linkages in dashed red patterns.

The second map, entitled "***Kenansville Town Center Pedestrian Plan***" is an enlarged black and white aerial photograph superimposed by more detailed depictions of the existing and proposed pedestrian system. Intersections and crosswalks, existing and proposed, are easily visible. Likewise, the detailed land use patterns of buildings, streets, and key landmarks and destinations emerge. Appearing easily is the US Post Office, Liberty Hall, Duplin County Library, Health Department, and Duplin General Hospital, Kenan Auditorium, and Golden Grove Cemetery. Visible are homes in neighborhoods with streets lacking sidewalks. The discord between existing sidewalks and un-served areas is even clearer in this view. Illustrated are missing and existing corner ramps and street crosswalks.

The final, close-up map, entitled "***Kenansville Downtown Pedestrian Plan***", reveals the substantial crowding of vehicles in parking lots and along streets surrounding the Courthouse. The unsatisfactory arrangement, where overflowing parked cars block sidewalks is visible along Front Street. The inset photograph of the scene further illustrates the point. The map also shows there are sidewalks in the downtown where daytime employment swells and visitors with cars are plentiful.

The acute angled intersections of the three highways that bring through traffic and local traffic around the edge of downtown become noticeable too. These traffic arteries, combined with a dominance of vehicle-oriented businesses and services, especially on the south side of Main Street, combine to challenge pedestrians. Liberty Square Shopping Center and the drive through banks and restaurants generate turning movements at multiple driveways at or near signaled intersections. The Post Office with its very wide-open parking lot off the curve junction of Routledge Rd. and S. Main Street is particularly difficult for pedestrian safe movements.

All three maps illustrate potential sidewalks, trails or greenway projects conceptualized in Section 4 (p. 4-2).

Section 9. Recommendations and Implementation Process

The following section presents recommendations and implementation methods to develop the Kenansville pedestrian system over a 10-year period. This plan of action defines a scope of work and establishes the desired timing and funding that will likely be required to carry out the goals of the program. The plan is necessarily flexible, knowing that some projects may advance sooner than others may due to available resources, possessing adequate right-of-ways and acquisition of off road trail easements.

9.1 Act to Reach Goals

Seven goals were set out in Section 1 of this document (see p. 1-5). The Steering Committee also identified a number of recommended actions, as follows, to pursue in support of these goals. From among these recommended actions and other projects explored in Section 7.1, a number of pilot projects and policy initiatives emerged for immediate and longer-term implementation (see Section 9.2).

Goal 1. Improve connectivity of key destinations

Recommended Actions

1. Fill in walking facilities that link major destination points – downtown, town hall/police department, community college, Duplin Commons, schools, hospital, parks, ball fields, etc.
2. Include greenways to connect destination points such as along creeks and old railroad corridor
3. Add walkway improvements for residential areas/neighborhoods
4. Improve pedestrian accessibility at the Post Office

Goal 2. Establish and enforce pedestrian regulations

Recommended Actions

1. Amend the sign regulations (Section 15, Zoning Ordinance) – pedestrian and slow traffic oriented with restrictions for size, type, and location
2. Create and/or enforce ordinance to force landowners to clean properties
3. Address abandon houses/used cars/furniture on front porches

4. Create/enforce beautification ordinance
5. Enforce the town's leash law
6. Include design standards and requirements for sidewalks and pedestrian circulation in the town's subdivision regulations
7. Update the zoning ordinance to address building placements, guidelines for front porches, driveways and garages to neo-traditional neighborhood and commercial design guidelines to orient streets to buildings and people places rather than automobiles
8. Establish a tree ordinance and programs to qualify for the Tree City USA designation by the National Arbor Day Foundation

Goal 3. Improve Pedestrian Signage

Recommended Actions

1. Provide signage such as "blue loop" for historic, "red loop" for agriculture," yellow loop" for gardens, etc.
2. Walking trail signs to link sites
3. Continue to improve town welcome signs
4. Establish "Way-finding" signage

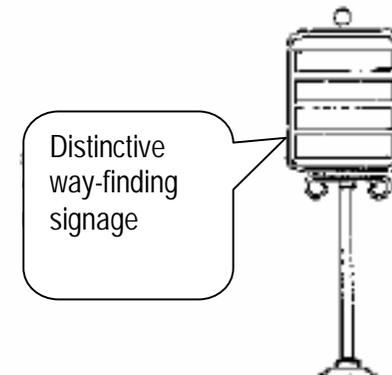


Figure 9.1 Sample signage systems

Goal 4. Promote Quality Design and Beautification

Recommended Actions

1. Landscape pedestrian walkways such as New Bern, NC, Varina, NC etc.
2. Provide quality seating
3. Decorative walkways in strategic areas such as brick and concrete combined. This should include benches, lighting, trees, plantings, etc.
4. Beautify downtown – trees, streetscape ideas for streets and building facades.
5. Look into endowment for long-term maintenance and beautification (Cooperstown, NY example)
6. Research feasibility of underground utilities – seek funding from USDA-Rural Development Services
7. Include more trees in the planned projects



Figure 9.2 New Bern, NC downtown

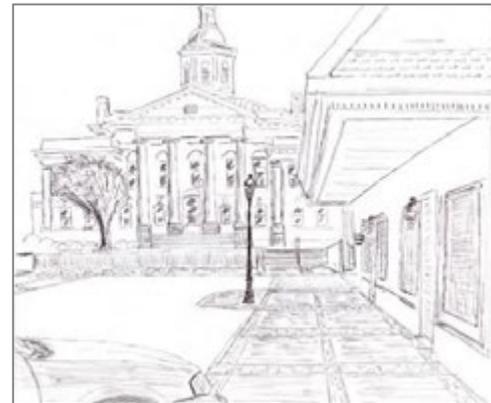


Figure 9.3-Design streetscape using Kenansville's architecture & history

Goal 5. Address pedestrian Safety

The Kenansville Police Department is responsible for public safety measures: reduce speeding, responsible helmet usage for bicyclists, educating drivers and pedestrians of traffic laws, and preventing illegal parking. The department works with the primary and middle schools during the school year on student safety issues. The department has access to a "speed wagon sign" advising motorists of the posted speed limits and their actual speed. The Public Works Department is responsible for town grounds maintenance, streets and sidewalks maintenance and signage, street trees maintenance and parks and grounds maintenance. These departments have coordinating responsibilities with their counterparts with the Sheriff and NC State Highway Patrol and NCDOT Maintenance Division, respectively. The Town needs to support these functions to help ensure crosswalks are marked, traffic and pedestrian signage made, and safety hazards corrected.

Recommended Actions

1. Address uneven sidewalks and storm drains
2. Remove hazardous situation at Post Office
3. Include attractive lighting downtown
4. Improve lighting overall
5. Include a plan to treat fire ants
6. Address truck routes and heavy truck usage (i.e. asphalt plant)
7. Liberty Square – address the lack of internal traffic control
8. CVS Pharmacy location & traffic conflicts
9. Explore educational, technical assistance and funding through the "*Safe Routes to School*" initiative

A Safe Routes to School Workshop is a great way to help initiate a Safe Routes to School Program within a community. This workshop helps communities develop programs based on their unique situations while providing basic strategies and useful resources to consider as they develop an action plan to overcome barriers identified. Anyone interested in improving the health of children and the community by making walking and bicycling to school safer, easier, and more enjoyable can be involved in a SRTS workshop. For more information about the SRTS program and the 2008 call for funding proposals, check out the information in Appendix I of this plan and contact Leza Mundt at 919-807-0774 or lwmundt@dot.state.nc.us.

Goal 6. Address Maintenance

Recommended Actions

1. Include attractive trash cans in strategic areas
2. Plan to keep drains clean
3. Clean and maintain the landmark "Spring" – work with county.
4. Plan for periodic cleaning of curbs (grass and dirt)
5. Seminary Street needs to be cleaned and beautified – historic street

Goal 7. Enhance Quality of Life

Recommended Actions

1. Identify areas for common use such as the triangle in the center of town and the triangle beside the ABC Store. Obtain long-term lease, if possible, and create parking and park setting.
2. Find grant money to provide incentives to attract specialty shops such as antique, gift, bakery, coffee, etc.
3. Ensure walkways are user friendly for pets
4. Consider bicycles and horses
5. Include farmers' market
6. Horse-drawn carriage rides could attract tourists/new residents
7. Address children's needs at the Parks and especially around schools
8. Look into getting old Kenansville railroad station back from Judge Henderson (Trenton) and use as a destination point/welcome center, museum, cultural center, etc.
9. Identify available funding/grant sources.

9.2 Programming and Timing Projects

For the purposes of this plan, it is assumed there is sufficient street right-of-way for installing sidewalks along the identified street corridors. Additional right-of-way costs would need to be determined in those few instances where it will otherwise not be feasible to ensure proper design under adopted design guidelines and standards. The relocation of major overhead and underground utilities are to be avoided unless the sidewalk is incorporated into larger road construction projects.

In order to develop off-road trails and greenways it will be necessary to acquire conservation easements or fee simple deeds. The granting of a permanent conservation easement or donation of fee simple interest to the Town of Kenansville or other qualified non-profit organization or governmental unit of government, can generate income benefits, reduce annual property taxes and lower estate taxes. If the owners are receptive to donating land for the corridor then timing of the donation is also important for the town or project-sponsoring agency. Some grant programs allow the appraised value of the donation to count toward local cash match requirements. In these instances, the donated value normally would only count as match if made following grant approval. There may be exceptions but it important to confer with the potential grant source to clearly understand how best to maximize project funds.

During the initial months following adoption of the plan and through an initial two-year period, the Committee and public have identified the following short-term pedestrian projects and policy actions. A larger number of mid-range projects follow this list, and yet a longer-term group of projects round out the overall listing of desired local pedestrian system improvements. Table 9.2 lists and summarizes recommended projects and their estimated costs, and potential funding sources.

Table 9.2 Summary Pedestrian Facilities Implementation						
Short-term Projects: Zero to 2-year period (FY 2007-8 -- FY2008-9)						
Pedestrian Facility	Type Activity	Length/Width & No.	Right-of-Way	Cost	Construction Issues	Potential Resources
S. Main St. -(West side)	Sidewalk	560 ft./5 ft. concrete	NCDOT	\$14,500	NCDOT Encroachment; utilities; use of private easement	PB; E; SR
Post Office Area – Upgrade @ Routledge Rd	Mark crosswalk, ramp, signal, replace, asphalt walk	50 ft./5 ft. concrete to replace asphalt path	NCDOT	\$3500	NCDOT Encroachment	PB; SS
Front Street -(South side) from S. Main St. to South Street	Install curb stops to protect sidewalk	10 @ \$25	Town	\$250	Use town forces	PB
Seminary Street (West side) Bowden Dr. to Cooper Street & sidewalk repairs & 8 ADA ramps and crosswalk	Sidewalk	895 ft/5 ft. concrete	Town	\$30,000	Curb cuts	PB
Duplin Commons Trail Extension to Mallard Street	Multi-use Path	2,690 ft. /10 ft asphalt	Partial; acquire ROW or easements	\$60,000	Storm drainage; route traverses open meadow and woods;	HC; RTS;V
Potential funding resources: Town Powell Bill (PB); State Transportation Improvement Plan Project (TIP); Surface Transportation Program (STP); NCDOT Spot Safety (SS); NCDOT Enhancement (E); Safe Routes to School (SRTS); Recreation Paths (RTS); Adopt a Path (AT); Parks & Recreation Trust Fund (PARTF); Healthy Carolinians (HC); Adopt-A-Trail (AT); Design Arts Program (DAP); Clean Water Management Trust Fund (CWTF); Volunteers (V)						

Short-term Projects: Zero to 2-year period (FY 2007-8 -- FY2008-9)						
Pedestrian Facility	Type/Activity	Length/Width & No.	Right-of-Way	Cost	Construction Issues	Potential Resources
Golden Grove Trail Phase I	Foot Path	Signage, 2 crosswalks, ramps (use existing soil/gravel surface)	Town cemetery lane; NCDOT	\$9,500	Curb cuts; NCDOT Encroachment;	PB; AT
Kenansville Railroad Line Historic Marker	Multi-use Path signage	none	NCDOT	\$2,000	NCDOT Encroachment	NC Cultural Resources; V
Mid-range Projects: three to 5-year period (FY 2009-10 -- FY2011-12)						
S. Main St. -(East side)Lodge St. to Mallard St.	Sidewalk	2,090 ft /5ft concrete drives and ramps	NCDOT	\$50,160;	NCDOT Encroachment; utility poles; tree protection	STP; E; PB; SRTS
S. Main St. -at Stokes St., Bostic St. and Cooper St.	Curb bulb outs or pavement narrowing with ramps and marked crosswalks		NCDOT	\$75,000	NCDOT Encroachment; curb cuts; utility poles; assumes sidewalks in place both sides of S. Main St.	STP; TIP; E
Hill St. at Routledge Rd.	Curb extension upgrade and new crosswalk location	Replace 75 ft curb & gutter with 110 ft. relocated curb & gutter; 2 ramps; crosswalk	NCDOT; town	\$10,800	NCDOT Encroachment; curb cuts; curb replacement	SS; PB
Potential funding resources: Town Powell Bill (PB); State Transportation Improvement Plan Project (TIP); Surface Transportation Program (STP); NCDOT Spot Safety (SS); NCDOT Enhancement (E); Safe Routes to School (SRTS); Recreation Paths (RTS); Adopt a Path (AT); Parks & Recreation Trust Fund (PARTF); Healthy Carolinians (HC); Adopt-A-Trail (AT); Design Arts Program (DAP); Clean Water Management Trust Fund (CWTF); Volunteers (V)						

Pedestrian Facility	Type/Activity	Length/Width & No.	Right-of-Way	Cost	Construction Issues	Potential Resources
Routledge Rd. (south side) near Page St.	Sidewalk	570 ft./5 ft.	NCDOT	\$13,680	NCDOT Encroachment	PB; E
Front Street	Sidewalk widening & Streetscape Improvements	curb bulb-outs at corners; distinctive crosswalks, tree pits, trees, lampposts, brick edging	Town	\$25,000 to \$100,000 (costs vary depending on design detail & in-house work capabilities)	Utilities relocations, fittings, storm water grates, relocation increase costs; widen right-of-way on south side preferred	PB; General fund; donations; property owners; sell Kenansville commemorative walk bricks
Church St from Seminary St to Magnolia Ext.	Sidewalk	1190	Town; NCDOT		NCDOT Encroachment	SRTS
Duplin Commons Trail Extension to Mallard Street west of EE Smith Middle School	Multi-use Path; signage	3035ft /10 ft asphalt	Duplin County; private property	\$91,050	Acquire easements, drainage; and develop the Path	RTS; HC; V
Kenansville Railroad Trail Phase I. from Duplin Commons, Path Extension eastward to Magnolia Ext.	Multi-use Path; signage	1040 / 10 ft asphalt	Duplin County; private property	\$31,200	Obtain easements for Path	RTS; HC; V; AT; DAP
Longer-term Projects: five to 10-year period (FY 2012-13 -- FY2016-17)						
Limestone Rd. (NE side) Phase I- Peachtree to Lee St	Sidewalk, ramps and crosswalk	1,664 lf/5 ft	NCDOT	\$39,940	NCDOT Encroachment	STP; PB; SRTS
Potential funding resources: Town Powell Bill (PB); State Transportation Improvement Plan Project (TIP); Surface Transportation Program (STP); NCDOT Spot Safety (SS); NCDOT Enhancement (E); Safe Routes to School (SRTS); Recreation Paths (RTS); Adopt a Path (AT); Parks & Recreation Trust Fund (PARTF); Healthy Carolinians (HC); Adopt-A-Trail (AT); Design Arts Program (DAP); Clean Water Management Trust Fund (CWTF); Volunteers (V)						

Pedestrian Facility	Type/Activity	Length/Width & No.	Right-of-Way	Cost	Construction Issues	Potential Resources
Limestone Rd. (NE side) Phase II – Lee St. to Main St.	Sidewalk	856 lf/5 ft	NCDOT	\$20,540	NCDOT Encroachment	STP; PB; SRTS
Complete pre-2007 sidewalk ramp upgrades	Sidewalk ramps	20	NCDOT	\$20,000	NCDOT Encroachment; curb cuts	STP; PB; E
Precythe St, David St. Peachtree St., Canal St, Page St.	Sidewalk	4430/ 5 ft	town	\$88,600	Town Install sidewalk behind swale on one side; utilities	PB; SRTS
Seminary St. to S. Main St. at Kenansville Park	Sidewalk & elevated walkway foot/bridge connecting	635 lf/5 ft; 150 lf/8ft elevated walkway & 60-100 lf footbridge	town (part) private property	\$15,240; undetermined	Feasibility study; engineering; obtain easements for path; or purchase property; terrain; determine costs	RTS; HC; V; PB
W. Hill Street (N. side) Sheriff's Department to S. Main Street	Sidewalk; curb & gutter	160 lf/5 ft concrete & curb & gutter install	town	\$11,000	Redesign adjacent Health Department parking lot; utilities; install tree lawn to match Sheriff Dept. section; add curb & gutter	PB
Magnolia Ext. from Mallard St. to Duplin Commons & JSCC	Multi-Use Path	3850 lf/8ft concrete	NCDOT	\$115,500	Utilities; mail boxes; without curb & gutter use wide buffer (see figures 5.2 & 5.3) & 8 feet wide concrete tread; alt. standard buffer with curb & gutter	STP; E; TIP
Kenansville Railroad Trail Phase 2 from S. Main Street to east of Kenansville Park.	Multi-Use Path	4020	Private	\$120,600	Acquire easements for Path	RTS; HC; V; AT; DAP
Grove Trail –Phase I. E.E. Smith Middle School connection with the Duplin Commons Path Ext. to Stokes St. (Bowden's Rd.) @ Cooper St. intersection.	Multi-Use Path or Foot Path alternative	2790	Private	\$83,700 or \$27,900	Acquire easements for Path	RTS; HC; V; AT; CWTF
Potential funding resources: Town Powell Bill (PB); State Transportation Improvement Plan Project (TIP); Surface Transportation Program (STP); NCDOT Spot Safety (SS); NCDOT Enhancement (E); Safe Routes to School (SRTS); Recreation Paths (RTS); Adopt a Path (AT); Parks & Recreation Trust Fund (PARTF); Healthy Carolinians (HC); Adopt-A-Trail (AT); Design Arts Program (DAP); Clean Water Management Trust Fund (CWTF); Volunteers (V)						

Pedestrian Facility	Type/Activity	Length/Width & No.	Right-of-Way	Cost	Construction Issues	Potential Resources
Grove Trail--Phase 2 Bowden's Rd. to the end of Industrial Drive (Wastewater Treatment Plant WWTP road)	Multi-Use Path	4580 (not incl. bridge)	NCDOT	\$137,400	NCDOT Encroachment; new bridge with sidewalk & bike lanes at Grove Swamp Creek	RTS; HC; V; AT; CWTF
Grove Trail--Phase 3 Past the WWTP to Hwy 11 N of Grove Swamp Creek to Amos Brinson Field	Multi-Use Path	3935	Private & NCDOT	\$118,050	Acquire easements and NCDOT encroachment; wetlands; new bridge with sidewalk & bike lane at Grove Swamp Creek	RTS; HC; V; AT; CWTF
Indian Grave Creek Trail – Phase I from Limestone Rd. southwest to connect with the Kenansville Railroad Path near Kenansville Park	Multi-Use Path or Foot Path alternative	2000	Private	\$60,000 or \$ 20,000	Acquire easements for Path; many back yards; consider same area used for stream bank stabilization; blue line stream buffer stormwater rules	RTS; HC; V; AT
Other Longer-term Potential Projects						
Round-A-Bout at Mallard & S. Main St.	Sidewalks & crossings included	n/a	NCDOT	No est. available	Intersection redesign; property and business acquisition & relocation; utilities relocation	TIP; STP; SS; E
Indian Grave Creek Trail – Phase II from Limestone Rd to Tea Swamp	Multi-Use Path or Foot Path alternative	4565	Private	\$136,950 or \$45,650	Acquire easements for Path; blue line stream buffer stormwater rules	RTS; HC; V; AT
Tea Swamp Trail from Limestone Rd to Indian Grave Creek Path	Foot Path	2010	Private	\$20,100	Acquire easements for Path; blue line stream buffer stormwater rules	RTS; HC; V; AT
Potential funding resources: Town Powell Bill (PB); State Transportation Improvement Plan Project (TIP); Surface Transportation Program (STP); NCDOT Spot Safety (SS); NCDOT Enhancement (E); Safe Routes to School (SRTS); Recreation Paths (RTS); Adopt a Path (AT); Parks & Recreation Trust Fund (PARTF); Healthy Carolinians (HC); Adopt-A-Trail (AT); Design Arts Program (DAP); Clean Water Management Trust Fund (CWTF); Volunteers (V)						

9.3 Implementing Pedestrian-friendly Policies

- The Planning Board and Town Board of Commissioners should amend the appropriate sections of the Zoning Ordinance, Subdivision Regulations, and Town Code increase from four (4) feet to five (5) feet the minimum sidewalk width and adopt by reference the NCDOT pedestrian guidelines (See Section 5 and Appendix G). Consider extending the following text in Section 510 G (PUD) to apply to a full range of development styles and subdivisions, both residential and commercial centers, namely: "... *shall provide pedestrian ways adequate in terms of safety, separation, convenience, access to points of destination and attractiveness.*"
- The Town Board and Administration should bring forward projects identified in the first five-years of this plan to a Capital Improvements Plan processes. Such action would help ensure that annual reviews, updates and consideration of funds for projects will be addressed in the budgeting process.
- The Town Administrator should notify the NCDOT Bridge replacement program representative of the need to include provisions for sidewalk and bike lanes in the design of replacement bridges for NC 11 N (N. Main Street) at Grove Swamp Creek and Stokes St. (Bowden's Rd.).

9.4 Plan preparation, approval, and adoption process

The year and a half long process for plan preparation included an initial public forum held February 21, 2006, community survey, and multiple meetings of the Steering Committee. The Steering Committee hosted a second public forum May 15, 2007, to present the preliminary plan. Attending this session were numerous stakeholders and the Town Board of Commissioners. The Eastern Region RPO, NCDOT, and other stakeholders' agencies reviewed and commented on the preliminary plan as well. Based on its study and supported with public and professional input, the Steering Committee endorsed a final plan and the Town Board of Commissioners adopted it by resolution December 3, 2007.

The town staff, Town Board, Planning Board, Steering Committee and stakeholder agencies will reference the plan in their communications with potential project sponsors. Periodically, as various grant cycles approach or other means arise; the staff and Steering Committee will have opportunities to advance some pedestrian programs, policies and projects. At least annually, the staff and Board of Commissioners will consult the plan in preparing budget priorities. These annual updates will enable program and construction project monitoring and adjustments. A complete plan review and update every five years will enable the pedestrian planning process to stay active and relevant.

9.5 Project planning / implementation process

The vision established in this plan to create a “walkable community” is achieved one activity at a time. Setting priorities for projects in several categories enables focus on the most needed improvements, but doing so does not negate opportunities that may come sooner to do other work further along the list. After all, the priority list is a plan—one that identifies need and perhaps the most likely sources of funding, yet other projects may move forward more quickly than some priority projects because of outside funding agency priorities, dovetailing an improvement with another project, private development initiatives, and so on.

The N. C. Safe Routes to School program, the N. C. Recreation Trails Program, NCDOT Spot Safety, and NC and Federal Enhancement programs offer the more promising funding sources to carry projects forward. Easements for the Duplin Commons Trail extension past the County’s property should be sought. Similarly, easements or fee simple purchases of lands will be necessary to implement the other off-road multi use trails and greenways suggested in this Plan. Landowners may be interested in conservation tax credits or donations as a contribution to leverage Town or County sponsored grants. Combining funds, donations of land or materials, and volunteer labor will be necessary to implement a trail or greenway system. Duplin County owns Duplin Commons and the idea of extending the current multi-use trail to the JSCC campus and further northward warrants another try for NCDOT Enhancement Funds. This was the source of the \$24,000 used to fund the current Duplin Commons trail.

While pursuing priority projects, everyone should realize other activities are also important. The installation of marked crosswalks, street tree planting, intersection upgrades and new sidewalk segments take place individually yet advance the larger goals. The highest priority project, among many, is installation of sidewalk along the north side of S. Main Street from near the intersection of Mallard Street to Stokes Street. Justification for this project is that it will complete a missing section of sidewalk leading to and from E. E. Smith Middle School along a high traffic strip commercial area. Implementing a priority project such as this brings reality to the possibility of others to come. While this project merits early focus there may be others among the list the town may concurrently pursue or be open to consider earlier due to available sponsors funding sources. In other words, do not pass over a lower priority improvement while striving to implement the most desired ones. A system of interconnected walkways will be increasing as more projects are accomplished.

A RESOLUTION ADOPTING
TOWN OF KENANSVILLE
PEDESTRIAN PLAN

WHEREAS, walking is an important mode of transportation which benefits the quality of life for the communities, businesses, residents and visitors within the Town of Kenansville; and

WHEREAS, a well-designed, connected, safe pedestrian transportation system is critical to the quality of life of the citizens of Kenansville and sound development of the community; and

WHEREAS, the adopted Kenansville Land Use Plan-2020 called for development of a pedestrian plan in recognition of the importance of improving and expanding the Town's pedestrian infrastructure to the Town's future development, by providing diverse modes of transportation for all citizens, and to maintain the quality of life within the Town; and,

WHEREAS, the Town of Kenansville has entered into a municipal agreement with the N.C. Department of Transportation, Division of Bicycle and Pedestrian Transportation whereby the Town shall develop and adopt a Pedestrian Plan; and,

WHEREAS, the Board of Commissioners appointed a Pedestrian Plan Steering Committee (hereafter, "the Committee") and charged the Committee with the task of developing a Pedestrian Plan; and,

WHEREAS, the City contracted with Clark Planning & Associates, LLC to provide consultant services in the development of a Pedestrian Plan; and,

WHEREAS, Clark Planning & Associates, LLC, in consultation with the Committee and Town Staff, and after receiving extensive public input the Town of Kenansville, has prepared the Town of Kenansville Pedestrian Plan; and,

WHEREAS, on the Committee has recommended that Board of Commissioners adopt and implement the Kenansville Pedestrian Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF THE TOWN OF KENANSVILLE, NORTH CAROLINA, THAT:

Section 1. The Kenansville Pedestrian Plan dated November 2007 is hereby adopted and shall serve as policy of the Town of Kenansville, North Carolina, as the primary guide to the installation and improvement of new and existing pedestrian infrastructure within the Town.

Section 2. The Kenansville Pedestrian Plan is hereby referred to the Town Clerk, Public Works Director, Planning Board and the Committee for implementation, including proposals for consideration by the Board of Commissioners, including but not limited to policies, regulations, capital projects, grant applications, and collaboration with NC DOT and other agencies as appropriate.

Section 3. The Town Clerk shall report to the Board of Commissioners progress toward implementation of the Pedestrian Plan and suggestions for modification. Major review and updating will be considered as needed but is expected every five years.

Section 4. The Town Clerk is hereby directed to forward this adopted Kenansville Pedestrian Plan to the Eastern Carolina Rural Planning Organization and the North Carolina Department of Transportation for review, adoption, and implementation as appropriate. The Town Clerk, with assistance of Clark Planning & Associates, LLC, is authorized to make such minor amendments and modifications as are required by the North Carolina Department of Transportation for compliance with agency and grant requirements.

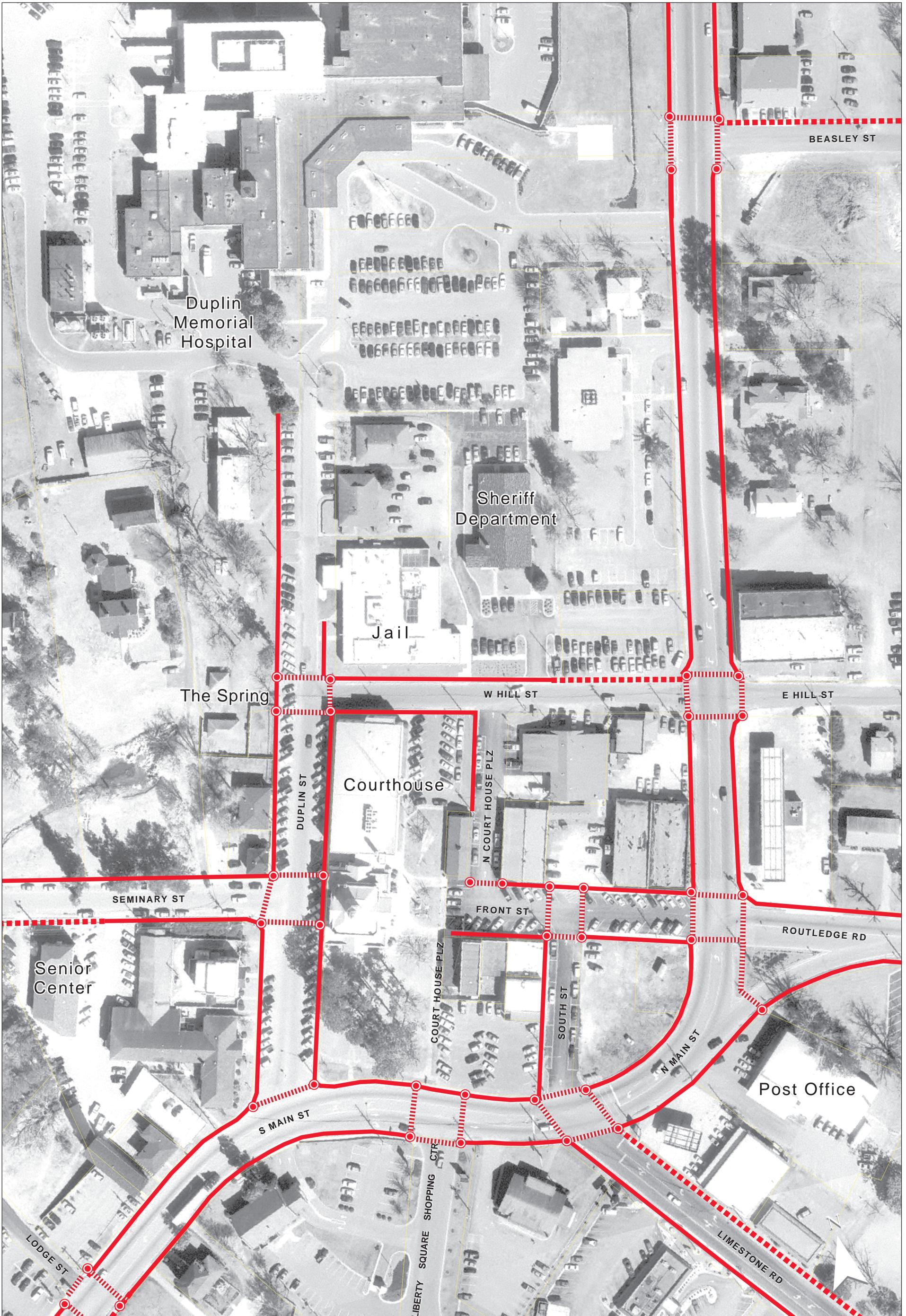
Section 5. This Resolution shall become effective upon its adoption.

Adopted this the 3rd day of December, 2007.

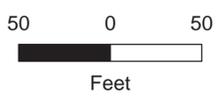
(signed)
Betty Long
Mayor

ATTEST:

(signed)
Cristal R. Jenkins
Town Clerk



Kenansville Pedestrian Plan DOWNTOWN



- Ramps
- - - - - Crosswalks
- Existing Sidewalks
- - - - - Proposed Sidewalks
- - - - - Property Lines

Plan adopted by Kenansville Board of Commissioners 12/3/2007
 Orthophotography, tax parcels, and street centerlines provided by
 County of Duplin/Duplin County Tax Office GIS.
 The preparation of this map was financed, in part, through a grant
 from the NC DOT Bicycle and Pedestrian Grant Initiative.
 Projection System: NC State Plane 83 Units: Feet.
 Prepared for Clark Planning by K. Mulcahy 12/11/05, updated
 8/5/06, and final map prepared 12/26/2007.

Kenansville Pedestrian Plan

OVERVIEW

- Sidewalks**
-  Existing
-  Proposed
- Off Road Trails**
-  Existing
-  Proposed (see note)
-  Truck Route
-  Town Limits
-  Roads
-  Streams
-  Property Lines
-  Flood Zone AE

Note: Proposed trails are illustrative corridors, detailed study determines exact route.

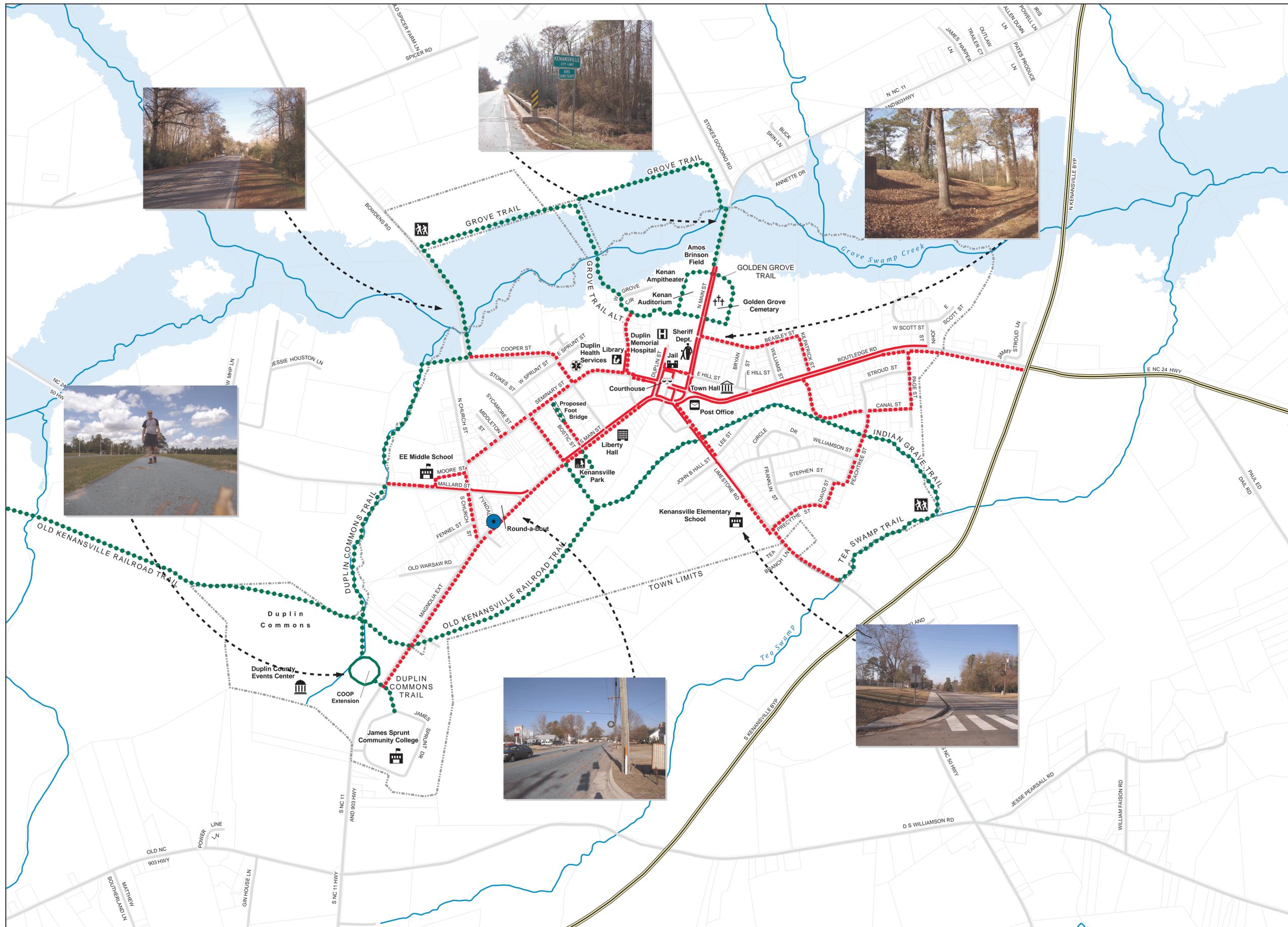
Plan adopted by Kenansville Board of Commissioners 12/3/2007

Orthophotography, tax parcels, and street centerlines provided by County of Duplin/Duplin County Tax Office GIS

The preparation of this map was financed, in part, through a grant from the NC DOT Bicycle and Pedestrian Grant Initiative.

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Appendix A. Public Participation

The public's involvement in identifying issues and strategies important to bettering the local pedestrian environment began with the Vision Plan 2004 (set forth in Appendix C) more than a year before the formal plan preparation started. The public participation strategy used during development of the Kenansville Pedestrian Plan allowed local residents many opportunities for involvement in its formation. Through use of publicity and town-wide distribution of the Walkability Survey presented in Appendix B, frequent meetings of the Pedestrian Plan Steering Committee, and two public forums, local residents identified concerns with the lack of safe, enjoyable, and convenient places to walk. Residents' suggestions taken throughout the planning process helped formulate the plan.



In addition to advertised notices placed in the *Duplin Times*, the Steering Committee distributed the following brochure and flyer to inform people of the first forum held February 21, 2006. Participants attending the forum, held at the new Duplin Commons Cooperative Extension Building, reviewed results of the Walkability Survey, the consultant's analyses of existing conditions, and preliminary maps and plans prepared to address citizens concerns.

A second public forum on the Draft Plan was an advertised special two-hour session with the Town Board of Commissioners held in Town Hall on May 15, 2007. The *Duplin Times* covered the forum and reported on the draft plan.

Appendix B. Kenansville Walkability Survey

Between late January and March 2006, the Kenansville Pedestrian Plan Steering Committee conducted the Kenansville Walking Survey to assess the pedestrian needs of community residents and workers.

The purpose of the survey was to understand the principal reasons residents choose to walk, where they prefer to do this activity, and what might motivate or discourage them to do more. Respondents listed their first and second choices of where the town should pursue additional sidewalks or paths. For the purposes of this study, “walker” is a broad term, defined as someone needing or desiring pedestrian activity for exercise or enjoyment or needing to reach a destination for work, attend school, or to get services (i.e., getting mail, groceries, library book, etc.).

The consultant provided the Steering Committee sample survey instruments and questions administered in other North Carolina communities. The Steering Committee reviewed and validated the instrument. *Duplin Times* published a news release in advance of survey distribution. Every water customer received a copy of the instrument via the town’s monthly water billing. The distribution reached four hundred service addresses. Additionally, the steering committee asked residents entering Town Hall to complete the survey. In addition, a sampling of employees concentrated in the downtown and Duplin General Hospital responded to the questionnaire. The committee wanted to see if non-resident workers concentrated in Kenansville’s core held views similar to residents. The committee members also registered their responses. The data were analyzed using descriptive statistics.

Question #One—Where are sidewalks or walking paths needed most? Respondents wrote suggestions for places they wished the town to add sidewalks or paths. The numbers in parentheses (N) represent repeated suggestions for the same idea.

- S. Main St. from JSCC and Duplin Commons/ Agribusiness Center along Hwy 11 to “2 Dogs Pizza” & Hwy 24 and downtown (17)
- Path in or around park and woods (15)
- Complete sidewalk along Seminary St.—the area between Health Department and Library (9)
- From town to EE Smith Elementary School (2)
- Front of EE Smith Elementary School (2)
- A sidewalk all the way from the elementary school to playground park (2)
- More sidewalks anywhere in town (4)
- East side of Routledge
- From Brown’s Service Center to Employment Office and from Brown’s Service Center to Duplin County Schools Garage
- A lot of people walk on the unpaved side of Routledge St. because this is the side where most people live (on back or side streets). They don’t cross the street to walk on the paved sidewalk. A sidewalk needs to be put in for safety of people who do walk. It is a dangerous place to be walking because of the traffic.
- Pine Crest Acres (2)

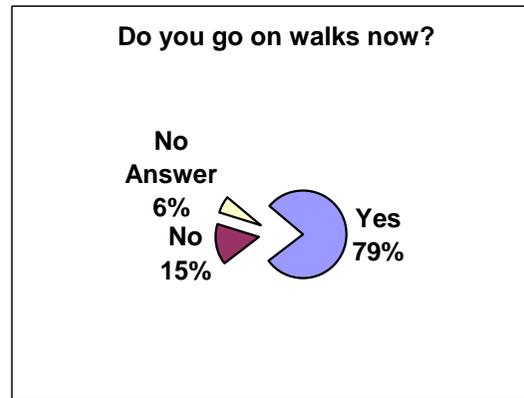
- Williams St.
- Canal Street
- Kenan Park and along Hwy 24 on right (north side)
- In parks and along streets
- Cooper Street
- Side streets
- All way down Routledge to Hwy 11
- Stokes Street
- Beasley Street (2)
- In front of Liberty Hall and along Seminary St.
- In town and NC Hwy 50
- Town Commons
- Should be part of all neighborhoods
- Shaded areas
- Lighted downtown area
- Nature trails or greenway (2)
- South Kenansville sidewalks
- Greenway connecting Kenansville to Warsaw
- Area around Kenansville Post Office
- Area around Main and Hill Street (Pizza Corner)
- Connecting existing sidewalks –one end of Kenansville to other
- Need walking trail at Duplin General Hospital for employees

Question #Two—Would you walk more if there were more sidewalks or paths? Eighty-four percent of respondents said they would take advantage of additional places to walk. Such high support for improving pedestrian infrastructure is evident too in the long list of places desired for walking shown above. Concerns over unsafe vehicle traffic, poor health, and lack of a walking companion were frequent reasons sixteen percent of those surveyed would not increase their frequency of walks or time walking if there were more walkways. In early morning and late afternoon walkers use streets and road shoulders for paths. Some emerge from their neighborhoods to use sidewalks along Routledge Road and Main St. When asked about attitudes regarding specific walking activities, the respondents reported that an improved walking environment would entice them to walk more often. The worst, least safe, places to walk include crossing Main St. in front of the US Post Office and the entire stretch from S. Main Street near the Dollar General Store to Kenansville Park. These findings were consistent with general comments received from the committee and attendees at two public forums.

Question #Three—Do you go on walks now? Four of five adults surveyed (79%) in Kenansville walk somewhere in town and most often they do so to maintain or improve their health (89%). A third of Kenansville's walking adults indicate they like to walk because it is enjoyable. Around the same number (26%) suggest adding off-road paths to Kenan Park, similar to the one around the Agriculture Center in Duplin Commons.

Question #Four—If yes, what are the reasons you walk now? The survey shows 91 percent walk for improved health. Thirty-four percent walk for pleasure. The survey questionnaire may have suppressed other responses by listing but two (health and enjoyment) of potentially many reasons

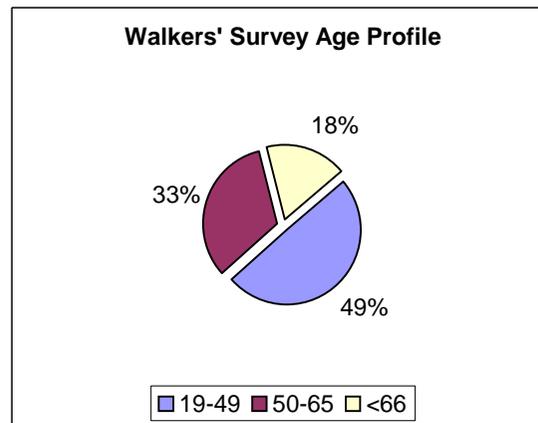
someone may walk. Elsewhere the survey results suggests respondents were interested in other uses of walkways, namely: safe places for children and adults to access schools, library, post office, health department, downtown, and the James Sprunt Community College Campus.



Question #Five—Where do you most often walk? With the lack of sidewalks in neighborhoods, walking takes place close to home as nearly half (46%) of adults are using their neighborhood streets and street shoulders for walking. Roughly one-half of those surveyed make use of existing sidewalks for their walks (47%). One out of five Kenansville adults goes to a neighborhood other than their own to walk. The sidewalks along Routledge Road were the most often mentioned places for someone to walk outside ones own neighborhood. Other choice walking places include downtown (22%), school grounds (9%), and the trail at Duplin Commons (12%). Walking at ones work place occurs with sixteen percent of adults indicating this was most convenient to them. Other places mentioned include ones yard, a field, and on a treadmill.

Question Six—What things keep you from doing more walking? Interestingly, "too busy" lead the list of reasons given by half of those surveyed for not walking more often. A number of respondents indicated they had limitations to their being able to walk at all or more often. Among the top reasons cited were poor health, dogs, not enough places to walk, and no walking companion. Approximately 8 percent of the respondents indicated that they are physically limited from walking. A few people mentioned fear of crime as a reason for staying away from outside walks. While better than a third (35%) of the people, felt unsafe from traffic. Specifically, unsafe street crossings concerned one in five people. Six percent felt they would walk more if more people were seen walking. It would be interesting to follow-up with the person who wrote, "Just don't want to." Eighteen percent of adults surveyed listed the lack of a nearby off-road paths or trails as their reason for not walking more often.

Who responded to the questionnaire? **Question 7—Your age group?** The questionnaire distribution method influenced the pool of respondents as likely being adults (utility customers, workers, ad committee members). Among the adults in the survey of households nearly half (49%) were between 19 and 49 years. This group represents a prime audience of adults likely to be in the income producing pool, have children or younger grand children. Eighteen percent were in the traditional retirement age group of seniors age 66 and older. Maintaining mobility, reducing risks for heart disease, stroke, and diabetes are among the likely health concerns of this age group. One-third (33%) of the survey pool were adults between 50 and 65 years.



Other Comments or suggestions: Summarized below are comments offered by twenty percent of the survey pool completing the questionnaire. This statement is pertinent, "Surveys are great! Now, follow through!"

- Motorists in the morning are not observing the speed limit, especially coming into town on Routledge. Some drivers are speeding in excess of 50 mph. or more—its like a raceway sometimes. Maybe you could borrow the speed indicator used periodically by Faison on Hwy 117.
- There are a lot of people that walk in Pine Crest Acres and Canal Street up to Hwy 24 and back to Downtown.
- Kenansville is a good place to be and to walk
- A nature trail would be nice
- The hill on Cooper St. is unsafe
- It would be nice if Kenansville had a nice gym and sidewalks to walk on for nice days
- Don't walk on street anymore, go to Goldsboro gym
- Stop leaking of hydrant on Routledge. It causes slippery sidewalk and could cause a fall and possible lawsuit. Fix the sidewalks we have.
- Need lighting and supervision
- Add bike paths and/or shoulders on roadways
- Surveys are great! Now, follow through!
- Need fitness center and work time to access facility.

- Need incentive program to get workers health conscience
- KidsWorld at Westbrook Park in Mount Olive has a nice paved trail around perimeter
- Use treadmill, would walk more if we had enjoyable places to walk. I used to walk in other towns I lived in to see nice homes and landscaping
- I would walk at JSCC or the Commons
- I don't walk much in Winter months—too cold. I try to go to Curves at lease 2-3 times a week.
- Need pool in Duplin Commons for older people with Arthritis

In sum, when asked about attitudes regarding specific walking activities, the respondents reported that the following would improve the walking environment in Kenansville: (a) sidewalks (b) trail/path, and (c) healthy living. The worst, least safe, places to walk include crossing Main St. in front of the US Post Office and the entire stretch from S. Main Street near the Dollar General Store to Kenan Park. These findings were consistent with general comments received from the committee and attendees at two public forums. Again, the study found 84 percent of respondents would walk more frequently if there were more places to do so. The most frequently areas mentioned for walking were the sidewalks along Routledge Road, grounds within Kenansville Park, the downtown area, within Duplin Commons, and the campus at James Sprunt Community College (JSCC). These public places need further improvements and better connectivity with one another and other sties. According to those surveyed, neighborhoods and business areas along principal streets near E.E. Smith Middle School and the Kenansville Elementary School are stretches where additional sidewalks and paths would benefit the community. While the worst, least safe, places to walk include crossing Main St. in front of the US Post Office and the entire stretch from S. Main Street near the Dollar General Store to Kenan Park. These findings were consistent with general comments received from the committee and attendees at two public forums.

The walkers' survey respondents indicated that they would like to see Kenansville become a good place to walk and serve as an example for other Duplin County towns. Thus, respondents reported a strong demand for Kenansville becoming a walkable community for improved health and enjoyment of its residents. A good network of interconnected walks will help ensure the safety of older adults and children currently lacking reasonable access to these facilities. Programs to encourage a walking habit are the other part of the need. Respondents suggested ideas for improving the environment for walkers: (1) better lighting, (2) maintenance or existing sidewalks, (3) more shaded areas, (4) controlling dogs, and (5) walking in pairs.

Furthermore, results of the study suggested that stakeholders should continue exploring new ways to expand pedestrian facilities in Kenansville. While some Kenansville residents and visiting employees have benefited from sidewalk improvements in previous years, the study revealed the need for the Kenansville Board of Commissioners to find more ways to fill gaps in the town's pedestrian infrastructure. The challenge will be how to set priorities so that some improvements happen every year while finding partners to undertake projects that are more complex.

KENANSVILLE WALKING SURVEY

The Town of Kenansville is studying how best to improve or provide places, facilities, and programs for walking. Please complete this form and return it to Town Hall before February 1, 2006.

1. Where are sidewalks or walking paths needed most?

1st choice _____

2nd choice _____

2. Would you walk more if there were more sidewalks or walking paths? Yes ___ No ___

3. Do you go on walks now? Yes ___ No ___

4. If yes, what are the reasons you walk now?

a. ___ health

b. ___ enjoyment

c. ___ do not drive

d. ___ other. _____

5. Where do you MOST OFTEN walk?

a. ___ at a park

b. ___ on a trail or path

c. ___ on school grounds

d. ___ on sidewalks

e. ___ on streets in your neighborhood

f. ___ in the downtown

g. ___ on streets in other neighborhoods

h. ___ at your work place

i. ___ not sure

j. comment _____

6. What things keep you from doing more walking?

- a. too busy
- b. poor health
- c. no one to go with
- d. dogs
- e. no nearby paths or trails
- f. no nearby parks
- g. unsafe street crossings
- h. no shops or interesting places to go
- i. not enough people walking
- j. fear of crime
- k. too many cars

7. Your age group?

- a. less than 18 years
- b. 19 - 49 years
- c. 50 - 65 years
- d. 66 years plus

Other Comments or suggestions:

Thank You!

Appendix C. Vision Plan

Vision Plan (Excerpted from report) prepared in 2004 by the Planning Board, Board of Commissioners' appointed task forces, citizens, and South East Regional Office, Division of Community Assistance

Key Issue: Strengthen and Sustain the Community

Kenansville is a wonderful place to work and live. Its residents share common values that reflect small town living. The town limits do not define the boundary of the community; the Kenansville community goes far beyond the corporate limits into the surrounding rural area. Kenansville of the future will continue to foster its small town values and seek to strengthen and sustain the community.

Vision Statement Kenansville will continue to foster its small town values and strengthen and sustain the community.

STRATEGIES

GROWTH MANAGEMENT

- . Ensure that ordinances are enforced NT
- Hire and train an enforcement officer NT
- . Prepare and adopt subdivision regulations NT
- . Develop a citizen involvement plan to inform the public on issues facing the community and encourage their participation in the planning process NT
- Planning Board conduct quarterly or semi-annual public meetings to address issues and provide educational opportunities NT
- Publish community newsletter NT
- . Review and update the existing zoning ordinance NT
- Provide for more open space within town
- Address sign provisions in ordinance - size, type, height, banners, signs placed on light poles.
- Review junk car provision
- Include architectural guidelines
- Parking lot regulations and landscaping
- . Establish a tree protection ordinance MT
- . Prepare a comprehensive land development plan L T

- Hire a consultant to prepare plan
 - Appoint a steering committee to guide process
- Elements of the plan should include: land use, water supply, waste disposal, storm water, transportation, historical preservation, open space and parks facilities, community appearance and architectural standards

APPEARANCE AND IDENTITY

- . Create a litter/landscaping maintenance plan for streets and sidewalks

NT

Use outside resources to assist with maintenance of curbs, streets and sidewalks - DOT, prison inmates and service groups **NT**

- . Encourage the preservation of the area's natural beauty **NT** Develop a campaign to stop littering and encourage pride in the community **NT**.

Investigate placing more attractive trash cans in the. downtown area NT

Identify landscaping opportunities **NT**

Parking lots

Entrances into town

Coordinate activities with the Kenansville Action Group **NT** . . Develop a community identity program that reflects Kenansville's historic character **NT**

Include the town's motto: *Proud of its Past - Pride in its Future* and develop a logo

Incorporate the town's motto and logo in a signage program Develop a downtown

"community place" where citizens can

gather and talk

Emphasize the historic character of the town while encouraging new, appropriate development

Key:	NT = Near Term
	MT = Mid Term
	LT = Long Term

Appendix C. Vision Plan

Key Issue: Preserve and Enhance the Historic Character of the Community

Kenansville is a community that takes pride in its history and historic structures. There are many architecturally significant structures still standing in town along with stories both written and oral to go along with them. The citizens want to preserve the historic character of the town as well as pass along their knowledge and love of the community to future generations and visitors.

Vision Statement Kenansville is a community that appreciates and protects its historical background and architectural heritage and shares it with future generations and visitors.

STRATEGIES

HISTORICAL BACKGROUND

- . Collect and safe keep oral history of the *community* NT
 - Identify individuals that are sources of oral history and collect information from them NT
 - Establish guidelines for recording oral history NT
 - Host teas for oral history contributors to gather and record information NT
- . Establish a repository and program for oral history, cultural artifacts, genealogy *information* and historical materials MT
 - Establish a non profit organization to administer the program MT - Select a location to serve as the repository MT
 - Invite contributions of historical materials MT & L T
 - Seek ways for the financial support of the facility MT
 - Make collection-available for the public LT
 - Determine location of the Confederate Arms Factory in Kenansville LT

BUILDINGS AND CHARACTER

- . Preserve and protect the historic structures and character of the community NT
 - Establish a Historic Properties Commission NT
 - Prepare a map of the National Register Historic District NT
 - Establish architectural guidelines for commercial buildings in the zoning ordinance NT

Key Issue: Create Economic Opportunities for All Ages and Groups

The people of Kenansville want their community to grow and prosper, for their children to have the option of finding employment and remaining in the area after graduation from high school or returning after college and an environment that fosters new business development. Being the governmental center of the county offers options that the town should maximize to create new economic opportunities.

Vision Statement Kenansville will provide community services that enhance the quality of life for the citizens of Kenansville as well as attract businesses to the area for future growth.

STRATEGIES

- . Provide water and sewer service to 100% of town residents. NT
- . Extend water and sewer lines to Kenansville Bypass interchanges. L T
- . Explore the possibility of an Extraterritorial Jurisdiction Ordinance to encourage business development. NT
- Extend zoning into Extraterritorial Jurisdiction MT
- Enforce subdivision regulations MT
- . Request NC DOT to erect logo-directional signs on Bypass to direct travelers to downtown area restaurants and shops. NT
- . Encourage motel and restaurant development to serve Agri-Business Center users. NT
- . Expand recreational activities to include soccer; encourage athletic tournaments to bring visitors/money into the area. MT
- . Develop a local festiv-1 to attract tourists and local patrons. (Examples Mt. Olive Pickle Festival, Burgaw Blueberry Festival) MT

Kenansville Sidewalk Inventory -- Sheet 1 of 3 --

STREET (direction)	SIDE	SECTION BETWEEN BLOCKS	LENGTH (ft.)	WIDTH (ft.) not counting obstructions	Grass strip between street & walk	ADA RAMPS (Yes/No)	CONDITION	MATERIAL	SHADE TREES	LIGHTING	OBSERVATIONS	RECOMMENDATIONS	origin-destination
Front St. (west)	(N)	Main St. - N. Ct. House Plaza	225	9	No	Yes	F	C	None	Poor	2.5 ft. bumper clearance, storefront access conflicts; store front loading; effective width reduced to 6 ft	add curb bulb-outs, tree pits, trees, lamp posts, running brick edge & distinctive cross walks	Downtown
Front St. (west)	(S)	Main St. - South St.	130	6	No	Yes	Fair	C	None	Poor	No curb or stops; narrow street; vehicles block walk	acquire easement strip; replace sidewalk with new 10 ft section, add car stops or curb	Downtown
Front St. (west)	(S)	South St. - Court House Plaza steps	111	8	No	No	Fair	C	None	Poor	2.5 ft. bumper clearance, storefront access conflicts; store front loading; effective width reduced to 5.5 ft	Add curb bulb-outs, tree pits, trees, lamp posts, running brick edge	Downtown
N. Ct. House Plaza	(W)	W) Front St. - W. Hill St.	120	3	No	No	Fair	C	None	Poor	sidewalk too narrow with curbside parking	replace with 5 ft walk	Downtown
South St.	(W)	Main St - Front St.	180	5	No	No (N); Yes (S)	Fair	C	None	Poor	Parallel parking- opening vehicle doors reduces effective width to 3 ft.; street parking lane too close to crosswalk	widen to 8 ft; change to angled parking, street trees & lamp posts	Downtown
South St.	(E)	Main St. - Front St.	0	0	n/a	Yes	n/a	n/a	None	Poor	next to vacant lot; require zero storefront setbacks to new sidewalks	purchase easement strip; add 10 ft. decorative walk	Downtown
W. Hill St.	(S)	N. Court House Plaza - Duplin St.	167	4	No	No	Fair	C	None	Poor	Exit drive & tel. pole conflicts next to intersection; landscaped lawn	widen sidewalk or relocate pole; corner ramp	Downtown
W. Hill St.	(N)	Sheriff's Dept. entrance - Duplin St.	258	5	no	Yes	E	C	None	Poor	planting area in front of Sheriff's Dept. & jail	Plant shade trees; lamp posts; bench & waste basket	Downtown

Kenansville Sidewalk Inventory -- Sheet 2 of 3 --

STREET (direction)	SIDE	SECTION BETWEEN BLOCKS	LENGTH (ft.)	WIDTH (ft.) not counting obstructions	Grass strip between street & walk	ADA RAMPS (Yes/No)	CONDITION	MATERIAL	SHADE TREES	LIGHTING	OBSERVATIONS	RECOMMENDATIONS	origin-destination
Duplin St.	(E)	Main St. - W. Hill St.	437	5	no	Yes (N) No (S)	Good	C	None	Poor	green area with trees S. of Ct. House	add mid-block crosswalks at Seminary St.	Downtown, Courthouse
Duplin St.	(W)	Main St. - Seminary St.	216	5	no	Yes	Good	C	None	Poor			
Duplin St.	(W)	Seminary St. - Hospital drive	522	5	no	Yes (S)	Good	C	None	Poor	Lacking mid-block ramps & crosswalks at park entrance opposite W. Hill St.	Add ramps & mark crosswalks	
Duplin St.	(E)	W. Hill St. - jail driveway	72	5	no	Yes (S)	Good	C	None	Poor			
Routledge Rd.	(N)	Main St. - E. Hill St.	960	5	Yes	Yes	Good	C	None	Poor	standard crosswalk at Main St. signaled intersection; acute street angle at E. Hill	spot safety project @ E. Hill	Town Hall & Police Department
Routledge Rd.	(N)	E. Hill St. - Williams St.	355	4	Yes	Yes	Good	C	Some	Poor	no cross walks; extra street width & parking lanes when combined with speeding - unsafe pedestrian crossings	add corner marked crossings	neighborhood
Routledge Rd.	(N)	Williams St. - Kilpatrick St.	470	4	Yes	Yes	Good	C	Some	Poor			
Routledge Rd.	(N)	Kilpatrick St. - Star Christian Academy	1030	4	Yes	Yes	Good	C	Some	Poor		add mid-block marked crossing	
Routledge Rd.	(N)	Star Christian Academy - John St.	950	5	No	Yes	E	C	None	Poor	mail boxes in sidewalk reduce width to 3 ft; no grass strip		
Routledge Rd.	(S)	Main St. - Canal St.	1765	5	Yes	Yes	Good	C	Some	Poor			
Routledge Rd.	(S)	Canal St. - near Page St.	1192	5	Yes	Yes	Good	C	Some	Poor	570 ft. short of Page St	extend to Page St.	
Limestone Rd.	(SW)	S. Main St. - John B. Hall St.	1130	5	no	Yes	E	C	Some	Poor	lacks traffic separation	Add sidewalk to NE side of Limestone St.; with wide planting strip	School
Limestone Rd.	(SW)	John B. Hall St. - Kenansville Elementary School	720	5	no	Yes	E	C	Some	Poor	Continental style crosswalk at school entrance drive		
Seminary St.	(S)	Duplin St. - Senior Center	280	5	No	No	Fair	C	Some	Poor		extend to Lodge St	Senior Center
Seminary St.	(N)	Duplin St. - Bowden Dr.	480	5	No	No	Fair	C	Some	Poor	Ample room to extend walk with planting tree lawn to Health Dept & Cooper St.	ramps & maintenance; crosswalk Bowden intersection;	Library, neighborhood; County offices
Bowden Dr.	(W)	Seminary St. - past Library	310	5	No	No	Fair	C	None	Poor		extend (N) sidewalk	
Bowden Dr., neighborhood	(E)	Seminary St. - past Duplin C. Administration Offices	260	5	No	No	Fair	C	None	Poor			

Kenansville Sidewalk Inventory -- Sheet 3 of 3 --

STREET (direction)	SIDE	SECTION BETWEEN BLOCKS	LENGTH (ft.)	WIDTH (ft.) not counting obstructions	Grass strip between street & walk	ADA RAMP (Yes/No)	CONDITION	MATERIAL	SHADE TREES	LIGHTING	OBSERVATIONS	RECOMMENDATIONS	origin-destination
N. Main St.	(W)	W. Hill St. - Hospital Entrance	500	5	Yes	No	Good	C	None	Poor		install ADA curb ramps	Hospital
N. Main St.	(W)	Front St. - W. Hill St.	206	5	Yes	Yes	Fair	C	None	Poor			Downtown
N. Main St.	(W)	Hospital Drive - N. of Kenan Auditorium	1190	5	Yes	Yes	Good	C	None	Poor			Hospital, Auditorium
N. Main St.	(E)	Front St. - E. Hill St.	206	5	Yes	No	Fair	C	None	Poor	wide drives - gas lanes for convenience store		Downtown
N. Main St.	(E)	E. Hill St. - Beasley St.	593	5	Yes	No	Good	C		Poor			Medical dist.
N. Main St.	(E)	Beasley St. - N. of Golden Grove Cemetery	1092	5	Yes	No	Good	C		Poor	need ramps especially near cemetery		
S. Main St.	(E)	Front St. - signal to east bound lane of Routledge Rd.	70	4	Yes	Yes	Poor	Asph.	None	Poor	landscaped traffic island & asphalt walk; no crosswalk at Post Office side	shift walk eastward; add ramp & crosswalk	Post Office; downtown
S. Main St.	(SE)	east bound lane Routledge Dr - Limestone Rd. (signals)	205	5	Yes	Yes	Good	C	None	Poor	standard crosswalk markings; excessive Post Office drive width; sharp curve with center turn lane	upgrade crosswalks - greater visibility & pedestrian activated signals	Downtown, Shopping Ctr.
S. Main St.	(S)	Limestone Rd. (signals) - Liberty Square SC drive	125	5	Yes	Yes	Good	C	None	Poor	standard crosswalk markings; sharp curve, center turn lanes; acute angle intersection		
S. Main St.	(S)	Liberty Square SC drive - to just past Lodge St.	540	5	Yes	Yes	Good	C	None	Poor	Sidewalk ends mid block opposite IGA store	extend to Kenan Park, Mallard St. with wide grass strip	
S. Main St.	(W)	Duplin St. - Lodge St.	289	5	Yes	Yes	Fair	C	None	Poor	utility pole, sunken drop box @ parking lot at Lodge St		
S. Main St.	(W)	Lodge St. - Cooper St.	607	5	Yes	Yes		C	Good			add historic lamp posts both sides	Historic Dist., neighborhood
S. Main St.	(W)	Cooper St. - Bostic St.	435	5	Yes	Yes		C	Good		specimen live oak at Southern Bank shades walk		
S. Main St.	(NW)	Bostic St. - Stokes St.	320	5	Yes	Yes		C	None				
S. Main St.	(W)	CVS Pharmacy drive -right on Mallard St.	175	5	Yes	No	E	C	None		major intersection; acute angle west-bound lane curve at CVS; narrow grass		Shopping & school
Mallard St. (NC24/NC50)	(N)	S. Main St. signal - Church St.	904	5	Yes	Yes		C			Students crossing at too many unmarked places	"Safe Routes" to School funding possible	Shopping & school
Mallard St. (NC24/NC50)	(N)	Moore St. - E. E.. Smith School	546	5	Yes	Yes		C			Students crossing at too many unmarked places		School

Appendix E. Illustrations and Cross Sections



Figure E.1 Front Street streetscape with pedestrian lighting, sidewalk treatment, crosswalks and parking

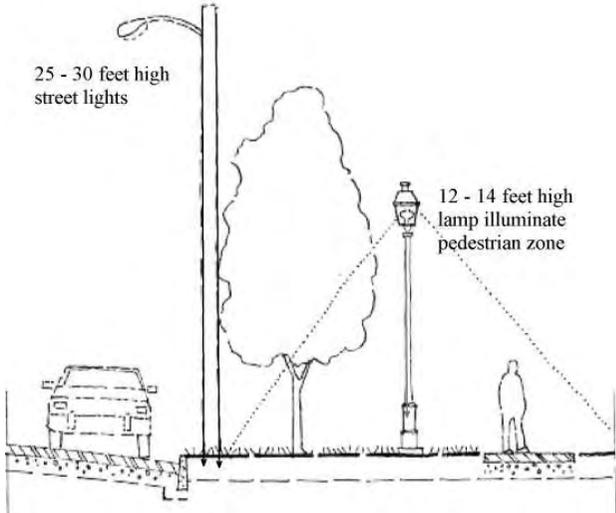


Figure E.2 Pedestrian scale lighting

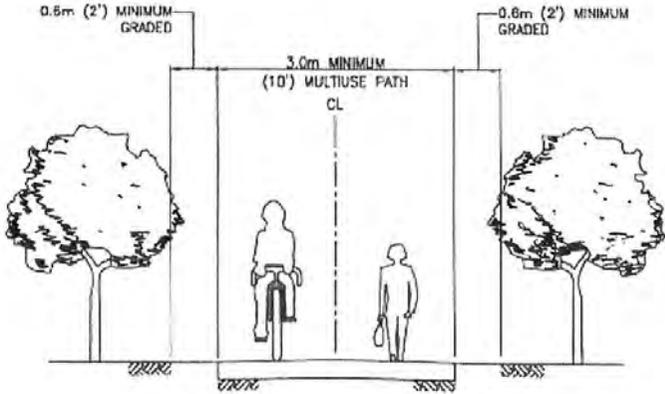


Figure E.3 Multi use path

Appendix F. Potential Funding Sources

Implementation of the pedestrian program needs funding. Many North Carolina communities have learned it takes a variety of funding sources combined with local funds, volunteer labor, municipal labor and appropriations, and private foundations, corporations, and sponsors. Local foundations and businesses generally like to participate in community projects. Volunteers, cost sharing, donations, and adopt-a-trail efforts generate interest and pride in the completed project.

Funding off-road trails usually requires a combination of public and private sector funds. Federal, State, Local funding typically requires matching monies and/or in-kind labor or materials contributions. Leveraging outside funding by using local funds is challenging, but possible. Local advocates should pursue a variety of funding sources. State grants may match Federal grants with local funds and donations covering a share. The funding sources listed in Table F.1 of this appendix have interest in trails, recreation, and greenway projects and represent some of the funding sources typically sought by other communities to meet their pedestrian facilities needs.

Table F: Funding Sources for Trails, Sidewalks, Greenways	
Federal Sources	
Transportation Equity Act for the 21st Century (TEA21)	TEA21, formerly the Intermodal Surface Transportation Efficiency Act (ISTEA), is the primary source of federal funding for greenways, providing millions of dollars in funding for bicycle and pedestrian transportation projects across the country. Many sections to TEA21 provide authority for several programs NCDOT chooses to distribute funding. Listed below are three such programs, namely the Surface Transportation (STP) funds, Transportation Enhancements Program, and Recreation Trails Program.
Surface Transportation Program (STP) funds	A component of TEA21, this program funds projects for bicycle and pedestrian facility construction or non-construction projects such as brochures, public service announcements, and route maps. The projects must include bicycle and pedestrian transportation and are required to be part of the Long Range Transportation Plan. Surface Transportation Program (STP) funds can be used to build walkways, public service announcements, brochures and other means of promoting safe walking. STP funds are use for upgrading sidewalks to comply with ADA handicapped access requirements. Kenansville is in Duplin County and together with Lenoir, Wayne and Greene County these local governments are participants in the East Carolina Regional Planning Organization (RPO). Among criteria for qualification, the community should seek RPO endorsement and placement of its priority projects on the State

	Transportation Improvement Plan (TIP). Priority projects from those identified in adopted Greenway or Pedestrian Plans stand better chance of receiving TEA21 funds.
Transportation Enhancements Program	A component of TEA21, this program appropriates ten percent of North Carolina's annual STP funds for projects such as trails, greenways, sidewalks, signage, bikeways, safety education and wildlife under crossings. A 20 percent local match is usually required. NCDOT administers the TEA21 program and projects must conform to several federal laws and regulations to be eligible to receive the funds. Powell Bill Funds may be used for this match for sidewalks and regulatory signage within street right-of-ways.
Recreational Trails Program	A component of TEA21, this program is formerly known as the Symms National Recreational Trails Fund Act (NRTFA or Symms Act). Grants for the building of a trail or piece of a trail go to government and non-profit agencies and range from \$5,000 to \$50,000. It is a reimbursement grant program (The sponsor must fund 100% of the project up front) and requires a 20% local match. Local matches can be in the form of donations of services, materials or land. This is an annual program, with an application deadline at the end of January. Thirty percent of the funds go towards motorized trails projects, 30% to non-motorized trails, and 40% is discretionary for trail construction. This money can be spent on the acquisition of easements and fee simple title to property, trail development, trailhead parking and bathroom facilities, and construction. This program's intent is to meet the trail and trail-related recreational needs identified by the Statewide Comprehensive Outdoor Recreation Plan.
Safe Routes to School (SRTS)	SRTS targets ways of making safer walking environments for elementary and middle school students. Monies are available for planning and implementation of projects and activities that improve safety within approximately walking distance of elementary and middle schools. The funds may be used to build sidewalks and multi-use trails. In addition, the SRTS funds pedestrian safety programs aimed at students, teachers, parents, and drivers.
Highway Safety Improvement Program (HSIP)	The Highway Safety Improvement Program (HSIP) was created by SAFETEA-LU to allow states to target critical safety needs. The proposed median crosswalk installation proposed at the US Post Office is one of Kenansville's potential unsafe pedestrian safety locations. Another potential safety improvement zone is the congested area between EE Smith Middle School and Kenansville Municipal Park..
State Roadway Construction Funds	Pedestrian facilities as part of roadway projects or sole projects qualify of State Roadway Construction

	Funds. Sidewalk construction on roads that are not scheduled for improvement may be included for a portion of the \$100,000 available per NCDOT Highway Division for hazard elimination projects.
Community Development Block Grant Program	Through the state CDBG Program, the U.S. Department of Housing and Urban Development (HUD) provides States with annual direct grants, which the CDBG program in turn awards on a competitive basis to smaller communities and rural areas for use in neighborhood revitalization, expanding affordable housing and economic development, and improvements to community facilities and services, especially in low and moderate-income areas. Recreation trails may be included Larger communities receive HUD entitlement funds based on local priorities
Urban and Community Forestry Assistance Program.	With adoption of a tree ordinance, annual expenditure of at least \$2 per capita, and celebration of Arbor Day the town may enter the Tree City USA recognition program. Once designated by the National Arbor Day Foundation, the town may compete for an increase of tree planting and community forestry management funds. The town has received tree planting assistance in the past but without the TCUSA designation, \$3,500 is the maximum funds per grant. Entering the TCUSA program enables the town to seek grants up to \$10,000. Planting public trees along public multi-use trails, in its parks, and along sidewalks enhances the pedestrian environment.
Land and Water Conservation Fund (LWCF) Grants	Established in 1965, the LWCF grants provide park and recreation opportunities to residents throughout the United States. The funds come from the sale or lease of nonrenewable resources, primarily federal offshore oil and gas leases and surplus federal land sales. The LWCF grants can be used by communities to acquire and build a variety of park and recreation facilities, including trails and greenways. The LWCF grant funds are distributed annually by the National Park Service through the North Carolina Department of Environment and Natural Resources (DENR). These highly competitive recreation facilities development project funds generally go to large-scale multi-purpose recreation facilities. A portion of the Duplin Commons would be a possible site for such a complex the design of which could include walking and bicycle trails. The LWCF is a 50-50 matching grant fund that must be used exclusively for recreation. purposes only.
Conservation Contracts	The USDA Farm Service Agency can forgive debt from Farm Loan Program loans in exchange for conservation contracts on environmentally sensitive portions of a borrower's property. Contracts can be set up for conservation, recreational and wildlife purposes on farm property, including properties

	adjacent to streams and rivers.
Wetlands Reserve Program	The Department of Agriculture allows private landowners to receive direct payments in exchange for placing sensitive wetlands under permanent easements. This program is administered by the NRCS in North Carolina and can be used to fund the protection of open space and greenways within riparian corridors.
Watershed Protection and Flood Prevention (Small Watersheds) Grants	The USDA Natural Resource Conservation Service (NRCS) offers grants to enable state and local agencies or nonprofit organizations the authority to implement, maintain and operate watershed improvements involving less than 250,000 acres. Financial and technical assistance is provided by the NRCS to eligible projects that improve watershed protection, flood prevention, sedimentation control, public water-based fish and wildlife enhancements, and recreation planning. The grant requires a 50 percent local match for public recreation, and fish and wildlife projects.
Economic Development Grants for Public Works and Development of Facilities	The U. S. Department of Commerce, Economic Development Administration (EDA), provides grants to states, counties and cities designated as redevelopment areas by EDA for public works projects that can include developing trails and greenway facilities. There is a 30-percent local match required, except in severely distressed areas where federal contribution can reach 80 percent.
Design Arts Program	The National Endowment for the Arts provides grants to states and local agencies, individuals and nonprofit organizations for projects that incorporate urban design, historic preservation, planning, architecture, landscape architecture and other community improvement activities, including greenway development. Grants to organizations and agencies must be matched by a 50-percent local contribution. Agencies can receive up to \$50,000.
State Sources	
North Carolina Parks and Recreation Trust Fund	This program provides more than \$14 million in funds annually for local recreation land acquisition, development and renovation of recreational areas. The PARTF is financed by a real estate transfer tax. These are 50-50 matching grants are available to local governments on a competitive annual cycle. Larger projects may qualify for up to \$500,000. The Recreation Resources Service (RRS) of the NC Division of State Parks administers this program for the NC Parks & Recreation Trust Fund Authority. Multi-purpose trails are often included among recreation facilities funded through PARTF. RRS staff provides applicants guidance in the application process (919-515-7118). Competitive applications require considerable public participation, community recreation survey,

	comprehensive recreation plan, and capital improvements plan adopted by the governing body.
The Transportation Improvement Program (TIP)	The Transportation Improvement Program (TIP) is a transportation facilities prioritization construction plan for the entire state. Funding for the projects comes from Federal Aid and the State Highway Trust Fund. Priority pedestrian projects are candidates for the TIP.
The Governor's Highway Safety Program (GHSP)	The Governor's Highway Safety Program (GHSP) provides funds to carry out various pedestrian and bicycle safety initiatives, including educational programs and materials. Based on specific amounts requested for projects, funds allocated to the GHSP fluctuate annually. (Use for pedestrian safety programs)
Clean Water Management Trust Fund	In 1996, the General Assembly established the Clean Water Management Trust Fund (CWMTF) to provide grants to local governments, state agencies, and nonprofit conservation organizations for projects that address water pollution problems. Six and a half percent of the unreserved credit balance in the state's general fund, or a minimum of \$30 million annually, is allocated to the CWMTF. CWMTF grants can be used to acquire or fee-simple purchase properties for projects that: 1) enhance or restore degraded waters; 2) protect unpolluted waters; and/or 3) contribute towards a network of riparian buffers and greenways for environmental, educational, and recreational benefits. Projects range from land acquisition for greenways and riparian buffers to sewage treatment plant upgrades to planning and mapping for water quality protection.
Ecosystem Enhancement Program	This program was established recently to provide a new mechanism to facilitate improved mitigation projects for NC highways. This program provides funding for both restoration projects and protection projects that serve to enhance water quality and wildlife habitat in NC. Additional information is available by contacting the Natural Heritage Program in the NC Department of Environment and Natural Resources (NCDENR).
NC Wetlands Restoration Program	This is a non-regulatory program established by the NC General Assembly in 1996. The goals of the NCWRP are to: <ul style="list-style-type: none"> • Protect and improve water quality by restoring wetland, stream and area functions and values lost through historic, current and future impacts. • Achieve a net increase in wetland acreage, functions and values in all of

	<p>North Carolina's major river basins.</p> <ul style="list-style-type: none"> • Promote a comprehensive approach for the protection of natural resources. • Provide a consistent approach to address compensatory mitigation
North Carolina Conservation Tax Credit Program	<p>The State offers an incentive program to assist landowners that donate their land or easements on the land for conservation purposes. Individuals and corporations can receive a state income tax credit for the value of their donation.</p> <p>For more information see: http://www.enr.state.nc.us/conservationtaxcredit/</p>
NC Adopt-A-Trail Grant Program	<p>This grant program is administered by the Trails Section of the NC Division of State Parks and awards \$135,000 annually to local governments, non-profit organizations, and private trail groups for trail projects. Grants are generally capped at about \$5,000 per project and do not require a match. For more information, visit http://ils.unc.edu/parkproject/trails/grant.html</p>
Urban and Community Forestry Assistance Program	<p>This program is a cooperative partnership between the NC Division of Forest Resources and the Southern Region of the USDA Forest Service that provides small grants of up to \$10,000 to communities for the purchase of trees to plant along city streets and for greenways and parks. To qualify for this program, a community must agree to develop a street-tree inventory, a municipal tree ordinance, a tree commission, committee or department, and an urban forestry-management plan.</p>
Water Resources Development Grant Program	<p>The NC Division of Water Resources offers cost-sharing grants up to \$1 million per year for acquisition and development of water-based recreation sites, including greenways. Funding is provided for two categories of projects: Stream Restoration projects and Land Acquisition and Facility Development projects.</p>
North Carolina Department of Transportation	<p>Distributes grant money allocated through programs authorized by TEA21 such as the Surface Transportation Program (STP), Transportation Enhancement Program, and Recreational Trails Program. See sections under Federal Sources of Public Funding).</p>
Local Sources	
Recreation In-Lieu-Of Fees from new development (via Subdivision Regulations)	<p>As an alternative to requiring developers to dedicate on-site greenway sections that would serve their development, some communities provide a choice of paying a front-end charge for off-site protection of pieces of the larger system. Payment is generally a condition of development approval through the Subdivision Regulations and recovers the cost of the off-site land acquisition or the development's (new developments) proportionate share of the cost of a regional facility serving a larger area. Some communities prefer in-lieu-of fees. This alternative allows the community to purchase land worthy</p>

	of protection rather than accept marginal land that meets the quantitative requirements of a developer dedication but falls a bit short of qualitative interests. Such fees are common for larger or fast growing places.
Subdivision and Zoning Development Standards requirements for Pedestrian Infrastructure (typically sidewalks)	The Town has requirements in its Subdivision Regulations for streets and utilities design, construction, and public acceptance. Many communities are recognizing the concept of "complete streets." These streets are developed to serve new homes and businesses with pedestrian infrastructure just as developers recognize the more traditional public and buyers interests in streets serving vehicular access, storm drainage, water and sewer mains, electric service, etc.
Private Sources & Foundations	
Local Businesses	Local industries and private businesses may agree to provide support for development of trails, sidewalks, and greenways through donations of cash or materials or services to reduce costs of trails. This method of raising funds requires a great deal of coordination. Project sponsors can purchase amenities such as benches, trash receptacles, mile markers, entry signage and bollards to assist in funding while enhancing the overall project. Another option is to sell linear feet of a multi-use path at the unit cost for said path. Some sort of recognition should be provided for sponsors, possibly through a plaque or certificate. (Various uses, as listed above)
Land Owners	Sensitive wetlands placed by their owners under permanent easements, such as greenways with multi-use paths, can receive payment through the Wetlands Reserve Program. In addition, landowners donating property for conservation purposes, whether as easements or by sale, are eligible for the North Carolina Conservation Tax Credit. Public access trails and greenways may qualify.
Kodak American Greenways Awards Program	The Kodak American Greenways Awards Program, a partnership project of the Eastman Kodak company, The Conservation Fund, and the National Geographic Society, provides small grants ranging \$500-\$2,500 for planning, design, and development of greenways. Community organizations get grant preference.

Appendix G

NC Department of Transportation Pedestrian Policy Guidelines

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

REQUIREMENTS FOR DOT FUNDING:

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

REQUIREMENTS: (Transportation Improvement Plan) TIP INCIDENTAL PROJECTS: DEFINED: Incidental pedestrian projects are defined as TIP projects where pedestrian facilities are included as part of the roadway project.

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

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

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

3. The Department will review the feasibility of including the facility in our project and will try to accommodate all requests where the Department has acquired appropriate right of way on curb and gutter sections and the facility can be installed in the current project berm width. The standard project section is a 10-ft berm (3.0-meter) that accommodates a 5-ft sidewalk. In accordance with AASHTO standards, the Department will construct 5-ft sidewalks with wheelchair ramps. Betterment cost (i.e. decorative pavers) will be a Municipal responsibility.

4. If the facility is not contained within the project berm width, the Municipality is responsible for providing the right of way and/or construction easements as well as utility relocations, at no cost to the Department. This provision is applicable to all pedestrian facilities including multi-use trails and greenways.
5. A cost sharing approach is used to demonstrate the Department's and the municipality's / county's commitment to pedestrian transportation (sidewalks, multi-use trails and greenways). The matching share is a sliding scale based on population as follows:

MUNICIPAL POPULATION	D O T PARTICIPATION	L O C A L PARTICIPATION
> 100,000	50%	50%
50,000 to 100,000	60%	40%
10,000 to 50,000	70%	30%
< 10,000	80%	20%

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

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

7. FUNDING CAPS are no longer applicable.

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

INDEPENDENT PROJECTS

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

Appendix H. Trail Easement

Note: This is a sample document only and its use is informational only. Easements are subject to the Laws of the State of North Carolina and the Federal Government. Qualified legal counsel shall approve all easements as to form.

THIS TRAIL EASEMENT is made and entered into this _____ day of _____, 2007 by and between _____ (hereinafter referred to as "Grantor"), and the Town of Kenansville, a political subdivision of the State of North Carolina (hereinafter referred to as "Grantee"). Wherever used herein the terms "Grantor" and "Grantee" include all the parties to this instrument and their respective heirs, legal representatives, successors and assigns. Grantor is used for singular or plural, as the context requires.

WITNESSETH:

Grantor, for and in consideration of TEN DOLLARS (\$10.00) and other valuable consideration paid by the Grantee, the receipt and sufficiency of which is hereby acknowledged, hereby conveys, grants, bargains and sells unto the Grantee, a perpetual, non-exclusive easement for the purpose of construction and maintenance of a public pedestrian and bicycling trail upon and across the following described lands located in Duplin County, North Carolina, to wit:

See attached Exhibit "A" which is incorporated herein by reference.
Subject to easements, restrictions, and reservations of record.

The trail shall be constructed and maintained in conformance with generally accepted design standards, and may include paved and unpaved trail surfaces, at-grade shoulders, vegetative buffers (with irrigation), benches, and such improvements as necessary to comply with all lawful requirements, including the Americans with Disabilities Act. Grantor hereby declares and covenants that the general public shall have and be allowed regular access to the Trail Easement Area, for the purpose of walking, jogging, running, bicycling and like activities, but specifically excluding all motorized vehicles except as authorized by Grantee for maintenance, management, police and emergency purposes.

Grantee shall have the right to regulate public access to and activities within the Trail Easement Area, and shall further have the right to require Grantor to keep the Trail Easement Area free from obstructions which prevent reasonable public access to and along the Trail Easement Area, including but not limited to structures, fences and fallen trees.

The easement granted herein shall constitute an easement running with the land in perpetuity and shall burden the lands described above.

IN WITNESS WHEREOF, the Grantor has caused these presents to be executed the date and year first above written.

Signed, sealed and delivered
in our presence as witnesses:

Grantor(s)

(1) _____
Signature Printed/Typed Name: _____
Signature Printed/Typed Name: _____

(2) _____
Signature Printed/Typed Name: _____
Signature Printed/Typed Name: _____

**STATE OF NORTH CAROLINA
COUNTY OF DUPLIN**

The foregoing Easement was acknowledged before me, the undersigned authority, on this _____ day of _____, 2007, by _____ who () are personally known to me or () produced _____ as identification.

Notary Public/State of North Carolina
Name: _____
My Commission expires:

North Carolina Department of Transportation
presents the

Safe Routes to School Program
Informational Workshops



Sponsored by the Division of Bicycle & Pedestrian Transportation
and the Institute for Transportation Research & Education



Purpose of the Safe Routes to School Program

The Safe Routes to School Program (SRTS) was established in the fall of 2005 with the passage of the SAFETEA-LU, the Safe, Accountable, Flexible, Efficient Transportation Equity Act. A total of \$612 million was set aside nationally, to be allocated to state Departments of Transportation for a variety of program activities. The stated purpose of the SRTS program is to:

- Enable and encourage children, including those with disabilities, to walk and bicycle to school
- Make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age
- Facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

In addition to increasing the number of children who walk and bicycle to school, the SRTS desired program outcomes include the following:

- Reduce the number of children hit by cars
- Reduce congestion around schools
- Improve children's health
- Reduce air pollution
- Potentially reduce school transportation costs
- Increase a child's sense of freedom
- Help establish lifetime habits
- Teach safety skills for bicycling and walking

Developing a SRTS Program that Works

Research has shown the most successful way to increase bicycling and walking is through a comprehensive approach that includes the "S E's." This includes the development of:

- Education programs and activities that teach safe practices, not just to school children, but to the entire community, including parents, neighborhood residents, etc.
- Encouragement programs that motivate children to walk and bicycle more
- Engineering improvements that creates a safer and more appealing environment for walking and bicycling to school
- Enforcement strategies that increase compliance with laws and reduce speeding in the vicinity of schools
- Evaluation activities that document the effectiveness of projects, programs and activities

An effective SRTS program brings together many diverse elements of the community, including educators, municipal and regional transportation professionals, law enforcement officers, public health professionals, elected officials, advocates and interested citizens. A steering committee should be established to gather information and identify issues; prioritize needs; develop viable solutions; create a plan of action; identify funding sources; and involve other stakeholders in establishing programs that can help make bicycling and walking to and from school a safe and healthy transportation alternative. The end result is a benefit to the entire community.

Funds Available through the NCDOT SRTS Program

North Carolina will receive approximately \$15 million in federal-aid funds for its SRTS Program. In order to equitably serve the diverse areas of the state, the NCDOT SRTS Program has developed the menu of funding categories listed below. Awards are granted through a competitive process. All SRTS grants are awarded on a reimbursement basis and are 100% federally funded; no local match is required. There will be two grant cycles, the first in the fall of 2007 and the second in mid-2008. Brief descriptions of the award categories are listed below.

Action Plan Service Award

- Promotes the development of a plan that identifies the infrastructure and non-infrastructure needs and proposed actions at schools serving grades K-8
- Schools, school districts, and municipalities are eligible applicants
- Awards will be given in two categories: one to two schools in close proximity; any three to five schools within a municipality or school district
- \$300,000 is set aside for this program for the first grant cycle
- Awarded schools/communities will be assigned a consultant, paid for directly with SRTS funds

Non-Infrastructure Grant Reimbursement Program

- For education, encouragement, enforcement and evaluation programs and activities
- Any state, local or regional agency, tribal government, school or school district, or non-profit organization is eligible to apply
- \$500,000 is set aside for this program for the first grant cycle
- Funding requests may range from \$10,000 to \$50,000

Infrastructure Grant Reimbursement Program

- Details and call for proposals coming in 2008
- Provides funding for planning, designing and constructing engineering projects
- Projects must be within 2 miles of a school serving grades K-8

NCDOT Highway Division Funds

- Funds will be used for "spot improvements" to infrastructure only
- Projects must be within 2 miles of a school serving grades K-8
- Project requests will be routed through one of the 14 Division of Highways Offices
- \$200,000 per Highway Division is allocated in the 2007-2008 funding cycle and \$230,000 will be allocated per Division in the 2008-2009 funding cycle
- Project allocations will range from \$10,000 to \$50,000

Important Dates for the 2007-2008 Grant Cycle*

October 22, 2007	Solicit Call for Proposals
January 14, 2008	Applications Due by 5:00 pm
February 2008	Eligible applications reviewed by committee
March 2008	Review Committee makes recommendations
March/April 2008	NCDOT presents final selection to BOT and FHWA
April/May 2008	BOT/FHWA approves selection; applicants notified of award
October/November 2008	Award recipients execute reimbursement agreement with NCDOT

*This schedule is provided to assist you in your planning. The actual dates may be subject to change.

Web Resources

This list is a starting point for information and resources. There are several other useful sites, many of which can be found in the "links" sections of the sites listed below.

NCDOT Safe Routes to School Program

<http://www.ncdot.org/transit/bicycle/saferoutes/SafeRoutes.html>

NCDOT Division of Bicycle & Pedestrian Transportation

<http://www.ncdot.org/transit/bicycle>

National Center for Safe Routes to School (NCSRTS)

<http://www.saferoutesinfo.org>

NCSRTS Safe Routes to School Guide

<http://www.saferoutesinfo.org/guide>

Walk to School in the USA

<http://www.walktoschool.org>

Federal Highway Administration Office of Safe Routes to School

<http://safety.fhwa.dot.gov/saferoutes/index.htm>

National Highway Traffic Safety Administration

<http://www.nhtsa.gov>

Pedestrian and Bicycle Information Center

<http://www.pedbikeinfo.org>

Safe Routes to School National Partnership

<http://www.saferoutespartnership.org>

Centers for Disease Control & Prevention Kids Walk-to-School Program

<http://www.cdc.gov/nccdphp/dnpa/kidswalk>

Safe Kids Worldwide

<http://www.safekids.org>

US Access Board

<http://www.access-board.gov>

For more information about the North Carolina SRTS Program contact:

Leza Wright Mundt, AICP

NCDOT Safe Routes to School Coordinator

lwmundt@dot.state.nc.us

919-807-0774

Appendix J: References

1. The Conservation Fund – Kodak American Greenways Awards Program
<http://www.conservationfund.org>
2. Street Smart by Barbara Basler, AARP Bulletin September 2007
3. Study Shows what motivates older people to walk
<http://www.columbian.com> (2/18/07)
4. National Center for Safe Routes to School (includes SRTS training programs)
<http://www.saferoutesinfo.org>
5. Incomplete Streets
<http://www.sacbee.com/110/v-print/story/251408.html>
6. Federal Highway Administration - Safe Routes to School
<http://safety.fhwa.dot.gov/saferoutes>
7. National Highway Traffic Safety Administration (NHTSA)
Safe Routes to School Practice and Promise
<http://www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2004>
Safe Routes to School Toolkit
<http://www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2002>
8. Clean Water management Trust Fund CWMTF
<http://cwmf.net/criteria.htm>
9. Pedestrian and Bicycle Information Center
<http://www.pedbikeinfo.org>
10. Community Links for Better Health
A step-by-Step Guide for Wise Women Projects and other Community-Based Health Promotion Projects
http://www.hpdp.unc.edu/CLBH/Community_links_for_better_health
11. Guidelines for Planting within Highway Right-of-Way
Roadside Environmental Unit
12. Centers for Disease Control and Prevention (CDC)
<http://www.cdc.gov/nccdphp/dnpa/kidswalk/>

13. International Walk to School Day/Week/Month
<http://www.walktoschool-usa.org>
14. Starting a Walking School Buss
<http://www.walkingschoolbus.org>
15. North Carolina Department of Transportation - Division of Bicycle and Pedestrian Transportation
<http://www.ncdot.org/transit/bicycle/>
16. North Carolina Department of Transportation - Municipal and School Transportation Assistance (provides traffic engineering assistance through the performance of comprehensive transportation studies to North Carolina schools, state agencies, and municipalities under 50,000 in population that do not have a traffic engineering staff.)
<http://www.ncdot.org/doh/preconstruct/traffic/congestion/CM/msta/default.htm>
17. Strategic Plan for Economic Recovery and Land Use
Duplin County, NC
18. Institute for Transportation Research and Education (ITRE)
<http://www.itre.ncsu.edu/>
19. National Center for Bicycling and Walking
<http://bikewalk.org/saferoutestoschool.php>
20. Institute of Transportation Engineers (ITE) - Traffic Calming
<http://www.ite.org/traffic/index.html>