Isle of Wight County

Pedestrian and Bicycle Facilities Master Plan
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ToolDesignGroup

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EXECUTIVE SUMMARY



Isle of Wight County's historic towns and villages, parks, rivers and streams, and rural landscapes provide an ideal setting for walking and bicycling. County residents have expressed a desire to improve pedestrian and bicycle facilities and preserve greenway corridors throughout the County. Residents are increasingly requesting more convenient routes that they can use to walk and bicycle to nearby destinations as well as safer conditions for walking and bicycling throughout the County as a means of recreation and improving their personal health.

This is an important time for Isle of Wight County to establish a plan to improve conditions for walking and bicycling. The County's population is projected to grow significantly in the next 25 years. Growth in the County's Development Service Districts represents an excellent opportunity for increasing pedestrian and bicycle transportation and recreation because new facilities can be constructed as a part of developments. In addition, promoting walking and bicycling is an important component of a strategy for preserving the historic character of villages and towns and limiting the growth of automobile traffic in rural areas.

This Plan provides a coordinated and strategic approach to the development of a countywide system of pedestrian facilities, bikeways, and greenways. The Plan meets the goals of local communities to improve conditions for pedestrians and create a comprehensive network of bicycle facilities that connects key destinations, developing areas, rural communities, and adjacent counties.

Why are Greenways, Bikeways, and Walkways Important to Isle of Wight County?

There are many reasons why pedestrian facilities, greenways, and bikeways are important in Isle of Wight County:

#1: Improving pedestrian and bicycle facilities will make conditions safer and more convenient for all residents of Isle of Wight County.



All County residents are pedestrians at one time or another. This includes people walking to work, to school, or to the park, as well as people who drive and park in Downtown Smithfield or Windsor and walk to local establishments as well as International Paper employees who cross US 258 from the parking lot to get to work. Pedestrians and bicyclists include people of all ages, incomes, and abilities. The projects, programs, and policies recommended in this plan will make conditions safer for all types pedestrians and bicyclists.

#2: Better facilities for pedestrians and bicyclists in Isle of Wight County will provide a valuable recreational resource.

Walking for fitness or recreation has been ranked consistently as the number one outdoor recreational activity by U.S. adults for the past decade, and bicycling has been consistently ranked among the top ten activities. Improving pedestrian and bicycle facilities is an excellent way to provide recreational resources for County residents.



#3: Walking and bicycling play a vital role in improving the health of residents of Isle of Wight County.

There are serious personal and public health consequences to leading sedentary lifestyles. In the United States, a lack of physical activity has contributed to doubling the number of overweight children and tripling the number of overweight adolescents since 1980. In Virginia, the prevalence of obesity doubled between 1991 and 2001. Residents of Isle of Wight County need opportunities to meet the Surgeon General's recommendation of 30 minutes of physical activity per day. Walking and bicycling provide opportunities for residents to integrate physical activity into their daily routines.

#4: Developing a network of pedestrian and bikeway facilities will help support tourism and economic development in Isle of Wight County.

Isle of Wight County has a multitude of outdoor activities to offer, including bicycling, hiking, camping, fishing, horseback riding and canoeing. The County has an opportunity to build a reputation as a destination for people seeking an active vacation. The North Carolina Department of Transportation estimated that the 40,800 people for whom bicycling was an important reason for choosing to vacation in the Outer Banks had an annual economic impact of $60 million and supported 1,407 local jobs. Several other economic impact studies of trails in the Mid-Atlantic have also shown that multi-use trails bring significant revenue to local small businesses and Towns.



#5: More greenways and increased levels of walking and bicycling will help maintain the historic pedestrian-oriented character of the County's small towns and villages, preserve rural landscapes, and reduce the negative impacts of automobile emissions on air and water quality.

The pedestrian-friendly character of the small towns and villages in Isle of Wight County is an attractive historic feature that should be preserved and enhanced for residents and visitors. Further, increased levels of

walking and bicycling can play an important role in reducing air and water pollution. National data show that 43.2% of all automobile trips are less than 3 miles in length[1]. By bicycling or walking instead of driving to a nearby grocery store, park, or workplace, area residents can impact the amount of pollutants generated by automobiles. Sixty percent of the pollution created by automobile emissions is emitted in the first few minutes of operation, before pollution control devices begin to work effectively. In addition, by protecting open space areas, or greenways, along the County's stream and river corridors, water quality can be greatly improved. Greenways act to filter runoff and reduce flooding by slowing the release of stormwater into floodplains.

#6: Improving pedestrian and bicycle facilities increases the transportation options available to Isle of Wight County residents.

Walking and bicycling provide transportation for residents who can not or do not drive. This includes people who are too old or young to drive, people who do not have the means to own and operate an automobile, people who choose to live without an automobile, and many people with disabilities.



Summary of Vision and Goals

VISION STATEMENT

Isle of Wight County will become a place:

- ◊ *where people have the convenient and safe option of traveling on foot and by bicycle throughout the County for transportation and recreation, and;*
- ◊ *where pedestrian and bicycle activity is promoted for the health of residents, preservation of community character and the environment, and economic vitality of the County.*

The following goals build on the strengths of Isle of Wight County, and are designed to help achieve the vision for improving pedestrian and bicycle accommodations in the region.

GOALS

GOAL 1: CONNECTIVITY

GOAL: Develop a county-wide walkway, bikeway, and greenway network among residential neighborhoods, Towns, workplaces, shopping centers, historic districts, schools, libraries, recreation centers, parks, and other destinations, including linkages to neighboring jurisdictions.

[1] Source: *National Household Travel Survey*, United States Department of Transportation, Bureau of Transportation Statistics, 2001.

GOAL 2: ECONOMIC BENEFITS

GOAL: Improve pedestrian and bicycle conditions to provide more opportunities for recreation-based tourism and support local businesses.

GOAL 3: PRESERVATION OF COMMUNITY CHARACTER AND THE ENVIRONMENT

GOAL: Preserve the character of small towns and rural areas and protect the environment in the County by encouraging pedestrian and bicycle travel and designating greenway and open space corridors.

GOAL 4: RECREATION AND HEALTH

GOAL: Provide opportunities for County residents to walk, bicycle, skate, run, boat, and participate in other similar activities for recreation and health.

GOAL 5: SAFETY

GOAL: Minimize the number of pedestrian and bicycle crashes and injuries while increasing the amount of pedestrian and bicycle activity in the County.

Short-Term Recommendations

This Plan recommends the construction of a physical network of greenways, bikeways and sidewalks, as well as a variety of programs and policies that are needed to achieve the vision and goals identified above. A complete list of recommendations is provided in Chapters 5 and 6. Below is a summary of the short-term recommendations of the Plan. These actions should be implemented within the first five years after the plan is adopted. They will help build momentum for implementing the longer-term recommendations in the Plan.

Rough cost estimates are provided for each of these short-term facility improvement projects in Chapter 6, and detailed cost estimates are included in the Appendix of this Plan.

Short-term recommendations include:

<u>Projects (Facility Improvements)</u>

- **Battery Park Road Multi-Use Path:** Build a ten-foot-wide multi-use path on the south side of the road to improve pedestrian and bicycle access to Nike Park Road. This is the first of a series of non-motorized transportation improvements recommended for Battery Park Road. The multi-use path should be built far enough from the existing roadway to leave room for planned roadway improvements and still maintain an adequate buffer zone. This multi-use path will also be a first step in making an important non-motorized facility connection between Smithfield, Carrollton Nike Park, and the US 17 Corridor.

- **Jones Creek Bridge Enhancement Grant:** Apply for an Enhancement Grant to construct a pedestrian and bicycle bridge parallel to Nike Park Road across Jones Creek. This will serve as a critical link for pedestrian and bicycle access between Smithfield, Carrollton Nike Park, and the US 17 Corridor. This project should give special attention to the environmental characteristics at the site.
- **US 17 Pedestrian Crossing Improvements:** Provide high visibility crosswalks, add pedestrian signals, add pedestrian lighting, and make other improvements to increase the safety of pedestrians crossing the street. This includes all existing and future signalized intersections in the area around Eagle Harbor. The pedestrian signals must provide enough time for pedestrians to get across the roadway. It will be important to time the traffic signals to reduce the negative impacts on automobiles. Raised medians are recommended at the crosswalk to improve the safety of the crossing, requiring the existing medians to be reconfigured. These improvements will increase the safety of pedestrians crossing from the new residential developments to the new retail area. Pedestrian demand is already apparent in this area and will increase with the upcoming developments.
- **VA 10 Bypass & US 258 Intersection Pedestrian Crossing Improvements:** Provide high visibility crosswalks on all four legs of the intersection, provide pedestrian signals, and improve pedestrian lighting. This intersection is used by many pedestrians to cross the VA 10 Bypass between downtown Smithfield and surrounding residential neighborhoods. The improvements at this intersection should be coordinated with the pedestrian connectivity improvements to the north and south of the intersection (as described in the Pedestrian Recommendations in Chapter 4 of this document).
- **US 460 & VA 603 & VA 610 Intersection Pedestrian Crossing Improvements:** Provide high visibility crosswalks on all legs of the intersection, provide pedestrian signals, improve lighting, and add pedestrian warning signs. The timing of traffic signals should ensure that pedestrians have enough time to get across the street. This crossing serves as a vital connection for pedestrians walking to businesses on US 460 and nearby residences, parks, and the high school, as well as for bicyclists traveling through Windsor.



- **Crosswalk Improvements at the packing plants associated with Smithfield Foods Corporation (VA 10 Business):** Add in-roadway crossing signs (MUTCD sign R1-6) and high-visibility crosswalk markings. Lighting improvements should also be provided. These crossing improvements will improve pedestrian safety for people crossing between the plants and adjacent parking lots across VA 10 Business.

- **US 258/West Smithfield Pedestrian and Bicycle Facilities:** Include bike lanes or paved shoulders in the programmed roadway improvement to US 258 between Westside Elementary School and VA 620/Foursqaure Road. Sidewalks should also be constructed as a part of this project to serve locations of planned development.
- **South Church Street Sidewalks:** Add sidewalks as part of the South Church Street roadway reconstruction project. These sidewalks will make it safer and more convenient for pedestrians to access the businesses on South Church Street in Smithfield. There is already evidence of pedestrian demand in this area. The Town of Smithfield should also pursue the possibility of providing bike lanes or paved shoulders as part of this project in order to improve conditions for bicycling on South Church Street.
- **North Windsor/Heritage Park Pedestrian and Bicycle Pathway:** Provide a pathway to provide pedestrian and bicycle access between US 460 in Windsor and Heritage Park. This pathway would consist of several distinct facilities. In the town of Windsor, bicyclists could follow a signed on-roadway bike route and pedestrians could follow the sidewalk. A multi-use path or paved shoulders could be provided along the road in the area near Windsor Middle School. Between VA 610 and Heritage Park, a multi-use path should be provided along the east side of US 258 to allow pedestrians to access the mobile home park, new developments, ball fields, and Heritage Park.
- **Pedestrian and Bicycle Accommodations on Blackwater River Bridge near Franklin:** Provide wide sidewalks and paved shoulders as a part of the programmed Blackwater River Bridge project. This will improve pedestrian and bicycle access between South Isle of Wight County and the City of Franklin.
- **Lake Gaston Pipeline Trail (Phase 1):** Construct a shared-use path along the Lake Gaston Pipeline Right of Way in the vicinity of Walters. This section of pathway would be the first phase of a trail that would extend across much of Isle of Wight County and ultimately provide connections between Southampton County and the Town of Windsor. This section of trail would also serve as an important link for one of the County Signed Bicycle Routes. This first phase of path in Walters would take advantage of publicly owned right-of-way as well as publicly-owned property adjacent to the trail (e.g., Camp Washington property). This path would serve a mix of users including pedestrians, bicyclists and possibly equestrians.



- **Signed Bicycle Routes:** The Plan maps identify a series of routes connecting between important destinations throughout the County. The County should field check these routes and then post signs indicating that they are part of the designated bicycle route system.

- **Share the Road Signage:** Provide Share the Road signs on VA 626 (as shown on the Plan map). It is recommended that the Share the Road signs read, "Share the Road with (BIKE SYMBOL)". This sign is intended to remind drivers of their responsibility to expect bicyclists and to drive with caution around bicyclists. An educational campaign should be undertaken as the signs are posted to ensure that drivers interpret the sign's message correctly.
- **Sidewalks in New Developments:** The County should require all new developments to include sidewalks on both sides of all streets (except short cul-de-sacs and dead-end streets) and bicycle facilities on main roadways as part of the development review process. These requirements would apply to all new developments, including Benns Grant and future projects.



- **Bicycle Parking at Commuter Parking Lots:** The County should work with VDOT to provide bicycle racks and bicycle lockers at the Park and Ride Lot near the intersection of US 17 and Smiths Neck Road (served by Hampton Roads Transit) and at the commuter parking lot near the intersection of VA 10 Bypass and US 258.
- **Mountain Bike Trails and Hiking Trails:** The County should develop trails for mountain biking and hiking within County Parks. These trails would provide excellent recreation opportunities for walkers, joggers, runners, and mountain bicyclists.

<u>Programs (Education, Encouragement, Enforcement)</u>

- **Maps and Brochures:** The County Parks and Recreation Department should work with the Smithfield and Isle of Wight County Convention and Visitors Bureau to develop maps and brochures to show residents and visitors preferred routes for bicycling and walking. These materials would provide information about the benefits of non-motorized transportation and physical activity, pedestrian and bicycle safety tips, bicycling rules, bicycle parking, and information about local bicycling and walking organizations.
- **Safe Routes to School (SRTS):** The County should work with Westside Elementary School and Windsor Middle School to start Safe Routes to School programs for encouraging and improving the safety of walking and bicycling to school.

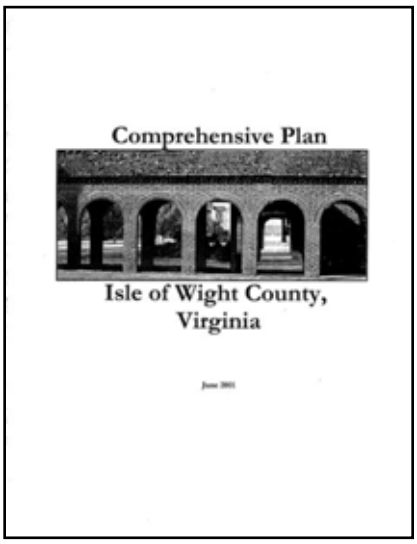


- **Bike/Walk Rodeos:** The County should work with local law enforcement and educators to offer walking and bicycling rodeos in different parts of the County. The objective of these rodeos is to teach children about pedestrian and bicycle safety through hands-on experience.

- **Maintenance and Enforcement Hotline:** The County should provide a toll-free number for reporting maintenance and enforcement problems.
- **Organized Bike Rides/Historic Walking Tours:** The County should work with local organizations to offer organized family-friendly bicycle rides and historic walking tours on a regular basis. This will give an opportunity for County residents and visitors to experience Isle of Wight County by foot and by bicycle.

Policies

- Isle of Wight County should **incorporate the recommendations of the Land Use and Built Development Guidelines from the 2001 Comprehensive Plan into the Development Review section of the Zoning Ordinance.** The County should also make changes to other sections of the Zoning Ordinance to improve conditions for pedestrians and bicyclists.
- The County should **integrate the recommendations from this plan into the County Comprehensive Plan update.**
- All transportation projects in the County that involve VDOT right of way or utilize funds that flow through VDOT must **follow the VDOT *Policy for Integrating Bicycle and Pedestrian Accommodations*.**
- **The County Parks and Recreation Department should establish a Greenways Program.** This Greenways Program would ensure that locations designated for greenways in this plan would be secured for Greenways as development occurs. The Program would also attain funding for land acquisition and future greenway development projects.



- The County should **designate an existing staff person in the Parks and Recreation or Planning and Zoning Department to serve as Pedestrian and Bicycle Coordinator.** This staff person would be responsible for implementing the recommendations of this plan. This staff person could work part-time on pedestrian and bicycle issues.
- The County should **continue meetings of the Pedestrian and Bicycle Facilities Committee to provide oversight of the recommendations of the Plan and to deal with future needs as they arise.** The Committee should work to ensure that the needs of bicycles and pedestrians continue to be addressed in all County projects and programs. The Committee should continue to have Countywide representation (including individuals from the Chamber of Commerce, Public Safety, Planning and Zoning, Parks and Recreation, VDOT, and citizens from all five voting districts).

CHAPTER 1: INTRODUCTION

Isle of Wight County's historic towns and villages, parks, rivers and streams, and rural landscapes provide an ideal setting for walking and bicycling. County residents have expressed a desire to improve pedestrian and bicycle facilities and preserve greenway corridors throughout the County, both to improve water quality and environmental conditions, as well as to increase opportunities for recreation. Bicycling in the region is growing in popularity, and County residents are increasingly requesting routes that they can use to walk safely to nearby destinations as well as places where they can safely walk to improve their health.



This is an important time for Isle of Wight County to establish a plan to improve conditions for walking and bicycling. The County's population is projected to grow from approximately 29,700[2] to approximately 41,800 by 2020[3]. New developments are being established, particularly on the east side of Smithfield, in the Carrollton Area, and on the east side of Windsor. These developments provide an excellent opportunity to include new pedestrian and bicycle facilities. Providing sidewalks, shared-use paths, bicycle lanes, roadway shoulders, safe pedestrian crossings, and other pedestrian and bicycle facilities during development will be much more cost-effective than providing them later as retrofit projects. Further, current and new residents will be able to take advantage of these new opportunities for active transportation and recreation.



This Plan provides a coordinated and strategic approach to the development of a countywide system of pedestrian facilities, bikeways, and greenways. The Plan meets the goals of local communities to improve conditions for pedestrians and create a comprehensive network of bicycle facilities that connects key destinations, developing areas, rural communities, and adjacent counties.

This Plan has been developed for adoption by the Board of Supervisors and inclusion in the updated Isle of Wight County Comprehensive Plan. With the endorsement of the local towns, the recommendations of this plan are also intended to be incorporated into the updated Smithfield Comprehensive Plan and future comprehensive plans in Windsor. Therefore, this plan represents a coordinated effort to improve conditions for pedestrian and bicycle activity in all parts of Isle of Wight County.

[2]Census 2000
[3]Draft 2021 Socio-economic Forecast, Hampton Roads Planning District Commission, December 2000

The Importance of Greenways and Bikeways in Isle of Wight County

Isle of Wight County is a popular place to visit and live because of the region's natural beauty, access to outdoor activities, and abundance of historic and cultural resources. Recent growth has created dramatic changes in transportation and land use. As new developments have been established, more County residents are living within walking and bicycling distance of parks, shopping centers, schools, and other destinations. However, many of these new developments have been created as isolated neighborhoods, with only one or two entrances. Further, many of these developments do not provide ways for pedestrians and bicyclists to connect with nearby neighborhoods, parks, schools, or commercial areas. The only convenient way to reach these destinations is by automobile. Therefore, traffic on the few main arteries in the County has increased, further reducing the safety and convenience of walking and bicycling to key destinations in the County.

Efforts should be made now to ensure that people on foot and bicycle will be able to use Isle of Wight County's roadway network in the future. Transportation improvements must be designed to preserve the ability for people to walk and bicycle for recreation and transportation throughout Isle of Wight County.

There are a variety of reasons why pedestrian facilities, greenways, and bikeways are important in Isle of Wight County:

#1: Improving pedestrian and bicycle facilities will make conditions safer and more convenient for all residents of Isle of Wight County.

- Safer for all ages and abilities of pedestrians and bicyclists
- Accessible for all pedestrians, including persons with disabilities
- All County residents are pedestrians. This includes people walking to work, to school, or to the park, as well as people who drive and park in Downtown Smithfield and Windsor, as well as walk to local establishments and International Paper employees who cross US 258 from the parking lot to get to work.
- People of a wide variety of ages are bicyclists.

Pedestrian and Bicycle Crashes Reported to Police in Isle of Wight County (2001-2005)

- 15 pedestrians and 6 bicyclists were involved in serious (police-reported) crashes
- 73% of pedestrian crashes were on weekdays
- 60% of the pedestrian crashes occurred under dusk or dark lighting conditions
- Of the pedestrian crashes, 3 were on US 258; 2 were on US 17, and 2 were on US 258/VA 10
- 67% of bicycle crashes were on weekends
- 67% of bicycle crashes occurred in daylight
- 3 bicycle crashes were on US 258/VA 10

Source: Virginia Department of Transportation

#2: Better facilities for pedestrians and bicyclists in Isle of Wight County will provide a valuable recreational resource.

- Walking for fitness or recreation has consistently been ranked as the number one outdoor recreational activity by U.S. adults for the past

decade, and bicycling has been consistently ranked among the top ten activities[4].

- The County's residents will be more likely to use bicycles for transportation if there are safe places to ride. A 1990 Louis Harris Poll found that 40% of U.S. adults say they would commute by bike if bike lanes and pathways were available.[5]

#3: Walking and bicycling play a vital role in improving the health of residents of Isle of Wight County.

- Residents of Isle of Wight County need opportunities to meet the Surgeon General's recommendation of 30 minutes of physical activity per day. Efforts to integrate physical activity into people's daily routines (such as opportunities to walk and bicycle) are critically important[6].
- Today, there are nearly twice as many overweight children and almost three times as many overweight adolescents in the U.S. as there were in 1980. In Virginia, the prevalence of obesity doubled in the ten years between 1991 and 2001, increasing from 10.1 percent to 20.0 percent of residents [7].



- Research conducted in 1999 by the Centers for Disease Control found that "obesity and overweight are linked to the nation's number one killer – heart disease – as well as diabetes and other chronic conditions". The report also states that one reason for Americans' sedentary lifestyle is that "walking and cycling have been replaced by automobile travel for all but the shortest distances."[8]
- Total costs attributed to obesity (medical costs and lost productivity) amounted to an estimated $117 billion in the year 2000, 10% of total national health care costs.

#4: Developing a network of pedestrian and bikeway facilities will help support tourism and economic development in Isle of Wight County.

- The North Carolina Department of Transportation studied the economic benefits of the approximately 40,800 visitors who were attracted to the Outer Banks because of bicycling opportunities (about 1% of the 4 million annual visiors) in 2003. It estimated that these 40,800 people for whom bicycling was an important reason for choosing to vacation in

[4] *National Survey on Recreation and the Environment Version 1-8*, United States Department of Agriculture, 2001
[5] *National Bicycling and Walking Study*. Federal Highway Administration, 1994.
[6] 1998 report of the American Medical Association.
[7] Centers for Disease Control and Injury Prevention.
[8] *Journal of the American Medical Association*, October 1999.

the area had an annual economic impact of $60 million and supported 1,407 jobs in the Outer Banks[9].

- Greenways can provide a significant boost to the local economy. Several recent economic impact studies of trails in the Mid-Atlantic have shown that multi-use trails bring significant revenue to local small businesses and Towns. A 2004 study of the Northern Central Rail Trail (a 21-mile unpaved trail in Maryland) found that the annual revenues from the purchase of hard goods, soft goods and accommodations was approximately $10.3 million. A trail user count conducted by the Maryland Department of Natural Resources estimated a total of 867,725 user visits to the Northern Central Rail Trail in 2004.
- Bicycle touring is a low impact tourist activity that can bring dollars to many small town businesses, museums, and other cultural institutions, but does not generate overwhelming numbers of cars or people. Realizing economic benefit from appropriate use of rural road resources and trails coincides with the region's desire to maintain its rural nature and quality of life.



- Bicycle tourism is big business in the United States, bringing millions of dollars in tourism revenue to some parts of the country. In Vermont, for example, bicycle touring brings in more revenue than the maple syrup industry. A questionnaire of Delaware cyclists in 1997 found that bicycle tourists were willing to spend between $35.59 and $84.77 per day, with the amount increasing as the number of days touring increases.
- Isle of Wight County has a multitude of outdoor activities to offer visitors in addition to bicycling, including hiking, camping, fishing, horseback riding and canoeing. The region has an opportunity to build a reputation as a destination for people seeking an active vacation.

#5: More greenways and increased levels of walking and bicycling will help maintain the historic pedestrian-oriented character of the County's small towns and villages, preserve rural landscapes, and reduce the negative impacts of automobile emissions on air and water quality.

- By protecting open space areas, or greenways, along the County's stream and river corridors, water quality can be greatly improved. Greenways act to filter runoff and reduce flooding by slowing the release of stormwater into floodplains.
- Greenways provide opportunities to protect the County's rural open space areas by preserving sensitive ecological lands. In locations where public access is appropriate, some greenways can also provide access for fishing, canoeing, hiking and horseback riding.

[9] Lawrie, J.J., T.P. Norman, M. Meletiou, and S.W. O'Brien. "Bikeways to Prosperity: Assessing the Economic Impact of Bicycle Facilities," *TR News 242*, North Carolina Department of Transportation, Institute for Transportation Research and Education, North Carolina State University, January-February 2005.

- Vehicle emissions and other motor vehicle pollutants contribute to water pollution, which ends up in Isle of Wight County's streams, the James River and the Chesapeake Bay. Increased levels of walking and bicycling will have a positive impact on local and regional water quality, and greenways help to filter pollutants from runoff.
- Motor vehicle emissions are a major contributor to ozone pollution.
- Increased levels of walking and bicycling can play an important role in reducing air pollution. National data show that 43.2% of all automobile trips are less than 3 miles in length[10]. By bicycling or walking instead of driving to a nearby grocery store, park, or workplace, area residents can help reduce the amount of pollutants generated by automobiles. Sixty percent of the pollution created by automobile emissions is emitted in the first few minutes of operation, before pollution control devices begin to work effectively.
- The pedestrian-friendly character of the small towns and villages in Isle of Wight County is an attractive historic feature that should be preserved and enhanced for residents and visitors.

#6: Improving pedestrian and bicycle facilities increases the transportation options available to Isle of Wight County residents.

- Walking and bicycling provide transportation for residents who can not or do not drive. This includes people who are too old or young to drive, people who do not have the means to own and operate an automobile, people who choose to live without an automobile, and many people with disabilities.
- Bicycling is an extremely affordable option when compared to the expense of owning and operating an automobile ($120 per year compared to over $5,000 per year). Walking costs only as much as a pair of good shoes.
- Promoting higher-density, mixed-use land use patterns, connected street systems, and new facilities for non-motorized modes will make walking and bicycling more convenient and safe for all residents and visitors.

Pedestrian and Bicycle Transportation and Independence: At least 1/3 of Isle of Wight County residents do not drive.

- County population under age 16: 6,647 (22%)
- County population age 16 and older with a disability: 5,293 (18%)
- County households that do not own a motor vehicle: 659 (6%)

Source: Census 2000
Isle of Wight County population: 29,728

[10] Source: *National Household Travel Survey*, United States Department of Transportation, Bureau of Transportation Statistics, 2001.

POLICY AND PLANNING BACKGROUND

Over the past 15 years, many policies and plans have been developed at the national, state, regional, and local levels that provide support for improving pedestrian and bicycle transportation and recreation in Isle of Wight County. The first part of this section describes policies, as established through laws, ordinances, and agency directives. The second part describes the local and regional planning efforts that have included recommendations to improve conditions for walking and bicycling.

Federal, State, and Local Policies and Regulations
Policies have been adopted at all levels of government in order to ensure that land is preserved for greenways, and that communities are designed to support walking and bicycling. Below is a description of the policies that are most relevant to this Plan. More detailed descriptions of these policies can be found in Appendix A.

Federal Policies
Federal transportation policies (through the Intermodal Surface Transportation Efficiency Act of 1990 as well as subsequent transportation bills) strongly support the inclusion of pedestrian and bicycle facilities in transportation projects, and have supplied a consistent source of funding for these activities for the past fifteen years. The federal requirements for the provision of pedestrian and bicycle facilities are very detailed, and can be found in Appendix A.



The Federal Highway Administration (FHWA) Virginia Division Office established a Bicycle and Pedestrian Policy in 2001. This policy supports including pedestrian and bicycle facilities in all new and reconstructed federal-aid transportation projects except under several specific circumstances.

This policy states that it will assist VDOT by sharing technologies, helping with planning activities, and promoting the safety aspects of walking and bicycling. The FHWA Division policy also states: "Bicycle and pedestrian facilities should be funded at the same federal-state ratio as the typical highway improvement," and "Federal participation will be withdrawn on any major project that severs an existing bicycle or pedestrian route, unless an alternate route exists or is provided."

<u>Americans with Disabilities Act (ADA)</u>
According to the 2000 U.S. Census, one in every five Isle of Wight County residents over age five has a disability (this is approximately the same percentage as the United States)[11]. People with disabilities are more likely to be pedestrians than other adults because some physical limitations can make driving difficult.

[11] According to Census 2000, 5,543 (20%) of 27,676 Isle of Wight County Residents have some type of physical, mental, or sensory disability. This sample includes civilian, non-institutionalized residents five years and older.

For these reasons, the U.S. Government established the Americans with Disabilities Act (ADA) in 1990. Its implementing regulations, issued by the Department of Justice (DOJ) in 1991, require that all new and altered facilities - including sidewalks, street crossings and related pedestrian facilities in the public right-of-way – be accessible to and usable by people with disabilities. The Americans with Disabilities Act Accessibility Guidelines (ADAAG) provide the necessary guidance for the design and construction of pedestrian facilities.

State Policies

Virginia Department of Transportation

As described above under Federal policies, transportation agencies have provided a tremendous level of support and funding for bikeways, greenways and sidewalks. While local jurisdictions play a large role in establishing transportation priorities in Virginia, the Virginia Department of Transportation (VDOT) is the agency responsible for constructing and maintaining many of the primary and secondary roads throughout the Commonwealth.

VDOT Policy for Integrating Bicycle and Pedestrian Accommodations

On March 18, 2004 the Commonwealth Transportation Board adopted a new state policy for integrating pedestrian and bicycle accommodations into roadway projects (often termed "incidental" improvements – bikeways and sidewalks that are built as part of new roadway construction or roadway reconstruction). This policy essentially reverses previous VDOT policies which required a great deal of public and political support in order for bikeways and sidewalks to be *considered* for inclusion in transportation projects.



The new policy states that *"VDOT will initiate all highway construction projects with the presumption that the projects shall accommodate bicycling and walking."* The policy provides a number of factors under which additional emphasis will be placed on the need for such facilities, essentially requiring bikeways and sidewalks whenever a roadway project occurs in an urban or suburban area. The policy provides several exemptions under which facilities are not required (see Appendix A). This policy also pertains to operations and maintenance, including hazard elimination projects and signal installation.

VDOT's policy applies to all projects that reached the scoping phase after March 18, 2004. As with all major policy changes, it will take several years before the "on the ground" results of VDOT's new policy will be evident, as projects move through the pipeline from initial scoping, through the planning and design phases and eventually into construction.

Isle of Wight County supports the inclusion of pedestrian and bicycle accommodations that involve VDOT right of way or utilize funds that flow through VDOT. This includes projects at all levels: maintenance, design and construction, and operations. The level of accommodation provided in VDOT projects should be appropriate for the future land use planned in an area, and should be commiserate with the level of support expressed by local citizens, agency staff and elected officials.

The complete version of VDOT's *Policy for Integrating Bicycle and Pedestrian Accommodations* can be found on the VDOT website (www.virginiadot.org) in the Program section of the website, under Bicycling and Walking.

VDOT Roadway Design Manual
VDOT has established standards for the physical layout of roadways through its Roadway Design Manual. The 2005 version of this manual has incorporated the VDOT Policy for Integrating Pedestrian and Bicycle Accommodations (see above). Several sections of the manual describe in detail how pedestrians and bicyclists should be included in roadway projects. It describes various methods of accommodating bicyclists, such as bicycle lanes, paved shoulders, and wide outside lanes, specifications for shared use paths, and also describes requirements for sidewalks, buffers between sidewalks and roadways, curb ramps, and pedestrian tunnels.

The VDOT roadway design manual requirements for pedestrian and bicycle accommodations should be followed in all projects in Isle of Wight County.

Virginia Department of Conservation and Natural Resources
This Plan is clearly in line with statewide recreation goals, as set forward in the recommendations of the Virginia Department of Conservation and Recreation's (DCR) *2002 Virginia Outdoors Plan*. DCR identified the need to provide *"transportation alternatives, specifically trails for walking, hiking and cycling and to connect people with destinations."*

This Plan is also supported by a variety of land preservation programs that are available in Virginia, including Purchase of Development Rights (PDR) Programs. The PDR program in Isle of Wight County is the Purchase of Agricultural Conservation Easements (PACE) program. This program enables local governments to develop and enact an easement program to preserve open spaces, farms, forests and natural areas, and restrict future development of the land while permitting landowners to continue to use their land as they had been.

The Open-Space Land Act enables public bodies to acquire properties or interests in property, or designate property for use as open-space land. "Open-space land" means any land provided or preserved for

- park or recreational purposes
- conservation of land or other natural resources
- historic or scenic purposes

- assisting in the shaping of the character, direction, and timing of community development, or
- wetlands

Public bodies may also acquire fee simple title or other interests in real property including easements for the conservation of farm and forestlands (Information above was obtained from Virginia DCR website at http://www.state.va.us/dcr/olc/howto04.htm).

Local Policies
In addition to federal and state policies, there are a number of local policy documents that also support improving conditions for pedestrian and bicycle transportation and recreation in Isle of Wight County. These policies are included in the following ordinances:



- Isle of Wight County Zoning Ordinance (2005)
- Town of Smithfield Zoning Ordinance (1998)
- Town of Smithfield Subdivision Ordinance (1999)

Isle of Wight County Zoning Ordinance
The Isle of Wight County Zoning Ordinance (2005) has a number of good provisions for pedestrians and bicyclists. However, several factors have been overlooked and are in need of revision.

The County Zoning Ordinance describes the uses permitted in each type of zoning district. While none of the general zoning districts (e.g., primary residential, suburban estate, general commercial, village center, etc.) include specific requirements for pedestrian and bicycle facilities, non-motorized transportation and recreation facilities are required in Planned Development Districts and the Newport Development Service Overlay (NDSO) District.

Planned Development Districts must include pedestrian and bicycle accommodations:

"Pedestrian pathways or bikeways shall be provided and may be located parallel to the street or away from the road system with considerations for safety and convenient access, and the preservation of natural features and provide visual interests" (Section 4-14006).

The NDSO applies in the Development Service District in Northeast Isle of Wight County. This District supplements the regulations of underlying zoning districts.

Developers are required to develop an access plan to show how these objectives will be met. The specific pedestrian and bicycle requirements for the NDSO are stated in Section 6-2009 (Development Standards):

- Provide continuous connections within and between developments for pedestrian and bicycle traffic.
- Provide facilities to store or lock bicycles at appropriate sites, such as schools, recreation areas, office parks, public institutions, and activity centers.
- Develop the proposed bike pathway system in a manner that links to existing and proposed neighborhoods, park lands, conservation areas, scenic landscapes, and historical sites in accordance with the goals and objectives of the Comprehensive Plan.



- Provide pedestrian walkways from the public sidewalk/right-of-way to customer entrances of large retail establishments; provide crosswalks and other roadway crossing treatments to enhance the safety of pedestrians in parking lot areas; provide sidewalks and other pedestrian amenities along the entrance sides of retail buildings.
- Site development shall include streetscape improvements that enhance the pedestrian environment, such as decorative light fixtures, benches and tables, trash receptacles, pedestrian and bicycle paths, and bicycle parking structures.
- Provide crosswalks and other roadway crossing treatments that enhance the safety of pedestrians, including raised crosswalks.

The County Zoning Ordinance also includes development review procedures and general development design guidelines as a part of Article VII. Development review requires the initial written site analysis to describe the relationship of a site to existing and proposed pedestrian pathways and bikeways. Site design must provide for interconnected streets between developments to assure adequate traffic flow. Recommendations for improving the pedestrian and bicycle facility requirements in the Zoning Ordinance are provided in Chapter 4 and in Appendix F.

Town of Smithfield Zoning Ordinance
The Smithfield Zoning Ordinance (1998) states that Traffic Impact Assessment studies for developments must include site plans showing access for pedestrians to the development and proposed sidewalk improvements.

Town of Smithfield Subdivision Ordinance
The Smithfield Subdivision Ordinance (1999) includes a section on Subdivision Design Standards. These standards require sidewalks to be installed on one or both sides of the street.

County, Local, and Regional Plans

There are a number of area plans that emphasize the need to improve pedestrian and bicycle facilities and programs. These plans show public support for non-motorized transportation and recreation at the county, local,

and regional level. These plans are described below. More detailed descriptions of these plans are included in Appendix B.

Isle of Wight County Comprehensive Plan

The Isle of Wight County Comprehensive Plan (2001) provides significant support for pedestrian and bicycle transportation and recreation. Specific recommendations for improving pedestrian and bicycle conditions are described by chapter below.

Chapter 3 – Growth Management/Land Use: The requirements for several land use districts recommend developments that are pedestrian scale, have connected roadway systems (rather than cul-de-sacs), make non-vehicular links to activity centers and adjacent residential uses, and include trails and connect to the Countywide trail system.

Chapter 4 – Transportation: The chapter highlights pedestrian and bicycle needs as an emerging issue in Isle of Wight County:

"Walking/hiking trails and bike trails are few in number in the County. Such facilities have not been a key component of the County transportation program in the past. Trail systems can serve to connect neighborhoods to one another and to key public facilities and provide an alternative means of transport, on foot or on bike. Such facilities are most important within the County development service districts. They diversify transportation options and provide recreational amenities that enhance the quality of life for residents. The County needs to elevate the status of pedestrian and bike facilities as a component of its overall transportation program in future years" (p. 5.11).

A specific objective for improving the transportation system in Isle of Wight County is to "decrease the need for automobile trips by encouraging mixed-use developments, pedestrian pathways, and bike paths" (p. 5.12).

Chapter 8 – Parks and Recreation: This chapter highlights the need to develop greenway trails for recreation in Isle of Wight County. It includes recommendations to:

- Establish a greenways program that would identify locations for greenways in advance of development in order to secure rights-of-way or easements for trails.
- Acquire land along the James River and its tributaries to develop greenways for public use.
- Pursue funding from both public and private sources to purchase easements or secure easements through donations.
- Develop an interconnected system of trails and greenways over time. The



system of greenway trails should link park lands, conservation areas, scenic landscapes, and historic/cultural sites.

Specific recommendations are provided for a trail along the Lake Gaston Pipeline and for developing a bikeway to link parks such as Carrollton Nike Park, Riverview Park, Tyler's Beach, and Fort Boykin Historic Park in the northern part of the County.

Chapter 11 – Community Character and Design: This chapter recommends many important concepts for supporting pedestrian and bicycle activity in the County's built environment. These concepts address land use patterns, neighborhood design, street network patterns, etc. They are described in greater detail in Appendix B.

Chapter 12 – Implementation: A pedestrian and bicycle system should be developed for the County between 2003 and 2006.

Isle of Wight County Strategic Plan of Action

Isle of Wight County developed Action Steps in March 2004 to guide its activities in nine goal areas. One of the Action Steps under the transportation planning goal is to develop a County Transportation Plan that includes aspects of multi-modal transportation "critical for the future of the County (ex. County road networks, bicycle pathways, high-speed rail and mass transit)." Under the growth management goal, the Plan of Action recommends updating the County Comprehensive Plan, as necessary. This provides support for incorporating the recommendations of this Pedestrian and Bicycle Facilities Master Plan into the updated Comprehensive Plan.

Town of Smithfield Comprehensive Plan

The Town of Smithfield emphasizes the importance of pedestrian and bicycle transportation and recreation in its 1999 Comprehensive Plan. It includes a community development objective to encourage continued streetscape and pedestrian improvements throughout the Town and transportation and parking objectives to use traffic calming in Downtown Smithfield, study the feasibility of adding new sidewalks, and studying the possibility of linking a bike trail in Smithfield to the regional bicycle system.

The Comprehensive Plan also recommends that the Town develop a Bicycle and Pedestrian master plan to integrate these non-motorized facilities into the Town's Transportation Plan. Planning for pedestrians and bicyclists is important for enhancing "the Town's viability as an inviting center for tourism and to better integrate its existing and planned neighborhoods" (p. X-13). Specific pedestrian and bicycle recommendations from the Smithfield Comprehensive Plan are listed in Appendix B.

The Smithfield Plan recognizes existing deficiencies in pedestrian and bicycle facilities and the need for improvements:

"The existing Town sidewalk network fails to extend in any systematic way beyond the downtown area. The vast majority of the existing residential communities in the Town lack sidewalks, walking paths or bikepaths. As a result, few physical pedestrian connections are made between residential subdivisions. Residents who wish to walk for exercise purposes or to do their small goods shopping or to visit friends and neighbors must do so in the street or in residential yards. This presents safety hazards for pedestrians and drivers alike. When effectively employed, pedestrian facilities provide increased community benefits in the form of physical linkages between neighborhoods, reduced air pollution, reduced traffic congestion and automobile fuel savings" (p. X-29).

Hampton Roads 2026 Regional Transportation Plan

The Hampton 2026 Roads Regional Transportation Plan provides a vision for improving pedestrian and bicycle connections throughout the Hampton Roads District. It states:

"Offering a variety of transportation options is necessary to serve the diverse needs of those traveling in Hampton Roads. Bicycling and walking are unique modes in that many people enjoy biking and walking not just as a means of travel but also as forms of fitness and recreation" (p. 79).

The Plan incorporates the facility inventory and recommendations from the *VDOT Hampton Roads District Bicycle Plan* (2003). It identifies 443 miles of existing bicycle facilities (less than 5 miles in Isle of Wight County) and recommends over 1,400 miles of additional bicycle facilities (approximately 100 miles in Isle of Wight County). The Plan estimates that 230 of the 1,400 miles of bicycle and pedestrian facilities could be constructed throughout the region by 2026 through highway projects and Congestion Mitigation Air Quality projects.

To the extent possible, the findings of the above-mentioned studies and master plans were coordinated with the planning process for this Plan.

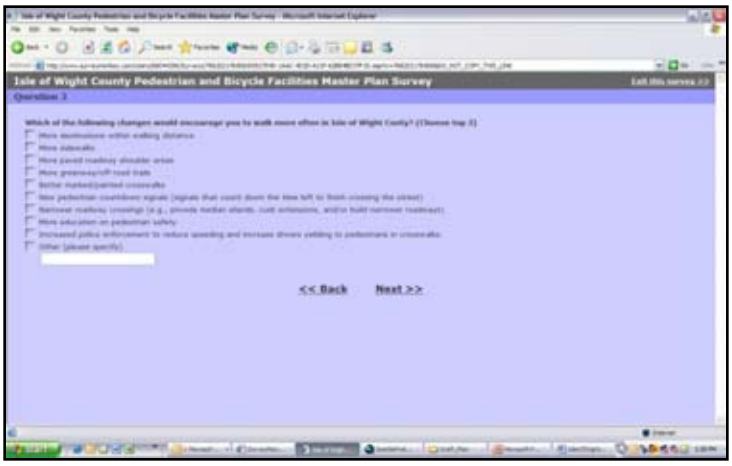
Planning Process

The planning process for this study involved a number of different activities and outreach efforts. The process is briefly outlined below.

1. *Background Data Collection and Field Analysis*
   Background information was gathered for this plan from previous plans and studies (as described above), existing GIS data and maps, interviews with local, county, and regional government staff, and field work. Existing GIS data were provided by Isle of Wight County, including the locations of roadways, railroads, water pipelines, power lanes, rivers and streams, major subdivisions, schools, parks, and municipal boundaries. Representatives of local bicycle clubs provided information about the roadways that they frequently ride. Potential roadway improvement projects and pedestrian and bicycle crash data were obtained from VDOT staff.

Field work was conducted throughout Isle of Wight County to document existing conditions for walking and bicycling and to identify opportunities to improve pedestrian and bicycle facilities. This analysis included pedestrian crossing conditions, on-road bicycling conditions, and potential locations for future greenways.

2. *Public Input*
   A considerable effort was undertaken to gather input for this Plan from residents and key stakeholders from all parts of Isle of Wight County. As part of this effort, public meetings were held in June 2006 at Windsor Middle School and the Luter Family YMCA in Smithfield. At these meetings, citizens made suggestions for future locations of greenways and trails, as well as on-road pedestrian and bicycle improvements. An online questionnaire was also developed to provide the opportunity for more residents to comment on walking and bicycling conditions in the County. The survey participants were not selected randomly; rather the survey was distributed as widely as possible throughout the County. Over 205 people responded to this Pedestrian and Bicycle Facilities Master Plan Online Survey. The survey results are summarized in the Existing Conditions Chapter. Complete results are provided in Appendix C. County staff also held meetings with stakeholder groups, such as the Isle of Wight County Schools, Smithfield YMCA, local developers, and Homeowners Associations to gather input from their perspectives. In addition, the Isle of Wight Pedestrian and Bicycle Facilities Committee provided important guidance and input throughout the planning process. This group included representatives from the Isle of Wight County Parks and Recreation and Planning Departments, the Town of Smithfield, the Virginia Department of Transportation, and citizens from each of the County's five election districts.



3. *Draft and Final Plan and Route Network*
   The final version of the Plan was reviewed by the Isle of Wight Pedestrian and Bicycle Facilities Committee, whose members represent a wide variety of user groups throughout the County. It was also reviewed by the Isle of Wight County Parks and Recreation Department. Based on comments from both groups, the Plan was revised. It was then reviewed by the Planning Commission and the Board of Supervisors.

It is intended, upon its adoption, that this Plan will become a component of the updated Isle of Wight County Comprehensive Plan.

Conclusion

This Plan has grown out of public concerns that walking and bicycling conditions in the County need a greater level of attention in order to be safe activities and that greenway trails should be developed. The remainder of this Plan describes how to accomplish this.

Chapter 2 outlines a vision for the Isle of Wight pedestrian, bicycle, and greenway network and identifies five key goals that form the foundation of this vision. Chapter 3 describes existing conditions and the extent of existing facilities. Chapter 4 recommends specific pedestrian and bicycle facilities and supportive policy actions that will be needed to improve conditions for walking and bicycling. It addresses engineering treatments as well as roadway design policies, land development policies, and network maintenance and management. Chapter 5 recommends education, enforcement, and encouragement programs to increase the total number and safety of pedestrians and bicyclists. Chapter 6 provides a guide for plan implementation.

CHAPTER 2: VISION AND GOALS

The recommendations of this Plan are based on a long-term vision for pedestrian and bicycle transportation and recreation throughout the County. The vision statement will guide the overall direction of future planning efforts in the County as well as the implementation of this plan.

Vision Statement

Isle of Wight County will become a place:

- ◊ *where people have the convenient and safe option of traveling on foot and by bicycle throughout the County for transportation and recreation, and;*
- ◊ *where pedestrian and bicycle activity is promoted for the health of residents, preservation of community character and the environment, and economic vitality of the County.*

The following goals build on the strengths of Isle of Wight County, and are designed to help achieve the vision for improving pedestrian and bicycle accommodations in the region.

GOAL 1: CONNECTIVITY

GOAL: Develop a county-wide walkway, bikeway, and greenway network among residential neighborhoods, Towns, workplaces, shopping centers, historic districts, schools, libraries, recreation centers, parks, and other destinations, including linkages to neighboring jurisdictions.

This goal addresses the need for a seamless network of pedestrian and bicycle connections within community areas and throughout the County. Countywide connectivity is a long-term goal that will be achieved in phases over time.

- OBJECTIVE A: Develop a network of greenway trails, pedestrian and bicycle facilities along roadways, and other pathways for non-motorized transportation throughout the County to connect parks, developments, neighborhoods, towns, historic districts, schools, museums, public facilities and adjacent jurisdictions.
- OBJECTIVE B: Prioritize pedestrian, bicycle, and greenway improvements in areas where development exists or growth is planned so that these public facilities can serve the greatest number of County residents and visitors.



- OBJECTIVE C: Incorporate requirements for greenways, bikeways and walkways into all community design and transportation project standards.
- OBJECTIVE D: Accommodate the widest possible range of user abilities, including bicyclists, pedestrians (walkers, joggers, runners), in-line skaters, persons with disabilities, children, and the elderly.

GOAL 2: ECONOMIC BENEFITS

GOAL: Improve pedestrian and bicycle conditions to provide more opportunities for recreation-based tourism and support local businesses.

This goal includes the economic benefits of improving pedestrian and bicycle conditions in Isle of Wight County. Isle of Wight County's small towns and rural countryside are an attractive destination for visitors to experience by walking and bicycling. In addition, improving sidewalks and streetscapes in small business districts can increase the attractiveness of stores and restaurants.



- OBJECTIVE A: Promote walking and bicycling in Isle of Wight County to residents and visitors through tours, brochures, maps, signs, and other tourism outlets.
- OBJECTIVE B: Redevelop streetscapes in small commercial areas to improve conditions for pedestrian activity and increase the attractiveness of local businesses.

GOAL 3: PRESERVATION OF COMMUNITY CHARACTER AND THE ENVIRONMENT

GOAL: Preserve the character of small towns and rural areas and protect the environment in the County by encouraging pedestrian and bicycle travel and designating greenway and open space corridors.

This goal addresses the growing need to preserve and enhance Isle of Wight County's landscapes and to protect the quality of life in established towns and villages and rural parts of the County.



- OBJECTIVE A: Maintain the personal character of small towns and peaceful nature of rural areas by promoting pedestrian and bicycle activity rather than automobile-dependent development.
- OBJECTIVE B: Reduce the environmental impact of motor vehicle emissions by providing alternative forms of transportation for short trips.
- OBJECTIVE C: Preserve greenways, stream buffers,

and open space corridors in areas when development occurs in order to filter run-off, provide migration routes for wildlife, and opportunities for non-motorized transportation and recreation.

GOAL 4: RECREATION AND HEALTH

GOAL: Provide opportunities for county residents to walk, bicycle, skate, run, boat, and participate in other similar activities for recreation and health.

This goal addresses the need for County residents to have close-to-home activities that can be reached by bicycling and walking and for County residents to engage in physical activity during their daily lives.

- OBJECTIVE A: Provide greenway trails, bikeways, and walkways within close proximity to places where people live and work, so that they have safe and convenient opportunities to engage in these activities.
- OBJECTIVE B: Provide access to the County's parks and recreational facilities via greenway trails, bikeways, sidewalks, and safe pedestrian crossings.
- OBJECTIVE C: Work with volunteer groups to encourage walking and bicycling through special events such as bike rides and walking tours.

GOAL 5: SAFETY

GOAL: Minimize the number of pedestrian and bicycle crashes and injuries while increasing the amount of pedestrian and bicycle activity in the County.

This goal addresses the need to provide safer facilities to accommodate pedestrian and bicycle activity and for community leaders and the general public to have a greater level of awareness of pedestrian and bicycle safety.



- OBJECTIVE A: Identify locations that are dangerous for pedestrians and bicyclists and recommend specific engineering, education, enforcement, and encouragement treatments to improve their safety.
- OBJECTIVE B: Incorporate safety and security related design standards for roads, walkways, bikeways and shared-use paths.
- OBJECTIVE C: Educate the public about safe walking, bicycling, and driving rules and practices.
- OBJECTIVE D: Promote trail safety by establishing guidelines for trail etiquette, and by educating people about these guidelines.

Conclusion

Isle of Wight County's vision for more greenways, bikeways and walkways provides the public, elected officials, county staff, and others with a clear picture of future accommodations for pedestrians and bicyclists. The goals speak directly to the particular areas of emphasis that need action. Together they provide a framework for the recommendations in Chapter 4 of this Plan.

CHAPTER 3: EXISTING CONDITIONS

Isle of Wight County has a number of very good opportunities for walking and bicycling for both recreation and transportation. Many County residents and visitors walk to experience the historic communities of Smithfield and Windsor. Bicyclists tour these towns as well as the beautiful rural landscapes in the County. Rural roadways with low volumes of traffic provide excellent opportunities for bicyclists to view rolling fields, farmhouses, the James River, the Blackwater River, and other inlets and tributaries. County residents also use non-motorized transportation modes to access local parks, schools, shops, and workplaces in their communities.

Non-motorized transportation and recreation opportunities are provided in different parts of the County by pedestrian, bicycle, and greenway facilities. These existing facilities are described below and shown on the Existing Conditions for Pedestrians and Bicycles Map (see folded map). However, there are also many barriers to pedestrian and bicycle access in Isle of Wight County, including the absence of important facilities, such as sidewalks and bicycle lanes on key roadways, disconnected street networks, and automobile-oriented developments. These barriers are also described below.

Pedestrian Facilities



Sidewalks are an essential element of the Isle of Wight County pedestrian transportation system. Sidewalks are currently provided on both sides of most streets in Historic Smithfield and in two new developments: Founder's Pointe and Windsor Woods. Sidewalks are provided on one side of the roadway in older sections of Windsor, VA 10 Business on the north side of Smithfield, part of South Church Street in Smithfield, as well as the Gatling Pointe and Eagle Harbor developments.

Roadway crossings are also critical for pedestrian accommodation. Several locations have marked crosswalks, including US 258 at the International Paper plant, VA 10 Business at the packing plants associated with Smithfield Foods Corporation, and the intersections of VA 10 Business and Main Street Smithfield, VA 10 Bypass and US 258, and South Church Street and Battery Park Road. Pedestrian crossing warning signs have been provided at several of these crosswalks. Some narrow, low-volume roads, such as the older residential streets in Windsor, are also convenient for pedestrian crossings because motor vehicle traffic travels slowly.

Bicycle Facilities

There are many rural and neighborhood roadways in Isle of Wight County with low traffic volumes that are excellent places to bicycle without special bicycle facilities. Some paved shoulder space is provided on US 17, US 258, VA 10 Bypass, Brewers Neck Road, and on bridges over the Pagan River and Jones Creek. These paved shoulders provide additional roadway pavement that allows bicyclists to ride further from moving automobiles.



The County also has one "Share the Road" with bicycles sign, located on Oliver Drive (VA 600). There are currently no designated bicycle lanes in Isle of Wight County.

Greenway Facilities

Currently, Isle of Wight County's most significant greenway path or trail is the Carrollton Nike Park Mountain Bike Trail. This trail is a soft-surface, 2.5-mile loop in Carrollton Nike Park. Other short trails exist in local parks. All of these greenway paths are used primarily for recreation. There are no greenway facilities in Isle of Wight County that meet existing AASHTO standards for shared-use pathways (these standards are described in Appendix D).



Barriers to Walking and Bicycling

Sidewalk facilities are essential for pedestrian safety and comfort, but have not been provided along many roadways in Isle of Wight County that serve residential and commercial developments. Lack of sidewalks is a barrier to pedestrian travel in the following developed areas:

- Zuni
- Carrsville
- West Main Street in Smithfield to Little's Supermarket and to Westside Elementary
- Benns Church Boulevard
- Battery Park Road
- North Court Street in Windsor
- US 460 on the east side of Windsor
- US 258 in Windsor

Further, some of the existing sidewalks do not provide a comfortable walking experience. For example, the sidewalks on US 460 in Windsor are immediately adjacent to the curb, with little separation from high-speed, high-volume traffic that includes many large trucks. Pedestrians on these sidewalks must also negotiate numerous driveway crossings.

Roadways with high traffic volumes and high speeds are barriers to bicycling, particularly in areas where alternative low-volume roadways are not available. For example, many bicyclists would like to use Battery Park Road and Nike Park Road, but these roadways are used by motor vehicles as east-west connectors between Smithfield and the US 17 Corridor. They currently lack shoulders, making them very difficult for bicycling during times of heavy traffic. Even on roadways where shoulders are provided, they are often difficult to ride on because of roadway debris that has not been cleared.

The major thoroughfares in Isle of Wight County are barriers to both pedestrian and bicycle crossings. In particular, US 17, US 258, US 460, VA 10 Bypass, and Benns Church Boulevard are significant barriers to pedestrians and bicyclists. Many sections of these roadways have two lanes in each direction and serve high volumes of high-speed traffic. While traffic signals have been provided stop traffic at some intersections on these roadways, there are currently no pedestrian signals in Isle of Wight County. Pedestrian signals would indicate to pedestrians how much time they have to complete crossing the roadway. In addition, many existing intersections with traffic signals are also difficult for pedestrians to cross because there are no marked crosswalks, no median refuge areas, and they have poor lighting at night. Simply providing traffic signals at complex intersections does not accommodate pedestrians adequately.

In addition, the land use patterns and street networks that have been developed over the past 40 years in Isle of Wight County discourage pedestrian and bicycle transportation. Residential areas have tended to be separated completely from commercial and industrial areas. Further, residential neighborhood streets have often been developed in "pods" that are connected by only one or two street access points to other residential pods and activity areas. These development choices have created a land use pattern that requires long trips between homes and activities—a pattern that makes pedestrian and bicycle trips (as well as automobile trips) inconvenient.

Many of these pedestrian and bicycle barriers were identified by Isle of Wight County residents who completed the Pedestrian and Bicycle Facilities Master Plan Survey. Residents are clearly demanding better conditions for non-motorized transportation. Survey responses are summarized in the box below. These existing barriers to pedestrian and bicycle transportation and recreation will be addressed and overcome through the implementation of this Plan.





Summary of Online Survey Results
(207 responses from May to June 2006)

- 62% of respondents reported walking and 48% of respondents reported biking at least a few times per week.
- 94% of respondents have at least one bicycle in their household.
- Respondents walk and bicycle most commonly for exercise, but also walk and bicycle to social/recreational activities, to work, to shopping/errands, to work, and to school.
- The most commonly cited barriers to walking in Isle of Wight County are:
  - Lack of sidewalks
  - Lack of greenway paths/trails
  - Dangerous/difficult roadway crossings
  - High-speed traffic
- The most commonly cited barriers to bicycling in Isle of Wight County are:
  - Lack of bicycle facilities (such as bike lanes, wide travel lanes, paved shoulders, greenway trails, etc.)
  - High-speed traffic
  - Narrow roads
  - Heavy traffic
- Isle of Wight County residents would be encouraged to walk more if the following changes are made:
  - More greenways/off-road trails
  - More sidewalks
  - More destinations within walking distance
  - More paved roadway shoulder areas
- Isle of Wight County residents would be encouraged to bicycle more if the following changes are made:
  - More bicycle facilities (such as bike lanes, wide travel lanes, paved shoulders, greenway trails, etc.)
  - More destinations within bicycling distance
  - More bike parking
  - More organized bicycle rides for families and new bicyclists
- Respondents prefer to ride on the following types of bicycle facilities:
  - Designated bicycle lanes
  - Greenways/off-road trails
  - Paved shoulders
- Locations most commonly suggested for pedestrian facility improvements are:
  - Battery Park Road - Nike Park Road
  - Church Street in Smithfield - US 258 in Windsor and Smithfield
  - US 17 through County - Brewer's Neck Boulevard
  - Berry Hill Road - VA 10 Bypass
  - Intersection of VA 10 Bypass & US 258 - US 460 through Windsor
  - Carrsville Highway (US 58) - Reynolds Road
  - Benns Church Boulevard - Crossings of VA 10 Business by the Smithfield meat plants
- Locations most commonly suggested for bicycle facility improvements are:
  - Battery Park Road - Nike Park Road
  - Church Street in Smithfield - US 460 through Windsor
  - Smith's Neck Road - Brewers Neck Road
  - US 17 - VA 10 Business and Bypass
  - US 258 - US 58
  - Downtown Smithfield - Benns Church Boulevard
- Respondents feel that motorists commonly drive too fast and pass people walking and bicycling on the side of the road too closely.
- County residents would like more trails connecting between developments.
- Respondent characteristics:
  - The most common age group for respondents was 40 to 49 (41%).
  - 57% of respondents were female.
  - 42% of respondents lived in households with 4 or more members; 6% were in single-family households.
  - 48% of respondents have lived in Isle of Wight County for more than 10 years.
  - Responses were received from throughout the County, though more responses came from areas with more population: 55% of respondents were from the Smithfield area; 21% were from the Carrollton Area, and 11% were from the Windsor Area.

Pedestrian and Bicycle Programs
While there have been few pedestrian and bicycle education, enforcement, and encouragement programs formalized at the County level, there have been a number of organized activities on a smaller scale in parts of Isle of Wight County. These activities include:

- Historic Smithfield and Windsor walking tours
- Signs in Historic Smithfield and Windsor that are oriented for pedestrians
- Promotion of walking by the Isle of Wight-Smithfield-Windsor Chamber of Commerce
- Organized bicycle rides
- Bicycle clubs from Isle of Wight County and surrounding counties riding in the County
- Bicycle rodeos organized by law enforcement officers and safety organizations
- Organized running races, such as the Hog Jog
- Smithfield Triathalon

Conclusion

Isle of Wight County has a mix of opportunities and challenges to walking and bicycling. Progress to improve future connectivity will depend on the County's ability to overcome the barriers identified in this chapter, as well as to capitalize on the County's strengths and the growing popularity of greenways and pedestrian and bicycle transportation and recreation. The following chapters provide recommendations for achieving the County's goals for pedestrians and bicyclists.

CHAPTER 4: FACILITY AND POLICY RECOMMENDATIONS

This chapter recommends pedestrian and bicycle facilities for specific locations as well as supportive policies that require pedestrian and bicycle facilities to be provided along with new transportation and land use development in Isle of Wight County.

FACILITY RECOMMENDATIONS

The recommendations in this section are aimed at creating an interconnected network of greenways, sidewalks, bikeways, and safe roadway crossings so that people have the convenient and comfortable option of bicycling and walking for recreation and transportation.



As noted in Chapter 1, these recommendations are fully supported by the Isle of Wight County Comprehensive Plan and Hampton Roads Regional Transportation Plan.

The recommended pedestrian and bicycle facilities for Isle of Wight County are identified in the following maps (the maps are included with this Plan):

- Recommended Pedestrian Facilities Map (includes greenway trails, formalized public water access, and pedestrian crossing improvements)
- Recommended Bicycle Facilities Map (includes regional and State-wide greenway trails, dedicated bicycle lanes, paved shoulders, signed bicycle routes, and "Share the Road" signs)

The recommended pedestrian and bicycle system consists of a variety of complementary facility types (e.g., multi-use paths, dedicated bicycle lanes, sidewalks, signed routes, etc.). Each facility type is described in detail in Appendix D and in the County's *Construction Specifications Manual*. This system of facilities will be developed fully over the next 25 years. Project phasing (e.g., short-term, medium-term, and long-term projects) is described in detail in the Implementation Chapter.

The pedestrian and bicycle facilities that are recommended in this Plan:

- Provide residents and visitors with pedestrian and bicycle access to activity locations, such as schools, offices, restaurants, churches, etc.
- Provide access to scenic open space areas such as greenways, parks, and water bodies
- Serve historical sites
- Create more direct access for pedestrians and bicyclists between destinations

- Improve opportunities for recreation within neighborhoods
- Increase the safety of pedestrian and bicycle activity

ACTION 1: Provide facilities that allow pedestrians to travel along and cross roadways safely.

The Isle of Wight County Planning and Parks and Recreation Departments should work with VDOT to provide more sidewalks, paved shoulders, and safer roadway crossings for pedestrians. Nearly all County residents and visitors are pedestrians at some time during the day. People are pedestrians when they are walking to school, running on a sidewalk for exercise, crossing the street after parking in a downtown shopping district, or walking to a store entrance through a parking lot. Therefore, it is essential to provide safe and convenient facilities for pedestrians.

Sidewalks

Sidewalks should be provided in urban, suburban, and village areas of the County to increase the safety and comfort of walking along roadways. Approximately 11 miles of major roadways are recommended for new sidewalks in this Plan. These include:

- South Church Street (Cypress Creek Bridge to Battery Park Road)
- Benns Church Boulevard (South Church Street to Brewers Neck Boulevard)
- Battery Park Road (South Church Street to the Gatling Pointe development)
- Main Street in Smithfield (Westside Elementary School to Grace Street—add sidewalk to side where missing)
- US 460 in Windsor (Court Street to Lovers Lane)
- US 258 in Windsor (US 460 to Court Street North)
- Court Street North (US 460 to US 258—add sidewalk to side where missing)
- Brewers Neck Boulevard (Benns Church Boulevard to Chapmans Lane)
- Fairway Drive/Cedar Street/Jericho Road (sidewalk connection between Cypress Creek and Downtown Smithfield/Jericho Estates)

As a long-term goal, sidewalks should be provided on both sides of all roadways in urban, suburban, and village areas. To achieve this goal, sidewalks must be included as a part of new developments, as described in Action 8 and Appendix F.

Roadway Crossing Improvements

Roadway crossing improvements are also recommended at several locations in Isle of Wight County. While sidewalks are important pedestrian facilities, many pedestrian crashes occur at roadway crossing locations. In addition, roadways such as US 17, US 258, US 460, VA 32, and VA 10 can be barriers to pedestrian travel because they are difficult to cross. Therefore, pedestrian crossing improvements are recommended at 19 locations, including:

- Crossings of US 17 in the Eagle Harbor development area (pedestrian signals, marked crosswalks, median refuge areas, pedestrian warning signs, improved pedestrian lighting)

- US 258 & VA 10 Bypass (pedestrian signals, marked crosswalks, pedestrian warning signs, improved pedestrian lighting, connecting sidewalks)
- US 258 north of Westside Elementary School (median crossing islands in the center turn lane, marked crosswalks, pedestrian warning signs, improved pedestrian lighting)
- VA 10 Business between the plants associated with Smithfield Foods Corporation, and parking lots (in-roadway pedestrian warning signs, improved pedestrian lighting)
- US 258 & US 460 (pedestrian signals, marked crosswalks, pedestrian warning signs, improved pedestrian lighting, connecting sidewalks)



- US 258 between International Paper and parking lots (median crossing island, improved pedestrian lighting, flashing pedestrian warning signs)
- US 460 & VA 603 & VA 610 (pedestrian signals, pedestrian warning signs, improved pedestrian lighting)
- Benns Church Boulevard & Canteberry Lane (pedestrian signals, marked crosswalks, median refuge areas, pedestrian warning signs, improved pedestrian lighting, connecting sidewalks)
- Benns Church Boulevard & Brewers Neck Boulevard (relocate Brewers Neck Boulevard to the south to create a new intersection and reconfigure existing intersection to include crosswalks, pedestrian signals, pedestrian warning signs, improved pedestrian lighting, connecting sidewalks)
- Benns Church Boulevard south of Brewers Neck Boulevard (provide crosswalks, curb ramps, median crossing islands pedestrian signals, pedestrian warning signs, pedestrian lighting, and connecting sidewalks at new intersection(s) when developments are constructed adjacent to Benns Church Road)
- South Church Street & Battery Park Road (pedestrian signals, pedestrian warning signs, improved pedestrian lighting, connecting sidewalks)
- Battery Park Road & Nike Park Road (provide safe pedestrian crossings when intersection is reconstructed)
- US 258 at Heritage Park (pedestrian warning signs and median crossing island)
- Battery Park Road & Gatling Pointe Parkway (pedestrian warning signs, improved pedestrian lighting, and median crossing islands or in-roadway pedestrian warning signs)

Pedestrian crossing facilities should also be included at all intersections along US 17 as a part of the future improvements being planned between US 258/VA 32 and the Chuckatuck Bridge. In addition, this project should include facilities to accommodate pedestrian and bicycle travel along the corridor, such as

multi-use paths, paved shoulders, and sidewalks. Other future roadway projects should also be designed and constructed to facilitate safe pedestrian crossings.

Providing safe roadway crossings for pedestrians also improves conditions for bicyclists.

ACTION 2: Establish multi-use paths that serve the transportation and recreation needs of County residents and visitors.

The Isle of Wight County Parks and Recreation Department should take the lead in developing a system of multi-use path facilities. The facilities in this system should generally be separated from County roadway rights-of-way.

Multi-use paths

Multi-use paths are paved or unpaved–trails that can serve a wide variety of types of non-motorized users. Paved multi-use paths can serve all types of bicyclists, runners, walkers, in-line skaters, and wheelchair users. When constructed, these paved paths should be a minimum of 8-feet wide and designed according to the standards in the County's Construction Specifications Manual or the AASHTO *Guide for the Development of Bicycle Facilities* (1999). Unpaved multi-use paths are typically a minimum of 10-feet wide, graded, and constructed out of crushed stone or gravel. These trails can serve a wide variety of users, including mountain bicyclists, horseback riders, hikers, runners and walkers. In most cases, the multi-use paths recommended in Isle of Wight County extend along stream valleys and floodplain areas that can't be developed, through larger tracks of land that will be developed in the future, along roadways, abandoned railways, and utility corridors.



This Plan recommends 88 miles of multi-use paths. One of the key multi-use paths is the Lake Gaston Pipeline Trail. This regional trail would take advantage of the public right-of-way used for the underground pipeline between Lake Gaston and the Town of Windsor. The first section of this trail in Isle of Wight County should be developed near Walters, utilizing the County-owned Camp Washington property as one potential trail head. Within the first two years, an agreement should be signed with the City of Virginia Beach for utilizing the pipeline right-of-way, and the section of the trail near Walters should be designed. Construction of this section of trail should follow.

In the longer-term, a multi-use path or other high-quality pedestrian and bicycle facility connection should be constructed within the Battery Park Road and Nike Park Road Corridors. This facility should provide an important connection between Smithfield, Carrollton Nike Park, and the US 17 Corridor.

Isle of Wight County should also continue to develop other less formal, unpaved trails that can be used for running, hiking, horseback riding, and mountain biking. These trails are not included on either of the recommendations maps. Unpaved trails have the advantage of not adding impervious surface area to sensitive environmental areas. However, these trails are typically used only for recreation and not transportation.

In addition, the County should also develop additional public water access points and establish blueway corridors. It will be critical for the recommended pedestrian and bicycle facilities to connect to these blueways. See Appendix J for additional information about blueways.

The short-term multi-use paths should be developed as stand-alone projects. These projects include constructing the first section of the Lake Gaston Pipeline Trail in the Walters area and adding a multi-use path between the Windsor Middle School Area and the Heritage Park area on US 258.

Many of the other recommended multi-use paths can be provided through future land use development projects (i.e. proffers, roadway development, donations, and land purchase). As a result, the lines on the recommendations map representing long-term trails are very wide and generic in nature. They do not reflect the acquisition of specific properties. Instead, they represent important network connections that should be provided as land is developed.

In developing this system, it is important to note that the County does not endorse the destruction of any home or business or taking of family garden plots.

ACTION 3: Develop on-road bicycle facilities to serve a wide variety of bicyclists.

The Isle of Wight County Planning and Parks and Recreation Departments should work with VDOT to construct on-road bicycle facilities for all types of bicyclists in the County. There are many different types of bicycle accommodations that can be provided on roadways, including dedicated bicycle lanes, non-dedicated paved shoulders, and shared roadways. These facility types can be appropriate in different situations.

Dedicated Bicycle Lanes



Dedicated Bicycle lanes should generally be provided in more urban and suburban areas on roadways with moderate to high traffic volumes. These facilities make conditions more comfortable for all types of bicyclists, particularly for children and less experienced riders. Bicycle lanes are areas of the roadway that have been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. They are always located on both sides of the road (except one way streets), and carry bicyclists in the same direction as adjacent motor vehicle traffic. The minimum width for a bicycle lane shall be 4 feet on roads without curb and gutter, and 5 feet with a curb and gutter (5' includes the 2' gutter pan). Five- and six-foot bike lanes are typical for collector and arterial roads. Dedicated bicycle lanes are recommended as shown on the Recommended Bicycle Facilities Map.

Non-dedicated Bike Routes (Striped/Paved Shoulders)

Non-dedicated Bike Routes (striped/paved shoulders) are usually recommended in lower density suburban and rural roadways with higher traffic volumes and/or traffic speeds. These facilities provide cyclists with extra riding space to increase their comfort when traveling adjacent to motor vehicle traffic. There is no minimum width for paved shoulders; however a width of at least 4 feet outside the lane edge stripe is preferred, up to six (6) feet for higher speed and/or higher volume roadways. According to the AASHTO Guide for the Development of Bicycle Facilities (1999), "where 4-foot widths cannot be achieved, any additional shoulder width is better than none at all". In addition to improving conditions for bicyclists and pedestrians, shoulders extend the pavement life of travel lanes and increase motor vehicle safety. Shoulders should be kept clear of debris to be usable by bicyclists. Shoulders are recommended on the following roadways:

- Nike Park Road
- Moonefield Drive
- Foursquare Road (Racetrack Road to US 258)
- West Blackwater Road
- VA 10 Bypass
- VA 10 Business
- VA 32
- US 17
- US 58
- US 258

This plan recommends more than 116 miles of dedicated bicycle lanes and non-dedicated bike routes (paved shoulders), not including shoulders to be developed on roadways as a part of new developments (see Action 8 and Appendix F).

Shared Roadways



Shared roadways are locations where bicyclists can comfortably share the travel lanes with motor vehicles. These roadways provide excellent conditions for bicycling without any other special bicycle accommodations. Isle of Wight County has many shared roadways that are bicycle-friendly, including many low-volume rural roadways and low-speed neighborhood streets. No special recommendations are made for these roadways except to provide routine maintenance and to monitor traffic volumes and speeds over time to ensure that they remain safe as shared roadways.

There are two unpaved roadways that could provide excellent connections for bicycle routes. These roads are Morgarts Beach Road (VA 673) between VA 10 Business and Fort Boykin Historical Park and Ballard Road (VA 614) between US 258 and VA 641. It is recommended that these 4-miles of roads be prioritized for paving through the County's Rural Rustic Road Program. Rural Rustic Road paving projects are done with the primary purpose of increasing the safety and comfort of motor vehicle travel, but they also improve conditions for bicycling by creating a smooth riding surface.

ACTION 4: Establish a network of signed bicycle routes that identifies the most suitable roadways for bicycling between community centers, recreational areas, and other key destinations in the County.

The Isle of Wight County Parks and Recreation Department should work with VDOT and the County Planning Department to create a network of signed bicycle routes in the County. Signed bicycle routes can consist of a variety of bicycle facility types, including multi-use paths, paved shoulders, bike lanes, and shared roadways. The recommended network of signed bicycle routes shows preferred routes for bicycling between major destinations in the County. Marking roadways with bicycle route signs indicates to bicyclists that there are particular advantages to using these routes rather than alternative roadways, such as lower traffic volumes, lower traffic speeds, better visibility to oncoming traffic, and fewer difficult intersection crossings. The bicycle route signs in Isle of Wight County should include information about destinations and distance (such as an arrow sign stating: "Windsor, 5.2 miles"). The 130+ mile system of bicycle routes are shown on the Recommended Bicycle Facilities Map, and signage on these routes is recommended as a short-term project.

ACTION 5: Install bicycle racks at key destinations throughout the County.



The Isle of Wight County Parks and Recreation Department should install bicycle racks at all of its park facilities. In addition, it should set up a program for businesses, non-profit organizations, government agencies, and other property owners to do one-stop shopping for bike racks. The Parks and Recreation Department should have one staff member be the point of contact for all bike rack requests from around the County, and set up a procedure for application and installment of the racks. This procedure would include procurement, site evaluations, determining the number of racks that are needed, installing the racks, and tracking their locations. Initially, bicycle racks and bicycle lockers should be provided at the Park and Ride Lot near the intersection of US 17 and Smiths Neck Road and at the commuter parking lot near the intersection of VA 10 Bypass and US 258.

ACTION 6: Improve pedestrian and bicycle access to existing and future public transit facilities.

The Isle of Wight County Planning Department should work with VDOT to improve pedestrian and bicycle access to transit facilities. Currently, the County has one park and ride lot in the Carrollton area (near the intersection of Smith's Neck Road and US 17). Sidewalks and bicycle lanes should be provided and safe roadway crossing opportunities should be created on Smith's Neck Road to increase the safety and comfort of walking and bicycling to the park and ride lot. As adjacent land is developed, additional pedestrian and bicycle pathways should be provided to connect to the park and ride lot. Bicycle racks and lockers should be provided in close proximity to where buses pick up passengers. Bike lockers provide long term, secure bike parking, and are usually made available through long-term rentals (i.e. 3 to 6 months).



As development occurs and public transit services expand in Isle of Wight County in the future, the County should continue to work with Hampton Roads Transit and VDOT to provide high-quality pedestrian and bicycle access to all bus stops and transit hubs.

POLICY RECOMMENDATIONS

By far, the most efficient way to improve conditions for walking and bicycling is to incorporate pedestrian facilities, bicycle facilities, and greenways into community design from the outset. It is much more expensive to retrofit pedestrian and bicycle facilities into communities that were originally designed only for automobile access. Therefore the concept of "complete streets" has gained a tremendous amount of support in recent years through Federal, State, and local policies. Complete streets are those that are designed for all users – people who drive automobiles, people who use public transportation, people who bicycle, people with disabilities, and people who travel on foot. One of the keys to achieving this recommendation is for the County to ensure that VDOT follows the *VDOT Policy for Integrating Bicycle and Pedestrian Accommodations* is applied to all projects that involve VDOT right of way or utilize funds that flow through VDOT.

Now is the critical time for Isle of Wight County to prepare for growth in its Development Service Districts, and to learn from the mistakes of other Virginia counties that were less prepared for this type of growth. Other jurisdictions are dominated by automobile traffic, and face a daunting task of retrofitting their suburban areas to enable people to walk and bicycle. This is an expensive solution that could have been avoided if streets, residential and commercial developments had been built to accommodate all users initially.

A critical step in providing convenient and safe options for pedestrian and bicycle transportation and recreation in Isle of Wight County lies in having a strategic plan that is supported by design guidelines, ordinances and other regulations necessary to steer community design and roadway construction.

The policies recommended in this plan will help integrate accommodations for pedestrian and bicycle transportation and recreation into the everyday activities of Isle of Wight County.

ACTION 7: Ensure that new developments (both commercial and residential) are safe for walking and bicycling, and that the non-motorized transportation and recreation facilities identified in this Plan (and other local plans) are constructed during development projects.

County and municipal staff should require future developers to construct the public greenway, pedestrian, and bicycle facilities that are identified in this Plan as a part of their developments. Further, developers must provide connector trails in order to provide access from their developments to the main County trails. This plan recommends six specific connections between existing subdivisions that should be provided as new developments occur. Over time, this will help address the County's current problem of disconnected sidewalks and bikeways between different developments.

In addition, new development often creates new opportunities for providing non-motorized transportation and recreation facilities. Therefore, developers should also be required to include other public pedestrian and bicycle facilities to provide both internal and external connectivity.



Except in rare circumstances, all trails should be built outside of the 10-year floodplain. All trails that are built to conform to this Plan will be dedicated by the developer to the County for public use.

Action 8: Require developers to provide pedestrian and bicycle accommodations in new developments by incorporating new design standards into the Isle of Wight County Zoning Ordinance.

At the present time, pedestrian and bicycle facilities are supported in the language of the Comprehensive Plan but are not adequately supported by the detailed regulations that control development within the County. *As a result, there are few regulations that require developers to include pedestrian and bicycle accommodations in new developments.*

Developers that have worked in other Virginia counties are accustomed to regulations that require sidewalks, bikeways, and multi-use paths. Isle of Wight County should act now to codify specific requirements for pedestrian and bicycle accommodations in the Development Review section of the Isle of Wight County Zoning Ordinance and also encourage the Town of Smithfield and Town of Windsor to strengthen their Zoning and Subdivision Ordinances so that future developments in the Service Districts are of the highest possible quality for pedestrians and bicyclists.

The Isle of Wight County Zoning Ordinance should be revised to incorporate many of the guidelines in the Community Design Chapter of the Isle of Wight County Comprehensive Plan (2001). In particular, new developments should include the following:

- A land use pattern that provides activities and services in close proximity to residences so that walking and bicycling are viable
- An interconnected roadway system (within the development and connecting to adjacent roadways and developments)
- Sidewalks on both sides of roadways (with the exception of short dead-end streets)
- Multi-use paths within the subdivision that connect to the countywide greenway system

- Riparian buffer of 50 feet on either side of streams that can be used for public greenway facilities
- Safe and convenient roadway crossings for pedestrians and bicyclists within and at the boundaries of the development
- Dedicated bicycle lanes on collector and arterial roadways and non-dedicated bike routes with paved shoulders on main rural roadways (see Appendix F and the County's *Construction Specifications Manual* for specific guidelines)
- Bicycle parking at potential bicycling destinations
- Pedestrian and bicycle facilities to provide safe and convenient access to existing and future transit facilities

More details about these recommendations for updating the County Zoning Ordinance are included in Appendix F.

Action 9: Establish a Greenway Program to preserve and protect open space and greenway lands in Isle of Wight County.

While this Plan recommends greenway trails in many locations across Isle of Wight County, very few miles of these proposed greenways are currently on publicly-owned land. Therefore, the recommendations provide a long-term vision for greenway development in the County that will require a wide variety of strategies to achieve. Strategies that can be used to preserve space for greenway trails include:

- Land management (management plans and easements)
- Government regulation (incentive zoning, dedications, fee-in-lieu programs, buffer zones, overlay zones, and subdivision exactions)
- Acquisition (donation, tax incentives, purchase of development rights/PACE Program)

Appendix G provides a more detailed description of several of these strategies.

To implement these strategies, the Isle of Wight County Parks and Recreation Department should establish a formal Greenway Program. Private landowners in Isle of Wight County should be invited to participate in this Greenway Program primarily through voluntary measures and incentives, many of which already exist through the County's Land Preservation Program. The new Greenway Program should be established as a distinct part of the Land Preservation Program (which currently includes Open Space Management and Open Space Preservation).

Rising development pressures on small landowners present a serious threat to preserving greenway lands in the County, because landowners with less than 50 acres of land are not eligible for many of the existing preservation programs. There are some good reasons for this – small parcels usually cost more per acre, making it more cost effective to concentrate on preserving large parcels. In order to protect the greenway network, however, there must be opportunities for landowners of all different sizes to participate.

Some landowners fail to participate in land preservation programs because they are not aware of the tax benefits. It can be difficult to navigate through the myriad of programs and requirements to determine the best option for a landowner's given situation. To gain increased awareness among local citizens, the County Parks and Recreation Department should create a brochure entitled: *Guide to Private Landowner Participation in Isle of Wight County's Greenway Network*. This brochure should be specific to the programs available for Isle of Wight County landowners, and should explain eligibility requirements for each program in a clear and easy-to-read format.

A Note about Liability:

Private landowners who grant an easement for public access across their land are protected from liability by the Virginia Recreational Use Act. (§29.1-509 of the *Code of Virginia*)

This brochure should be made available to land trusts, greenway advocates, and other citizens groups working on greenway projects, as well as through traditional sources within the County. Note that descriptions for many of these programs already exist; this would consolidate them in one brochure, for ease of access.

The County Parks and Recreation Program should also provide periodic updates to the development community regarding the greenway network. Developers and their engineering consultants should be made aware of changes in the County's review process with regards to protecting greenway lands, as well as the incentives that are available to them.

ACTION 10: Establish an institutional framework and oversight structure necessary to implement the recommendations of this Plan.

This section addresses the need for continued oversight and coordination to ensure successful implementation of this Plan. This Plan serves as a starting point to provide direction for improving walking and bicycling conditions throughout the County. It also encourages local communities to perform further investigation into opportunities to construct pedestrian and bicycle facilities multi-use greenway paths, bikeways and walkways in their specific localities.

A variety of agencies, boards, committees and individuals will play a role in the oversight of future bicycle, pedestrian and greenway programs and projects. It is important that these bodies provide the appropriate level of oversight and do not overlap in their responsibilities. The responsibilities of each are described below:

<u>County and Town Agency Staff (including all plan reviewers) (Existing)</u>
County and Town agency staff are responsible for reviewing the *details* of all proposed projects, and must enforce the regulations with regards to bicycle, pedestrian and trail provisions. These staff should also be responsible for identifying appropriate issues that should be brought before the Planning Commission.

County and Town agency staff are also responsible for *quality control* of the system. They must ensure that pedestrian and bicycle facilities are

constructed and maintained in compliance with County and Town standards (see Action 8 and Appendix F). In this respect, they have a responsibility for inspecting pedestrian and bicycle facilities that are built by developers for public use.

As the responsibilities of agency staff will be considerable, it is recommended that a new County staff person be hired to be responsible for the Pedestrian, Bicycle, and Greenways program (see below). In addition, County staff can consult a new Pedestrian and Bicycle Advisory Committee (PBAC) regarding various details of development projects when staff need advice or assistance. The PBAC will be responsible for advocating for the implementation of various aspects of the Plan (see below).

County Pedestrian, Bicycle, and Greenway Program Coordinator (Designation of Existing Staff Member to Serve in this Role)

Isle of Wight County should designate an existing staff person in the Parks and Recreation or Planning and Zoning Department to oversee the planning and design of the recommended pedestrian and bicycle facilities and proposed greenways and trails throughout the County, and to act as an advocate for such facilities during the development process.

To achieve the recommendations of this Plan, much work will need to be done in the future. County staff should assume the responsibilities of preparing funding grant proposals, overseeing the work of developers in establishing greenways, and coordinating among the various Service Districts, local communities, and adjacent jurisdictions.

County Pedestrian and Bicycle Advisory Committee (PBAC) (New as a Full-Time Committee)

The Planning Commission/Board of Supervisors should establish a county-wide committee responsible for advising the County Pedestrian, Bicycle, and Greenway Program Coordinator, advising the County Planning Commission, and overseeing the implementation of this Plan.

Evidence from around the country shows that successful pedestrian and bicycle programs often result from well-organized advocacy and inter-agency support. The purpose of the PBAC will be to stimulate and coordinate the implementation of this Plan. The PBAC should continue to be comprised of individuals from the Chamber of Commerce, Public Safety, Planning and Zoning, Parks and Recreation, VDOT, and citizens from all five voting districts. The County should also consider including a school system representative on the Committee.

A key goal of this committee in the first year should be to provide assistance and support for revisions to the Isle of Wight County Zoning Ordinance and Town of Smithfield and Town of Windsor Zoning and Subdivision ordinances.

Planning Commission (Existing)

As an advisory board to the Board of Supervisors, the Planning Commission's responsibilities include providing recommendations to the Board of Supervisors

for special exceptions, rezonings, Comprehensive Plan amendments, and other related land development issues. It will also be responsible for achieving the County's vision for the location of pedestrian and bicycle facilities and preservation of greenway corridors. As such, the Planning Commission may request assistance from the PBAC on occasion regarding important pedestrian and bicycle issues, and will serve to advocate for pedestrian and bicycle facilities as part of its ongoing work. In addition, the Planning Commission will be responsible for implementing the recommended changes to the Zoning Ordinance (see Action 8 and Appendix F).

ACTION 11: Develop a maintenance and management program that ensures that facilities are maintained in good repair, both through routine seasonal maintenance and spot repairs.

Since Isle of Wight County will own only portions of the system of recommended pedestrian and bicycle facilities throughout the County, ensuring good maintenance will require coordination with a variety of other parties. This includes VDOT, developers and property managers, Home Owners Associations (HOAs), volunteer groups, and other organizations. VDOT will maintain (e.g., replace and repair) "sidewalks, shared use paths, and bicycle paths built within department right-of-way, built to department standards, and accepted for maintenance" (as per VDOT *Policy for Integrating Bicycle and Pedestrian Accommodations*, effective March 18, 2004). This does not include snow and ice removal on sidewalks and multi-use paths and does not preclude previous maintenance agreements.

<u>Maintenance Schedule</u>

A first step in developing the County's maintenance program is to identify what tasks need to be undertaken and who is responsible for these tasks. Responsibility is largely determined by facility ownership. Tasks are largely divided between on-street bikeway maintenance tasks, "off-street" sidewalk tasks, and multi-use trail maintenance tasks. Recommended maintenance practices include:

- Sweeping trails, bicycle lanes and paved shoulders regularly to remove debris;
- Repairing trail and roadway surfaces and sidewalks to ensure a continuous facility and smooth surface that is free of cracks, potholes, bumps and other physical problems;
- Careful repair of utility cuts to prevent rough surfaces for cyclists and sidewalk interruptions for pedestrians;
- Cutting back vegetation such as shrubbery, tree limbs and intrusive tree roots to prevent encroachment;
- Maintenance of pedestrian and bicycle signs, striping, and markings, especially replacement of signs that are damaged by vehicle crashes and other incidents;
- Maintenance of drainage facilities including catch basins and drainage grates;
- Snow removal; and
- Signal maintenance.

A maintenance program for future pedestrian and bicycle facilities is provided in Appendix E. The Isle of Wight County Parks and Recreation Department should work with the County Public Works Department, VDOT, and volunteer organizations to achieve this schedule.

Maintenance Website and Hotline

Once a regular schedule for pedestrian and bicycle facility maintenance is established, a website and phone hotline should be established to allow residents to report maintenance problems and request spot repairs. The County website should include a "Pedestrian and Bicycle Facility Maintenance Action Request Form" and the County should establish a Pedestrian and Bicycle Maintenance Hotline to give citizens an easy means of reporting maintenance concerns on local trails and bikeways.

Maintenance Manager

The County identify a lead staff person as a Maintenance Manager to organize and keep track of both regular and remedial inspection and maintenance of the on-road and off-road pedestrian and bicycle network. This staff person would be responsible for coordinating with VDOT, County maintenance crews, and volunteer groups for tasks that they can assist with. The maintenance manager would be responsible for addressing maintenance issues that were raised by residents through the County website or Pedestrian and Bicycle Facility Maintenance Hotline.

ACTION 12: Provide focused training to local agency staff to ensure that pedestrian, bicycle, and greenway needs are incorporated into planning, design, construction, and maintenance procedures for roadway and land use development.

The Isle of Wight County Planning and Parks and Recreation Departments should work with VDOT State, Hampton Roads District, and Waverly Residency staff to provide focused training to Isle of Wight County, the Town of Smithfield, and Town of Windsor staff on pedestrian and bicycle issues. Pedestrian and bicycle design is a relatively new field of study in Isle of Wight County, so this training will help local agency staff who are responsible for development reviews and for coordinating with VDOT on transportation projects understand requirements for pedestrian and bicycle accommodation. Providing training on how to incorporate pedestrian and bicycle needs into the planning, design, construction, and maintenance phases of roadway and land development processes is supported by the VDOT Policy for Integrating Bicycle and Pedestrian Accommodations.

This type of training has been conducted in other Virginia communities and has been funded by VDOT in the past (a training session was given in the Richmond Region in 2004, and a statewide series of pedestrian and bicycle workshops is currently being planned by VDOT's State Office).

ACTION 13: Pursue additional grant sources and capital funding as necessary to supplement developer-financed pedestrian and bicycle facilities.

Although the majority of the proposed network will be built through the development process, there will be gaps in the network in both the short term and long term that will need special funding in order to complete. It will be important to establish a mechanism by which to build these connections, otherwise the network will remain incomplete. There are a wide variety of grant sources available (see Implementation Chapter). The County should establish a yearly budget item for greenway and sidewalk construction, in order to provide matching funds for future successful grants, and to complete special projects that are not grant-funded.

Conclusion

In conclusion, the network and policy recommendations in this chapter are a critical step in achieving the vision of an interconnected network of greenways, bikeways and sidewalks throughout Isle of Wight County. The implementation of this network will require partnerships among local jurisdictions, agency staff, and citizens. The physical network, however, is only one aspect of accommodating and encouraging walking and bicycling in Isle of Wight County. Chapter 5 describes a variety of other programs that will be needed in the future to support walking and bicycling.

CHAPTER 5: PROGRAM RECOMMENDATIONS

The physical improvements to pedestrian and bicycle facilities in Isle of Wight County should be complemented by education, enforcement, and encouragement programs. When new sidewalks, shoulders, bike lanes, and pathways are constructed, pedestrians and bicyclists of all skill levels should be educated on how to use these facilities safely. In addition, drivers should be expected to treat pedestrians and bicyclists as legitimate users of the road and operate safely around these non-motorized modes. Unsafe behavior by pedestrians, bicyclists, or drivers should be targeted through law enforcement. At the same time, promotional efforts, such as Walk and Bike to Work Day and developing a public walking and bicycling map can help advertise walking and bicycling fun, healthy forms of recreation and transportation in the County.

This chapter sets forward a number of recommendations that will help the County promote and increase the safety of walking and bicycling.

ACTION 14: Educate County residents about pedestrian and bicycle safety.

Bicycling and Walking Rodeos
The County Parks and Recreation Department should work with the County Sheriff's Office, Town of Smithfield Police Department, Town of Windsor Police Department, and other local organizations to organize bicycling and walking rodeos. These rodeos are an opportunity for County staff, police, and other leaders to teach safe bicycling and walking behaviors and give children hands-on experience to improve their bicycling skills. The rodeo site can be set up with mock streets, intersections, and houses/stores for the walking course and cones, stop signs, and play vehicles for a bicycle course. These rodeos should be offered several times each year, and could be coordinated with other County events, such as the County Fair, running and bicycling races, or community bicycle rides. Bicycle rodeos have been held in Isle of Wight County in the past.

Pedestrian and Bicycle Safety Education Curriculum
The County Parks and Recreation Department should work with the Isle of Wight County Public Schools to implement a pedestrian and bicycle safety education curriculum in elementary and middle schools throughout the County and in educational programs offered by the Parks and Recreation Department.



There are a number of existing sources for funding and assistance in integrating pedestrian and bicycle safety education into schools. The *Bike Smart, Virginia!* initiative is a collaborative project with the Virginia Departments of Education, Health, Motor Vehicles, and Transportation and the non-profit organization, BikeWalk Virginia. The program aims to prevent bicycle-related

injuries and fatalities in communities throughout Virginia. The initiative has several components to educate citizens about bicycle safety and to make safety equipment (such as bicycle helmets) available.

The *Bike Smart, Virginia!* offers training-the-trainer workshops around the state throughout the year. At these workshops, school health and PE teachers receive 2 days of training in methods of teaching bicycle safety and become "Bike Smart Basics" Certified. These trainers can then offer the *BikeSmart, Virginia!* six-week course as a part of the Health and Physical Education curriculum in elementary and middle schools. The course includes on-bike instruction (including: helmet safety, crash avoidance, bike handling skills, rules of the road, etc.) and other safety tips. Additional information can be found at www.vahealth.org/civp/bike/schools.asp. The County should work with the health and P.E. coordinator for Isle of Wight County Public Schools to conduct additional research into the program and gain the involvement of local schools.

A viable source for pedestrian and bicycle safety education funding in Virginia is the Department of Motor Vehicle's Safety Grant. The Virginia DMV accepts grant applications each year in March that support Virginia's primary transportation safety goal of "reducing the number of deaths and serious injuries that result from traffic crashes," which includes improving pedestrian and bicycle safety. Guidelines for the current year's application can be found at www.dmvnow.com/webdoc/pdf/tss10a.pdf.

Pedestrian and Bicycle Safety Materials

The Isle of Wight County Parks and Recreation Department should develop and distribute pedestrian and bicycle safety materials. Potential materials include safety tips on the County website, brochures, handouts, and public safety messages. These materials can be provided at local businesses, schools, and public buildings. Information should be targeted at pedestrians and bicyclists as well as drivers. Important safety topics that should be discussed include:

- Rules of the road
- Road crossing safety
- Proper location and direction for bicycling on the roadway
- Pedestrian and bicyclist visibility to drivers at night
- Yielding to pedestrians and bicyclists at road crossings and giving bicyclists enough space when riding on the roadway
- The relationship between vehicle speeds and the severity of pedestrian and bicycle injuries

ACTION 15: Initiate *Safe Routes to School* programs in Isle of Wight County.

The County Parks and Recreation Department should work with the County Planning Department and the Isle of Wight County Public Schools to apply to VDOT for Federal grant funding to establish a SRTS pilot program at two County schools. This grant source provides 100% (no match required) funding for engineering, education, enforcement and encouragement programs within 2 miles of schools that serve Kindergarten though the 8th grade (see Page 72 for

additional details about the VDOT SRTS program). The pilot program could be based on existing models used in Charlottesville and elsewhere to plan physical improvements (including sidewalk construction and pedestrian crossing improvements) and implement safety education programs at interested schools. The goal would be to expand the SRTS program to other schools in the future. The pilot program should be offered initially at:

- Windsor Middle School
- Westside Elementary School (Smithfield)

Safe Routes to School programs are beneficial because they provide an impetus to improve walking conditions around schools, help to reduce the financial burden of student busing, provide another way for children to get daily exercise, and reduce traffic volumes during the morning peak hours. State and national estimates suggest that up to thirty percent of morning peak hour vehicle trips are school-bound trips or include dropping students at schools. The environmental, social, health, and safety (not to mention direct costs) of a system that delivers most students to school via school buses and personal automobiles is significant. While increasing the numbers of students that bicycle and walk to school can help mitigate the negative impacts of the current system, safe routes to school must be created before parents and school officials will feel comfortable encouraging students to use them.



It is likely that SRTS programs will be most successful in schools located within the towns and suburban parts of the County. However, health-based SRTS programs have also been successfully implemented in rural areas of Virginia by using walking routes on the school campus.

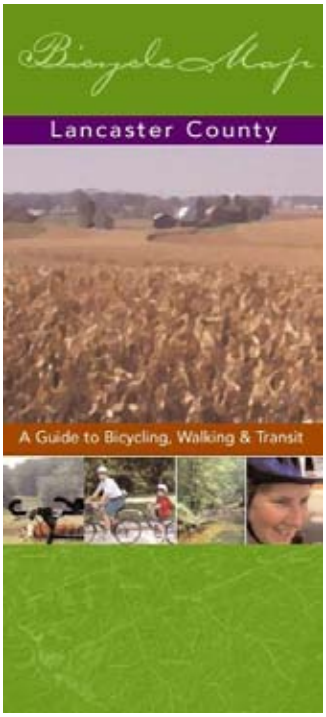
It is important to note that the Safe Routes to School program does NOT encourage students to walk alone in unsafe locations – it provides a method for improving conditions, and encourages parents to walk with students to school.

ACTION 16: Conduct programs and events that encourage walking and bicycling for fun, health and fitness, and for transportation.

The Isle of Wight County should work with the Town of Smithfield and Town of Windsor to coordinate and promote more programs that encourage walking and bicycling. An important key to developing a successful encouragement programs throughout the County is having a coordinated approach, a consistent message (e.g., “Walk and bike for health, fun, and to experience Isle of Wight County”), and focused activities. Recommended encouragement activities are listed below.

Pedestrian and Bicycle Website
The County Parks and Recreation Department should develop a website to encourage more pedestrian and bicycle activity in Isle of Wight County. The website should include maps of on-and off-road walking and bicycling facilities, recommended bicycle touring routes that provide access to historic and cultural sites in Isle of Wight County, and public water access points. Information should also be provided on pedestrian, bicycle, and driver safety tips. It should also include resources such as bicycle shops, running shoe stores, bicycle clubs, a calendar of events with information about events such as organized rides and walking tours, and links to other websites with information about walking, bicycling, and health.

Isle of Wight County Bicycling and Walking Maps and Brochures
The County Parks and Recreation Department should work with the Smithfield and Isle of Wight Convention and Visitors Bureau to develop maps and brochures to show residents and visitors preferred routes for bicycling and walking. These materials would provide information about the benefits of non-motorized transportation and physical activity, pedestrian and bicycle safety tips, bicycling rules, bicycle parking, and information about local bicycling and walking organizations.



One document that should be developed is a Countywide Bicycling and Walking Map. This map would highlight many of the major bicycling routes between towns and villages, show road conditions for bicycling, and include inset maps with walking tour routes in Smithfield and Windsor. It would also feature many pictures of historic landmarks and the picturesque countryside, making it an attractive document to promote tourism in Isle of Wight County.

Brochures about individual bicycle routes, mountain bicycle trails, hiking trails, and walking tours should also be developed. These brochures would show the bicycle route, trail, or walking route in significant detail, including written directions (e.g., cue sheet). They would include information about historic sites, restaurants, shops, village centers, and other attractions along or close to the route. This type of brochure would be a great resource for residents or visitors looking to do a half-day or full-day of walking or bicycling in Isle of Wight County.

These maps and brochures should be distributed through a wide variety of outlets, including:

- Visitors centers
- Bicycle shops
- Libraries
- Gyms/YMCAs
- Schools
- Online
- Other organizations, such as bicycle clubs, businesses, and realtors

Community Events
The County Parks and Recreation Department should work with the Isle of Wight-Smithfield-Windsor Chamber of Commerce, local volunteer groups, and local villages to sponsor events such as community bike rides for children, family bicycle tours, walk-a-thons, community trail walks, interactive historic walking tours, and guided walking and cycling tours for elected officials. The County Parks and Recreation Department and County Planning Department should work with local pedestrian and bicycle advocates to encourage individual localities to organize and participate in annual Walk- and Bike-to-Work Day activities.

Educational Campaign on the Benefits of Walking and Bicycling
Most people are aware of the environmental benefits of walking and bicycling instead of driving an automobile, yet do not fully realize the health benefits that walking and bicycling provide. This strategy encourages the development of bikeways, walkways and trails to promote physical activity and wellness programs for people of all ages in Isle of Wight County. The initiative should emphasize the links between walking and bicycling and weight loss, disease prevention, lower health care costs, and longer lives for all members of the community. Targeted audiences for this outreach effort should include:

- Community-based health improvement partnerships
- Elder care facilities
- Hospitals
- Schools

Specific projects can be targeted based on local needs and ideas, however a key component of each project should be a community outreach and promotion effort that highlights the health benefits of walking and bicycling and gives practical advice about where to walk or bicycle in the community.

Employee Pedestrian and Bicycle Commute Incentive Programs
The Isle of Wight County Parks and Recreation Department and Planning Department should encourage pedestrian and bicycle commuting by providing information about economic benefits, health benefits, and potential commuting routes to employers and employees. A good resource for information on this topic is the *Guide to Bicycle Commuting* developed by the Metropolitan Washington Council of Governments.

Public agencies in Isle of Wight County should be model employers by considering the following actions:

- Offering monetary incentives for employees who walk or bicycle to work
- Providing showers and lockers for employees
- Working with local bicycling and walking groups to provide “pedestrian and bicycle mentors” to demonstrate to employees who have always driven to work how it may be possible to bicycle or walk to work
- Establishing “Guaranteed Ride Home” policies for people who do not bring a car to work but need a car in case of emergencies and inclement weather.

- Encouraging employees who live in locations that are safe and convenient for walking and bicycling to work to participate in Walk- and Bike-to-Work Day.

Arlington, VA's alternative commute program is an excellent example: employees who walk or bike to work at least 50% of the days in any given month receive a $35 per month stipend. The stipend is paid out in a lump sum twice a year. The County also offers a "Guaranteed Ride Home" program and actively promotes Bicycle-to-Work Day.

Walk and Bicycle to School Day
The Isle of Wight County Parks and Recreation Department should work with local schools to increase participation in International Walk and Bicycle to School Day (held each year in October). Walk to school days have been instituted at many schools throughout Virginia over the past decade. They increase awareness of bicycling and walking as fun, healthy transportation choices that can reduce automobile congestion and pollution near schools.

ACTION 17: Improve enforcement of laws concerning the safe interaction of pedestrians, bicyclists, and motorists in shared environments.

Pedestrian and Bicycle Education for Law Enforcement Officers
The Isle of Wight County Sheriff's Office, Town of Smithfield Police Department, and Town of Windsor Police Department should offer educational training to officers about pedestrian and bicyclist rights and responsibilities as well as aggressive motor vehicle behavior toward bicyclists and pedestrians. For example, The Maryland Office of Highway Safety organizes safety training events for officers to raise awareness of about rights, rules, and appropriate responses to incidents involving conflicts between motor vehicles, bicycles and pedestrians. Educating law enforcement officers can lead to increased enforcement of the following behaviors:

- Motorist not yielding to pedestrians in crosswalks
- Motorist speeding
- Motorist running red lights
- Unsafe pedestrian and bicycle behaviors



Enforcement should also be targeted at dangerous motorist behaviors on roadways with "Share the Road" with bicycles signs. Initially, Isle of Wight County should work with VDOT to expand upon VDOT's existing educational efforts related to "Share the Road" signs. This includes providing information about the meaning of the signs (e.g., motorists should be aware of and provide enough space for bicyclists traveling on the roadway). These signs are typically used on roadways that serve higher numbers of bicyclists but do not have bicycle lanes or paved shoulder areas. Safe motorist behavior is particularly important for the comfort and safety of

bicyclists on these roads.

Isle of Wight County should establish a Pedestrian and Bicycle Enforcement Hotline (this could be shared with the Maintenance Hotline) for pedestrians and bicyclists to use when they observe or are affected by unsafe driving behaviors.

Pedestrian and Bicycle Safety Awareness Programs
The Parks and Recreation Department should work with the County Sheriff's Office, Town of Smithfield Police Department, and Town of Windsor Police Department to develop a pedestrian and bicycle safety awareness program. This type of program can result in significant improvements in motorist behavior at the local level. For example, the Laurel, MD Police Department holds an annual Pedestrian Safety Awareness Week in Laurel's downtown each year. Each day, they focus on a different theme, culminating in a Safety Saturday event aimed at raising general awareness of pedestrian issues. Weeklong activities include speed trailers on Main Street, targeted enforcement (drivers who do not yield to pedestrians at crosswalks are ticketed), and safety awareness messages.

Police Bicycle Patrols
The Isle of Wight County Parks and Recreation Department, the Town of Smithfield, and the Town of Windsor should work together to apply for grants and other resources to establish a bike patrol in the County. Police Bicycle Patrols should be established first in the Town of Smithfield and Town of Windsor to increase the visibility of law enforcement as well as bicycling in general. This will also help involve law enforcement more extensively in bicycling issues. Bicycle squad members should work with the County Parks and Recreation Department and other local organizations to provide bike and pedestrian safety education through youth groups and schools, as well as simply talking with residents on their beats. Professional law enforcement can also be supplemented with volunteer and community-based patrols. This approach can be used with great success on multi-use trails, and along walking and biking routes to school. In the future, bike patrols can be provided in communities in other parts of Isle of Wight County.

CHAPTER 6: IMPLEMENTATION PLAN

This chapter describes how the recommendations for improving the safety and convenience of pedestrian and bicycle transportation and recreation in Isle of Wight County will be achieved over the next 25 years. The first section of this chapter breaks the phasing of recommendations into short-, medium-, and long-term categories. The second part of the chapter discusses the groups and organizations that will be responsible for implementing the recommended projects and programs. The final section describes potential funding sources for the Plan.

Project and Program Phasing

The County's pedestrian and bicycle projects and programs will be developed over the next 25 years. Phasing of the plan recommendations is discussed below. Specific short-term recommendations are listed. These are the first actions that should be taken to begin implementing this Plan.

Short-Term Recommendations (0 to 5 years)

Several of the project and program recommendations should be implemented soon after this plan is adopted (within 5 years). These short-term projects will improve pedestrian and bicycle conditions in specific areas, creating early successes for decision-makers to highlight. These short-term projects, programs, and policies will build momentum for the other recommendations of the plan.

Rough cost estimates are provided for each of the short-term facility improvement projects below. For the pedestrian and bicycle facilities that are part of larger projects, the cost estimates represent the cost of constructing only the pedestrian and bicycle facilities. These cost estimates do not include staff labor, engineering design, easement, or property acquisition costs. More details about the cost estimates are provided in Appendix G.

Short-term recommendations include:

<u>Projects (Facility Improvements)</u>



- **Battery Park Road Multi-Use Path:** Build a ten-foot-wide multi-use path on the south side of the road to improve pedestrian and bicycle access to Nike Park Road. This is the first of a series of non-motorized transportation improvements recommended for Battery Park Road. The multi-use path should be built far enough from the existing roadway to leave room for planned roadway improvements and still maintain an adequate buffer zone. This multi-use path will also be a first step in making an important non-motorized facility connection between Smithfield, Carrollton Nike Park, and the US 17 Corridor.
  (Estimated Cost = $572,000)

- **Jones Creek Bridge Enhancement Grant:** Apply for an Enhancement Grant to construct a pedestrian and bicycle bridge parallel to Nike Park Road across Jones Creek. This will serve as a critical link for pedestrian and bicycle access between Smithfield, Carrollton Nike Park, and the US 17 Corridor. This project should give special attention to the environmental characteristics at the site. (Estimated Cost = $3,000)
- **US 17 Pedestrian Crossing Improvements:** Provide high visibility crosswalks, add pedestrian signals, add pedestrian lighting, and make other improvements to increase the safety of pedestrians crossing the street. This includes all existing and future signalized intersections in the area around Eagle Harbor. The pedestrian signals must provide enough time for pedestrians to get across the roadway. It will be important to time the traffic signals to reduce the negative impacts on automobiles. Raised medians are recommended at the crosswalk to improve the safety of the crossing, requiring the existing medians to be reconfigured. These improvements will increase the safety of pedestrians crossing from the new residential developments to the new retail area. Pedestrian demand is already apparent in this area and will increase with the upcoming developments. (Estimated Cost = $610,000)
- **VA 10 Bypass & US 258 Intersection Pedestrian Crossing Improvements:** Provide high visibility crosswalks on all four legs of the intersection, provide pedestrian signals, and improve pedestrian lighting. This intersection is used by many pedestrians to cross the VA 10 Bypass between downtown Smithfield and surrounding residential neighborhoods. The improvements at this intersection should be coordinated with the pedestrian connectivity improvements to the north and south of the intersection (as described in the Pedestrian Recommendations in Chapter 4 of this document). (Estimated Cost = $164,000)



- **US 460 & VA 603 & VA 610 Intersection Pedestrian Crossing Improvements:** Provide high visibility crosswalks on all legs of the intersection, provide pedestrian signals, improve lighting, and add pedestrian warning signs. The timing of traffic signals should ensure that pedestrians have enough time to get across the street. This crossing serves as a vital connection for pedestrians walking to businesses on US 460 and nearby residences, parks, and the high school, as well as for bicyclists traveling through Windsor. (Estimated Cost = $156,000)
- **Crosswalk Improvements at the packing plants associated with Smithfield Foods Corporation (VA 10 Business):** Add in-roadway crossing signs (MUTCD sign R1-6) and high-visibility crosswalk markings. Lighting improvements should also be provided. These crossing improvements will improve pedestrian safety for people crossing between the plants and adjacent parking lots across VA 10 Business. (Estimated Cost = $28,000)

- **US 258/West Smithfield Pedestrian and Bicycle Facilities:** Include bike lanes or paved shoulders in the programmed roadway improvement to US 258 between Westside Elementary School and VA 620/Foursqaure Road. Sidewalks should also be constructed as a part of this project to serve locations of planned development. (Estimated Cost = $607,000)
- **South Church Street Sidewalks:** Add sidewalks as part of the South Church Street roadway reconstruction project. These sidewalks will make it safer and more convenient for pedestrians to access the businesses on South Church Street in Smithfield. There is already evidence of pedestrian demand in this area. VDOT should also look into the possibility of providing bike lanes or paved shoulders as part of this project in order to improve conditions for bicycling on South Church Street. (Estimated Cost = $648,000)
- **North Windsor/Heritage Park Pedestrian and Bicycle Pathway:** Provide a pathway to provide pedestrian and bicycle access between US 460 in Windsor and Heritage Park. This pathway would consist of several distinct facilities. In the town of Windsor, bicyclists could follow a signed on-roadway bike route and pedestrians could follow the sidewalk. A multi-use path or paved shoulders could be provided along the road in the area near Windsor Middle School. Between VA 610 and Heritage Park, a multi-use path should be provided along the east side of US 258 to allow pedestrians to access the mobile home park, new developments, ball fields, and Heritage Park.
(Estimated Cost = $712,000)
- **Pedestrian and Bicycle Accommodations on Blackwater River Bridge near Franklin:** Provide wide sidewalks and paved shoulders as a part of the programmed Blackwater River Bridge project. This will improve pedestrian and bicycle access between South Isle of Wight County and the City of Franklin. (Estimated Cost = $201,000)



- **Lake Gaston Pipeline Trail (Phase 1):** Construct a shared use path along the Lake Gaston Pipeline Right of Way in the vicinity of Walters. This section of pathway would be the first phase of a trail that would extend across much of Isle of Wight County and ultimately provide connections between Southampton County and the Town of Windsor. This section of trail would also serve as an important link for one of the County Signed Bicycle Routes. This first phase of path in Walters would take advantage of publicly owned right-of-way as well as publicly-owned property adjacent to the trail (e.g., Camp Washington property). This path would serve a mix of users including pedestrians, bicyclists and possibly equestrians.
(Estimated Cost = $762,000)



- **Signed Bicycle Routes:** The Plan maps identify a series of routes connecting between important destinations throughout the County. The County should field check these routes and then post signs indicating that they are part of the designated bicycle route system. (Estimated Cost = $38,000)
- **Share the Road Signage:** Provide Share the Road signs on VA 626 (as shown on the Plan map). It is recommended that the Share the Road signs read, "Share the Road with (BIKE SYMBOL)". This sign is intended to remind drivers of their responsibility to expect bicyclists and to drive with caution around bicyclists. An educational campaign should be undertaken as the signs are posted to ensure that drivers interpret the sign's message correctly. (Estimated Cost = $8,000)
- **Sidewalks in New Developments:** The County should require all new developments to include sidewalks on both sides of all streets (except short cul-de-sacs and dead-end streets) and bicycle facilities on main roadways as part of the development review process. These requirements would apply to all new developments, including Benns Grant and future projects. (Estimated Cost = $312,000 per mile)



- **Bicycle Parking at Commuter Parking Lots:** The County should work with VDOT to provide bicycle racks and bicycle lockers at the Park and Ride Lot near the intersection of US 17 and Smiths Neck Road (served by Hampton Roads Transit) and at the commuter parking lot near the intersection of VA 10 Bypass and US 258. (Estimated Cost = $63,000)
- **Mountain Bike Trails and Hiking Trails:** The County should develop trails for mountain biking and hiking within County Parks. These trails would provide excellent recreation opportunities for walkers, joggers, runners, and mountain bicyclists. (Estimated Cost = $45,000 per mile)

<u>Programs (Education, Encouragement, Enforcement)</u>

- **Maps and Brochures:** The County Parks and Recreation Department should work with the Smithfield and Isle of Wight County Convention and Visitors Bureau to develop maps and brochures to show residents and visitors preferred routes for bicycling and walking. These materials would provide information about the benefits of non-motorized transportation and physical activity, pedestrian and bicycle safety tips, bicycling rules, bicycle parking, and information about local bicycling and walking organizations.
- **Safe Routes to School (SRTS):** The County should work with Westside Elementary School and Windsor Middle School to start Safe Routes to School programs for encouraging and improving the safety of walking and bicycling to school.

- **Bike/Walk Rodeos:** The County should work with local law enforcement and educators to offer walking and bicycling rodeos in different parts of the County. The objective of these rodeos is to teach children about pedestrian and bicycle safety through hands-on experience.
- **Maintenance and Enforcement Hotline:** The County should provide a toll-free number for reporting maintenance and enforcement problems.
- **Organized Bike Rides/Historic Walking Tours:** The County should work with local organizations to offer organized family-friendly bicycle rides and historic walking tours on a regular basis. This will give an opportunity for County residents and visitors to experience Isle of Wight County by foot and by bicycle.

Policies

- Isle of Wight County should **incorporate the recommendations of the Land Use and Built Development Guidelines from the 2001 Comprehensive Plan into the Development Review section of the Zoning Ordinance.** The County should also make changes to other sections of the Zoning Ordinance to improve conditions for pedestrians and bicyclists.
- The County should **integrate the recommendations from this plan into the County Comprehensive Plan update.**
- All transportation projects in the County that involve VDOT right of way or utilize funds that flow through VDOT must **follow the VDOT *Policy for Integrating Bicycle and Pedestrian Accommodations*.**
- **The County Parks and Recreation Department should establish a Greenways Program.** This Greenways Program would ensure that locations designated for greenways in this plan would be secured for Greenways as development occurs. The Program would also attain funding for land acquisition and future greenway development projects.
- The County should **designate an existing staff person in the Parks and Recreation or Planning and Zoning Department to serve as Pedestrian and Bicycle Coordinator.** This staff person would be responsible for implementing the recommendations of this plan. This staff person could work part-time on pedestrian and bicycle issues.
- The County should **continue meetings of the Pedestrian and Bicycle Facilities Committee to provide oversight of the recommendations of the Plan and to deal with future needs as they arise.** The Committee should work to ensure that the needs of bicycles and pedestrians continue to be addressed in all County projects and programs. The Committee should continue to have Countywide representation (including individuals from the Chamber of Commerce, Public Safety, Planning and Zoning, Parks and Recreation, VDOT, and citizens from all five voting districts).

Medium-Term Recommendations (0 to 10 years)

There are a number of recommended projects and programs that are very important for improving pedestrian and bicycle conditions in Isle of Wight County, but are likely to take longer to implement than the short-term initiatives. These projects and programs are classified as medium-term

recommendations. Though these recommendations are designed for a 10-year timeframe, Isle of Wight County should take advantage of opportunities that arise to implement the projects and programs sooner.

Specific medium-term projects and programs are listed below.

Projects (Facilities)

- **Battery Park Road Sidewalk and On-Road Bicycle Improvements:** Construct a sidewalk on the north side and bicycle lanes on both sides of Battery Park Road between South Church Street and Country Way to complement the multi-use path that should be constructed on Battery Park Road in the short-term. These improvements should be made as a part of the Battery Park Road widening project.
- **Windsor Boulevard East Sidewalks (US 460):** Construct a five-foot sidewalk on the North side of US 460 in Windsor between Holland Drive and Lovers Lane. The sidewalk will provide pedestrian access to businesses along US 460, including the Windsor Farmer's Market, and allow pedestrians a place to walk outside of the roadway.



- **Pedestrian and bicycle connection across VA 10 Bypass:** A combination of sidewalks, paved shoulders, and safe roadway crossings should be provided for pedestrians and bicyclists to facilitate safe access between the Cypress Creek development and Jericho Road across the VA 10 Bypass.
- **Benns Church Boulevard Pedestrian and Bicycle Access:** Provide paved shoulders and wide sidewalks on Benns Church Boulevard between South Church Street and the southern limit of the Benns Grant Development.
- **Brewers Neck Boulevard Pedestrian and Bicycle Access:** Provide paved shoulders and wide sidewalks on Brewers Neck Boulevard between Benns Church Boulevard and Reynolds Drive as the Benns Grant and St. Luke's Village developments are constructed.
- **Moonfield Drive Pedestrian and Bicycle Improvements:** Construct sidewalks and bicycle lanes along the length of Moonfield Drive in Smithfield.
- **North Windsor Pedestrian Facility Improvements:** Provide sidewalks on the east side of US 258 between US 460 and VA 610 and complete the sidewalk coverage on both sides of the roadway along VA 610 between US 460 and US 258.
- **International Paper Crosswalk Improvements (US 258):** Provide a raised pedestrian refuge island to increase the safety of the crossing. Also install a high-visibility crosswalk, improve pedestrian lighting and consider adding flashing beacons to the pedestrian warning signs to provide a special alert for drivers on this higher-speed roadway. This crosswalk serves many pedestrians traveling between the International paper plant and the adjacent parking lots across US 258.

- **Westside Elementary Crosswalk Improvements:** Provide two to three raised pedestrian refuge islands on US 258 to improve the safety of students and other pedestrians crossing the street to access Westside Elementary School. Also provide high-visibility crosswalk markings and improve lighting.
- **US 17 Pedestrian Crossing Improvements (East):** Provide high visibility crosswalks, add pedestrian signals, add pedestrian lighting, and make other improvements to increase the safety of pedestrians crossing US 17 at Channel Way and at Sugar Hill Road as development occurs in the area. The pedestrian signals must provide enough time for pedestrians to get across the roadway. It will be important to time the traffic signals to reduce the negative impacts on automobiles. Raised medians are recommended at the crosswalk to improve the safety of the crossing, requiring the existing medians to be reconfigured.
- **Gatling Pointe Parkway & Battery Park Road Intersection Crossing Improvements:** Provide high-visibility crosswalks and raised median islands across Battery Park Road to make it more convenient for pedestrians and bicyclists to cross Battery Park Road between the Gatling Pointe and Gatling Point South developments. The raised median islands would also serve as a traffic calming feature that may help reduce traffic speeds on Battery Park Road.
- **Battery Park Road & South Church Street Intersection Crossing Improvements:** Install high-visibility crosswalks, add pedestrian countdown signals, and provide better lighting at this intersection to facilitate safer pedestrian and bicycle crossings.
- **Battery Park Road & Nike Park Road Intersection Crossing Improvements:** Accommodate pedestrians and bicyclists in the design of the new intersection at this location. This includes providing high-visibility crosswalks and better lighting, and adding pedestrian signals (if the intersection remains signalized). In addition, the intersection design should minimize the corner turning radii to shorten pedestrian crossing distances and keep vehicle turning speeds low.
- **US 258 & US 460 Intersection Crossing Improvements:** Install high-visibility crosswalks, add pedestrian countdown signals, and provide better lighting at this intersection to facilitate safer pedestrian and bicycle crossings. Sidewalks with curb ramps should also be provided to connect the intersection to the developed areas of Windsor.
- **US 258 & Heritage Park Access Road Intersection Crossing Improvements:** Install high-visibility crosswalks and raised median crossing islands at this intersection to make it safer for pedestrians in the Clydesdale Mobile Home Community to cross US 258 to access Heritage Park. Pedestrian lighting should also be improved at this intersection.
- **Benns Church Boulevard & Brewers Neck Bouleverd Intersection Crossing Improvements:** Provide high-visibility



marked crosswalks, pedestrian countdown signals, raised median crossing islands, and adequate pedestrian lighting at this new intersection as the Benns Grant Development is constructed. This intersection will be at the center of the urbanized area between the Benns Grant and St. Luke's Village Developments. It will be surrounded by residential areas and be adjacent to major retail buildings, offices, and a medical center. Therefore, significant pedestrian activity is highly probable at this location, and pedestrians crossing at this intersection must be accommodated safely.

- **Benns Church Boulevard & South Access Road to Benns Grant Development Intersection Crossing Improvements:** Provide high-visibility marked crosswalks, pedestrian countdown signals, raised median crossing islands, and adequate pedestrian lighting at this new intersection.
- **Signed Bicycle Routes (Medium-Term):** Extend the system of signed bicycle routes to include the medium-term signed routes (see Recommended Improvements for Bicycles Map). Before posting signs on these routes, the County should verify that these routes are suitable for less-experienced bicyclists.
- **Foursquare Road (VA 620) Shoulders:** Provide paved shoulders on Foursquare Road (VA 620) between US 258 and Central Hill Road (VA 637).
- **US 258 Shoulders on southwest side of Smithfield:** Construct paved shoulders on US 258 between Westside Elementary and Foursquare Road (VA 620) as a part of the US 258 improvement project in this area.
- **US 258 Shoulders on the west side of Windsor:** Provide paved shoulders on US 258 between Blackwater Road (VA 603) and Heritage Park to serve this important corridor for pedestrians and bicyclists.
- **Nike Park Road Shoulders:** Construct paved shoulders on Nike Park Road as development occurs in the Carrollton area to provide better conditions for the increasing amounts of bicyclists on this busy roadway. These shoulders should be complemented by a multi-use path on the south side of the roadway in the long-term.
- **Reynolds Drive Shoulders:** Construct paved shoulders on Reynolds Drive between Nike Park Road and Smith's Neck Road as development occurs in the Carrollton area. These shoulders should be complemented by a multi-use path on one side of the roadway in the long-term.
- **Smith's Neck Road Shoulders:** Construct paved shoulders on Smith's Neck Road between Reynolds Drive and US 17 as development occurs in the Carrollton area to provide better conditions for the increasing amounts of bicyclists on this busy roadway. These shoulders should be complemented by a multi-use path on one side of the roadway in the long-term.

<u>Programs (Education, Encouragement, Enforcement)</u>

- **Safe Routes to School (SRTS):** The County should expand its Safe Routes to School programs to at least two additional schools (after programs are established at Windsor Middle School and Westside Elementary School in Smithfield.

- **Targeted Enforcement:** County and local law enforcement should conduct a focused enforcement campaign to target unsafe driving behaviors around pedestrians and bicyclists (e.g., speeding, red-light-running, not yielding to pedestrians in crosswalks, passing bicyclists too closely, etc.) and unsafe pedestrian and bicycle behaviors.

Long-Term Recommendations (0 to 25 years)
Long-term recommendations include providing shoulders on many higher-volume rural roadways and constructing much of the greenway trail system.

While these recommendations may be included in the long-term category, there may be opportunities for implementing them sooner. For example, pedestrian and bicycle facilities could be added as a part of a new roadway project added to the Transportation Improvement Program or a new pedestrian and bicycle program could be provided by applying to a new grant funding source. The County should take advantage of these opportunities for implementation.

Implementation Schedule

Implementing the pedestrian, bicycle, and greenway projects and the education, enforcement, and encouragement programs recommended in this Plan will require a partnership among Isle of Wight County departments, pedestrian and bicycle advocates, local communities, and the State.

Below is an implementation schedule that identifies the organizations and agencies responsible for executing the recommendations of the plan during its 25-year implementation timeframe.

Implementation Schedule

Isle of Wight County Pedestrian and Bicycle Facilities Master Plan

1. PEDESTRIAN AND BICYCLE FACILITIES	IOW P&R	Implementation Schedule						
Recommendations	**Partners**	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6-10	Years 11-25
Short-Term Projects	**V,M**							
Medium-Term Projects	**V,M**							
Long-Term Projects	**V,M**							
Signed Bicycle Routes	**V,M,N**							
Monitoring Construction and Paving Projects	**V,PW**							

2. PEDESTRIAN AND BICYCLE POLICIES	IOW P&R	Implementation Schedule						
Recommendations	**Partners**	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6-10	Years 11-25
Development Review for Pedestrian/Bicycle Facilities	**I,M**							
Update County Zoning Ordinance	**BS,I**							
Establish Greenway Program	**BS,I**							
Establish County Pedestrian/Bicycle Coordinator	**BS,I**							
Create Full-Time Pedestrian/Bicycle Advisory Committee	**BS,I**							
Update Pedestrian and Bicycle Facilities Master Plan	**B,BS,I,M**							
Establish Pedestrian/Bicycle Facility Maintenance Program	**BS,I**							
Maintenance of Pedestrian/Bicycle Facilities	**V,PW,M,C**							
Provide Training on Pedestrian/Bicycle Issues	**V,M,N**							
Grant Applications for Ped/Bike Facilities	**V,B**							

3. PEDESTRIAN AND BICYCLE PROGRAMS	IOW P&R	Implementation Schedule						
Recommendations	**Partners**	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6-10	Years 11-25
Bicycling/Walking Rodeos	**PD,S,B,C,M**							
Pedestrian/Bicycle Safety Education Curriculum	**S,V,B**							
Pedestrian/Bicycle Safety Materials	**PD,B,M**							
Safe Routes to School Program	**V,S,B,C,HE,M**							
County Pedestrian and Bicycle Website	**B,I,T**							
Bicycling and Walking Maps and Brochures	**B,T,M**							
Community Bicycling and Walking Events	**B,BU,C,HE,S,T**							
County Pedestrian/Bicycle Educational Campaign	**B,C,M**							
Pedestrian and Bicycle Commute Incentives	**B,BU,HE,HT**							
Walk and Bicycle to School Day	**S,B,C,HE,M**							
Pedestrian/Bicycle Education for Law Enforcement	**PD,M**							
Bicycle Patrols	**PD,M**							

B = Isle of Wight County Pedestrian and Bicycle Advisory Committee
BS = Board of Supervisors
BU = Isle of Wight County businesses
C = Community volunteer groups
HE = County and local health organizations
HT = Hampton Roads Transit (HRT)
I = Isle of Wight County government agenicies (all levels)
IOW P&R = Isle of Wight County Parks and Recreation Department
M = Local municipalities
N = Neighboring counties
PW = County and municipal public works departments
PD = County and municipal police departments
S = Isle of Wight County schools
T = Isle of Wight County tourism organizations
V = Virginia Department of Transportation (VDOT)

Facility Development Strategies

This section describes several strategies that Isle of Wight County can use to develop the pedestrian, bicycle, and greenway facilities recommended in this plan. It is essential for the County to implement the most cost-effective strategies in order to have the greatest impact with a finite amount of resources available for pedestrian and bicycle transportation and recreation. The first part of this section describes strategies for the development of pedestrian and on-road bicycle facilities (within the roadway right-of-way), and the second part describes strategies for greenway development.

Pedestrian and Bicycle Facility Development Strategies
Roadway construction and re-construction projects offer excellent opportunities to incorporate facility improvements for non-motorized modes. It is much more cost-effective to provide bicycle and pedestrian facilities along with these projects than to initiate the improvements later as "retrofit" projects. The list below includes several types of roadway projects that can incorporate pedestrian and bicycle facilities.

- New roadway construction
- Roadway reconstruction
- Restriping
- Repaving
- Replacing roadway bridges
- Retrofitting roadways with new pedestrian and bicycle facilities
- Signage and wayfinding projects

More detailed descriptions of each of these strategies are provided in Appendix H.

Note that VDOT's programmed roadway improvements are a response to requests made by local jurisdictions. Therefore, it will be necessary for the Isle of Wight County, Town of Smithfield, and Town of Windsor governments to continue to advance high priority pedestrian and bicycle projects by incorporating construction of new sidewalks, trails, and on-road bikeways and retrofit projects for pedestrian and bicycle facilities into regional lists of recommended roadway resurfacing and reconstruction projects.

Greenway Development Strategies

Acquisition of land for greenways is an important part of the greenway development process. Strategies for acquisition include:

- Obtaining support from local land trusts and other organizations
- Providing educational material to property owners and developers about the benefits of greenways and land donations/easements
- Obtaining easements (conservation, preservation, and public access easements)
- Government regulation (incentive zoning, negotiated dedications, fee-in-lieu, buffer/transition zones, overlay zones, subdivision exactions)

- Acquisition (donation/tax incentives, fee simple purchase, easement purchase, purchase/lease back, bargain sale, purchase of development rights (Isle of Wight County PACE program))
- Eminent Domain (last resort)
- Condemnation (last resort)

More detailed descriptions of these Greenway development strategies are provided in Appendix H. In addition, an excellent resource for greenway development strategies is the Virginia Greenways and Trails Toolbox (2000) (http://www.dcr.virginia.gov/prr/docs/toolbox.pdf). This document includes information about greenway funding and development, planning, construction, and maintenance.

Funding

Funding is essential for implementing the recommendations of this Plan. New greenway trails, on-road bikeways, and sidewalk projects, programs, and maintenance activities will need to be funded through various sources.

Funds from a variety of sources are often required to develop specific projects. Because of this, it will be important for Isle of Wight County to:

- Establish specific funding sources in Isle of Wight County to use as matching funds for federal, state, and other grants (e.g., the new Greenway Program can dedicate specific funds for greenway facilities). These funds can be generated through donations from community groups, through the proffer system, and through the capital budget if necessary.
- Partner with local governments and adjacent jurisdictions to develop funding sources
- Look for additional funding opportunities from the public and private sectors

The sections below describe available funding sources for pedestrian and bicycle facilities (within roadway rights-of-way) and greenway facilities.

Pedestrian and Bicycle Funding Sources

Two of the most common programs available for developing pedestrian and bicycle facilities in Isle of Wight County are VDOT's Secondary Six-Year Improvement Program (S-SYIP) and the Hampton Roads Metropolitan Planning Organization (MPO) four-year Transportation Improvement Program (TIP). The S-SYIP is developed by the County Board of Supervisors with assistance from the VDOT Hampton Roads District. The TIP is developed by members of the Hampton Roads MPO (including Isle of Wight County). The VDOT *Policy for Integrating Bicycle and Pedestrian Accommodations* applies to all projects in the S-SYIP and to all projects in the Hampton Roads TIP that involve VDOT right of way or use funds that flow through VDOT. This policy requires that these projects will be initiated with the presumption that they will accommodate pedestrians and bicyclists. However, it will still be important for Isle of Wight County to continue to make specific requests for pedestrian and bicycle facilities to be included in the S-SYIP and TIP project descriptions. In addition,

the County should monitor the planning, design, and construction of these projects to ensure that they accommodate pedestrians and bicyclists adequately.

There are several other sources of VDOT funding that can be used to develop pedestrian and bicycle facilities (see table below). Most of the funding sources described below require a local match – up to 20% of the project cost, in some cases (with the exception of the Safe Routes to Schools Program, which is 100% Federal funding). Fortunately, in-kind donations of materials, labor, and land can be used as matching funds. Through a creative strategy of volunteer assistance and land donation, other Virginia counties have been able to generate matching funds with very little capital outlay.

VDOT Funding Sources

Rural Transportation Planning Program

Purpose	This program provides funds to planning district commissions to carry out transportation planning for rural areas.
Funding	▪ Federal funds finance 80% of program activities and grants ▪ A match of at least 20% from a planning district commission or locality is required
Eligible projects	▪ Pedestrian and bicycle planning, greenway planning
Eligible applicants	▪ Planning district commissions
Contact	VDOT Hampton Roads District, http://www.virginiadot.org/quick/hampton_quick.asp

Highway Construction Program

Purpose	This program provides funding for the preliminary engineering, right of way acquisition, and construction of highway projects.
Funding	No local match is needed for projects on primary and secondary system roads. A 2% local match is required for projects on urban system roads
Eligible projects	▪ Pedestrian and bicycle accommodations can be built as part of highway projects ▪ Pedestrian and bicycle accommodations can be built as individual projects, separate from the construction of highways, either on highway or independent right of way
Contact	VDOT Hampton Roads District, http://www.virginiadot.org/quick/hampton_quick.asp

Pedestrian and Bicycle Safety Program

Purpose	This program was developed to implement safety projects addressing pedestrian and bicycle crashes or the potential for such crashes, with evaluations based on risk and applications competing with like projects.
Funding	▪ Up to 90% of a project can be financed with federal funds ▪ A project must have a minimum 10% match
Eligible projects	▪ Construction of on-street facilities and shared use paths ▪ Development of treatments for intersections ▪ Installation of signs and pavement markings
Eligible applicants	▪ State and local agencies may apply to the program
Contact	VDOT Mobility Management Division – HSIProgram@vdot.virginia.gov 804-786-9094

Transportation Enhancement Program

Purpose	This program is an initiative to focus on enhancing the travel experience and fostering the quality of life in American communities
Funding	▪ Up to 80% of a project can be financed with federal funds. A local match of at least 20%, from other public or private sources, is required. ▪ Local matches may be in-kind contributions including tangible property, professional services and volunteer labor ▪ This is a reimbursable program
Eligible projects	▪ Pedestrian and bicycle facilities such as sidewalks, bike lanes and shared use paths ▪ Pedestrian and bicycle safety and educational activities such as classroom projects, safety handouts and directional signage for trails ▪ Preservation of abandoned railway corridors such as the development of a rails-to-trails facility
Eligible applicants	▪ Any local government, state agency, group or individual may apply to the program. All projects need to be formally endorsed by a local jurisdiction or public agency.
Contact	VDOT Hampton Roads District, http://www.virginiadot.org/quick/hampton_quick.asp Transportation Enhancement Program Staff, VDOT Local Assistance Division

Safe Routes to Schools Program – NEW PROGRAM

Purpose	This program provides funding for engineering, education, enforcement, encouragement, and evaluation activities that are aimed at making it safer and more appealing for children to walk and bicycle to school.
Funding	▪ 100% of the cost of the program can be financed with Federal funds ▪ No match is required. ▪ This is a reimbursable program
Eligible projects	▪ Engineering projects such as traffic calming, sidewalk installation, intersection improvements, warning signage and crosswalks markings, among others ▪ Education programs such as pedestrian and bicycle safety classes, bike rodeos, and motorist education programs ▪ Encouragement programs such as Walking School Buses, Bike Trains, Walk to School Day, and other incentives to encourage children and their parents to walk and bicycle to school.
Eligible applicants	▪ Any local government, state agency, or non-profit may apply to the program.
Contact	Jakob Helmboldt, VDOT Safe Routes to School Coordinator, jakob.helmboldt@vdot.virginia.gov, 804-225-3269

Recreation Access Program

Purpose	This program provides bicycle access to public recreational facilities or historic sites operated by a state agency, a locality, or a local authority, either with an access road or on a separate bicycle facility.
Funding	▪ This program uses state funds only. ▪ Up to $75,000 may be awarded for bicycle access to a facility operated by a state agency. ▪ UP to $60,000 may be awarded for bicycle access to a facility operated by a locality or local authority, with a $15,000 match.
Eligible projects	Construction, reconstruction, maintenance, or improvement of bikeways.
Eligible applicants	A governing body of a county, city or town may make an application to this program
Contact	Hugh Adams, 804-786-2744, hugh.adams@vdot.virginia.gov VDOT Local Assistance Division

National Scenic Byways Program

Purpose	This program supports projects to improve the quality and continuity of the traveler's experience on highways designated as National Scenic Byways, All American Roads, or a state scenic byway.
Funding	▪ Up to 80% of a project can be financed with federal funds ▪ A project must have a minimum 20% match ▪ This is a reimbursable program
Eligible projects	▪ Construction of a facility for pedestrian and bicyclists along a scenic byway ▪ Safety improvements to reduce or eliminate the incidence or likelihood of crashes or conflicts with bicyclists and pedestrian
Eligible applicants	Any local government, state agency, group or individual may apply to the program.
Contact	Scenic Byways Program Staff VDOT Local Assistance Division 804-786-2264 h.chenault@vdot.virginia.gov www.bywaysonline.org, "Grants" section

Source: Information in the tables above was derived from a VDOT brochure entitled: *VDOT Funding for Bicycling and Walking Accommodations*.

Greenway Funding Sources

To be as successful as possible with greenway funding and implementation, Isle of Wight County should dedicate a portion of its Land Preservation Program funding for greenway development. This funding source can be managed by the new Greenways Program. Funds will be needed to continue greenway planning activities, leverage funding from other sources, acquire properties and easements, administer the implementation process, and maintain completed facilities.

In addition to a dedicated County funding source, the Greenways Program should also seek funds through a variety of other sources, including:

Federal Sources

- Surface Transportation Program
- Recreational Trails Program
- Office of Bicycle and Pedestrian Transportation Program
- National Scenic Byways Program
- Land and Water Conservation Fund (LWCF)
- Wetlands Reserve Program

State Sources

- Virginia Land Conservation Foundation (VLCF)
- Virginia Outdoors Fund (VOF)
- Virginia Recreational Trails Fund (VRTF)

In addition, there are several resources provided by the Commonwealth that provide useful information about greenway funding, acquisition, development, and maintenance. These are the Virginia Outdoors Plan (2002) (http://www.dcr.virginia.gov/prr/vopfiles.htm) and The Virginia Greenways

and Trails Toolbox (http://www.dcr.virginia.gov/prr/docs/toolbox.pdf). These resources also suggest working with the following organizations:

- The Conservation Fund (national)
- Land Trust Alliance (national)
- Rails-To-Trails Conservancy (national)
- Trails and Greenways Clearinghouse (national)
- Trust for Public Land (national)
- James River Association (state)
- Land Trust of Virginia (state)
- Williamsburg Land Conservancy (state)

Local Sources

- Taxes (property taxes and excise taxes)
- Fees (stormwater utility fees, impact fees, in-lieu-of fees)
- Bonds and Loans (revenue bonds, general obligation bonds, special assessment bonds)
- Other Local Sources (Capital Improvements Program, local trail sponsors, volunteer work, private foundations and organizations)

These federal, state, and local greenway funding sources are described in detail in Appendix I.

APPENDIX A: DETAILED POLICY DESCRIPTIONS

This appendix includes detailed descriptions of the federal, state, and local policies that are most relevant to this Plan.

Federal Policies and Regulations

Federal transportation policies (through the Intermodal Surface Transportation Efficiency Act of 1991, as well as subsequent transportation bills) strongly support the inclusion of pedestrian and bicycle facilities in transportation projects, and have supplied a consistent source of funding for these activities for the past fifteen years.

Section 1202 of the 1998 Transportation Equity Act for the 21st Century (TEA-21) states:

- "*Bicyclists and pedestrians shall be given due consideration in the comprehensive transportation plans developed by each metropolitan planning organization and State.*" (Section 1202(a));

- "*Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction and transportation facilities, except where bicycle and pedestrian use are not permitted.*" (Section1202(a)); and

- "*Transportation plans and projects shall provide due consideration for safety and contiguous routes for bicyclists and pedestrians.*" (Section 1202(a))

Federal law, as established in the Transportation Equity Act for the 21st Century (TEA-21), makes the following statements with respect to bridges:

"In any case where a highway bridge deck is being replaced or rehabilitated with Federal financial participation, and bicyclists are permitted on facilities at or near each end of such bridge, and the safe accommodation of bicyclists can be provided at reasonable cost as part of such replacement or rehabilitation, then such bridge shall be so replaced or rehabilitated as to provide such safe accommodations." (23 U.S.C. Section 217)

Policy Guidance

TEA-21 directed the Federal Highway Administration to draft policy guidance that would better define the level of accommodation that was required. In 1999, the Federal Highway Administrator issued the following guidance pertaining to pedestrian and bicycle accommodations:

"While these sections stop short of requiring specific bicycle and pedestrian accommodation in every transportation project, Congress clearly intends for bicyclists and pedestrians to have safe, convenient access to the transportation system and sees every transportation improvement as an

opportunity to enhance the safety and convenience of the two modes. 'Due consideration' of bicycle and pedestrian needs should include, at a minimum, a presumption that bicyclists and pedestrians will be accommodated in the design of new and improved transportation facilities. In the planning, design, and operation of transportation facilities, bicyclists and pedestrians should be included as a matter of routine, and the decision to not accommodate them should be the exception rather than the rule. There must be exceptional circumstances for denying bicycle and pedestrian access either by prohibition or by designing highways that are incompatible with safe, convenient walking and bicycling."

In the FHWA's subsequent Design Guidance issued in 2000 (entitled Accommodating Bicycle and Pedestrian Travel: A Recommended Approach), the following statement is made:

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

- *bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, a greater effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right of way or within the same transportation corridor.*
- *the cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project.*
- *where sparsity of population or other factors indicate an absence of need. For example, the Portland Pedestrian Guide requires "all construction of new public streets" to include sidewalk improvements on both sides, unless the street is a cul-de-sac with four or fewer dwellings or the street has severe topographic or natural resource constraints.*

2. In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day, as in States such as Wisconsin. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to operate.

FHWA Virginia Division Office

The Federal Highway Administration (FHWA) Virginia Division Office established a Bicycle and Pedestrian Policy in 2001. This policy states:

"Bicycle and pedestrian facilities will be included on all new and reconstruction Federal-aid transportation projects, both exempt and nonexempt, except under the following circumstances:

1. On the Interstate system where prohibited by state policy and/or law;
2. On non-Interstate controlled access facilities where the speed and/or volume of traffic would create an unsafe condition;
3. The design year average daily traffic count does not justify the inclusion of paved shoulders;
4. The scarcity of population and/or the scarcity of the bicycle/pedestrian traffic does not justify the need or planned use of the facility;
5. The cost would be excessively disproportionate to the need or planned use of the facility;
6. Severe environmental or social (environmental justice) impacts outweigh the need or planned use of the facility; and
7. The bicycle and pedestrian facilities are inconsistent with the MPO's bicycle and pedestrian policies in urbanized areas."

The FHWA Virginia Division policy further states that it will assist VDOT by sharing technologies, helping with planning activities, and promoting the safety aspects of walking and bicycling. The bicycle and pedestrian policy also states: "Bicycle and pedestrian facilities should be funded at the same federal-state ratio as the typical highway improvement," and "Federal participation will be withdrawn on any major project that severs an existing bicycle or pedestrian route, unless an alternate route exists or is provided."

Americans with Disabilities Act (ADA)

According to the 2000 U.S. Census, one in every five Isle of Wight County residents over age 5 has a disability (this is approximately the same percentage as the United States)[12]. People with disabilities are more likely to be pedestrians than other adults because some physical limitations can make driving difficult.

For these reasons, the U.S. Government established the Americans with Disabilities Act (ADA) in 1990. Its implementing regulations, issued by the Department of Justice (DOJ) in 1991, require that all new and altered facilities - including sidewalks, street crossings and related pedestrian facilities in the public right-of-way – be accessible to and usable by people with disabilities. The Americans With Disabilities Act Accessibility Guidelines (ADAAG) provide the necessary guidance for the design and construction of pedestrian facilities.

State Transportation and Recreation Policies

Virginia Department of Transportation

State agencies also provide a tremendous level of support and funding for bikeways, greenways and sidewalks. While local jurisdictions play a large role in establishing transportation priorities in Virginia, the Virginia Department of Transportation (VDOT) is the agency responsible for constructing and maintaining many of the primary and secondary roads throughout the Commonwealth.

[12] According to Census 2000, 5,543 (20%) of 27,676 Isle of Wight County Residents have some type of physical, mental, or sensory disability. The sample includes civilian, non-institutionalized residents five years and older.

VDOT Policy for Integrating Bicycle and Pedestrian Accommodations
On March 18, 2004 the Commonwealth Transportation Board adopted a new state policy for integrating pedestrian and bicycle accommodations into roadway projects (often termed "incidental" improvements – bikeways and sidewalks that are built as part of new roadway construction or roadway reconstruction). This policy essentially reverses previous VDOT policies which required a great deal of public and political effort in order for bikeways and sidewalks to even be considered for inclusion in transportation projects.

The new policy states that *"VDOT will initiate all highway construction projects with the presumption that the projects shall accommodate bicycling and walking."* The policy cites a number of circumstances under which additional emphasis will be placed on the need for such facilities, essentially requiring bikeways and sidewalks whenever a roadway project occurs in an urban or suburban area. The policy also provides guidelines for determining exemptions under which pedestrian and bicycle accommodations would not be required:

- scarcity of population, travel, and attractors, both existing and future, indicate an absence of need for such accommodations
- environmental or social impacts outweigh the need for these accommodations
- safety would be compromised
- total cost of pedestrian and bicycle accommodations to the appropriate system (i.e., interstate, primary, secondary, or urban system) would be excessively disproportionate to the need for the facility
- purpose and scope of the specific project do not facilitate the provision of such accommodations (e.g., projects for the Rural Rustic Road Program)
- pedestrian and bicycle travel is prohibited by state or federal laws

This policy also pertains to operations and maintenance, and specifically states the following in Section 3.3.1:

"Bicycling and walking should be considered in operational improvements, including hazard elimination projects and signal installation. Independent operational improvements for bicycling and walking, such as the installation of pedestrian signals, should be coordinated with local transportation and safety offices. The maintenance program will consider bicycling and walking so that completed activities will not hinder the movement of those choosing to use these travel modes. The maintenance program may produce facility changes that will enhance the environment for bicycling and walking, such as the addition of paved shoulders."

VDOT's policy went into effect on March 18, 2004 and applies to all projects that have reached the scoping phase since that date. As with all major policy changes, it will take several years before the "on the ground" results of VDOT's new policy will be evident, as projects move through the pipeline from initial

scoping, through the planning and design phases and eventually into construction.

Isle of Wight County supports the inclusion of pedestrian and bicycle accommodations on all projects that involve VDOT right of way or utilize funds that flow through VDOT. This includes projects at all levels: maintenance, design and construction, and operations. The level of accommodation provided in VDOT projects should be appropriate for the future land use planned in an area, and should be commiserate with the level of support expressed by local citizens, agency staff and elected officials.

The complete version of VDOT's *Policy for Integrating Bicycle and Pedestrian Accommodations* can be found on the VDOT website (www.virginiadot.org) in the Program section of the website, under Bicycling and Walking.

VDOT Roadway Design Manual
VDOT has established standards for the physical layout of roadways through its Roadway Design Manual. The 2005 version of this manual has incorporated the VDOT Policy for Integrating Pedestrian and Bicycle Accommodations (see above). Several sections of the manual describe in detail how pedestrians and bicyclists should be included in roadway projects: it describes various methods for accommodating bicyclists, such as bicycle lanes, paved shoulders, and wide outside lanes; specifications for shared use paths; and requirements for sidewalks, buffers between sidewalks and roadways, curb ramps, and pedestrian tunnels.

The manual also includes a section on sight plan review that emphasizes the need to provide more significant pedestrian and bicycle accommodations in areas with greater pedestrian and bicycle demand, and to connect new developments and roadway projects with existing and proposed sidewalks/paths, trails, and other bicycle facilities. A section on neotraditional neighborhood design recommends interconnected street patterns, mixing land uses so that neighborhood residents can reach a large number of activities within a short distance. Traffic calming treatments, such as curb extensions to slow motor vehicle speeds in order to make conditions safer for pedestrians and bicyclists, as also described.

The VDOT roadway design manual requirements for pedestrian and bicycle accommodations should be followed in all projects in Isle of Wight County.

Virginia Department of Conservation and Natural Resources

This Plan is clearly in line with statewide recreation goals, as set forward in the recommendations of the Virginia Department of Conservation and Recreation's (DCR) *2002 Virginia Outdoors Plan*. DCR identified the need to provide "transportation alternatives, specifically trails for walking, hiking and cycling and to connect people with destinations."

This Plan is also supported by a variety of land preservation programs that are available in Virginia, including the Purchase of Development Rights (PDR) Program. This program enables local governments to develop and enact an easement program to preserve open spaces, farms, forests and natural areas, and restrict future development of the land while permitting landowners to continue to use their land as they have in the past. In Isle of Wight County this is referred to as the PACE program.

The Open-Space Land Act enables public bodies to acquire properties or interests in property, or to designate property for use as open-space land. "Open-space land" means any land provided or preserved for:

- park or recreational purposes
- conservation of land or other natural resources
- historic or scenic purposes
- assisting in the shaping of the character, direction, and timing of community development, or
- wetlands

Public bodies may also acquire fee simple title or other interests in real property including easements for the conservation of farm and forestlands. (The above information was obtained from the DCR website.)

Local Policies

In addition to federal and state policies, there are a number of local policy documents that also support improving conditions for pedestrian and bicycle transportation and recreation in Isle of Wight County. These policies are included in the following ordinances:



- Isle of Wight County Zoning Ordinance (2005)
- Town of Smithfield Zoning Ordinance (1998)
- Town of Smithfield Subdivision Ordinance (1999)

Isle of Wight County Zoning Ordinance
The Isle of Wight County Zoning Ordinance (2005) has a mixture of good provisions for pedestrians and bicyclists, as well as a number of points that have been overlooked and are in need of revision (see Appendix F).

The County Zoning Ordinance describes the uses permitted in each type of zoning district. While none of the general zoning districts (e.g., primary residential, suburban estate, general commercial, village center, etc.) include specific requirements for pedestrian and bicycle facilities, non-motorized transportation and recreation are required in Planned Development Districts and the Newport Development Service Overlay (NDSO) District.

Planned Development Districts must include pedestrian and bicycle accommodations:

"Pedestrian pathways or bikeways shall be provided and may be located parallel to the street or away from the road system with considerations for safety and convenient access, and the preservation of natural features and provide visual interests" (Section 4-14006).

Planned Development Districts also include requirements for preserving natural features and amenities, such as watercourses, as well as developing facilities for active recreation. One specific type of Planned Development District is the Planned Development Mixed Use (PD-MU) District, which allows for more flexible zoning. The benefits of this district include blending homes into a built working environment to form a community "that will not only reduce vehicle miles of travel, but also present opportunities for workers to walk or bike to work" (Section 4-18001). PD-MU Districts also require internal pedestrian and bicycle circulation as well as connections to adjacent properties. Planned Development Districts are permitted only in the County's Development Service Districts.

The NDSO applies in the Development Service District in Northeast Isle of Wight County. The requirements of this District supplement the regulations of underlying zoning districts. It is intended to:

- Encourage the interconnectivity of commercial, office, civic, and residential uses through the use of roadways, pedestrian walkways, and bicycle paths
- Encourage the preservation of open space for active and passive recreation
- Encourage public access to waterways through the use of greenway/pedestrian walkways
- Promote traffic calming treatments that provide safe on-site circulation of vehicular, pedestrian, or bicycle traffic
- Promote pedestrian and bicycle connectivity between developments and areas with different land uses
- Preserve areas for future transit stops

Developers are required to develop an access plan that demonstrates how these objectives will be met. The specific pedestrian and bicycle requirements for the NDSO are stated in Section 6-2009 (Development Standards):

- Provide continuous connections within and between developments for pedestrian and bicycle traffic.
- Provide facilities to store or lock bicycles at appropriate sites, such as schools, recreation areas, office parks, public institutions, and activity centers.
- Develop the proposed bike pathway system in a manner that links to existing and proposed neighborhoods, park lands, conservation areas, scenic landscapes, and historical sites in accordance with the goals and objectives of the Comprehensive Plan.
- Provide pedestrian walkways from the public sidewalk/right-of-way to customer entrances of large retail establishments; provide crosswalks

and other roadway crossing treatments to enhance the safety of pedestrians in parking lot areas; provide sidewalks and other pedestrian amenities along the entrance sides of retail buildings.

- Site development shall include streetscape improvements that enhance the pedestrian environment, such as decorative light fixtures, benches and tables, trash receptacles, pedestrian and bicycle paths, and bicycle parking structures.
- Provide crosswalks and other roadway crossing treatments that enhance the safety of pedestrians, including raised crosswalks,

In addition, the NDSO requires minimum visual buffers of 70 feet between highway right-of-way lines and structures and parking areas on adjacent properties (applies to US 17, US 258, VA 10, and VA 32). Continuous sidewalks, pathways, and bicycle paths are permitted in this area.

The County Zoning Ordinance also includes development review procedures and general development design guidelines under Article VII. Development review requires the initial written site analysis to describe the relationship of a site to existing and proposed pedestrian pathways and bikeways. In addition, the preliminary site development plan (and subsequent site plan submissions) is required to show the location and dimensions of all existing and proposed improvements, including walkways, buffers, open space, and recreational areas and facilities.

Site design must provide for interconnected streets between developments to assure adequate traffic flow. In commercial and industrial developments, pedestrian walkways shall be provided so that patrons may walk from building to building within the site and to adjacent sites, and accommodations must be provided to comply with the Americans with Disabilities Act.

A full review and list of recommendations pertaining to the Zoning Ordinance is provided in Chapter 4 and the Appendix of this report.

Town of Smithfield Zoning Ordinance

The Smithfield Zoning Ordinance (1998) states that traffic Impact Assessment studies for developments must include site plans showing access for pedestrians to the development and proposed sidewalk improvements.

Town of Smithfield Subdivision Ordinance

The Smithfield Subdivision Ordinance (1999) includes a section on Subdivision Design Standards. These standards require sidewalks to be installed on one or both sides of the street.

APPENDIX B: DETAILED PLAN DESCRIPTIONS

This appendix includes detailed descriptions of county, local, and regional plans that emphasize the need to improve pedestrian and bicycle facilities and programs.

Isle of Wight County Comprehensive Plan

The Isle of Wight County Comprehensive Plan (2001) provides significant support for pedestrian and bicycle transportation and recreation. Specific recommendations for improving pedestrian and bicycle conditions are described by chapter below.

Chapter 4 – Growth Management/Land Use: The requirements for several land use districts recommend developments that are pedestrian scale, have connected roadway systems (rather than cul-de-sacs), make non-vehicular links to activity centers and adjacent residential uses, and include trails and connect to the Countywide trail system.

Chapter 5 – Transportation: The chapter highlights pedestrian and bicycle needs as an emerging issue in Isle of Wight County:

"Walking/hiking trails and bike trails are few in number in the County. Such facilities have not been a key component of the County transportation program in the past. Trail systems can serve to connect neighborhoods to one another and to key public facilities and provide an alternative means of transport, on foot or on bike. Such facilities are most important within the County development service districts. They diversity transportation options and provide recreational amenities that enhance the quality of life for residents. The County needs to elevate the status of pedestrian and bike facilities as a component of its overall transportation program in future years" (p. 5.11).

A specific objective of the transportation system improvements in Isle of Wight County is to "decrease the need for automobile trips by encouraging mixed-use developments, pedestrian pathways, and bike paths" (p. 5.12).

The transportation chapter also provides more specific recommendations for pedestrian and bicycle facilities, such as constructing a trail in the Lake Gaston Pipeline right-of-way, providing on-site bicycle paths within developments and bicycle storage/parking areas, and a number of specific roadways to be developed as bikeways.

In addition, this chapter calls for the County's 2000 Bicycle Plan to be "evaluated, refined, and opportunities to create off-road bike paths should be examined" (p. 5.15).

Chapter 8 – Parks and Recreation: This chapter highlights the need to develop greenway trails for recreation in Isle of Wight County. It includes recommendations to:

- Establish a greenways program that would identify locations for greenways in advance of development in order to secure rights-of-way or easements for trails.
- Acquire land along the James River and its tributaries to develop greenways for public use.
- Pursue funding from both public and private sources to purchase easements or secure easements through donations.
- Develop an interconnected system of trails and greenways over time. The system of greenway trails should link park lands, conservation areas, scenic landscapes, and historic/cultural sites.

Specific recommendations are provided for a trail along the Lake Gaston Pipeline and for developing a bikeway to link parks such as Carrollton Nike Park, Riverview Park, Tyler's Beach, and Fort Boykins Historic Park in the northern part of the County.

Chapter 11 – Community Character and Design: This chapter recommends many important concepts for supporting pedestrian and bicycle activity in the County's built environment. These recommendations include:

- Promoting higher densities and mixed land uses in Development Service Districts to increase the potential for shorter trips that can be made by walking and bicycling.
- Developing attractive streetscapes that accommodate a variety of transportation modes, including walking and bicycling.
- Including networks of pedestrian and bicycle pathways within and between developments.
- Creating neighborhoods with networks of interconnected streets rather than cul-de-sacs.
- Utilizing traffic calming methods that discourage motorists from traveling above the intended speed on a roadway (e.g., speed humps, chicanes, and roundabouts).
- Providing sidewalks that are a minimum of five feet in width. Sidewalks should be at least six-feet wide along major pedestrian routes and ten- to fifteen-feet wide in commercial areas.
- Developing bikeways to link internal open space with open spaces outside developments and to the countywide network of bikeways.
- Installing bike racks in open space and recreation areas.
- Arranging lots, buildings, and units to reduce the area devoted to motor vehicle access and to facilitate pedestrian and visual access to common open space.
- Orienting buildings toward public streets and sidewalks rather than parking lots. Place parking lots behind buildings.

Chapter 12 – Implementation: A pedestrian and bicycle system should be developed for the County between 2003 and 2006.

Isle of Wight County Strategic Plan of Action

Isle of Wight County developed Action Steps in March 2004 to guide its activities in nine goal areas. One of the Action Steps under the transportation planning goal is to develop a County Transportation Plan that includes aspects of multi-modal transportation "critical for the future of the County (ex. County road networks, bicycle pathways, high-speed rail and mass transit)." Under the growth management goal, the Plan of Action recommends updating the County Comprehensive Plan, as necessary. This provides support for incorporating the recommendations of this Pedestrian and Bicycle Facilities Master Plan into the updated Comprehensive Plan.

Town of Smithfield Comprehensive Plan

The Town of Smithfield emphasizes the importance of pedestrian and bicycle transportation and recreation in its 1999 Comprehensive Plan. It includes a community development objective to encourage continued streetscape and pedestrian improvements throughout the Town, and transportation and parking objectives using traffic calming in Downtown Smithfield. Studying the feasibility of adding new sidewalks and the possibility of linking a bike trail in Smithfield to the regional bicycle system are also encouraged.

The urban design guidelines in the Smithfield Comprehensive Plan provide less detailed recommendations for pedestrian and bicycle improvements than the County Comprehensive Plan. The Town of Smithfield recognizes the need for sidewalks and walkways and recommends them in specific situations. However, sidewalks are recommended only on one side of the roadway in future improvements to Battery Park Road, Moonefield Drive, Smithfield Boulevard.

One of the major transportation planning objectives is to incorporate expanded standards into a Design and Construction Manual for street, bikeway, pedestrian, and related drainage and infrastructure improvements. This would help incorporate pedestrian and bicycle accommodations into all transportation projects in Smithfield.

The Comprehensive Plan also recommends that the Town develop a Bicycle and Pedestrian master plan to integrate these non-motorized facilities into the Town's Transportation Plan. Planning for pedestrians and bicyclists is important for enhancing "the Town's viability as an inviting center for tourism and to better integrate its existing and planned neighborhoods" (p. X-13).

Pedestrian and bicycle facilities are also recommended as a part of specific projects in the plan, including:

- South Church Street: Provide a multi-use path bikeway on one side of the roadway and a sidewalk on the other side
- Battery Park Road/Route 704: Develop Corridor Overlay District design recommendations for constructing sidewalks and bikeways
- West Main Street: Install traffic calming devices to slow motor vehicle traffic to safe driving speeds and increase pedestrian and bicycle safety

- Moonefield Drive: Add sidewalks and bike paths on both sides of the road between John Rolfe Drive and Watson Drive as a part of recommended road improvements. Install traffic calming devices to slow motor vehicle traffic to safe driving speeds and increase pedestrian and bicycle safety
- Smithfield Boulevard: Developing sidewalks and bikeways and planting street trees would enhance the appearance of this roadway and safety and convenience of non-motorized transportation.
- Jericho Road: Promote pedestrian linkages between the Windsor Castle Area and South Church Street rather than road widening and increased vehicular traffic. Provide adequate lighting to avoid pedestrian/vehicular conflicts.
- Route 10 Business: Use traffic calming devices and other measures to reduce the potential for crashes involving pedestrians traveling between the manufacturing facilities and parking lots on each side of Route 10 Business.
- Cedar Street: Extend existing sidewalk on Cedar Street and continue on Jericho Road to create a pedestrian loop to connect Downtown Smithfield with Windsor Castle and the nearby amphitheater.
- Lumar Road: Construct sidewalk along roadway to connect South Church Street to the planned sidewalk improvement on John Rolfe Drive.
- Waterford Oaks area: Incorporate sidewalks into the existing internal street system and to allow safe walking opportunities in the development and provide pedestrian access between residences and nearby destinations.
- Connection between Jericho Road and Cypress Creek Development: Explore possible pedestrian connection across the Route 10 Bypass.

The Smithfield Plan recognizes existing deficiencies in pedestrian and bicycle facilities and the need for improvements:

"The existing Town sidewalk network fails to extend in any systematic way beyond the downtown area. The vast majority of the existing residential communities in the Town lack sidewalks, walking paths or bikepaths. As a result, few physical pedestrian connections are made between residential subdivisions. Residents who wish to walk for exercise purposes or to do their small goods shopping or to visit friends and neighbors must do so in the street or in residential yards. This presents safety hazards for pedestrians and drivers alike. When effectively employed, pedestrian facilities provide increased community benefits in the form of physical linkages between neighborhoods, reduced air pollution, reduced traffic congestion and automobile fuel savings" (p. X-29).

General recommendations have been provided for bikeway facilities, such as multi-use trails, shoulder bike lanes, and shared roadways. Locations are recommended for bikeway improvements, including specific bikeway facility types, which have been re-evaluated as a part of this County Pedestrian and Bicycle Facilities Master Plan. The locations include:

- Route 10 Bypass (shoulders and cantilevered pathways on both sides of the bridge over Cypress Creek)
- Cedar Street/Jericho Road (also explore possible bicycle connection across the Route 10 Bypass)
- Cary Street
- John Rolfe Drive/Moonefield Drive
- Battery Park Road (Multi-Use path)
- Smithfield Boulevard (Multi-Use path)
- South Church Street (Bicycle lane)
- Great Spring Road
- Route 258 West
- Waterworks Road

The Plan recommends that many bikeways be constructed as multi-use paths on the opposite side of roadways from sidewalks. However, this County Pedestrian and Bicycle Facilities Master Plan recommends that the Town of Smithfield change this statement in its next plan update.

Hampton Roads 2026 Regional Transportation Plan

The Hampton 2026 Roads Regional Transportation Plan provides a vision for improving pedestrian and bicycle connections throughout the Hampton Roads District. It states:

"Offering a variety of transportation options is necessary to serve the diverse needs of those traveling in Hampton Roads. Bicycling and walking are unique modes in that many people enjoy biking and walking not just as a means of travel but also as forms of fitness and recreation" (p. 79).

The Plan incorporates the facility inventory and recommendations from the *VDOT Hampton Roads District Bicycle Plan* (2003). It identifies 443 miles of existing bicycle facilities (less than 5 miles in Isle of Wight County) and recommends over 1,400 miles of additional bicycle facilities (approximately 100 miles in Isle of Wight County). The Plan estimates that 230 of the 1,400 miles of bicycle and pedestrian facilities could be constructed throughout the region by 2026 through highway projects and Congestion Mitigation Air Quality projects.

To the extent possible, the findings of the above-mentioned studies and master plans were incorporated into the planning process for this Plan.

APPENDIX C: PEDESTRIAN AND BICYCLE FACILITIES MASTER PLAN ONLINE SURVEY RESULTS

Isle of Wight County Pedestrian and Bicycle Facilities Master Plan Survey

Introduction

Thank you for your interest in walking and bicycling in Isle of Wight County. Your feedback on this survey will provide information for the Isle of Wight County Pedestrian and Bicycle Facilities Master Plan. Even if you don't walk or bike regularly, we would appreciate your feedback. Your responses to this survey will be anonymous.

This short survey includes three parts: 1) Pedestrian questions, 2) Bicycle questions, and 3) Background information questions.

Question 1

On average, how often do you walk (or travel as a pedestrian) for the following purposes?

	Never	A few times per month	A few times per week	Five or more times per week	Response Total
To work	**91% (182)**	4% (8)	2% (4)	3% (5)	**199**
To shopping or errands	**65% (130)**	20% (41)	12% (25)	2% (4)	**200**
To school	**95% (185)**	3% (5)	1% (2)	1% (2)	**194**
To social/recreational activities	**43% (87)**	34% (68)	17% (35)	6% (12)	**202**
For exercise (no destination)	8% (16)	31% (64)	**39% (80)**	23% (47)	**207**
Other	**39% (45)**	27% (31)	23% (27)	11% (13)	**116**
				Total Respondents	**212**
				(skipped this question)	**3**

Question 2

Which of the following prevent you from walking more in Isle of Wight County? (Choose top 3)

		Response Percent	Response Total
Travel time (takes too long to reach destination)		34%	69
Lack of sidewalks		**64%**	**130**
Lack of greenway paths/trails		58.6%	119
Poor sidewalk quality		22.2%	45
High-speed traffic		45.8%	93
Heavy traffic		36%	73
Dangerous/difficult road crossings		48.8%	99
Inadequate lighting (along roadways or at roadway crossings)		25.1%	51
Physical ability		3%	6
Hills		0%	0
Weather		9.9%	20
View Other (please specify)		9.9%	20
	Total Respondents		**203**
	(skipped this question)		**12**

Other Responses to Question 2:

Which of the following prevent you from walking more in Isle of Wight County? (Choose top 3)	
1.	no shoulders
2.	battery park road needs walking & biking trails badly; URGENT;
3.	It's farm country
4.	Not taxpayers responsibility to pay for Bike trails
5.	I walk in the downtown area after biking to Smithfield
6.	personal choice
7.	lack of space/ ditces too close to roadway
8.	locations to far from home
9.	Distance to destination
10.	roadside ditches too close to road to allow for safely avoiding traffic
11.	dogs & pecocks
12.	the distance involved
13.	We need a bike and walking "path" that encompasses the downtown area to include the sidewalks and a bike path on Main, Grace Streets, etc.
14.	Do not live in residential area. Country roads are not safe

15.	not enough time in the day to busy
16.	Its not like we live 10 min from work. If this was a city it would be diffrent.
17.	poor roads--not wide enough
18.	lack of marked pedestrian paths along highways
19.	time constraints
20.	I live 9 miles from town so I'm not within walking distance to most things

Question 3

Which of the following changes would encourage you to walk more often in Isle of Wight County? (Choose top 3)

		Response Percent	Response Total
More destinations within walking distance		53.1%	103
More sidewalks		66.5%	129
More paved roadway shoulder areas		46.9%	91
More greenway/off-road trails		**74.2%**	**144**
Better marked/painted crosswalks		14.4%	28
New pedestrian countdown signals (signals that count down the time left to finish crossing the street)		14.9%	29
Narrower roadway crossings (e.g., privode median islands, curb extensions, and/or build narrower roadways)		4.1%	8
More education on pedestrian safety		3.6%	7
Increased police enforcement to reduce speeding and increase drivers yeilding to pedestrians in crosswalks.		22.7%	44
View Other (please specify)		5.7%	11
	Total Respondents		**194**
	(skipped this question)		**21**

Other Responses to Question 3:

Which of the following changes would encourage you to walk more often in Isle of Wight County? (Choose top 3)

1.	battery park road need is urgent from Church Street to Gatling Point
2.	Not tax payers responsibility to pay for Bike Trails
3.	restroom availability
4	connecting desinations by master route that is safe for walkers/bikers we have lots of desinations

	but you just can't walk there, and not just "tourist" desinations, but like getting to the pool, par
5.	groups walking more
6.	street lights/ lite trails
7.	Main Street needs more monitoring for speed
8.	more free time
9.	A place to run or walk like what other counties has would work. The Parks we have now dont really offer this.
10.	We have been begging for a sidewalk for disabled husband and children.
11.	Better country roads for walking

Question 4

On which roads would you like to see pedestrian improvements, such as sidewalks or better crosswalks/signals (regardless of whether or not you are a pedestrian)? Please be as specific as possible. List the road name and a starting and ending intersection. Feel free to provide additional locations in the comment box at the end of the survey.

		Response Percent	Response Total
View **Location #1:**		**100**%	**129**
View Location #2:		80.6%	104
View Loaction #3:		56.6%	73
	Total Respondents		**129**
	(skipped this question)		**86**

Specific Responses for Question 4, Location #1:

1.	Route 17
2.	nike park road/battery park road
3.	Smith Neck Road
4.	cedar grove road
5.	Rt 17
6.	battery park road from church street to gatling point to town of battery park
7.	New Towne Haven Lane (library & school)
8.	Turner Road
9.	460, Corp. limits to corp. limits, Windsor, VA
10.	Nike Park Rd
11.	route 17 - full length in IOW Co.

12.	From corner of Main street and Church Street all the way to rt 10, pass 7-11, DMV and Anna's Pizza.
13.	route 17 from the JRB to Suffolk
14.	Comet Rd (Entire Road)
15.	Millswamp Rd. from holley drive to town
16.	Battery Park
17.	none
18.	Battery Park to Nike Park to S Church St--bike/pedestrian path or improved shoulders LOWER SPEED LIMIT and NO PASSING along those areas
19.	route 17 going south from James River Bridge (Eagle Harbor)
20.	Windsor Blvd. thru town of Windsor (Rt. 460)
21.	route ten
22.	any rail trail or off road paths
23.	Battery Park Rd, South Church St to Nike Park Rd
24.	Battery Park Rd -
25.	258 to Baseball fields or Fair Grounds
26.	Battery Park
27.	South Church Street near Battery Park
28.	Battery Park Rd from S. Church St. through at least Gatling Pointe if not all the way to Rescue
29.	Church steet b/t Station and Farmers Bank intersection
30.	around Beale Park Baseball Fields & pool
31.	church and main
32.	battery park road church to Gatling pt
33.	carrsville highway/ carrsville elem.
34.	East and West Windsor Blvd. through the Town of Windsor
35.	S. Church St. from Battery Park Road to the bridge going toward downtown
36.	S Church St in front of Smithfield Station restaurant & marina
37.	Carrsville Hwy. Beaver dam area to Carrsville community center.sidewalks.
38.	Battery Park Road
39.	Carrsville highway
40.	Rt 17 Eagle Harbor
41.	Scotts Factory Road/Rt 620
42.	Rte 10 between Route 258 and Turner Drive
43.	Owens Lane
44.	Brewer's Neck
45.	battery park - gatling pointe to church

46.	Battery Park Road
47.	258 from 460 north to 10
48.	Church Street - Battery Park to Grace
49.	Nike Park Road
50.	Benn's Ch. Blvd, Rt. 10
51.	farm Fresh intersection
52.	John Rolfe and Battery Park to Moonefield
53.	Washington Ave. Franklin,Va.
54.	Oliver Dr to Longview Rd to Scott Factory Rd
55.	Nike park rd and Reynolds
56.	Titus Creek Drive - whole length
57.	Rescue Road
58.	Battery Park Road
59.	battery park road
60.	battery park road from s. church to Gatlin Pointe
61.	Berry Hill Road
62.	The crosswalk at Eagle Harbor and Woodbridge (Rte 17) needs a pedestrian light
63.	South Church Street between Battary Park & Cypress Creek Bridge
64.	460
65.	South Church Street
66.	Burwells Bay Road
67.	Grace Street
68.	Route 256 and Route 10
69.	Scotts Factory Road
70.	Courthouse Hwy.
71.	Battery Park Road from light at Church St. at least to Gatling Point
72.	mill swamp
73.	Battery Park Road
74.	john rolfe
75.	windsor woods neighborhood
76.	nike park road, too narrow for anyone riding or walking, sidewalks would be beneficial. It would be nice to see Nike Park be expanded to included that waterfront farm that is for sale. Bike/walking
77.	Battery Pk Rd to Rescue
78.	Battery Park/Nike Park Intersection
79.	Church Street (Daily Press Building to Town of Smfld)

80.	Church Street
81.	Cypress Creek overpass to Jericho Estates
82.	Battery Park/ Gatling Pt Pkwy/ Church St
83.	Old Stage Highway
84.	Rt 17 near Eagle Harbor
85.	Church St._Smd Station to DMV / Pomoco
86.	Battery Park Road from church St to Nike Park
87.	Smith's Neck Rd
88.	Rynolds Rd
89.	nike park road
90.	10184 Bank St.
91.	Battery Park & S. Church
92.	Cedar Grove Road
93.	258
94.	Battery Park Road
95.	Route 10
96.	route 10 and 258 by littles super market
97.	Smithfield Blvd (full length)
98.	route 258 (main st) from smithfield bypass to waterworks road
99.	Route 258 from Farmer's Service Co. to Benn's Church Blvd.
100.	Nike Park
101.	South Church Street
102.	South Church Street
103.	Main Street
104.	South Church Street
105.	John Rolfe Drive West to Battery Park Road
106.	Town of Windsor- the annexed portion (esp. where new businesses are)
107.	South Church Street, Smithfield
108.	Route 17 near Eagle Harbor
109.	Old Suffolk Rd to Tyler Dr
110.	all areas surrounding the courthouse complex
111.	NEW TOWNE HAVEN LANE
112.	north court street
113.	Carey Street between Goose Hill Way and Grace Street

114.	Main Street & Bypass 10
115.	Hwy 17 & Eagle Harbor Entrance
116.	route 10 main street to surry line
117.	brewersneck blvd
118.	Route 258 from Windsor to Smithfield
119.	Battery Park Road
120.	From Windsor Woods to Rte 258/460 Intersection
121.	258 from 460 to the Poor House Rd.
122.	Smith Neck Road
123.	N. Church Street, Smithfield
124.	Eagle Harbor Shopping Area
125.	Rt. 10 Bypass & Main Street
126.	Scots Landing
127.	Carrollton Boulevard, entire length
128.	rt 10 - farm fresh area
129.	Windsor @ 460 and 258

Specific Responses for Question 4, Location #2:

1.	Brewers Neck Road
2.	battery park road/church street
3.	Nike Park Road
4.	carrollton blvd
5.	Smith Neck from Rt 17
6.	battery park raod; has more residents need to get out to exercise; walk or bike to stores
7.	Hwy 258 - Benns Church to the Shopping center
8.	Titus Creek Drive
9.	route 258 - rt 17 to Benns Church
10.	Brewer's Neck Road to downtown Smithfield
11.	Raynor Rd
12.	Battery Park Rd. from church to Nike Park
13.	Nike Park
14.	none
15.	Smith Neck Road-Eagle Harbor to Rescue--again LOWER SPEED LIMIT and consider adding a Roundabout at intersection of Smith Neck and Titus Creek and /or Reynolds
16.	route seventeen

17.	Nike Park Rd, Battery Park to Nike Park
18.	Nike Park Road
19.	460 Lover's Lane to DQ
20.	Church Street
21.	Battery Park Road
22.	Nike Park Rd- the entire road but especially from Battery Park to Nike Park
23.	Paths to Nike Park from various locations
24.	all of Church Street
25.	hwy 58 international paper end to 258
26.	From Windsor Post Office to the Food Lion on East Windsor Blvd.
27.	Smithfield Blvd
28.	Battery Park Road at Gatling Pointe to connect North & South
29.	Church Street
30.	Walters highway
31.	Nike Park Road
32.	Nike Park
33.	Cary Street between Grace and YMCA
34.	Route 10
35.	church - full length linked to smithfield stattion and historic downtown
36.	Nike Park Road
37.	Firetower RD from 460 to 258
38.	Battery Park Road
39.	Brewer's Neck Rd., Rt. 32
40.	intersection with Main st and Rt 10
41.	South Church Street from Rt. 10/258 to the Smithfield Center
42.	Pocahontas Ave. Franklin, Va.
43.	HWY 258 from Smithfield to Windsor
44.	Nike Park and Battery Park
45.	Rte. 17 between fire station and post office - both sides
46.	Nike Park Road
47.	Church Street
48.	reynolds road
49.	Moonefield Drive
50.	N. Church Street

51.	Town of Windsor
52.	Smithfield Blvd at South Church Street
53.	North Church street
54.	FT Huger Drive
55.	Church Street all the way down to Food Lion from the Smithfield Center
56.	Route 10 and Route 17
57.	Windsor Blvd.
58.	Nike Part Road from light to park
59.	wrenns mill
60.	Church Street
61.	battery park way
62.	258 inside windsor town limits
63.	church street , crosswalks at battery park and s. church street. and better sidewalks for most of the lenght of the road
64.	Nike Pk Rd to Nike Park
65.	Nike Park/Taylor Rd
66.	Battery Park Road to Nike Park Road
67.	Church St. to Beale Park area
68.	Battery Park Road/Nike Park Rd. area
69.	Nike Park RD/ Battery Park Rd to Nike Park
70.	Near Nike Park
71.	Battery Park Rd.
72.	Nike Park Rd - all
73.	Reynold's Rd
74.	Smithneck Rd
75.	benns church blvd
76.	Windsor Blvd.
77.	Route 17 (Chuckatuck Creek to Brewers Neck Blvd)
78.	460
79.	Battery Park Road
80.	Route 258
81.	by Smithfield station on Church Street
82.	Battery Park Road (between S. Church St and Gatling Point)
83.	church st & battery park rd to rescue, smith neck rd to titus creek to nike park to battery pard rd
84.	entire length of Church Street

85.	Battery Park
86.	Battery Park Road
87.	Benn's Church Blvd.
88.	Battery Park Road to Church Street
89.	Battery Park Road, Smithfield
90.	Whippingham Parkway
91.	Tyler Dr from Old Suffolk Rd
92.	rte. 258
93.	E Church Street at Smithfield Station parking lot--someone is going to get KILLED trying to cross that busy road!
94.	Hwy 17 & Eagle Harbor Entrance
95.	smithsneck rd
96.	Nike Park Road
97.	460 from Dominion Wy to Stave Mill
98.	Route 17 in Carrollton
99.	Carrollton Blvd near WC Sawyer shopping center
100.	Church Street (Smfd Station up hill and newer portions)
101.	Nike Park
102.	Benns Church intersection
103.	south church street Smfd - from food lion to smfd station
104.	Windsor @ 460 and Church St.

Specific Responses for Question 11, Location #3:

1.	south church street/to bridge to town
2.	Nike Park (entire road)
3.	battery park road; has more traffic
4.	Smith's Neck Rd
5.	route 10 - throughout length in Co.
6.	all of Smith's Neck Road, Nike Park Road, Reynold's Drive, Rescue Road, Battery Park Road
7.	Stallings Creek Rd
8.	Church St
9.	none
10.	Titus Creek--Nike Park to Smith Neck--improved, bigger shoulder
11.	South Church St, from S Benn's Church Rd to the Meat Packing plant
12.	Titus Creek Road

13.	258 to Church St. to A St.
14.	Nike Park
15.	Nike Park Road
16.	Smiths Neck Rd from Eagle Harbor all the way into Rescue
17.	Be sure connected to Benns Church as develops, connect Eagle Harbour, and as new development comes include it
18.	rt. 460 in Windsor between Dairy Queen & Windsor Scchool of dance (both sides of street)
19.	collasse rd to carrsville hwy
20.	Rt. 258, Walters Highway from Dairy Queen in Windsor to Walters
21.	Rt. 10 Bypass from Smithfield Shopping Center to Main St.
22.	Intersection of Rt. 258 and Rt 10 Bypass
23.	Smithfield Blvd
24.	down town Carrsville
25.	Intersection Rt. 620/258
26.	Entire S. Church Street in Smithfield
27.	South Church Street
28.	South Church Street
29.	Church St., Main St.
30.	Nike Park Road from Battery Park Intersection to Nike Park
31.	Carver Road Franklin, Va.
32.	Nike Park Road across from the park
33.	John Rolfe
34.	mill swamp road
35.	S. Church St. from Battery Park Rd. to town
36.	800-1000 Block S. Church St
37.	Entire route from Smithfield to Nike Park
38.	Wrenns Mill Road
39.	Path/walkway from Main Street onto the bypass to Farm Fresh area
40.	Ecella Road
41.	Great Springs Road the entire length wider paved shoulder
42.	carey st
43.	Nike Park Road
44.	lane cresent
45.	460 inside windsor town limits
46.	battery park road, side walks

47.	Rescue to Smith Neck , Titus Creek and on to Nike Park Rd.
48.	Titus Creek Road
49.	Church St. to Nike Park
50.	Church St/ Main St
51.	Jericho Road
52.	Nike Park Rd
53.	Benns Church
54.	rt 17
55.	Route 258
56.	Nike Park Road
57.	Battery park road
58.	Any of the crossing by the meat packing plants
59.	Nike Park Road (between Battery Park Rod and Nike Park)
60.	benns church blvd to turner drive to great spring rd
61.	Scott's Factory to Turner Drive to Route 10
62.	Church Street West to Food Lion and East to downtown
63.	Nike Park Road, Smithfield
64.	Buckhorn Dr to Parsons Dr to Joyner's Bridge
65.	clean broken glass on North Mason Street -- anyone heard of a street sweeper around here?
66.	SMiths Neck Rd & Eagle Harbor Entrance
67.	carrollton blvd
68.	Route 10 Bypass
69.	Whippingham Parkway
70.	Wrenns Mill Estates Area
71.	Battery Park to Church Street
72.	Prince Blvd at Windsor Blvd
73.	at the packing plants

Question 5

How do you feel drivers typically behave around pedestrians in Isle of Wight County? Please check all that apply.

		Response Percent	Response Total
Courteous - Drive slowly near pedestrians and yield to pedestrian crossing roadways		24.6%	47

Drive too fast		**49.7%**	**95**
Do not yield to pedestrians crossing roadways		36.1%	69
Pass pedestrians walking on the side of the road too closely		46.1%	88
Harass pedestrians		4.7%	9
I do not walk often enough to answer this question		18.8%	36
View Other (please specify)		11%	21
		Total Respondents	**191**
		(skipped this question)	**24**

Other Responses to Question 5:

How do you feel drivers typically behave around pedestrians in Isle of Wight County? Please check all that apply.	
1.	I only walk in residential areas because of the high traffic/lack of sidewalks and pathways elsewhere
2.	pedestrians need their own space along battery park road
3.	Walking, running or bike riding on Battery Park Rd and Nike Park Rd is UNSAFE--I 've encountered more than one driver who will purposely (it seems) speed up past me and my dog, as close as possible
4.	Unattentive
5.	On 258 to 460 - drive too fast
6.	they are also courteous! Either they are mean or nice, there is no inbetween
7.	courteous historic district - often unyieding elsewhere
8.	In areas with low speed limits, drivers are courteous but often just the opposite on higher speed roads
9.	talking on cellphones and drift
10.	act like we are not there!
11.	Redneck attitudes south of Route 10 are hostile to Bicyclists
12.	walking seems an enigma to some
13.	The speed in town is way too fast on all streets. Maybe it should be a 15 mph zone but at least enforce the 25mph
14.	Drivers act like brainless idiots. Even when pedestrian is walking on the correct side of the road (facing). It's very discouraging!
15.	highly varable occasionly dangerous
16.	Walk alot in my subdivision.
17.	Most drivers are courteous--danger comes in congested areas or areas with poor visibility--such as Carey Steet where cars park on sidewalk and force pedestrians onto roadway
18.	I feel that pedestrain bicylce riders are not courteous

19.	Roads are for cars not pedestrians
20.	drive erroneously/cell phones/drunk
21.	pedestrians do not look before crossing

Question 6

How many bicycles do you have in your household?

		Response Percent	Response Total
0		6.2%	12
1		10.8%	21
2		21.1%	41
3		**25.3%**	**49**
4		18%	35
5 or more		18.6%	36
		Total Respondents	**194**
		(skipped this question)	**21**

Question 7

On average, how often do you bicycle for the following purposes?

	Never	A few times per month	A few times per week	Five or more times a week	Response Total
To work	**90% (159)**	6% (11)	3% (5)	1% (2)	**177**
To shopping or errands	**79% (142)**	15% (26)	4% (8)	2% (3)	**179**
To school	**98% (166)**	1% (1)	1% (2)	1% (1)	**170**
To social/recreational activities	**45% (81)**	34% (62)	16% (30)	5% (9)	**182**
For excercise	20% (37)	32% (61)	**35% (67)**	13% (24)	**189**
Other	**49% (36)**	34% (25)	10% (7)	7% (5)	**73**
				Total Respondents	**191**

(skipped this question)	**24**

Question 8

Which of the following factors prevent you from bicycling or from bicycling more often? (Choose top 3)

		Response Percent	Response Total
Travel time (takes too long to reach destinations)		22.3%	41
Lack of bicycle facilities (such as bike lanes, wide travel lanes, paved shoulders, greenway trails, etc.)		**79.3%**	**146**
Heavy traffic		44%	81
High-speed traffic		52.2%	96
Dangerous/difficult road crossings		33.7%	62
Narrow roads		47.3%	87
Hills		1.1%	2
Other travel modes are safer or more comfortable		16.8%	31
Pavement quality		15.8%	29
Loose gravel/debris		16.8%	31
Poor lighting (along roadways or at roadway corssings)		13%	24
Personal security (concerned about crime)		6.5%	12
Physical ability		4.3%	8
Weather		6%	11
View Other (please specify)		10.9%	20
		Total Respondents	**184**
		(skipped this question)	**31**

Other Responses to Question 8:

Which of the following factors prevent you from bicycling or from bicycling more often? (Choose top 3)

1.	I live along battery opark road, too dangerous due to traffic; plese fix this
2.	lazy
3.	No bicycle

4.	Lack of time
5.	No new taxes
6.	No connection between locations other than dangerous roads
7.	Heavy traffic from Windsor Way onto 258
8.	Lack of bike trails x5
9.	Blind turns and NARROW road - Bethany Church Road
10.	grand kids only
11.	I ride for enjoyment so I do not let these matters interfere
12.	Dogs!
13.	Do not have bicycle at this time
14.	There is not a nice bicycle trail to ride on at any of the parks. Im not talking about a cross county trail.
15.	no bike
16.	If there were bike lanes here in Windsor I would bike a lot more!!!!
17.	my kids are small--I am nervous biking wih them in many areas due to lack of bike paths / sidewalks
18.	No crosswalks
19.	Unknown dogs
20.	bicycles should NOT be allowed on state roads

Question 9

Which of the following changes would encourage you to bike more often? (Choose top 3)

		Response Percent	Response Total
More destinations within bicycling distance		48.3%	84
More safety education programs and events for new cyclists		5.2%	9
More organized bicycle rides for families and new bicyclists		24.1%	42
More bike parking (such as bike racks or lockers at schools, parks, shopping areas, park and ride lots, offices, etc.)		34.5%	60
More bicycle facilities (such as bike lanes, wide travel lanes, paved shoulders, greenway trails, etc.)		**84.5%**	**147**
Narrower roadway crossings (e.g., provide median islands, curb extensions, and/or build narrower roadways)		9.2%	16

Increased enforcement or laws applying to motorists		19%	33
Increased enforcement or laws applying to bicyclists		10.3%	18
Greater availability of showers/changing facilities		4.6%	8
Bicycle route signs		42.5%	74
A map of bicycle routes		42%	73
View Other (please specify)		8%	14
	Total Respondents		**174**
	(skipped this question)		**41**

Other Responses to Question 9:

Which of the following changes would encourage you to bike more often? (Choose top 3)	
1.	more parks
2.	a bike trail along battry park road
3.	Public awareness that we belong on the roads, too!
4.	none
5.	The trails or lanes designated for bikes
6.	unfortunately the county is unfriendly to bikers, with no efforts for maked lanes, no effort to widen even a few feet key roads
7.	none
8.	Countywide leash law.
9.	Make country roads safer for walkers and bicyclists
10.	A nice trail that people can walk on of bike on.
11.	with the price of gas as it is, and the number of people that live and work in town, it would be feasible to look at this project seriously.
12.	Signs to alert drivers to share the road with bicycles
13.	adequate crosswalks
14.	Bike Trails

Question 10

Which type of bicycle facilities do you prefer to ride on? (Choose top 2)			
		Response Percent	**Response Total**
Paved shoulders		25%	43

Greenways/off-road trails		66.3%	114
Vehicle travel lanes (sharing travel lanes with motor vehicle traffic)		3.5%	6
Designated bicycle lanes		**76.2%**	**131**
Wide vehicle travel lanes (wide curb lanes) (outside lanes with enough space for motor vehicles to pass bicyclists on left side in the same lane)		19.8%	34
View Other (please specify)		3.5%	6
		Total Respondents	**172**
		(skipped this question)	**43**

Other Responses to Question 10:

Which type of bicycle facilities do you prefer to ride on? (Choose top 2)	
1.	paved side walks for people over 50
2.	low traffic country roads with good pavement
3.	none
4.	Sidewalks Too!
5.	in my neighborhood
6.	In my neighborhood

Question 11

On which roads would you like to see bicycle improvements, such as bicycle lanes, trails, paved shoulders, or safer roadway crossings (regardless of whether or not you are a bicylcist)? Please be as specific as possible. List the road name and a starting and ending intersection. Feel free to provide additional locations in the comment box at the end of the survey.

		Response Percent	Response Total
View **Location #1:**		**100%**	**128**
View Location #2:		84.4%	108
View Location #3:		68%	87
		Total Respondents	**128**
		(skipped this question)	**87**

Specific Responses for Question 11, Location #1:

1.	Route 17
2.	nike park road/battery park road
3.	cedar grove road
4.	Rt 17
5.	roads from Smithfield to Nike Park(Battery Park Rd to Nike Park Park Area
6.	battery park r oad from churc st reet to gatling point to town of battery park
7.	Church Street (N and S)
8.	all over Newport district
9.	Brewers Neck Road
10.	Nike Park Rd
11.	rt 17 - entire length in Co.
12.	Great Spring Rd
13.	route 10
14.	Church St, Smfd
15.	From River Road in Newport News, across James River Bridge on route 17 all the way to Churchland
16.	Comet Rd
17.	Church ST, Smfd
18.	Millswamp Rd. from town to Surry line
19.	Battery Park
20.	644 rt10 to 620
21.	Battery Park Rd Battery Park to S. Church St
22.	Smith Neck Rd
23.	South from Eagle Harbor
24.	RT. 460 thru town of Windsor where ther are destinations
25.	Rt 10
26.	Battery Park Rd, from S Church St to Rescue
27.	Battery Park
28.	258 to Baseball field or fair grounds
29.	Battery Park
30.	South Church St. from Battery Park to across the bridge
31.	Along all of Battery Park Road
32.	same as walking
33.	Great Springs Road - Entirety

34.	from Smithfield high school to church street
35.	Bethany Church Road - entire length
36.	carrsville hwy/ carrsville elem.
37.	East and West Windsor Blvd. throughout the Town of Windsor
38.	Main St from Rt. 10 Bypass to Westside Elem.
39.	Battery Park Road from Smithfield to Rescue
40.	Beaver dam section on Carrsville hwy. to Franklin and Carrsville community center.a side walk or bike lane so you can do both walk or bike on either one.
41.	Battery Park Road
42.	Carrsville
43.	Rt 460-Windsor
44.	Rt. 258/620 - Scotts Factory Road
45.	S. Church Street between bridge and Food Lion
46.	Brewer's Neck
47.	battery park in entirety
48.	none
49.	Battery Park Road
50.	Church Street - Battery Park to Grace
51.	Nike Park Road
52.	Hwy 10 from main st. to Benns Church rt. 32
53.	Battery Park Road from S. Church St. to Rescue
54.	Carver Road Franklin, Va.
55.	old stage hwy
56.	Nike Park Road
57.	258, from windsor to smithfield
58.	Gatling Point to Eagle Harbor via Titus Creek
59.	carroll bridge rd
60.	Nike Park Road - entire length
61.	Church Street - into Smithfield
62.	battery park
63.	Battry Park Rd from S. Church St. to Nike Park Rd.
64.	Battery Park Road
65.	Route 258 from Smithfield to Carrsville
66.	South Church Street
67.	460

68.	Church street
69.	Burwells Bay Road
70.	Main Street
71.	Carrollton Blvd b/w Cedar Grove & Smith's Neck
72.	battery park road
73.	Smith's Neck Road
74.	Scotts Factory Road
75.	Courthouse Hwy.
76.	Battery Park road from the light to at least Gatling Point
77.	Nike Park
78.	john rolf
79.	258 from courthouse to windsor
80.	NIke Park Road
81.	Battery Park Rd to Rescue
82.	Church St.
83.	rt.10 overpass fromcypress creek to jericho road
84.	Battery Park
85.	Old Stage Highway
86.	Rt 17
87.	Jericho Road
88.	Battery Park Rd from Church St to Nike Park Rd
89.	Smith's Neck Rd
90.	Reynolds Rd
91.	rt 17
92.	Bank St.
93.	battery park
94.	Cedar Grove Rd
95.	Battery Park Road
96.	Route 10
97.	Smithfield Blvd (full length)
98.	rt 258 main st to waterworks rd
99.	Route 258 From Farmer's Service Co. to Benn's Church Blvd.
100.	Main Street Smithfield
101.	South Church Street

102.	neighborhoods
103.	South Church Street
104.	Church Street West to Food Lion, and East to downtown
105.	orbit road
106.	South Church Street
107.	Route 17
108.	Buckhorn Drive to Parsons Drive to Joyner's Bridge Rd
109.	all areas surrounding the courthouse complex
110.	NEW TOWNE HAVEN LANE
111.	rte. 258
112.	Carey Stree between Goose Hill Way and Grace Street
113.	Hwy 258 Courthouse Highway
114.	route 10
115.	nike park rd
116.	Route 258 from Windsor to Smithfield
117.	Battery Park Road
118.	258 from 460 to Poor House Rd.
119.	Smith Neck Road
120.	Days Point Rd should NOT allow bicycles. It's too narrow and too hilly to be safe.
121.	Old Stage Hwy -Rushmere Area to Benns Church area
122.	Nike Park Road
123.	Mill Swamp Road
124.	Scots Landing
125.	residential areas of Eagle harbor, Sugar Hill Rd, Cedar Grove Rd
126.	rt 626
127.	Down Rt. 603
128.	Route 17- Entire length

Specific Responses for Question 11, Location #2:

1.	Brewers Neck
2.	battery park road/s. church street
3.	carrollton blvd
4.	Smith Neck Rd from Rt 17
5.	Turner Road from 10 to Scotts Factory
6.	battery park road to gatling point to town of battery park

7.	Rt 10 Smithfield to School
8.	Carrollton Blvd
9.	Titus Creek Drive
10.	258 - rt 17 to benns church
11.	Scotts Factory Rd
12.	Rt 10 by-pass and business
13.	all of Smith's Neck Road, Brewer's Neck Road, Battery Park Road, Rescue Dr., Reynold's Drive, Nike Park Road
14.	Rt 620
15.	Rt 10
16.	Battery Park Rd. from town to Rescue
17.	Nike Park
18.	Nike Park Rd Reynolds to Battery Park
19.	Carrollton Blvd (Hwy 17)
20.	am somewhat willlling to travel to a bike path destination via automobile to avoid riding on the roads
21.	Rt 17
22.	Smiths Neck Rd, from Hwy 17 to Rescue
23.	Nike Park
24.	460 Lover's Lane to DQ
25.	Nike
26.	Battery Park Road
27.	Along all of Nike Park Road
28.	for off road, interesting for children
29.	Scott's Factory Road & Foursquare Road
30.	church street from bypass to Main street
31.	Wrenn's Mill Road - Rt. 10 to Bethany Church
32.	hwy 58 to 258 starting at international paper
33.	From the Windsor Post Office to the Food Lion on East Windsor Blvd.
34.	South Church St. from begining to end
35.	Nike Park Road from Battery Park Road to Nike Park
36.	Church Street
37.	Carrsville highway
38.	Rt 258
39.	Route 10 bypass
40.	Route 10

41.	nike park coonection to battery park
42.	noneNONE
43.	Nike Park Road
44.	Battery Park - Church to Gatling Pointe
45.	Battery park Road
46.	Business 10 from Hardy to Hardees
47.	Nike Park Road from Battery Park intersection to Nike Park
48.	Washington Ave. Franklin, Va.
49.	Reynolds Road
50.	back road loops
51.	Eagle Harbor to Rescue
52.	scotts factory rd
53.	Battery Park Road - entire length from South Church all the way to the Rescue stop sign at Smith's Neck
54.	John Rolfe
55.	mill swamp
56.	Nike Park Rd. from stoplight to Nike Park
57.	Smith Neck Road
58.	Route 620
59.	Battery Park Road
60.	FT Huger Drive
61.	Church Street
62.	Smith's Neck @17 to Nike Park
63.	nike park road
64.	Turner Drive
65.	Windsor Blvd.
66.	Nike Park road from light to the park
67.	Church Street
68.	battery park way
69.	Church Street
70.	Rescue to Smith Neck, Titus Creek Rd and oi to Nike Park Rd
71.	Nike Park Rd.
72.	church street north
73.	Church Street
74.	Smithneck Rd to Nike Park Rd

75.	Battery Park Road
76.	Nike Park Rd - ALL
77.	Reynold's Rd
78.	Smiths Neck
79.	Benns Church Blvd
80.	Windsor Blvd.
81.	s. church
82.	Route 17 (Chuckatuck Creek to Brewers Neck Blvd)
83.	Battery Park Road
84.	Route 258
85.	Batter Park Road (between S. Church Street and Gatling Point)
86.	battery park rd from church st to rescue to titus creen to nike park
87.	Waterwork's Road to Comet Road to Foursquare Road to 258 to Waterwork's Road
88.	Benn's Church Blvd.
89.	John Rolfe Drive
90.	murphy mill road
91.	Battery Park Road
92.	Route 258
93.	Spivey Town Rd from Joyner's Bridge to Sunset Drive
94.	fire tower rd
95.	Main Street (historic district)
96.	Bypass 10
97.	mill swamp rd
98.	Nike Park Road
99.	460 from Suffolk line to Southampton Line
100.	Route 17
101.	Old Stage Hgwy. No bikes at all!
102.	Downtown Smfd -Hardy School going through Downtown (church st) to Benns Church area
103.	Nike Park Rd/Battery Park Rd.
104.	Nike Park
105.	safer crossings at intersections with Brewer's Neck Blvd
106.	rt 620
107.	Down Rt. 258 in Walters
108.	Routes 258, 10 & 32 Entire length

Specific Responses for Question 11, Location #3:

1.	Benns Church Rd
2.	south church street - n and s of battery park road
3.	Nike Park, whole thing
4.	Main Street from Battery Park intersection to Historical Area
5.	battery park from church street to town of battery park
6.	Turner Rd
7.	Smith's Neck Rd
8.	rt 10 - entire length in Co.
9.	Moonfield
10.	Cary St, Smfd
11.	Route 10 from Suffolk to Richmond
12.	Courthouse Hwy
13.	Cary ST, Smfd
14.	Hwy #10 from town to Surry line
15.	Church ST
16.	Smith Neck Rd Eagle Harbor to Rescue
17.	S Church St, from S Benns Church Rd and on pass the meat packing plant
18.	Titus Creek
19.	258 to Church St. to A St.
20.	Church Street
21.	Nike Park Road
22.	ALong all of Smiths Neck Road and Reynolds Drive
23.	Comet Road
24.	bypass from fork to main street
25.	Mill Swamp Road - Overall widen for riders
26.	collasse rd to carrsville hwy
27.	Throughout Windsor and beyond, i.e., From Windsor Dairy Queen to Walters; from DQ to the Iof W Courthouse complex
28.	North Church St. from Main St. to Hardy Elementary
29.	S. Church Street from Battery Park Road to Main Street
30.	Smith Neck road
31.	Walters highway
32.	Battery Park Road
33.	smith neck to rescue

34.	NONE
35.	South Church Street
36.	Nike Park - Battery Park to Nike Park Park
37.	South Church Street
38.	S. Church Street from Rt. 10/258 to Smithfield Center
39.	Pocahontas Ave. Franklin, Va.
40.	Church Street
41.	Gatlin Point to Battery Park
42.	turner rd
43.	Smith's Neck - entire length but primarily from Rescue to Titus Creek Rd
44.	Battery Park
45.	burwells bay
46.	Moonefield Drive & John Rolph
47.	Rescue Road
48.	Nike Park Road
49.	Wrenns Mill Road
50.	10 By pass
51.	Intersection of 17 and 258 to Benns Grant
52.	Route 10
53.	Ecella Road
54.	Great Springs road the entire length at least wider paved shoulder
55.	Battery Park
56.	nike park rd
57.	Battery Park Road
58.	Nike Park Rd from Battery Park Rd. to Nike Park
59.	Beale Park area
60.	battery park rd/nike park rd.
61.	Nike Park Rd
62.	Smithneck to Downtown Smithfield
63.	Nike Park area
64.	Nike Park Rd
65.	Nike Park Rd
66.	nike park road
67.	Route 258-Windsor

68.	Nike Park Road
69.	Battery Park Road
70.	Nike Park Rd (between Battery Park Rd and Nike Park)
71.	turner dr to great spring rd to rt 258
72.	Scott's Factory Road to Turner Drive to Route 10
73.	Route 258/Courthouse Hwy.
74.	Battery Park Road
75.	woodland road
76.	Nike Park Road
77.	Sunset Drive from Spivey Town to Buckhorn Dr
78.	four square
79.	East Church St (commercial district)
80.	foursquare rd
81.	Route 10 Bypass
82.	Rout 10
83.	Battery Park Road. No bikes at all
84.	Eagle lHarbor/Benns Grant/St. Lukes Village
85.	Bike trails in all Parks and leading to All parks from residential areas.
86.	hwy 258
87.	All future construction

Question 12

If you bicycle, how do you feel drivers typically behave around bicyclists in the Isle of Wight County? Please check all that apply.

		Response Percent	Response Total
Courteous - Yield and give bicyclists space		19.8%	35
Drive too fast		50.3%	89
Pass bicyclists too closely		**59.3%**	**105**
Harass bicyclists		7.3%	13
Do not yield to bicyclists crossing roadways		23.7%	42
I do not bicycle often enough to answer this question		19.8%	35
View Other (please specify)		6.8%	12
	Total Respondents		**177**

(skipped this question)	**38**

Other Responses to Question 12:

If you bicycle, how do you feel drivers typically behave around bicyclists in the Isle of Wight County? Please check all that apply.	
1.	I can't count the # of 'near misses' by only a few inches.
2.	The attitude toward bicyclists is very agressive and confrontational in this county. Some of the bicyclists need to ride single file on busy roads and some education needs to be done here.
3.	Mostly courteous, but occasionally pass to close at too high a speed
4.	Drive too fast on 258
5.	BICYCLE WON,T GO TO SIDE OF ROAD TO LET CARS BY.
6.	On low speed roads, drivers are typically courteous but just the opposite on the higher speed roads
7.	dogs and kids play in the roadway
8.	Rednecks south of Route 10 are openly hostile to bicyclists.
9.	why is this questionaire asking the same questions over and over?
10.	Not safe to cycle on roads near my residence
11.	Roads are for vehicles not bicycles
12.	I do not bike

Question 13

What is your age?			
		Response Percent	**Response Total**
0-9		0%	0
10-19		0.6%	1
20-29		8.6%	15
30-39		20.6%	36
40-49		**40.6%**	**71**
50-59		18.3%	32
60 or older		11.4%	20
		Total Respondents	**175**
		(skipped this question)	**41**

Question 14

What is your gender?

		Response Percent	Response Total
Male		42.9%	76
Female		**57.1%**	**101**
	Total Respondents		**177**
	(skipped this question)		**38**

Question 15

How many people live in your household?

		Response Percent	Response Total
1		5.6%	10
2		**33.1%**	**59**
3		18%	32
4		25.8%	46
5 or more		17.4%	31
	Total Respondents		**178**
	(skipped this question)		**37**

Question 16

How long have you lived in Isle of Wight County?

		Response Percent	Response Total
Less than 1 year		6.2%	11
1 - 2 years		10.7%	19
3 - 5 years		15.3%	27
6 - 10 years		16.9%	30

More than 10 years		**47.5**%	**84**
I am not a resident of Isle of Wight County		3.4%	6
		Total Respondents	**177**
		(skipped this question)	**38**

Question 17

What is your ZIP code?			
		Response Percent	**Response Total**
23304		0.6%	1
23314		21.2%	38
23315		1.1%	2
23397		0%	0
23430		**55.3**%	**99**
23431		1.7%	3
23487		11.2%	20
23851		1.7%	3
23866		1.1%	2
23898		1.7%	3
View Other (please specify)		4.5%	8
		Total Respondents	**179**
		(skipped this question)	**36**

Other responses to Question 17:

What is your ZIP code?	
1.	23607
2.	23185
3.	23185
4.	23666
5.	23703

6.	23606
7.	23430
8.	23188

Conclusion Section

Please provide additional comments in the box below:	
View Total Respondents	65
(skipped this question)	150

Please provide additional comments in the box below:	
1.	It would be nice to have pathways that stretch from the Cigarette barn to Eagle Harbor.
2.	It would be nice to have more greenways and trails for running/walking and bicylces. I live in Brewers Creek and would love to see more greenways from our area to Nike Park area or have a park in our area to use.
3.	Driver attitudes in Isle of Wight County are generally good towards Cyclist but I also ride in the Rural areas and the traffic on these roads are way too fast. Cars do not pass cyclists safely. I have cycled in Williamsburg too, and the bike lanes there have a debris problem. All the debris on the roads get washed/blown to the bike lanes. If we have this type of lane, the sides will need to be swept to be effective. I have also cycled on NOVA multiuse trails and they can be hazardous when bicycles/pedestrians are using the same trail. One economically idea would be to build bike paths that follow railroad tracks. On the peninsula, a bike path could be built to follow the train tracks from Williamsburg to downtown Newport News. People would have a safe way to commute to the Ship Yard on Bicycle. Please feel free to contact me dltlneik@verizon.net Thank You, David Neikirk
4.	Thank you for allowing our input. Please consider Battery Park Road for pedestrian & bike trails. I live along this road. Sometimes I want to walk to Food Lion or Hardees but it is too dangerous. I have tried. Too much traffic. There are more developments being planned. People need to be able to get out and exercise. I am not a cyclist. I am a resident who enjoy walking & biking when its safe. May God bless your efforts. thank you
5.	Note that Benns Church Blvd is an example of a good place to ride. The paved shoulder outside of the white lane marking is adequately wide to ride comfortably, not so wide that too much trash builds up on it and endangers bike tires with punctures.
6.	When the water and sewer lines were run down rt 17 several years ago it would have been an ideal time to install a walk/bike path. We live just off 17 and would use our bikes more but it is scary riding along 17 with cars and large trucks passing a few feet from you at 60 mph. As the plans for the Rt 17 corridor are developed we have to include safe paths this time.
7.	The trails should incorporate the historic district.
8.	I moved here from Newport News. People there are more used to seeing cyclists on the bike routes, the roads are wider, and the speed limits are slower. People in IOW county don't seem to care too much for cyclists slowing them down... so they don't. All these beautiful country roads and I can't ride them for fear of being hit. I can't tell you how many times that I felt the hair on the back of my neck stand up as someone 'passed' me with less than 6 inch clearance between their right-side mirror and my handle bars. For me the lack of safe bike routes in IOW has been the biggest disappointment to moving here as I am a former bike racer.
9.	Isle of Wight county found it necessary to build the tons of houses/neighborhoods the past few

	years. Getting all those motor vehicles off the road and people on foot or bicycle with relieve the traffic and pollution and crowded problems.
10.	We need to take this to the next level and not leave the study sitting on some staffers shelf. Keep up the good work!
11.	I am interested in being involved in the planning of the master plan. I would also volunter in what ever projects would come up. Ron Myers Phone 757-357-7632
12.	I live in James City County and have seen some dedication of biking and walking and it is a great thing ! I ride my bike to work 3-4 a week and save a bunch a money on gas and really keeps me in shape. Plus, I ride with a club for weekend excursions and I have travel to visit many areas like Isle of Wight by bike. The more that you can promote cycling/walking you will see positive growth and the potential for a different type of tourist trade.
13.	This proposal is for the benifit of a few at a cost. I will not support more taxes for this use.
14.	It is important to keep the "rural" orientation in our county, but we must improve safety--we need bike/pedestrian paths to help promote physical fitness and decrease the obesity problem in our country. In order to do so, the paths have to be readily available and interconnected to various areas--parks, schools, downtown, developments. If the paths begin and end in fragmented areas, only a few are going to use them--I don't want to drive somewhere to walk/bike, but will from my home. I lived in Denver, Co and the paths along the canal throughout the city and suburbs allowed access at various easily accessible areas. I would walk/bike more, not only for exercise, but for errands such as trips to the post office, and let my children do so--even to school--if there were safe paths available. Isle of Wight is a beautiful county and has so much to offer--improving the roads for multiple use and/or adding connecting paths will enhance it. Thank you for offering this survey and planning on improving our pedestrian and bicycle paths.
15.	I like the plan you have shown on the map on this site. I look forward to the improvements. Narrow roads with no shoulders are an impediment to bike riding today. This should fix the problem. Thanks.
16.	Isle of Wight County is one of our favorite cycling areas. My wife and I ride our tandem from Williamsburg to Smithfield four or five times a year (and always stop for lunch at the Bakery or Smithfield Station - we like to spend money in your community). We also ride around other parts of Isle of Wight when riding in the Surry County area. The mostly low traffic roads and beautiful rural scenery are ideal for cycling, and the beautiful town of Smithfield is a great destination. Your bike map gives us more ideas for additional riding in the County. Keep up the good work. Reed Nester, Williamsburg
17.	I have moved here recently from Florida and I miss all the Greenways (converted paths from old railroads) for running and biking. Additionally, there was a trail along the SunCoast Parkway that extends for many miles of almost worry free biking. I don't like biking in traffic!
18.	We need to move forward with the rail trail project. Isle of Wight needs to work with Southampton to get trail from Windsor all the way to Sebrell. Git-R.Done!!!
19.	Maps of designated paths for pedistrians and bicyclists would be great. I am a long distance runner and pedistrian friendly streets would be great. Thank you for taking this project into consideration, I am sure this would benefit and encourage many other people to exercise.
20.	I completed this form as a family. Since moving here in 2003, additional families and children are walking/biking on 258 and 460. I am very worried with three teenagers of my own, that someone will get seriously hurt. We moved from Virginia Beach and truly enjoy living in Windsor. But I would very much like to see bike and walking paths. Although very expensive, the walking/bike path that is on South Independence is wonderful and I know that many people would use the path. Bike/walking paths with additional lighting will definitly help with weight problems and bring the community together.
21.	What a great idea to include the community's input as we growth. Thank you for asking.
22.	I firmly believe that IOW needs to do much more to make walking/biking safe in the county. I live in Smithfield and while the county is BEAUTIFUL, I do not feel safe riding (either alone or with my family) anywhere outside of our neighborhood. I feel those who do choose to bike/walk/run on

	county roads are taking a significant risk since these roads are quite narrow. I would be THRILLED if IOW took on a significant trail initiative. I would have no problems if the tax rate was increased to accomplish this and feel that in today's economic/political climate, that an expenditure of this type would be accepted.
23.	Go for this! It will be wonderful! Thanks
24.	I t would be great to have a bike trail/lane from gatling pointe into town, from Cypress Creek subdivision into town, and from Cypress Creek and Jericho towards smithfield high school and the businesses at the fork (the food lion shopping center) and the farm fresh shopping center. Also a lane from Main street going to Westside elem. school.
25.	Bethany Church road is especially difficult to navigate as a rider due to the NARROW road with ditches right next to it and tight blind turns. It is hard enough for two vehicles to pass when the grass and weeds grow up along side of this road, and I never like riding on it....please focus some effort into widening this road for safety.
26.	I feel the southern end of the county needs alot of attention. This end of the county always seems to be left out.The Carrsville, Walters, Camptown, Collasse areas.This area of the county could use lots of improvments.It seems as though anything positive that happens in the county its on the other side of the railroad tracks.[from Windsor to Smithfield]So i ask that you please remember those of us in the southern end.
27.	The county is so nice and has a lot of back roads, we need to do more to encourage bicycling by having routes and family rides where areas are closed off for a few hours.
28.	Please continue to work towards this project. Windsor's pedestrian sidewalk system is an embarassment. It is dangerous to walk anywhere near rt. 460 and it is impossible to walk to or from the only grocery (Food Lion). Many of us would use sidewalks if they were available. Windsor is already a popular area for established bike clubs to pass through and hydrate. Better safer trails would enhance and encourage more participation. "If you build it they will come,"
29.	The county is a great place to live. Providing pedestrian and bike paths would be a significant draw to the county for new tourism as well as benefit to the residents.
30.	I feel for the unfair High assisments we just got from the county the least they can do is show us somthing for our over taxation on our side of the county . We get nothing but a dumpster for our taxes so parks and recreation for the working class people would be a nice change with all that surplus tax money. We are tired of seeing our tax dollars spent on the none working class and what ever you give them they destroy it. They need to work for it like the rest have too.Stop giving and make them work. We pay alot of tax dollors on fraudulant welfare and simuliar programs...
31.	I think this would be a wonderful idea and this could be a family outing which some faimiles really need. It would be nice if all roads had a lane for bikes. Please think about the people down South like Carrville / Franklin, We need things here too. Smithfield and Windsor has enough..... Think Carrsville..... Carrsville Carrsville Carrsville Carrsville
32.	Great project - we need a trails plan!!!
33.	Utilize the property located in Rushmere for a park to include walking/biking trails. The land was donated, spend the county tax payers money wisely. Trails in parks are much safer than riding on busy highways and back roads.
34.	Our county has a tremendous opportunity to become bike and pedestrian friendly by leveraging the growth underway to create connection paths, widened shoulders, and walkway/bikeways. Once the new infrastructure is in place, costs are much greater and it will never happen.
35.	BICYCLE WILL NOT GET ON THE SIDE OF ROAD TO LET CARS BY.
36.	The main roads in IOW are WAY too skinny and heavily traveled for bikers. There's no room for vehicles to pass and nowhere for bikers to move over. I'm amazed there are not more accidents involving bikers. I currently limit my bike rides to the Gatling Pointe neighborhood, and have still been hit twice (neither seriously). I'm not sure some folk would use bike trails or lanes, but know I would like to see some put in somewhere the county. Thanks...

37.	Just get on with it
38.	I live in Waterford Oaks and works at Smithfield Middle School. My children and I would like to ride our bikes to school but do not because it is too dangerous on route 10.
39.	The county would benefit from more bike trails. They don't necessarily need to follow roads.
40.	I would like to see the Town of Smithfield also address this problem.
41.	You could bring big business into the county with the right bike lanes and safe roads. we have to go out of state to ride. Also something must be done about the bad dogs and owners who set them free to bite and chase the bike riders. Contes in Hampton would bring the bike clubs over ti IOW if we could get some real safe roads and paths to ride...Lance Armstrong would even come to visit IOW if we had a real bike club.
42.	Safe pedestrian/Bicycle access to our parks would be an asset to the community and provide safety for our children and ourselves.
43.	The town of Smithfield and the county would do well to re-evaluate the possiblity of a bike path between Smithfield and Nike Park. There was a missed opportunity several years ago to implement such a project using mostly federal money. A bike path between Rushmere and Tyler's Beach and the new park at Fort Huger would also be an excellent project. The county has several parks in outlying areas that are not connected to the various town areas except by narrow roads wtihout shoulders. Nike Park, Tyler's Beach, Fort Boykin, and the new park at Fort Huger are prominent among these. The county should look at connecting these parks to town areas via bike lanes and/or off-road bike paths.
44.	keep up the good work!
45.	I would love to see more cyclist and pedestrian friendly lanes provided in this growing and active community.
46.	A nice green way around the pagon river would be nice and much safer. I dont think there is a great need for a path all across the county for people to get to work. There is much bigger need of facilities that this money could possibly be used for to get a better park for the county much sooner.
47.	Maybe the city council should give this project a little thought than they do to big business chains that we don't need (Walmart).
48.	Increased traffic due to more residents has made it unsafe to consider walking or cycling on most roads in the county.
49.	Thank you for looking into this - it would be nice to have a walking/bike trail from James /River Bridge into Smithfield
50.	Are you considering multi use trails for all except motorized . What about eqestrian trails in the rural areas. Property owners should be asked to have equestrian easements for a connectable trail to the new park site
51.	Our home and the two next door, are the only homes on Bank Street in Windsor, that do not have any sidewalks. My husband is in a wheelchair, and I have two children that are forced to ride on a busy street if they wish to leave the house. We have begged for a sidewalk for this short distance, to no avail. Hopefully this survey will help us as well as you! Thanks so much! Lisa Gallagher
52.	With the present bicycle traffic on the roads, especially after work, I find that the bicyclists do not follow the rules of the road, riding two a breast, rather than single file--an accident just waiting to happen. Education needs to be both ways!
53.	Thank God we are even considering something like this. This is long overdue!!!!!
54.	I think it is a shame that we have passed up money in the past for bike lanes and sidewalks. As our population increases, the roads are more congested making biking and walking a true hazzard on our roadways! And with gas going up by leaps and bounds, too bad we do not have a healthy alternative--like biking/walking!

55.	The one thing I think this survey did not address is the way in which people in the county act on bikes. NOt all but a growing number. There is a number of people who do not live here who come and park at the YMCA to ride in the country who do not follow the laws and who seem to think that it is a safe place for them to ride. It is very dangerous how they behave and some seem to think that they do not need to follow the law or use common sense.
56.	Please provide bike and pedestrian pathways and greenway trails. Investigate using abandoned railways (my brother-in-law in Illinois gets on such a converted rail line within 1/2 mile of his house and is soon riding out into farm land). Provide signs in Isle of Wight saying that IOW is a "bicycle and pedestrian"-friendly county and to ask motorists to be careful of such folks. Spend some tax dollars on this initiative, even if rates go up a tad. This is sorely needed! If you want a volunteer to help, call me, and I'll see what I can do . Bob Kelly 365-0472
57.	I could not answer all questions because the survey did not provide spaces in every case. This was especially true for the open-ended, write-in questions asking me where bike routes and/or pedestrian routes should go.
58.	I would LOVE to bicycle around Smithfield. My neighborhood is safe enough to traverse, but I would especially love to ride to Nike Park. If there were safe bike trails I would become an avid biker without a doubt!
59.	kids living in twin ponds desperately need a sidewalk on north court street to walk and bike to school. It is a waste of our tax money to provide a bus for them when they live so close. A lot of them walk to school with no sidewalk.
60.	I would love to see better sidewalks and bike paths in Smithfield and throughout Isle of Wight.
61.	I would like to know that bicyclists are given, at the very least, a warning, when they are in violation of the law.
62.	I would really like to see the County organize periodic bike rides for employees -- with appropriate destinations either in the County or elsewhere -- with the emphasis on recreational fun, not competitiveness.
63.	I believe biking is a wonderful exercise and pass-time. But I also believe bikers should not be allowed on public highways where the speed limit is over 15 mph. They create a severe danger to themselves when other vehicles (cars, trucks, etc) are traveling at 35, 45 & 55 mph. There should be designated bike trails for all bikers in Isle of Wight.
64.	This survey has been long overdue! I think that ALL developments should be required to include sidewalks, bicycle paths, bike routes, and bike lanes in EVERY plan, from the ground up. Pedestrian crossings, crosswalks and markings should be added to ALL intersections. Cities like Newport News and Hampton have done so with tremendous success. I applaud Parks & Rec for doing its part to make this happen. Thanks.
65.	The county should actively and aggressively require developers to provide pedestrian and bicycle facilities throughout new developments and any new road construction associated with their development activities

APPENDIX D: PEDESTRIAN AND BICYCLE FACILITY DESIGN

This appendix describes the types of pedestrian, bicycle, and greenway facilities that are recommended in Isle of Wight County. Roadway crossing facilities are described independently because safe and convenient crossings are essential for all types of non-motorized facilities.

All non-motorized transportation and recreation facilities in Isle of Wight County should be designed according to the County's Construction Specification's Manual or, considering individual project limitations, at a minimum to national standards, as defined by the American Association of State Highway Transportation Officials (AASHTO), the Americans with Disabilities Act, Designing Sidewalks and Trails for Access: Part 2 and the *Manual on Uniform Traffic Control Devices* (MUTCD). If the national standards are revised in the future, the new national standards should be followed.

For more in-depth information and design development standards, the publications listed below should be consulted:

- *Guide to the Development of Bicycle Facilities.* Updated in 1999 by the American Association of State Highway Transportation Officials (AASHTO). Available from FHWA or AASHTO. www.aashto.org/bookstore/abs.html

- *Manual on Uniform Traffic Control Devices* (MUTCD). Published by the U. S. Department of Transportation, Washington,DC, 2001

- *Americans with Disabilities Act Accessibility Guidelines*. U.S. Department of Justice, United States Access Board. Guidelines are available at http://www.access-board.gov/adaag/html/adaag.htm

- *Designing Sidewalks and Trails for Access: Part Two - Best Practices Design Guide*. Published by U.S. Department of Transportation, Washington, DC, 2001

- *Greenways: A Guide to Planning, Design and Development.* Published by Island Press, 1993. Authors: Charles A. Flink and Robert Searns. www.greenways.com

- *Trails for the Twenty-First Century.* Published by Island Press, 2001. Authors: Charles A. Flink, Robert Searns, and Kristine Olka. www.greenways.com

Other useful web sites for information include:

- Rails-to-Trails Conservancy - www.railtrails.org

- National Park Service - www.nps.org
- U.S. Department of Transportation - www.walkinginfo.org and www.bicyclinginfo.org
- Trails and Greenways Clearinghouse - www.trailsandgreenways.org
- National Bicycle and Pedestrian Clearinghouse - www.bikefed.org/clear.htm

Pedestrian Facilities

Sidewalks
Sidewalks are the central components of the pedestrian network. Sidewalk installation should be a routine part of road improvement and new construction projects in urban and suburban areas. Sidewalks should be included on both sides of all roadways (except short dead-end and cul-de-sac roadway segments) within Development Service Districts and should be a minimum of 5-feet wide. Where a 5-foot minimum width cannot be provided, the maximum possible sidewalk width is better than no sidewalk at all. Sidewalks should be separated from the roadway with a landscape buffer and should comply with the most recent ADA Accessibility Guidelines.

Striped/Paved Shoulders
Sidewalks are the preferred facilities for pedestrians walking beside roadways, but paved shoulders can also help accommodate pedestrians in rural areas where sidewalk installation is prohibitively expensive and pedestrian demand is low. There is no minimum width for paved shoulders, however a width of at least 4 feet is preferred. Greater widths provide better accommodation for pedestrians, particularly on roadways with higher traffic volumes or speeds. On some roadways, motor vehicle travel lanes can be narrowed to provide more shoulder space. According to the AASHTO Guide for the Development of Bicycle Facilities (1999), "where 4-foot widths cannot be achieved, any additional shoulder width is better than none at all."[22] Paved shoulders also improve safety for motor vehicles, prevent pavement damage to the travel lanes, and provide space for pedestrians.

Bicycle Facilities

To understand the bicycle facilities recommended in this plan, it is important to understand how roadway and traffic characteristics affect bicyclists. Several research studies have suggested factors that influence bicyclist safety and comfort when riding on a roadway segment[13,14,15,16]. These factors include:

- Effective width of the roadway, which includes the width of the outside lane and paved shoulder/bike lane space
- Presence of a bike lane or paved shoulder
- Motor vehicle traffic volumes on the roadway
- Traffic from intersecting roadways/driveways
- Speed of the traffic on the roadway
- Percent heavy vehicles on the roadway
- On-street parking
- Pavement surface condition

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[13] Landis, Bruce W., The Bicycle Interaction Hazard Score: A Theoretical Model. *Transportation Research Record 1438*, TRB, Washington, DC, 1994.
[14] Sorton, Alex. Bicycle Stress Level as a Tool to Evaluate Urban and Suburban Bicycle Compatibility. *Transportation Research Record 1438*, TRB, Washington, DC, 1994.
[15] Epperson, Bruce. Evaluating Suitability of Roadways for Bicycle Use: Toward a Cycling Level-of-Service Standard. *Transportation Research Record 1438*, TRB, National Research Council, Washington, D.C. 1994.
[16] Davis, Jeff. *Bicycle Safety Evaluation*. Auburn University, 1987.

In the late 1990s, groundbreaking research was performed to quantify the influence of each of these factors on the perceptions of bicyclists. One research study had bicyclists rate the characteristics of roadways in the field[17]; another had bicyclists rate roadway segments from video clips[18]. The former study resulted in the Bicycle Level of Service Model, and the latter resulted in the Bicycle Compatibility Index. All of the factors listed above were found to influence bicyclist comfort.

Both studies identified lateral separation between bicyclists and motor vehicles as one of the most significant factors influencing bicyclist comfort levels. The studies found that bicyclists preferred having wider pavement space to ride on. Further, both studies found that most bicyclists prefer having a shoulder or bike lane stripe provided on roadway segments when compared to the same pavement width without a stripe. In addition, a third study found that motorists give bicyclists more lateral space when bike lanes are striped[19]. These are particularly important findings because bicycle lanes and shoulders can be incorporated during roadway design.

These studies provide the background behind the recommendations to provide bicycle lanes and paved shoulders as preferred bicycle facilities for roadways with higher traffic volumes in Isle of Wight County.

Shared Roadways
Shared roadways are streets and roads where bicyclists can be served by sharing the travel lanes with motor vehicles. Usually, these are streets with low traffic volumes and/or low speeds, which do not need special bicycle accommodations in order to be bicycle-friendly. There are many low-volume rural and neighborhood roadways in Isle of Wight County that are excellent for bicycling.

Signed-Shared Roadways
A signed-shared roadway is shared roadway which has been designated by signing as a preferred route for bicycle use. Bike route signs should be posted on key routes between major destinations in Isle of Wight County to indicate to bicyclists that particular advantages exist to using these routes compared with alternative routes. Bicycle route signs should only be posted on roadways where conditions are suitable for families and riders without significant bicycling experience. While all roadways are open to bicyclists, the high-speed, high-volume roadways with many large trucks are suitable only for the most experienced bicyclists. Bicycle route signs should not be posted on these routes, even if they are more direct than other, lower-volume roadways.

Non-dedicated Bike Routes (Striped/Paved Shoulders)
Paved shoulder space improves the safety and comfort of bicyclists. There is no minimum width for paved shoulders; however a width of at least 6 feet is preferred, with four (4) feet being an acceptable minimum in certain circumstances. While paved shoulders are generally acceptable for roadway sections without frequent intersections, on those where intersections are frequent, appropriate bike lane striping should be applied. As for pedestrians, wider shoulders increase the level of safety and comfort for pedestrians. See the description of striped/paved shoulders under pedestrian facilities for additional benefits.

Dedicated Bicycle Lanes
A dedicated bicycle lane is a portion of the roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bicycle lanes are always located on both sides of the road (except one way streets), and carry bicyclists in the same direction as

[17] Landis, Bruce W., et al. Real-Time Human Perceptions: Towards a Bicycle Level of Service, *Transportation Research Record 1578*, TRB, Washington, DC, 1996.
[18] Harkey, D.L., et al. Development of the Bicycle Compatibility Index: A Level of Service Concept: Final Report, Report No. FHWA-RD-98-072, Federal Highway Administration, Washington, DC, August 1998.
[19] Hunter, William W., et al. A Comparative Analysis of Bicycle Lanes Versus Wide Curb Lanes: Final Report, Federal Highway Administration, FHWA-RD-99-034, December 1999.

adjacent motor vehicle traffic. Bicycle lanes should be at least 4-feet wide on roadways with open shoulders and 5-feet wide on roadways with curb and gutter. On curb and gutter roadways, the gutter pan may be included in the 5-foot bicycle lane width, provided the pavement surface is flush with the gutter pan. While 5-foot bicycle lanes are typical, 6-foot bicycle lanes are commonly used on roadways with higher traffic speeds and volumes. Bicyclists retain the right to use the travel lanes on streets with bicycle lanes.

Multi-Use Paths Adjacent to Roadways/Wide Sidewalks
Multi-Use Paths adjacent to roadways, or wide sidewalks, can provide a more comfortable place for beginning bicyclists and other people who are not comfortable riding on the road with traffic. However, multi-use paths adjacent to roadways are most appropriate in corridors with few driveways and intersections because conflicts between turning motorists and bicyclists are less of a problem.

"Share the Road" signs
"Share the Road" with bicycles signs can be posted on roads that bicyclists use regularly. These signs can increase awareness of bicyclists, especially in areas where bicyclists may not be expected or where many drivers are tourists. A new fluorescent yellow/green color has been is approved in the national Manual on Uniform Traffic Control Devices and can be used on these signs. Signs should be used judiciously—too many signs can cause visual clutter and lead to non-compliance.

Bicycle racks and bicycle lockers
Bike parking can be provided by bike racks or bike lockers. Secure bicycle parking located close to building entrances and transit entry points can make bicycling more attractive to potential cyclists. It also reduces the risk of bicycle damage or theft. Bike rack design and site location are discussed in the *Bicycle Parking Guidelines*, developed by the Association of Pedestrian and Bicycle Professionals[22]. Bike lockers provide added protection from theft and weather. Bike parking is important at destinations such as town centers, historic sites, transit stations and park-and-ride lots. It is also good to have bike parking available near business entrances and at employment sites. Bike parking reduces the need for vast surface parking lots.

Other Bicycle Facilities
There are several additional types of bicycle facilities that improve bicycle connectivity in Isle of Wight County. These include bike-friendly drainage grates, bicycle-friendly railroad crossings, and bicycle racks on buses. These facilities help to complete the bicycle system by eliminating barriers or allowing bicyclists to bypass barriers, such bringing a bicycle on the bus to cross the US 17 bridge over the James River.

Bicycling Rights and Responsibilities
The bicycle facilities recommended in this section are intended to improve bicycling conditions on roadways and provide a visible indication that bicycling is a mode of transportation that is supported in Isle of Wight County. However, it should be noted that bicyclists are not limited to using roadways with designated bicycle facilities: bicyclists have the legal right under Virginia law to travel on all roadways other than limited access roadways. Bicyclists share the same responsibility as drivers to operate safely and respectfully in the roadway environment and obey all traffic laws.

Greenway Facilities

Multi-Use Pathways
Multi- use pathways/trails are an important component of a bicycle and pedestrian transportation system. They can provide a high-quality experience for non-motorized users in an environment that is protected from motor traffic. Multi-use paths should be a minimum of 10-feet wide. Their width may be reduced to eight feet if there are physical or right-of-way constraints. Bridges and boardwalk structures can be used to traverse wetlands or other environmentally-sensitive areas, but they should also meet the AASHTO requirements for multi-use path width, surface, horizontal and vertical curves, and other geometric design characteristics.

Multi-use paths serve a wide variety of users, including pedestrians, bicyclists, in-line skaters, and equestrians, depending on whether they are paved or unpaved. These types of paths can be constructed within a roadway corridor right-of-way (see description of multi-use paths adjacent to roadways, above), in their own corridor (such as a greenway trail or rail-trail), or be a combination of both. Multi-use paths should not preclude providing facilities for walking and bicycling in roadway corridors, but rather be provided as a supplement to this system.

Bicyclists retain the right to use the roadway even if the path or trail is adjacent to it. Multi-use paths are most appropriate in corridors with few driveways and intersections because conflicts between turning motorists and bicyclists are less of a problem.

Hiking/Mountain Biking/Equestrian Trails

Some of the greenway trails that are to be provided in Isle of Wight County will be less formalized than multi-use pathways. Unlikemulti-use paths, these less-formalized trails are not required to be a minimum of 10-feet wide. These trails serve hikers, runners, mountain bicyclists, and equestrians. Wheelchair users and persons with strollers can use unpaved trails if they are designed to ADA standards and surfaced with compacted crushed stone. Though they are often constructed in natural, undeveloped areas or areas that are prone to frequent flooding, they can also be provided in the County's parks. Boardwalks can be used on these trails to bridge wetlands or other environmentally sensitive areas.

Surface Material by User Group

User Type	Concrete	Asphalt	Soil Hardener	Crushed Aggregate	Wood Chips	Natural Surface
Walker	**	***	***	**	*	***
Jogger			*	**	*	***
Bicyclist	**	***	*	**		
Mountain Cyclist	*	*	**	**		***
Equestrian				**	*	***
Handicapped	***	**				
Boater						***
Cross Country Skier						***

Key: *** Most Desirable ** Medium Desirability * Acceptable

Source: National Park Service- Rivers, Trails, & Conservation Assistance Program

Design

Factor	Class				
	I	II	III	IV	V
Tread Width	10-12'	6-8'	4-6'	4-6'	No Improvement
Shoulder Width Minimum each side	5'	5'	5'	4'	No Improvement
Trail width	15-22'	16-18'	9-11'	6-10'	No Improvement
Clearing Limits Horizontal Vertical	 24-30' 10'	 20-25' 10'	 12' 10'	 12' 10'	No Improvement
Right-of Way (minimum)	50'-75'	30-50'	30-50'	30-50'	No Improvement
Surface	Asphalt Concrete	Asphalt Concrete Crushed	Crushed Aggregate Wood Chips	Crushed Aggregate Wood Chips	Natural Surface

		Aggregate	Natural Surface	Natural Surface	
Recommended Grade Sustained Maximum in short distances	0-5% 5% 8-10%	0-8% 5-10% 15%	2-8% 8-10% 20%	2-8% 8-10% 20%	No Improvement
Sight Distance	100 ft. per 10 mph	100 ft. per 10 mph	100 ft. per 10 mph	100 ft. per 10 mph	No Improvement

Source-VDOT, ADA, and American Association of State Highway and Transportation Officials

Greenway Signage
Signage should be provided on greenway trails to provide maps, directions, safety information, and rules about using the greenway. This signage should also identify nearby destinations that greenway users can access, such as parks, schools, community centers, libraries, neighborhoods, etc. Conversely, these nearby destinations should also include signs with straightforward directions showing people how to get to the greenway. Signs can be designed creatively to help increase the attractiveness of the greenway.

Trailheads
Trailheads should be provided at key points along greenway trails to provide users with amenities, such as automobile and bicycle parking, restrooms, concessions, trail maps, and signs. Trailheads should be placed in highly-visible and easily-accessible public locations, such as parks. Public properties near the centers of communities can also make good trailhead locations.

Open Space Preservation/Wildlife Corridor Greenways
Isle of Wight County could also choose to designate specific corridors to preserve open space and/or serve as corridors for wildlife migration and habitat. These types of greenways are typically designed to have limited amounts of human impact because they have environmental constraints, such as steep slopes, wetlands, and sensitive plant and animal habitats. Footpaths are typically the only type of facility provided in these areas.

Roadway Crossing Facilities

Safe and convenient roadway crossings will be essential to the Isle of Wight County pedestrian, bicycle, and greenway system. Note that designating pedestrian and bicycle crossings with marked crosswalks alone does not necessarily provide an adequate level of safety for pedestrians and bicyclists. Roadways with higher motor vehicle speeds and volumes require enhanced pedestrian and bicycle crossing treatments, including appropriate features from the list below.

Marked Crosswalks
Marked crosswalks should be used to designate optimal or preferred locations for non-motorized to cross roadways. Crosswalks should be be at least 6-feet wide[32]. Crosswalk lines should be at least six-inches wide, and they can be marked with a pattern that is visible to approaching vehicles (e.g., ladder-pattern). Thermoplastic and inlay tape should be used to mark crosswalks because they are more visible and less slippery than paint when wet. A crosswalk should be at least as wide as the sidewalk or path leading to it.

High-visibility crosswalk markings should be used in areas with high volumes of pedestrian activity, such as near schools, parks, shopping areas, and existing and future transit stops. They should also be used in locations with high numbers of pedestrian crashes or other safety problems. High-visibility crosswalks should be installed in all of the types of locations mentioned above. Standard parallel-line crosswalks are appropriate for many intersections of minor neighborhood streets.

Marked crosswalks are often more effective when used in conjunction with facilities described in the list below.

Curb ramps
Curb ramps (wheelchair ramps) are required at all pedestrian crossings. Two curb ramps should be provided per corner at all intersections. Curb ramps provide access between the sidewalk and the street for people using wheelchairs, riding scooters, and pushing strollers. The five basic components of curb ramp design are approach, ramps, gutters, landings, and flares. Curb ramps must meet the requirements of the Americans with Disabilities Act Accessibility Guidelines.

Reduced turning radii
The turning radii at the corners of roadway intersections should be the smallest possible for the circumstances, rather than designed for the largest possible design vehicle. Large corner radii allow high vehicle turning speeds and increase pedestrian crossing distances, both of which negatively impact pedestrians.

Curb extensions
Curb extensions (also known as bulb-outs or neckdowns) extend the curb out into the parking lane, which reduces the effective street width. This reduces the pedestrian crossing distance and makes pedestrians more visible to approaching vehicles. Curb extensions also visually narrow the roadway, which can help reduce motor vehicle speeds. They are only appropriate on roadways with on-street parking. This treatment has been used on Main Street in Smithfield.

Medians or pedestrian crossing islands
Medians or pedestrian crossing islands can be provided at roadway intersections to give pedestrians a refuge area in the middle of the roadway and allow them to negotiate one direction of traffic at a time. Studies show that they reduce pedestrian crashes[20]. Median islands can be particularly beneficial at intersections with high volumes of motor vehicles, high volumes of pedestrians, and long pedestrian crossing distances. They should be given strong consideration at locations where crossing distance exceeds 60 feet. The desirable minimum width for medians or crossing islands is eight feet. Twenty feet is the recommended minimum length. All crossing islands must be accessible to persons with disabilities.

Pedestrian signals
Pedestrian signal heads should be provided at all intersections that have traffic signals. Pedestrian signals are especially beneficial at intersections with long crossing distances because they indicate clearance time for pedestrians to complete crossing the street.

Pedestrian countdown signals
Pedestrian countdown signals provide pedestrians with amount of time that they have available to complete crossing the street. They can be designed to begin counting down at the beginning of the walk phase or at the beginning of the clearance (flashing "DON'T WALK") interval. Countdown signals are included in the Manual on Uniform Traffic Control Devices (MUTCD).

Leading Pedestrian Interval
At signalized intersections with high crossing volumes, the signals can be programmed to allow pedestrians to begin crossing before the vehicle traffic on the parallel street is given a green light (assuming that signal control systems at particular intersections allow this type of programming). A study of a three-second leading pedestrian interval (LPI) found that the LPI decreased conflicts

[20] Zegeer, C.V., J.R. Stewart, H.H. Huang, and P.A. Lagerway. Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines. Federal Highway Administration, FHWA-RD-01-075, February 2002.

between turning motor vehicles and increased the percentage of motorists that yielded to pedestrians in the crosswalk[21].

Raised crosswalks
Raised crosswalks provide a continuous route for pedestrians at the same level as the sidewalk. Approaching vehicles must slow down to go over raised crosswalks comfortably. This encourages motorists to yield and makes crossing the street safer for pedestrians. Pedestrians are also positioned slightly higher than the road surface, which makes them more visible to approaching motorists. Pavement markings on the slope of the raised crosswalk can improve the visibility of the raised crosswalk to motorists. Raised crosswalks should be used only on low-speed neighborhood streets or at crosswalks in parking lots.

In-Roadway Pedestrian Crossing Signs
In-roadway pedestrian crossing signs are bright yellow signs placed in the middle of the road at marked crosswalks. They remind drivers of their responsibility to yield to pedestrians in the crosswalk. These signs have been used previously in some parts of Virginia (the signs read, "Virginia State Law—Yield to Pedestrians in Crosswalk"). In-street pedestrian crossing signs are included in Section 2B.12 of the Manual on Uniform Traffic Control Devices (MUTCD).



In-street pedestrian crossing signs remind drivers to yield to pedestrians in the crosswalk.

High-visibility advance warning signs
Advance warning signs can be posted to make drivers more aware of key pedestrian crossings. These signs can increase awareness of pedestrians, especially in areas where pedestrians may not be expected or where many drivers are tourists. A new fluorescent yellow/green color is approved in the national Manual on Uniform Traffic Control Devices and can be used on these signs (the W11-2 Pedestrian Crossing Sign). According to the MUTCD, these signs "should only be used at locations where the crossing activity is unexpected or at locations not readily apparent." Signs may also be accompanied by flashing lights, in appropriate situations, to grab the attention of drivers. Signs should be used judiciously—too many signs can cause visual clutter and lead to non-compliance.

Roadway Lighting
Pedestrians are adversely affected by low-light conditions: two-thirds of pedestrian fatalities occur between dusk and dawn. Lighting is important at intersections and midblock crossings, particularly in locations near transit stops.

[21] Van Houten, R., R. A. Retting, C. M. Farmer, J. VAnhouten, and J. E. L. Malenfant. "Field Evaluation of a Leading Pedestrian Interval Signal Phase at Three Urban Intersections," *Transportation Research Record 1734*, 2000.

In pedestrian-oriented areas, it is important to provide a higher quality of pedestrian lighting, particularly along sidewalks and walkways with higher volumes of night-time pedestrian activity, specifically in commercial pedestrian districts, in high density residential areas, and near colleges and universities. Street illumination levels should be determined by the type and intensity of adjacent development (see table below).

Recommended Pedestrian Illumination Guidelines
(Source: Illuminating Engineering Society of North America)

Pedestrian Walkways	Commercial		Intermediate		Residential	
	Footcandle	Lux	Footcandle	Lux	Footcandle	Lux
Sidewalks	0.9	10	0.6	6	0.2	2
Pedestrian Walks*	2.0	22	1.0	11	0.5	5
Building Sites:			Values are given in minimum Average maintained horizontal footcandles and lux.			
Entrances	5.0	55				
Grounds	1.0	11				
Parking Areas:						
Self Parking	1.0	11				
Attendant Parking	2.0	22				

*Crosswalks should be provided with additional illumination producing from 1.5 to 2 times the normal roadway lighting level.

Preferred pedestrian-scale lighting is characterized by shorter light poles (i.e. 16-foot tall posts), lower levels of illumination (except at crossings), shorter spacing between lamp posts, and lamps that produce a better color definition and "white light" to areas with higher pedestrian volumes.

Pedestrian light poles should be spaced to achieve the light level goals shown in the table above. Distinctive pedestrian lamp posts may be used to improve the appearance of the streetscape. Light poles should be placed either in the buffer zone, or on the other side of the sidewalk – and not within the pedestrian through zone (maintain the required clear width, per current accessibility standards).

Light poles should be constructed of durable, corrosion resistant materials. Poles located at the back of the sidewalk or within turf or landscaped areas must be raised six to ten inches above the adjacent ground on concrete pedestals. Attention should be given to placing light fixtures within reach of a maintenance vehicle parked on the adjacent roadway, to avoid damage to the adjacent sidewalk and landscaped areas. Street lampposts, pedestrian lampposts, and landscape plans must be coordinated to assure that the lights are not engulfed in a canopy of trees.

Crosswalks should be illuminated at each end by a standard street lamp.

Transitions Between Different Facility Types

Different segments of the same roadway or greenway corridor may require using different types of pedestrian and bicycle facilities because of differences in traffic volumes, speeds, roadway widths, right-of-way availability and other characteristics. It will be important for Isle of Wight County and VDOT to provide safe transitions between different facilities (such as transitioning from a bicycle lane to a shared roadway or from a bicycle lane to a multi-use path). These transitions can be made safer and more understandable for pedestrians, bicyclists, and motorists with appropriate treatments, such as signs, pavement markings, curb cuts, etc. Transitions should be addressed as a part of the pedestrian and bicycle facility design process.

APPENDIX E: MAINTENANCE PROGRAM

Pedestrian and bicycle facility maintenance responsibilities will be shared between VDOT, Homeowners Associations, volunteer organizations, and Isle of Wight County. While most pedestrian and bicycle facilities in the public roadway right-of-way will be maintained by VDOT, it is likely that Isle of Wight County will be responsible for maintaining shared-use paths. Maintenance activities will be managed by the Isle of Wight County Parks and Recreation Department, while the everyday maintenance work will be done by the County Public Works Department.

It is recommended that the County follow the Maintenance Schedules below. The first step in developing a maintenance program is to identify what tasks need to be undertaken and who is responsible for each task. The Shared-Use Path Maintenance Schedule (see Table 1) lays out maintenance tasks for the County Public Works Department. The County Pedestrian and Bicycle Coordinator should be responsible for coordinating the execution of the Shared-Use Path Maintenance Schedule with the Public Works Department and should be the point of contact for citizens with questions regarding maintenance. Funding for an ongoing maintenance program should be included in the County's operating budget or Capital Improvements Program. Table 1 is adapted from the 1996 Oregon Bicycle and Pedestrian Plan. The descriptions serve as guidelines for staff that are responsible for performing shared-use path maintenance tasks.

Table 1: Shared-Use Path Maintenance Schedule
County Parks and Recreation Department & County Public Works Department

Task	Frequency	Comments
Regular inspection	2 times per year	Includes all off-road bikeways, identify needed repairs of pavement signs, marking, etc.
Trail sweeping	2 times per year	All paved trails
Trail repairs	As needed	Repair of trails including potholes, cracks or other problems on shared-use paths, and benches, trash cans, and other trail amenities
Trail resurfacing	10-12 years	Applies to all asphalt trails
Debris removal from trails	As needed	Remove debris from trails such as limbs, slit and broken glass
Signs and markings	As needed	Repair or replace signs and markings identified during inspections
Vegetation control	As needed, at least 2 times per year	Trim limbs and shrubs 2 feet back from trail edge, trim grass from trail edges
Litter removal	6 times per year	Could be done with volunteers

Table 2 provides suggested guidelines for VDOT maintenance of on-road bicycle facilities. The County Pedestrian and Bicycle Coordinator should be responsible for coordinating the On-Road Bicycle Facility Maintenance Schedule with VDOT.

Table 2: On-Road Bicycle Facility Maintenance Schedule

County Parks and Recreation Department & Virginia Department of Transportation

Task	Frequency	Comments
Regular inspection	2 times per year	Includes all on-road bikeways, identify needed repairs of pavement signs, marking, etc.
Shoulder and bike lane sweeping	2 times per year	All paved trails
Shoulder and bike lane repairs	As needed	Repair of road surface, including potholes, cracks or other problems on bicycle facilities
Shoulder and bike lane resurfacing	During regular roadway repaving	Ensure that pavement width is maintained or increased during repaving projects.
Debris removal from shoulders	As needed	Remove debris from roadway shoulders and bike lanes such as limbs, slit and broken glass
Signs and markings	As needed	Repair or replace bicycle lane signs and markings identified during inspections
Vegetation control	During regular roadway maintenance	Trim limbs and shrubs 2 feet back from roadway edge
Litter removal	6 times per year	Could be done with volunteers

APPENDIX F: RECOMMENDED DEVELOPMENT REQUIREMENTS

Specific changes to the Isle of Wight County Zoning Ordinance will help make the County a better place for walking and bicycling. Excerpts from the Isle of Wight County Zoning Ordinance are included below. Only portions with recommended changes to improve pedestrian and bicycle transportation and recreation are included. Recommended additions to the Zoning Ordinance are shown in red underlined text (e.g., add this). Recommended subtractions are shown with strikethroughs (e.g., ~~remove this~~).

Article II Interpretations and Basic Definitions

2-1002 Definitions

Bicycle Lane- A portion of a roadway that has been designated by striping, signing, and pavement marking for the preferential and exclusive use of bicyclists.

Bikeway- A generic term for any road, street, path, or way which is some manner is specifically designated for bicycle travel, regardless of whether such facilities are designed for the exclusive use of bicyclists or are to be shared with other transportation modes.

Shared Use Path- A bikeway physically separated from motorized vehicular traffic by an open space or barrier either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.

Article IV Zoning Districts and Boundaries

4-14006 Regulations Pertaining to all Planned Developments

A. A planned development shall comply with the following design criteria unless otherwise approved by the Board of Supervisors during the approval of the master development plan, with a recommendation from the Planning Commission:

3. Street, sidewalks, street lighting and stormwater drainage

c. Pedestrian pathways or bikeways shall be provided ~~and may be located parallel to the street or away from the road system~~ with considerations for safety and convenient access, and the preservation of natural features ~~and provide visual interests~~. All planned developments must also conform with all other pedestrian and bicycle facility requirements listed in Article VII of this ordinance.

d. Street lights shall generally be provided at each intersection and adequately spaced in parking lots and other public areas. Street lights shall also be provided at all pedestrian crosswalks.

B. Variations to Design Criteria

2. It shall be the responsibility of the applicant to demonstrate to the satisfaction of the Planning Commission and the Board of Supervisors with respect to any requested waiver or modification:

~~d. That any waiver or modification as to sidewalks required for collector streets or larger commercial areas, industrial areas and residential areas where densities exceed ten (10) dwelling units per acre be justified on the basis of anticipated pedestrian traffic or because other provisions are made for pedestrian traffic and that all sidewalks or pedestrian ways not within the public rights-of-way are maintained by the property owners association;~~

Planned Development Commercial Park (PD-CP) District
4-17007 Vehicular and Pedestrian Entrances and Exits

Principal vehicular access for the general public shall be from arterials, secondary or collector streets. Vehicular access from minor streets through residential neighborhoods shall generally be avoided, but where permitted shall be so located, designed, and controlled as to be primarily for convenience of residents of adjoining residential areas and not for general public access. Pedestrian access points shall provide a direct path of travel. In general, pedestrian access shall be provided on sidewalks parallel to vehicular access points. In large developments, it may be desirable to provide additional pedestrian access points. Pedestrian access shall also be provided to minor streets in residential neighborhoods. ~~may be provided at any suitable location within and to the district, but shall, as a general rule, be separated from vehicular access points in order to reduce congestion, marginal friction, and hazards.~~ Service drives, turnout lanes, and merging lanes may be required at principal vehicular access points, with length and width as appropriate to the anticipated flow of traffic. Traffic separation devices may be required at such entrances and exits and along service drives, turn-outs or merging lanes.

Planned Development Industrial Park (PD-IP) District
4-19007 Vehicular and Pedestrian Access

A. Principle vehicular access for the general public shall be only from arterial and collector streets. Access points shall be designed to minimize traffic hazard and congestion. Vehicular access through residential neighborhoods

shall be prohibited. Pedestrian access points shall provide a direct path of travel. In general, pedestrian access shall be provided on sidewalks parallel to vehicular access points. In large developments, it may be desirable to provide additional pedestrian access points. Pedestrian access shall also be provided to minor streets in residential neighborhoods. ~~may be provided at any suitable location within the district but shall, as a general rule, be separated from vehicular access points in order to reduce congestion, points of conflict and hazards.~~

B. The design for internal circulation shall be appropriately related to access points and location of major traffic generators and shall provide for safe and efficient movement of vehicles and pedestrians with special attention to reduction of crossing conflicts, limiting numbers of internal and external vehicular access points and improvement of visibility.

Article V Supplementary Use Regulations

Supplemental Use Regulations

5-5002 Supplementary Use Regulations for Residential Use Types

B. Community Recreation

1. Except in the case of ~~a~~ planned developments and shared-use pathway facilities, community recreational facilities on private property shall be developed solely for the non-commercial use of the residents and guests of the residential development.
2. A conditional use permit shall be required for the commercial or non-commercial use of ~~a~~ community recreational ~~facility~~ facilities on private property by the general public. The Board of Supervisors, following a recommendation by the Planning Commission, may vary area and setback requirements for existing facilities, provided that alternative methods of protecting adjoining properties are required as conditions of the Conditional Use Permit.

Article VI Overlay Districts

Highway Corridor Overlay District

6-1007 Permitted Activity in the Minimum Visual Buffer

A. Within the minimum visual buffer there shall be no development, clearing, grading, or construction activity with the following exceptions:

3. Sidewalks, or other pedestrian and bicycle paths designed to provide continuous connection along the road corridor are encouraged. ~~may be permitted, provided that they can~~ They shall be constructed without materially reducing the screening and visual softening capacity of the bufferyard;

Newport Development Service Overlay (NDSO) District

6-2006 Permitted Activity in the Minimum Visual Buffer

3. Sidewalks, pedestrian pathways and bicycle paths shall be constructed in order to ~~designed to~~ provide continuous connections for non-motorized transportation and recreation along the road corridor.

~~may be permitted, provided that they can~~ They shall be constructed such that they do not ~~without~~ materially reduce ~~reducing~~ the screening and visual softening capacity of the bufferyard;

6-2008 Access and internal circulation

The purpose and intent of this section is to maximize the functional capacity and maintain the level of service of highways within the Newport Development Service Overlay District; to minimize the number of vehicular access points to arterials and other public rights-of-way within the district; to promote the sharing of access and the ability to travel between sites; to provide vehicular, pedestrian and bicycle circulation networks among residential, commercial, office, civic, and recreational areas; and, to enhance safety and convenience for land uses within the district.

6-2009 Development standards

Proposed development within the district shall provide for visual compatibility and harmony with surrounding natural land forms and vegetation; be protective of views and vistas from arterial highways within the district; and provide continuity of site design within the proposed development. These objectives include the following standards:

O. Sidewalks

1. Sidewalks, no less than ten (10) feet in width, shall be provided along the full length of the building along any façade featuring a customer entrance, and along any façade abutting public parking areas. Sidewalks shall provide weather protection features such as awning or arcades within fifteen (15) feet of all customer entrances, parallel to the building and at least six (6) feet deep over the sidewalk

2. Sidewalks shall meet the requirements under Article VII General Design Guidelines.

P. Pedestrian and Bike Pathways

1. The purpose of this system is to provide for non-vehicular traffic along major corridors and between major destinations, with emphasis on connecting residential areas to schools, recreation areas, and activity centers.

2. Pedestrian and Bike Pathways shall ~~include the following~~:

a. Provide connections for, within and between developments for pedestrian and bike traffic.

b. Provide facilities to store or lock bicycles at appropriate sties. Including, but not limited to schools, recreation areas, office parks, public institutions, and activity center focuses.

c. Develop the proposed bike pathway system in a manner that links to existing and proposed neighborhoods, park lands, conservation areas, scenic landscapes and historic/cultural sites in accordance with the goals and objectives of the Comprehensive Plan.

d. Meet the requirements of the VDOT Road Design Manual.

Q. Crosswalks

1. Crosswalks at busy intersections, between major pedestrian destinations, or between shopping centers and their parking, shall employ techniques to signal a pedestrian zone both to the motor vehicle and the pedestrian. These techniques include:

a. Crosswalks that are slightly raised;

b. The use of durable, low maintenance surface materials such as high visibility crosswalk markings that are distinguishable from driving surfaces. If pavers, bricks, or scored concrete surface materials are used, they shall be outlined with minimum 6-inch wide white retroreflrective markings to enhance nighttime visibility. ~~pavers, bricks, or scored concrete to enhance pedestrian safety and comfort that are distinguishable from driving surfaces;~~ and

c. Bulb-out corners that reduce the length of the crosswalk for the pedestrian.

d. Raised medians/pedestrian refuge islands that reduce the length of roadway that pedestrians must cross at one time. Minimum width of medians/pedestrian refuge islands should be six (6) feet.

~~Q.~~R. Pedestrian Walkways for shopping centers and retail establishments with a square footage greater than 25,000

1. Continuous internal pedestrian walkways, no less than 8 feet in width, shall be provided from the public sidewalk or right-of-way to the principal customer entrance of all principal buildings on the site. At a minimum, walkways shall connect focal points of pedestrian activity such as, but not limited to transit stops, street crossings, building and store entry points, and shall feature adjoining landscaped areas that include trees, shrubs, beds, ground covers, or other such materials for no less than 50 percent of its length.

~~2. Crosswalks at busy intersections, between major pedestrian destinations, between shopping centers and their parking, shall employ techniques to signal a pedestrian zone both to the motor vehicle and the pedestrian. These techniques include:~~

~~a. Crosswalks that are slightly raised;~~

~~b. The use of durable, low maintenance surface materials such as pavers, bricks, or scored concrete to enhance pedestrian safety and comfort that are distinguishable from driving surfaces; and~~

~~c. Bulb-out corners that reduce the length of the crosswalk for the pedestrian.~~

S. Developments in the NDSO must also conform with all other pedestrian and bicycle facility requirements listed in Article VII of this ordinance.

~~R.~~T. Screening

~~S.~~U. Signs are permitted in accordance with Article IX.

Article VII General Design Guidelines and Development Review Procedures

7-1004 General Site Design Standards

B. Site design

1. Development of the site shall be based on the results of the site analysis, and the capacity of adjacent roads which will serve the property, the capacity of public water and sewer systems if connections are proposed, and the capacity to provide reasonable and timely response to requests for police, fire and ambulance services.

3. The road system shall be designed so as to permit the safe, efficient, and orderly movement of pedestrian, bicycle, and vehicular traffic; to meet the needs of the present and future population; to provide for the interconnection of streets between adjoining developed and undeveloped lands to assure adequate traffic flow; to have a simple and logical pattern; to respect natural features and topography; and to present an attractive streetscape.

9. Internal pedestrian pathways or bikeways shall be located as required for safety and as determined by the Zoning Administrator. ~~In conventional developments, walks shall be placed parallel to the street,~~

~~with exceptions permitted to preserve natural features or to provide visual interest. The standards for construction of pedestrian and bicycle facilities in Isle of Wight County shall meet the required comprehensive standards as adopted by the Board of Supervisors.~~ With the exception of the Rural Agricultural Conservation (RAC), Rural Residential (RR), and Neighborhood Conservation (NC) zoning districts, the following community design treatments are required to accommodate pedestrians and bicyclists in all developments:

a. Sidewalks:

1) Sidewalks shall measure no less than five (5) feet in width, shall be provided parallel to all streets except short cul-de-sacs and dead-end streets. Sidewalks should measure at least six (6) feet in width along major pedestrian routes. In commercial areas, sidewalks shall be ten (10) to fifteen (15) feet in width.

2) The sidewalk network shall connect all dwelling units, non-residential uses, and open space.

3) It is strongly recommended that sidewalks be separated from the street by a buffer strip. A buffer of six (6) feet is recommended for local and collector streets. Wider buffer strips are recommended for arterial streets. Sidewalks without buffer strips shall be a minimum of eight (8) feet in width.

4) It is strongly recommended that the buffer strip between the street and the sidewalk be planted with street trees. Large street trees are preferred over medium and small trees. Street trees shall be spaced no closer than thirty (30) feet on center and no greater than sixty (60) feet on center.

5) Sidewalks shall continue over driveway aprons/cuts. Sidewalks over driveways shall maintain a maximum cross slope of 2% in order to meet the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

6) In addition to meeting the requirements of this ordinance, sidewalks along VDOT-controlled roads shall meet the requirements of the VDOT Road Design Manual.

b. The roadway network shall accommodate bicycles and pedestrians:

1) Bicycle lanes shall be provided on collector and arterial roadways in urban and suburban areas. Bicycle

lanes shall meet the requirements of the VDOT Road Design Manual.

2) Paved shoulders shall be provided on main rural roadways and shall meet the requirements of the VDOT Road Design Manual.

3) Safe and convenient roadway crossings shall be provided for pedestrians and bicyclists within and at the boundaries of developments.

4) The roadway system shall be interconnected to minimize walking and bicycling distances between destinations.

5) Traffic calming methods should be utilized to discourage motorists from traveling above the intended speed on a roadway (e.g., speed humps, chicanes, and roundabouts).

6) Pedestrian and bicycle facilities shall be provided to facilitate safe and convenient access to existing and future transit facilities.

c. Shared-use paths and Greenways:

1) Shared-use paths shall be provided within the development and connected to the countywide greenway system. Paths that connect to surrounding residential and commercial developments are strongly encouraged.

2) Bikeways should be provided to link internal open space with open spaces outside developments and to the countywide network of bikeways.

3) 50-foot riparian buffers shall be provided on either side of streams for future use as public greenway facilities.

d. Pedestrian and Bicycle Friendly development patterns:

1) Lots, buildings, and units should be arranged to reduce the area devoted to motor vehicle access and to facilitate pedestrian and visual access to common open space.

2) Buildings should be oriented toward public streets and sidewalks rather than parking lots. Parking lots should be placed behind buildings.

3) Bike racks shall be installed at potential bicycling destinations and in open space and recreation areas.

Article X Vehicle Parking Facilities

10-2003 Perimeter Landscaping Buffer

E. Where pedestrian and bike paths are proposed in the landscape area, such paths shall be meandering when and only when it is necessary in order to preserve the existing trees. (7-1-97)

APPENDIX G: GENERAL COST ESTIMATES FOR SHORT-TERM PROJECTS

Battery Park Road Multi-Use Path				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$16,000.00	$16,000
Stripe High Visibility Crosswalks (30 ft. x 10 ft. Avg.)	EA	8	$200.00	$1,600
Pedestrian Warning Sign Assembly (W11-1 and W16-7 subplate with wooden post)	EA	4	$220.00	$880
Earthwork (includes excavation, fill, and grading) (trail)	CY	4700	$20.00	$94,000
Remove Asphalt Driveway Pavement	CY	340	$20.00	$6,800
Path Pavement (10' wide, 4" surface, 6" base, 6" aggregate)	LF	7000	$25.00	$175,000
Curb Ramps (ADA compliant, with detectible warnings)	EA	12	$400.00	$4,800
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	14	$2,000.00	$28,000
Removable Bollards	EA	2	$400.00	$800
Landscaping (5%)	LS	1	$16,000.00	$16,000
Drainage, E&S and Seeding Disturbed Soil (12%)	LS	1	$39,000.00	$39,000
Maintenace of Traffic (8%)	LS	1	$26,000.00	$26,000
Utility Adjustments (12%)	LS	1	$39,000.00	$39,000
			Subtotal	$457,880
			25% Contingency	$114,470
			Total Estimated Cost	**$572,000**
Cost does not include engineering design, easement or property acquisition.				

Jones Creek Bridge Enhancement Grant				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Director Labor	HR	16	$35.00	$560
Pedestrian/Bicycle Coordinator Labor	HR	64	$25.00	$1,600
Administrative Labor	HR	8	$15.00	$120
			Subtotal	$2,280
			25% Contingency	$570
			Total Estimated Cost	**$3,000**
This enhancement grant application would not have any facility costs.				

Improvements to US 17 Pedestrian Crossings (assumes 4 intersections are improved)				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$16,000.00	$16,000
Earthwork (includes excavation, fill, and grading) (sidewalk)	CY	1800	$20.00	$36,000
Stripe High Visibility Crosswalks (30 ft. x 10 ft. Avg.)	EA	24	$200.00	$4,800
Pedestrian Warning Sign Assembly (W11-1 and W16-7 subplate with wooden post)	EA	8	$220.00	$1,760
Curb Ramps (ADA compliant, with detectible warnings)	EA	40	$400.00	$16,000
Concrete sidewalk in median area	SF	3200	$5.00	$16,000
Concrete curb and gutter	LF	1500	$25.00	$37,500
Aggregate Base Course (6") for Sidewalk	CY	60	$50.00	$3,000
Pedestrian Signal Heads	EA	32	$5,000.00	$160,000
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	16	$2,000.00	$32,000
Landscaping (5%)	LS	1	$16,000.00	$16,000
Drainage, E&S and Seeding Disturbed Soil (18%)	LS	1	$57,000.00	$57,000
Maintenance of Traffic (10%)	LS	1	$32,000.00	$32,000
Utility Adjustments (15%)	LS	1	$48,000.00	$48,000
			Subtotal	$486,060
			25% Contingency	$121,515
			Total Estimated Cost	**$610,000**
Cost does not include engineering design, easement or property acquisition.				

Intersection of VA 10 Bypass and US 258				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$5,000.00	$5,000
Earthwork (includes excavation, fill, and grading)	CY	200	$20.00	$4,000
Remove Asphalt Driveway Pavement	CY	120	$20.00	$2,400
Concrete Sidewalk – 4” Thickness, Broom Finish	SF	2400	$5.00	$12,000
Aggregate Base Course (6") for New Sidewalk	CY	50	$50.00	$2,500
Concrete Curb and Gutter (west corner)	LF	500	$25.00	$12,500
Curb Ramps (ADA compliant, with detectible warnings) (west corner)	EA	2	$400.00	$800
Pedestrian Warning Sign Assembly (W11-1 and W16-7 subplate with wooden post)	EA	4	$220.00	$880
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	4	$2,000.00	$8,000
Pedestrian Signal Heads	EA	8	$5,000.00	$40,000
Stripe High Visibility Crosswalks (40 ft. x 10 ft.)	EA	4	$250.00	$1,000
Drainage, E&S and Seeding Disturbed Soil (10%)	LS	1	$9,000.00	$9,000
Maintenance of Traffic (15%)	LS	1	$14,000.00	$14,000
Utility Adjustments (10%)	LS	1	$9,000.00	$9,000
			Subtotal	$131,080
			25% Contingency	$32,770
			Total Estimated Cost	**$164,000**
Cost does not include engineering design, easement or property acquisition.				

US 460 & VA 603 & VA 610 Intersection Improvements				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$4,000.00	$4,000
Curb Ramps (ADA compliant, with detectible warnings)	EA	12	$400.00	$4,800
Pedestrian Warning Sign Assembly (W11-1 and W16-7 subplate with wooden post)	EA	6	$220.00	$1,320
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	6	$2,000.00	$12,000
Pedestrian Signal Heads	EA	12	$5,000.00	$60,000
Stripe High Visibility Crosswalks (30 ft. x 10 ft.)	EA	4	$200.00	$800
Stripe High Visibility Crosswalks (40 ft. x 10 ft.)	EA	2	$250.00	$500
Drainage, E&S and Seeding Disturbed Soil (10%)	LS	1	$9,000.00	$9,000
Maintenance of Traffic (15%)	LS	1	$13,000.00	$13,000
Utility Adjustments (10%)	LS	1	$9,000.00	$9,000
			Subtotal	$124,420
			25% Contingency	$31,105
			Total Estimated Cost	**$156,000**
Cost does not include engineering design, easement or property acquisition.				

Crosswalk Improvements at Packing Plants Associated with Smithfield Foods Corporation (4 crosswalks)				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$1,000.00	$1,000
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	4	$2,000.00	$8,000
Stripe High Visibility Crosswalks (30 ft. x 10 ft.)	EA	4	$200.00	$800
In-Roadway Pedestrian Crossing Signs	EA	4	$150.00	$600
Maintenance of Traffic (10%)	LS	1	$2,000.00	$2,000
			Subtotal	$22,400
			25% Contingency	$5,600
			Total Estimated Cost	**$28,000**
Cost does not include engineering design, easement or property acquisition.				

US 258/West Smithfield Pedestrian and Bicycle Facilities				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$23,000.00	$23,000
Earthwork (includes excavation, fill, and grading) (shoulder area)	CY	3400	$20.00	$68,000
Earthwork (includes excavation, fill, and grading) (sidewalk)	CY	900	$20.00	$18,000
Remove Asphalt Driveway Pavement	CY	200	$20.00	$4,000
Shoulder Pavement (5' wide, 4" surface, 6" base, 6" aggregate--each side)	LF	10000	$12.50	$125,000
Concrete Sidewalk – 4” Thickness, Broom Finish	SF	19000	$5.00	$95,000
Curb Ramps (ADA compliant, with detectible warnings)	EA	10	$400.00	$4,000
Aggregate Base Course (6") for New Sidewalk (2000' on north portion)	CY	370	$50.00	$18,500
Concrete Curb and Gutter (2000' on north portion)	LF	4000	$25.00	$100,000
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	10	$2,000.00	$20,000
Landscaping, Drainage, Seeding, Maintenance of Traffic, and Utility Adjustments are not included in this cost because they would be included in the basic roadway improvement cost.				
			Subtotal	$485,500
			25% Contingency	$121,375
			Total Estimated Cost	**$607,000**
Cost does not include engineering design, easement or property acquisition.				

South Church Street Sidewalks				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Concrete Sidewalk – 4” Thickness, Broom Finish	SF	38000	$5.00	$190,000
Curb Ramps (ADA compliant, with detectible warnings)	EA	24	$400.00	$9,600
Earthwork (includes excavation, fill, and grading) (shoulder area)	CY	1800	$20.00	$36,000
Remove Asphalt Driveway Pavement	CY	150	$20.00	$3,000
Aggregate Base Course (6") for New Sidewalk	CY	750	$50.00	$37,500
Concrete Curb and Gutter	LF	8000	$25.00	$200,000
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	16	$2,000.00	$32,000
Mobilization, Landscaping, Drainage, Seeding, Maintenance of Traffic, and Utility Adjustments are not included in this cost because they would be included in the basic roadway improvement cost.				
			Subtotal	$518,100
			25% Contingency	$129,525
			Total Estimated Cost	**$648,000**
These sidewalks are included in a planned roadway improvement project. The detailed cost estimates for the sidewalk and curb and gutter elements from that project are likely to be more accurate than this general cost estimate. This cost estimate does not inlcude engineering design, easement, or property acquisition.				

North Windsor-Heritage Park Pedestrian and Bicycle Path				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$19,000.00	$19,000
Stripe High Visibility Crosswalks (30 ft. x 10 ft. Avg.)	EA	6	$200.00	$1,200
Pedestrian Warning Sign Assembly (W11-1 and W16-7 subplate with wooden post)	EA	12	$220.00	$2,640
Earthwork (includes excavation, fill, and grading) (trail)	CY	4600	$15.00	$69,000
Path Pavement (10' wide, 4" surface, 6" base, 6" aggregate)	LF	6900	$25.00	$172,500
Remove Asphalt Driveway Pavement	CY	170	$20.00	$3,400
Curb Ramp (ADA compliant, with detectible warnings)	EA	12	$400.00	$4,800
Earthwork, Excavation, Grading (Shoulder area)	CY	1400	$20.00	$28,000
Shoulder Pavement (5' wide, 4" surface, 6" base, 6" aggregate--each side)	LF	4000	$12.50	$50,000
Thermoplastic pavement markings for shoulders (6")	LF	4000	$1.00	$4,000
Bicycle Route Signs (Sign panel and sign post)	EA	16	$200.00	$3,200
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	14	$2,000.00	$28,000
Removable Bollards	EA	8	$400.00	$3,200
Landscaping (5%)	LS	1	$19,000.00	$19,000
Drainage, E&S and Seeding Disturbed Soil (15%)	LS	1	$57,000.00	$57,000
Maintenace of Traffic (10%)	LS	1	$38,000.00	$38,000
Utility Adjustments (15%)	LS	1	$57,000.00	$57,000
			Subtotal	$569,940
			25% Contingency	$142,485
			Total Estimated Cost	**$712,000**
Cost does not include engineering design, easement or property acquisition.				

Blackwater River Bridge Sidewalks and Shoulders				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Concrete Sidewalk – 6” Thickness, Broom Finish	SF	19600	$7.00	$137,200
Curb Ramp (ADA compliant, with detectible warnings)	EA	4	$400.00	$1,600
6" Thermoplastic pavement marking for shoulders	LF	4000	$1.00	$4,000
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	4	$2,000.00	$8,000
The cost of the Bridge Structure, Mobilization, Landscaping, Drainage, Seeding, Maintenance of Traffic, and Utility Adjustments are not included in this cost because they would be included in the basic roadway improvement cost.				
			Subtotal	$160,800
			25% Contingency	$40,200
			Total Estimated Cost	**$201,000**
These sidewalks and shoulders are included in a planned roadway improvement project. The detailed cost estimates for the sidewalk and shoulder elements of that project are likely to be more accurate than this general cost estimate. This cost estimate does not include engineering design.				

Lake Gaston Pipeline Trail (Phase I)				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$23,000.00	$23,000
Stripe High Visibility Crosswalks (30 ft. x 10 ft. Avg.)	EA	4	$200.00	$800
Pedestrian Warning Sign Assembly (W11-1 and W16-7 subplate with wooden post)	EA	16	$220.00	$3,520
Earthwork (includes excavation, fill, and grading) (trail)	CY	6700	$20.00	$134,000
Path Pavement (10' wide, 4" surface, 6" base, 6" aggregate)	LF	10000	$25.00	$250,000
Curb Ramp (ADA compliant, with detectible warnings)	EA	8	$400.00	$3,200
Trail Signs (Small sign panel and sign post)	EA	40	$150.00	$6,000
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	20	$2,000.00	$40,000
Removable Bollards	EA	8	$400.00	$3,200
Landscaping (5%)	LS	1	$23,000.00	$23,000
Drainage, E&S and Seeding Disturbed Soil (10%)	LS	1	$45,000.00	$45,000
Maintenace of Traffic (5%)	LS	1	$23,000.00	$23,000
Utility Adjustments (10%)	LS	1	$45,000.00	$45,000
			Subtotal	$609,720
			25% Contingency	$152,430
			Total Estimated Cost	**$762,000**
Cost does not include trailhead development, engineering design, easement or property acquisition.				

Signed Bicycle Routes				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Bicycle Route Signs (Sign panel and sign post)	EA	150	$200.00	$30,000
			Subtotal	$30,000
			25% Contingency	$7,500
			Total Estimated Cost	**$38,000**
Cost does not include the staff time required to field check the routes and develop the sign schedule to specify sign design and subplates. Assumes that signs will be installed by County staff.				

Share the Road Signs				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Share the Road Signs (Sign panel and sign post)	EA	30	$200.00	$6,000
			Subtotal	$6,000
			25% Contingency	$1,500
			Total Estimated Cost	**$8,000**
Cost does not include the staff time required to field check the routes and develop the sign schedule to specify sign design and subplates. Assumes that signs will be installed by County staff.				

Pedestrian and Bicycle Facilities in New Developments			
Item	**Unit**	**Quantity**	**Unit Cost**
Stripe High Visibility Crosswalks (30 ft. x 10 ft. Avg.)	EA	1	$200.00
Pedestrian Warning Sign Assembly (W11-1 and W16-7 subplate with wooden post)	EA	1	$220.00
Curb Ramp (ADA compliant, with detectible warnings)	EA	1	$400.00
Sidewalk (Concrete, 5' wide, includes aggregate base course, includes curb and gutter, one side of roadway)	MI	1	$312,000.00
Shoulder (5' wide, one side of roadway)	MI	1	$92,000.00
Bicycle Lane (two 6" thermoplastic stripes, 5 bicycle lane stencils, one side of roadway)	MI	1	$12,000.00
Bicycle Route Signs (Sign panel and sign post)	EA	1	$200.00
Shared-Use Path/Greenway Trail (10' wide)	MI	1	$185,000.00
Removable Bollards	EA	1	$400.00
The costs of Mobilization, Landscaping, Drainage, Seeding, Maintenance of Traffic, and Utility Adjustments are not included in this cost because they would be included in the overall cost of the development.			
In many locations, these costs will be covered by developers. Costs do not include engineering design, easement or property acquisition, mobilization or other lump sum items. A 25% contingency may be added for estimating purposes.			

Bicycle Parking at Commuter Parking Lots				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$2,400.00	$2,400
New Utility Connection	EA	1	$10,000.00	$10,000
New Pedestrian Scale Light (Incl. Wiring)	EA	8	$2,000.00	$16,000
Bicycle Racks	EA	30	$200.00	$6,000
Bicycle Lockers	EA	8	$2,000.00	$16,000
			Subtotal	$50,400
			25% Contingency	$12,600
			Total Estimated Cost	**$63,000**
Cost does not include the staff time required to select and order the bicycle parking facilities. Assumes that racks and lockers will be installed by County staff.				

Hiking and Mountain Bicycling Trails in County Parks			
Item	**Unit**	**Quantity**	**Unit Cost**
Hiking/Mountain Bicycling Trail	MI	1	$44,600.00
Costs do not include engineering design, easement or property acquisition. A 25% contingency may be added for estimating purposes.			

APPENDIX H: GREENWAY, PEDESTRIAN, AND BICYCLE FACILITY DEVELOPMENT STRATEGIES

GREENWAYS

The development of greenways often requires securing public right-of-way space by acquiring property or easements. Below is a list of potential strategies that can be used by Isle of Wight County to acquire land for greenways.

An excellent resource for greenway development strategies is the Virginia Greenways and Trails Toolbox (2000) (http://www.dcr.virginia.gov/prr/docs/toolbox.pdf). This document includes information about greenway funding and development, planning, construction, and maintenance.

Secure Easements from Property Owners
Easements allow the County to manage a specific part of a property by an established set of rules (such as using the property for a ten-foot wide shared-use path and 20-foot vegetative buffers on either side). The property owners retain all rights to the property that are not specified in the easement rules. While the property owner is still required to pay taxes on the property, the taxes on the land decrease based on the value of the easement. Types of easements include:

- Conservation easement (Typically sets permanent limits on the use of the easement land.)
- Preservation easement (Intended to protect the historical integrity of a structure.)
- Public access easement (Grants public access to specific easement property when conservation and preservation easements are not used.)

Control the Use and Development of Land through Government Regulatory Actions
The Isle of Wight County and the Town of Smithfield can take legislative actions to control the use and development of land. Specific actions that can be used include:

- Incentive zoning/density transfers (By ceding part of a property to the public for use as a greenway, the property owner can develop more densely on other parts of the property (or adjacent properties that are a part of a comprehensive development plan).)
- Negotiated dedication (Aimed to preserve specific types of resources, such as stream corridors. It can be applied when a parcel is subdivided. Note that the value of the dedicated land should be proportionate to the relationship between the community services required by the subdivision, as defined by the US Supreme Court in *Dolan v Tigard* (1994).)
- Fee-in-Lieu (Allows developers to pay monetary amounts to a greenways fund in lieu of including the required amount of greenway lands in their development. The greenways fund is then used to develop greenways in other strategic locations in the County.)
- Buffer zones (Preserves greenways that serve as buffers between potentially incompatible land uses, such as an industrial area and a residential neighborhood)
- Overlay zones (Provides additional zoning regulations in certain areas to require more extensive greenway development. These overlay zone requirements are in addition to the existing zoning of the areas.)

- Exactions (Requires developers to help finance public facilities, such as greenways, at their own expense in order to serve the public needs of the new residents that will be brought to the County by the development)

Acquire Land through Donation or Purchase
Isle of Wight County can use several techniques to purchase or obtain donated land. These techniques include:

- Tax Incentives (Allows the County to purchase the greenway property at a "bargain sale" rate or no cost, which would allow the property owner to take a federal tax deduction of 30 to 50 percent of adjusted gross income. Donating land for greenways may also allow property owners to avoid some inheritance taxes, capital gains taxes, and regular property taxes.)
- Fee Simple Purchase (The County purchases the property, including full title to the land and the full "bundle" of property rights.)
- Easement Purchase (The County would purchase only an easement on the property, not the full title to the land. This would have similar tax benefits as obtaining an easement through regulation or donation.)
- Bargain Sale (If a property owner sells the land at a price less than appraised fair market value, and the difference in price from the fair market value can be used as an income tax deduction)
- Purchase of Development Rights (PACE program in Isle of Wight County. Involves purchasing development rights from a property owner at fair market value, but the property owner gives up the right to develop the property.)
- Condemnation (Last resort option to make property available for greenway use. This option often only used when there is absentee property ownership, unclear land ownership, or multiple owners of the property located in other parts of the country.)
- Eminent Domain (Last resort option to take land for public use as greenways. This option requires significant public support from the community, and should only be used if all other attempts to acquire a property have not been successful. If Eminent Domain is considered, the rationale should be well-documented.)

PEDESTRIAN AND BICYCLE FACILITIES

This section describes types of transportation facility construction and maintenance projects that can be used to create new bicycle and pedestrian facilities. Note that new roadway construction and reconstruction projects offer excellent opportunities to incorporate facility improvements for non-motorized modes. It is much more cost-effective to provide bicycle and pedestrian facilities along with these projects than to initiate the improvements later as "retrofit" projects.

Incorporate Pedestrian and Bicycle Facilities Into New Roadway Construction Projects
Construction and reconstruction projects are among the most cost-effective opportunities to develop pedestrian and bicycle facilities. In order to take full advantage of these opportunities, Isle of Wight County should ensure that it has specific policies in place that require pedestrians and bicyclists to be accommodated in all new roadway construction and reconstruction projects. These policies can be established through updates to the Zoning Ordinance as well as developing roadway design guidelines. Roadway design guidelines specify how pedestrian, bicycle, automobile, and transit facilities should be provided on

roadways with different characteristics (e.g., traffic volumes, traffic speeds, number of lanes, etc.). Recommended changes to the Isle of Wight County Zoning Ordinance are provided in Appendix F. Pedestrian and bicycle accommodations should be incorporated into future roadway design guidelines in the VDOT Hampton Roads District and Isle of Wight County.

All new roads besides short cul-de-sacs should be constructed with sidewalks on both sides. New roadways that are planned to serve moderate to heavy motor vehicle traffic should have on-road bike facilities (bike lanes or paved shoulders); some may warrant both on-road and off-road facilities (shared-use paths) so that all types of bicyclists can be accommodated comfortably.

Incorporate Pedestrian and Bicycle Facilities Into Roadway Reconstruction Projects
When collector and arterial roadways are resurfaced or reconstructed, county and local agencies should evaluate the roadway cross-section to identify opportunities for pedestrian and bicycle facilities. This evaluation should consider how much motor vehicle travel lane width can be re-allocated and used for sidewalks, buffers between the roadway and sidewalks, bike lanes, or shoulder space, given the lane configuration, traffic volumes, and traffic composition of the roadway. Two types of modifications should be considered to provide additional right-of-way width for pedestrians and bicyclists: striping narrower lanes and/or removing travel lanes on roads with excess capacity. Reconfiguring a roadway during a reconstruction project is more cost-effective than adding sidewalks or shoulders as independent retrofit projects.

Take Advantage of Other Opportunities to Include Pedestrian and Bicycle Facilities
Isle of Wight County should also take advantage of several other types of opportunities to incorporate bicycle facilities into routine transportation projects. These opportunities are to ensure that pedestrian and bicycle facilities are listed as a part of projects in the Transportation Improvement Program (TIP), repaving schedules, and other lists of upcoming projects. The types of projects listed below are particularly good opportunities to incorporate bicycle accommodations.

Restriping
Restriping projects include adding bicycle lanes, edgelines, or shoulder stripes to streets without making any other changes to the roadway. In Isle of Wight County there may be roadways with exceptionally-wide lanes (13- to 15-feet wide). These roadways can be restriped with narrower lanes (10- to 12-feet wide, depending on traffic characteristics) to provide additional space for shoulders and bicycle lanes.

Repaving
Repaving projects provide a clean slate for revising pavement markings. Crosswalks and accessible curb ramps should be added for pedestrians. Further, when a road is repaved, the roadway can be restriped to create narrower lanes and provide space for bike lanes and shoulders. In addition, if the space on the sides of the roadway has a relatively level grade and few obstructions, the total pavement width can be widened to include paved shoulders.

Bridge Replacement
All new or replacement bridges should accommodate bicycles with on-road facilities on both sides of the bridge. If the bridge is in a developed area or an area that may experience

development in the future, it should also have wide sidewalks on both sides to accommodate all types of bicyclists and pedestrians.

Federal law, as established in the Transportation Equity Act for the 21st Century (TEA-21), makes the following statements with respect to bridges:

"In any case where a highway bridge deck is being replaced or rehabilitated with Federal financial participation, and bicyclists are permitted on facilities at or near each end of such bridge, and the safe accommodation of bicyclists can be provided at reasonable cost as part of such replacement or rehabilitation, then such bridge shall be so replaced or rehabilitated as to provide such safe accommodations." (23 U.S.C. Section 217)

On urban and suburban bridge projects, bridge shoulders should be a minimum of 5.5-feet wide and sidewalks should be a minimum of 5.5-feet wide if traffic volumes are projected to be less than 15,000 vehicles per day. If traffic volumes are projected to be 15,000 or more vehicles per day, the shoulders should be at least 6.5-feet wide and sidewalks should be at least 7-feet wide.

Bridge replacement projects on controlled access freeways where pedestrians and bicyclists are prohibited by law will generally not include facilities to accommodate bicyclists and pedestrians. In cases, however, where a bridge replacement project on a controlled access freeway impacts a non-controlled access roadway (i.e., a new overpass over an arterial roadway), the project should include the necessary access for pedestrians and bicyclists on the non-limited access roadway (i.e., paved shoulders, sidewalks, and pedestrian/bicycle crossing improvements).

Retrofit Roadways with New Pedestrian and Bicycle Facilities

There are several critical locations in Isle of Wight County with significant pedestrian and bicycle safety issues. These locations are often a part of essential links to destinations. In these locations, it may be justified to add new bicycle facilities before a roadway is scheduled to be repaved or reconstructed (e.g., Battery Park Road multi-use path).

In some places, it may relatively easy to add median islands, sidewalks, and/or extra pavement for shoulders, but other locations may be more difficult to improve pedestrian and bicycle facilities because the improvement may require removing trees, moving landscaping or fences, or regrading ditches or hills. Retrofitting roadways with sidewalks creates similar challenges. Therefore, retrofitting roadways is not commonly recommended as a strategy for developing on-road bicycle and providing pedestrian facilities.

Signage and Wayfinding Projects

This plan recommends that Isle of Wight County develop a new signage system to provide more direct bicycle connections between key destinations in the County. This new signage system should continue to be updated in the future based on bicyclist input so that the signs can be as effective as possible at helping people find destinations.

APPENDIX I: GREENWAY FUNDING SOURCES

This appendix describes potential federal, state, and local greenway funding sources in more detail. These sources can be used to increase funding for the recommended Isle of Wight County Greenways Program.

Federal Funding Sources

- Surface Transportation Program (STP) (States may spend up to 20 percent of their federal funds for transportation facility reconstruction, rehabilitation, resurfacing, and restoration for environmental restoration and pollution mitigation. Each state uses 10 percent of these STP funds for Transportation Enhancement projects, which include greenway trails. These funds are available through VDOT.)
- Recreational Trails Program (Grant program for non-motorized and motorized trails. The program requires county and local governments to provide a 20 percent match. Projects must be consistent with the Statewide Comprehensive Outdoor Recreation Plan (Virginia Outdoors Plan 2002).)
- Office of Bicycle and Pedestrian Transportation Program (Allows federal STP funds to be spent by states on bicycle and pedestrian facilities (including rail-trail projects) or on safety and promotional materials related to pedestrian and bicycle safety. These projects muse be part of a long-range transportation plan.)
- National Scenic Byways Program (Allows bicycle lanes to be developed on scenic byway roadways. Funds may only be used on scenic byway rights-of-way.)
- Land and Water Conservation Fund (LWCF) (Funds are available for park and recreation facility development through this program. Trails and greenways are eligible as a part of this program.)
- Wetlands Reserve Program (The US Department of Agriculture-Natural Resource Conservation Service will make direct payments to private landowners who agree to provide permanent easements in sensitive wetlands areas. This voluntary program can be used to provide open greenway space, but not greenway trails.)

State Sources

- Virginia Land Conservation Foundation (VLCF) (Provides matching grants to establish permanent conservation easements and to purchase open spaces and parklands, lands of historic or cultural significance, farmlands and forests, and natural areas. A portion funding may be used for developing properties for public use. Grant awards are for 50 percent or less of the total project cost. Applications must be for grants of at least $50,000 (minimum $100,000 total project cost). http://www.dcr.virginia.gov/vlcf/index.htm)
- Virginia Outdoors Fund (VOF) (Source of funding for development of public outdoor recreation areas and facilities. Grants are provided as 50 percent matching funds. Because this is a reimbursement program, the County would initially need to be able to fund the entire cost of the

project and be reimbursed periodically. The minimum grant award is $50,000 (for a $100,000 project), and the maximum award is $100,000 (for a $2000,000 project). http://www.dcr.virginia.gov/prr/vof.htm)

- Virginia Recreational Trails Fund (VRTF) (Source of funds for non-motorized, motorized, and multi-use trails. Funds may be used on urban trails near homes and workplaces, trails in rural areas, trailheads (including water trailheads). Funds may be used for easement acquisition, acquisition of fee-simple title for greenway lands, trail construction, improvements for persons with disabilities, maintenance. Grants can provide up to 80 percent of the project cost (20 percent local match required). This is a reimbursement program, so the County would initially need to be able to fund the entire cost of the project. Award recipients must consider guidance from the DCR Trails Board.. The minimum grant award is $20,000 (for a $25,000 project), and the maximum award is $100,000 (for a $125,000 project). Awards average $55,000. http://www.dcr.virginia.gov/prr/trailfnd.htm)

In addition, there are several resources provided by the Commonwealth that provide useful information about greenway funding, acquisition, development, and maintenance. These are the Virginia Outdoors Plan (2002) (http://www.dcr.virginia.gov/prr/vopfiles.htm) and The Virginia Greenways and Trails Toolbox (http://www.dcr.virginia.gov/prr/docs/toolbox.pdf).

Local Sources

- Taxes (Property taxes can be used to pay debt service on bonds issued to finance greenway development and maintenance. They distribute the tax burden widely throughout the community. Property taxes are often more acceptable to voters if they are restricted to greenways, parks, and open space. Excise taxes are taxes that are levied on specific goods and services and are restricted to specific uses, such as the gas tax that is used to generate transportation funds. Special legislation is required to create excise taxes.)
- Fees (Stormwater utility fees can be assessed based on the amount of impervious surface on a user's property. The fee generates revenue to be used for treatments, such as greenways, that offset the amount of stormwater runoff generated by the impervious surfaces. Impact fees are required of developers at the time they receive a building permit to pay for infrastructure improvements that help serve the new growth created by the development. Legislation would be required to allow impact fees in Isle of Wight County. The County would also need to provide adequate justification for the amount of fees required from each developer. In-lieu-of fees require developers to pay a front-end charge for developing parts of an off-site greenway system rather than providing greenway facilities as a part of a development. In-lieu-of fees would allow the County to purchase optimal lands for greenways rather than accepting marginal land that meets the written requirements of a developer dedication.)
- Bonds and Loans (revenue bonds, general obligation bonds, special assessment bonds)

- Other Local Sources (Capital Improvements Program, local trail sponsors, volunteer work, private foundations and organizations)

Other Organizations

- The Conservation Fund (national)
- Land Trust Alliance (national)
- Rails-To-Trails Conservancy (national)
- Trails and Greenways Clearinghouse (national)
- Trust for Public Land (national)
- James River Association (state)
- Land Trust of Virginia (state)
- Williamsburg Land Conservancy (state)

APPENDIX J: BLUEWAYS/PUBLIC WATER ACCESS

An additional objective of the County is to provide blueways that enable county residents to access the Blackwater River, Pagan River, Cypress Creek, Jones Creek, Lake Burnt Mills, and other streams for water-based recreation activities such as canoeing and kayaking.

Blueways are a set of public access points to the lakes, streams, and rivers in Isle of Wight County. While there are already several locations for public water access, a new public water access point should be added on the Blackwater River Near Franklin.

Additional blueway access points can be provided through future land use development projects (i.e. proffers, roadway development, donations, and land purchase). It is important for the proposed network of pedestrian and bicycle facilities also connect to public water access locations.