
Lake Country Bicycle, Pedestrian & Trails Plan

Brunswick County
Mecklenburg County
Virginia



2007

**Lake Country Bicycle,
Pedestrian & Trails Plan:**

*Brunswick County
Mecklenburg County*

2007

Prepared by the

Southside Planning District Commission

in cooperation with

Virginia Department of Transportation

Brunswick County

Mecklenburg County

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**SOUTHSIDE PLANNING DISTRICT
REGIONAL BICYCLE, PEDESTRIAN & TRAILS PLAN**

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I. Introduction and Purpose

Recent articles and studies have shown obesity has reached epidemic proportions in the state and nation. At the same time this lack of physical condition is so prevalent, the numbers of cyclists, hikers, birdwatchers, trail riders is growing. The 2006 Virginia Outdoors Survey identified the two highest needs for outdoor recreation in the next five years were for walking and hiking trails and for increased public access to recreational waters of the state. This increased health consciousness, statewide recreational needs, local interest and the desire to develop tourism in Southside Virginia were the catalysts for the following “Bicycle and Trails Plan” for Southside Planning District.

This document will set forth strategies to develop a network of on-road bicycle routes and off-road multipurpose recreational trails within Brunswick, Mecklenburg and Halifax counties with options for interconnections with adjacent counties. The trail system will be designed to optimize the region’s wonderful historical and natural assets—Revolutionary and Civil War sites, nature preserves, scenic rivers and lakes, and parks. The plan will also identify ways to increase awareness and safety issues regarding “sharing-the-road” with bicycle and other non-motorized modes of transportation.

VDOT Policy for Integrating Bicycle and Pedestrian Accommodations

The Commonwealth Transportation Board adopted the *Policy for Integrating Bicycle and Pedestrian Accommodations* on March 18, 2004. This policy provides the framework for how VDOT will accommodate bicyclists and pedestrians in the planning, funding, design, construction, operation, and maintenance of Virginia’s transportation network. In the VDOT policy, and in this plan, an *accommodation* is defined as any facility, design feature, operational change, or maintenance activity that improves the environment in which bicyclists and pedestrians travel.

This policy significantly improved the availability for a county to use its secondary roads allocation to plan, design, and construct bicycle facilities. This policy also eliminates the past VDOT procedure requiring that a roadway be included in an approved bikeway plan in order for bicycle accommodations to be considered as part of roadway improvements using Federal and State funding. Now an approved bike plan may be used to give direction to county and state transportation planners regarding the location and type of bicycle and pedestrian facility desired by the community. The plan may be used to prioritize which roads will receive bicycle facilities when road improvements are planned and constructed.

See Appendix A for the VDOT *Policy for Integrating Bicycle and Pedestrian Accommodations*.

II. Plan Development

A bike plan for Halifax County was developed in 2004 after a series of meetings of the Halifax Trails Advisory Group. The county adopted the "Halifax Bike, Pedestrian and Trails Plan" on February 9, 2004. The towns of South Boston and Halifax adopted the plan on April 12, 2004 and September 14, 2004 respectively. This plan served as the model for the region-wide plan.

Bicycle planning efforts for Mecklenburg and Brunswick actually began in 2003 but the initial focus of on-road biking facilities became centered on off-road trail development. The Lake Country Bike Committee was beginning to plan for bike routes through the two counties but was well aware for the need and safety of off-road trails. After a citizen advised of the availability of abandoned rail for a significant trail system, this interest switched to the development of the Tobacco Heritage Trail, and, the committee evolved into Roanoke River Rails to Trails, Inc., a non-profit organized with the goal of acquiring the abandoned railroad property in Southside Virginia and initiation of the trail system. Once the Tobacco Heritage Trail development was underway, completion of the Bike and Trails Plan for the two counties began again—now as a regional plan. The Lake Country Trails Group serves as the Tobacco Heritage Trail "Friends" or support committee and has helped guide development of the bike plan.

In order to identify desirable bicycle routes, the plan will provide background regarding the region—cultural, demographic, economic and geographic features—as well as describe the area's existing and planned attractions and destinations that may impact bike routes and pedestrian needs. The plan will also recognize the off-road facilities that are being developed by the RRRT and have been identified in the Tobacco Heritage Trail Conceptual Plan. Potential blueways are also featured in this document. Each county's unique needs and planned routes or other facility will in separate sections. Each county's plan will be characterized on maps separately.

The following mission was adopted by both bike plan committees:

To develop a plan of urban and rural trails and implementation strategies in order to establish a comprehensive network of multi-use facilities throughout the county and with regional connectivity.

The plan identifies trails and routes that are appropriate for bicycle and pedestrian travel, plus equestrian access on off-road trails, and facilities needed for the support and safety of such trails and routes. These routes may include both on- and off-road facilities, and water trails or blueways.

Public Outreach

In Halifax, two public input sessions were held. The first was held in the town of Halifax on November 18, 2003. A second was held in South Boston on December 10, 2003. Notice was sent to numerous groups and individuals and ads were placed in the county newspapers. Many of the comments received at the meeting were concerned with the historic and natural resources within the county. Committee meetings were held during the summer and fall. Public safety officers from South Boston and Halifax County attended one session and offered their insight as to safety of planned routes and safety education.

Bicycle planning efforts for Mecklenburg and Brunswick began in 2003. In addition to committee planning meetings, a public information meeting was advertised and held in South Hill on July 27, 2004, to receive public input on the Lake Country Bike and Trails Plan map & the Tobacco Heritage Trail. A public hearing for the THT was held October 14, 2005.

III. Goals and Objectives of a Trails & Bikeway System

Note: The following goals as were developed in Halifax County have been adapted to serve the entire Planning District.

Goal:

Provide the region's citizens with a first-class system of trails and bikeways that meet their transportation, recreational, and health needs, and improves their quality of life.

Objectives:

- ❖ Identify trails user groups and develop a system of off-road trails and shared roadways to accommodate a variety of non-motorized users
 1. Hikers, equestrians, mountain and recreational bikers
 2. Bicyclists and pedestrians traveling to school, work or to shop, commuters
 3. People with disabilities
- ❖ Identify features or facilities, both on- and off-road, to develop a system of interconnecting multi-use greenway trails, hiking, biking, and equestrian trails, and safe on-street bicycle access.
- ❖ In order to maximize trail effectiveness when proposing bike routes and multi-use trails, focus on natural and cultural opportunities of the county and region.

Goal:

Ensure that existing and future bikeways and trails provide safe alternatives to motorized transportation

Objectives:

- ❖ Enhance bicycle safety education in schools, clubs and local recreational centers.
- ❖ Provide and maintain off-road and on-road bikeways.
- ❖ Develop routes that are attractive, efficient, safe and economical.
- ❖ To encourage non-motorized commuting, consider centers of employment and shopping when locating bicycle routes and pedestrian access.
- ❖ To identify and coordinate corridor development with future and ongoing VDOT and/or county projects.

Goal:

Increase bicycle safety, awareness of the benefits of bicycling, walking, and other outdoor recreation through education, law enforcement, advocacy and public information.

Objectives:

- ❖ Provide educational programs and information to the public at large about the advantage of health and environmental advantages of outdoor exercise, ways to improve bicycle and pedestrian safety, the important rules, regulations and laws pertaining to bicycling and pedestrians, and the responsibility motorists and bicyclists have in sharing the right-of-way.

Goal:

Develop a community facility that will assist in economic and tourism development.

Objectives:

- ❖ Through the provision of bike and pedestrian accommodations and trail systems, develop a Quality of Place component that will attract employers interested in a green community emphasizing quality of life and recreational opportunities.
- ❖ Develop a biking and trails network that will be a destination for club bicyclists and trail riders and hikers.
- ❖ Promote tourism by offering additional recreational opportunities and access to the natural beauty of Southside Virginia.
- ❖ Provide off-road or shared roadways as appropriate to connect major visitor attractions—state parks, downtowns,
- ❖ Encourage the development of support facilities for long distance travelers

IV. Design Considerations and Options

BICYCLE FACILITIES

The following information is taken from the 2002 Virginia Department of Transportation Virginia Bicycle Facility Resource Guide.

Bicycle facility design has been refined over the past decade with the increase in new facilities and the growing interest in bicycling as a viable form of transportation and recreation. Today's bicycle design guidelines may vary based on the type of use anticipated on the facility and environment in which it is to be built. On-road bicycle facilities are considered part of the overall transportation system and need to be designed to ensure user safety for both the bicyclists and motorists. Off-road bicycle facilities include many types of "paths" that have varying design elements depending on the intended use and surroundings.

Factors to consider when planning a bicycle network include

- Environment
- User groups
- Facility types
- Ancillary facilities

Environment

The environment may be urban, suburban or rural. Each type of settings presents very different considerations. In the urban and even the suburban setting there is potential for bicycling as a means of commuting, running errands, biking to school, etc. In rural areas, the primary focus of a bicycle plan may be on providing recreational opportunities. The counties of Southside Planning District have all three settings, with the greatest portion being rural. The committees have tried to balance recreational biking with utilitarian opportunities within the urbanized areas. Schools, parks, shopping areas were identified and linked. Any opportunity to take the cyclist on a safe, less traveled route was taken. In the rural portions of the county the routes were selected to link scenic, historic sites and parks using low-volume roads as much as possible. Connections between towns, as well as, circuitous routes emanating from the towns were also a consideration. As a tourism initiative the long-distance recreational bicyclists with a focus on touring have been targeted. The recreational rider was also considered within the towns as these will be hubs and trailheads for the off-road trail and the long distance bicyclist.

In many cases connecting bike routes had to be located on roads that are currently not the best environment for cyclists or pedestrians perhaps due to width, alignment or speeds but are needed for connecting or linking destinations. For example Highway 903, a Virginia Scenic Byway, has

a relatively high traffic volume, unpaved shoulders and 55 MPH speed limit. It is also the primary access to Lake Gaston's homes and recreational sites, and biking and walking accommodations are very desirable in that area both for residents and visitors. The region's scenic byways should be a priority location for biking accommodations. See Appendix B for traffic volumes for recommended bicycle routes.

As stated earlier, the Commonwealth Transportation Board *Policy for Integrating Bicycle and Pedestrian Accommodations* provides the framework for how VDOT will accommodate bicyclists and pedestrians in the planning, funding, design, construction, operation, and maintenance of Virginia's transportation network. This policy allows a county to use its secondary roads allocation to include the construction of bicycle facilities with a road improvement or stand alone project. The bike plan can assist the CTB, VDOT, and county boards in the prioritizing of projects and allocation of funds by the identification of routes desirable for bicycle travel.

American Association of State Highway and Transportation Officials (AASHTO)

The American Association of State Highway and Transportation Officials advocates transportation-related policies and provides technical services to support states in their efforts to efficiently and safely move people and goods. AASHTO produces guidelines for many transportation modes, which serve as the states' model and policy. This is the case for bicycle and pedestrian modes. Likewise if federal funding is involved in a project, as is usually the case in highway projects, AASHTO design guidelines must be followed.

User Groups

While the type of environment shapes the focus of the bicycle plan, the targeted users influence the design. The American Association of State Highway and Transportation Officials (AASHTO) guidelines recommend consideration of the different cyclist types:

"...The choice of highway design will affect the level of use, the types of user that can be expected to use any given road and the level of access and mobility that is afforded bicyclists. For example, a four-lane divided highway with 12-foot travel lanes, no shoulder and a 55 mph speed limit will attract only the most confident of riders. The same road with a 5-foot shoulder or bike lane might provide sufficient "comfortable operating space" for many more adult riders, but would still not be comfortable for children or less confident adults. This latter group might only be accommodated through an alternative route using neighborhood streets linked by short sections of shared use path. If such an alternative route is provided and the four-lane road has a continuous paved shoulder, most

In order to assist in determining the impact of different facility types and roadway conditions on bicyclists, the Federal Highway Administration has defined the three types of bicycle users (A, B, and C). The American Association of State Highway and Transportation Officials (AASHTO) describe the user groups as follows:

Group A

Advanced or experienced riders generally using their bicycles as they would a motor vehicle. They are riding for convenience and speed and want direct access to destinations with a minimum of detour or delay. They are comfortable riding with motor vehicle traffic; however, they need sufficient operating space on the traveled way or shoulder to eliminate the need for either themselves or a passing motor vehicle to shift position.

Group B

Basic or less confident adult riders using their bicycles for transportation but prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by faster motor vehicles. Thus, basic riders are comfortable riding on neighborhood streets and shared used paths and prefer designated on-road facilities such as bike lanes or wide shoulders.

Group C

Children, riding on their own or with their parents, may not travel as fast as their adult counterparts but still require access to key destination in the community, such as schools, libraries, parks, and recreational facilities. Residential streets with low motor vehicle speeds, linked with shared use paths and busier streets with well-defined pavement markings between bicycles and motor vehicles can accommodate children without encouraging them to ride in the travel lane of major arterials.

Facility Types

The 1999 AASHTO Guidelines advise that, when planning, assume that bicyclists will use the roads. "All highways, except those where cyclists are legally prohibited, should be designed and constructed under the assumption that they will be used by cyclists. Therefore, bicycles should be considered in all phases of transportation planning, new roadway design, roadway reconstruction, and capacity improvement and transit projects." [Page 1] Furthermore they note that planners should be wary of assuming that low use of a facility by cyclists is necessarily reflective of potential demand. "Bicycle counts can be used to identify locations of high use. However, caution should be exercised when using bicycle counts as a measure of current demand. These numbers can considerably underestimate potential users. Traffic generators along the prospective route should be evaluated as to the potential bicycle traffic they would generate, given better conditions for bicycling." [Page 9]

The design guidelines developed by VDOT and AASHTO consider six types of bicycle facilities:

On-road Bicycle Facilities	Off-road Bicycle Facilities
Shared Roadway	Shared Use Path or Multi-use Trail
Paved Shoulder	
Wide Outside Lane	
Signed Shared Roadway	
Bike Lane	

Shared Use Path

<i>Definition:</i> A bikeway physically separated from motorized vehicular traffic by an open space or barrier.
<i>Typical Users:</i> Group B and C bicyclists, pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.
<i>Suitable Environment:</i> Urban, suburban, and rural.
<i>Minimum Width:</i> 10 feet.
These facilities have been very successful in reintroducing communities to bicycling as a form of transportation and recreation. Many times shared use paths are the catalysts for developing a bicycle network connecting a variety of attractions in the community.

Bike Lane

<i>Definition:</i> A portion of roadway, which has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.
<i>Typical Users:</i> Group A, B and, under certain conditions, B/C bicyclists.
<i>Suitable Environment:</i> Urban and suburban environments where there is significant bicycle demand.
<i>Minimum Width:</i> 4 feet. Certain edge conditions, such as on-street parking, curbing, guardrail, and longitudinal joints dictate additional bike lane width. For roadways with no curb and gutter, ... A width of 5 feet or greater is preferable and additional widths are desirable where substantial truck traffic is present, or where motor vehicle speeds exceed 50 mph.
Because of their pavement markings, bike lanes can also be an effective means of encouraging bicyclists to use particular corridors in lieu of others.

Wide Outside Lane

<i>Definition:</i> A wide outside travel lane shared by bicyclists and motorists. Wide outside lanes have no stripes to delineate lane for bicycles.
<i>Typical Users:</i> Group A and B bicyclists.
<i>Suitable Environment:</i> Urban and suburban environments.
<i>Minimum Width:</i> 14 feet of usable lane width is the recommended width for shared use in a wide curb lane. Similar to bicycle lanes, certain edge conditions dictate additional wide curb lane width. (This width should not include gravel or unpaved shoulders or gutter pans.)
Wide curb lanes require bicyclists and motorists to be more aware and attentive of each other, promoting safe interaction between the two modes.

Shoulder Improvements

<i>Definition:</i> Roadways with adequate shoulder widths can reduce the amount of interaction between bicyclists and motorists by providing bicyclists with a separate area to operate within the roadway cross-section. Where it is intended that bicyclists operate on the roadway shoulders, paved shoulders need to be uniform, smooth, and well maintained.
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<p><i>Typical Users:</i> Group A bicyclists, and, depending on adjacent traffic characteristics and the uniformity of the treatment, Group B bicyclists.</p>
<p><i>Suitable Environment:</i> Urban and suburban environments.</p>
<p><i>Minimum Width:</i> Under ideal conditions, shoulder widths should be a minimum of 4 feet when intended to fully accommodate bicycle travel. Where 4-foot widths cannot be achieved, any additional shoulder width is better than none at all.</p>
<p><i>Wide curb lanes</i> require bicyclists and motorists to be more aware and attentive of each other, promoting safe interaction between the two modes. These are usually preferred where shoulders are not provided. On highway sections without designated bikeways, an outside or curb lane wider than 12 feet can better accommodate both bicycles and motor vehicles in the same lane and thus is beneficial to both In general, 14 feet of usable lane width is the recommended width for shared use in a wide curb lane.</p>

Other AASHTO Design Considerations (excerpts from the 1999 AASHTO "Guide to Development of New Bicycle Facilities")

Sidewalks and Bicyclists

- **Sidewalks as bike facilities is unsatisfactory:** "In general, the designated use of sidewalks (as a signed shared facility) for bicycle travel is unsatisfactory. It is important to recognize that the development of extremely wide sidewalks does not necessarily add to the safety of sidewalk bicycle travel.... Sidewalk bikeways should be considered only under certain limited circumstances, such as: a) To provide bikeway continuity along high speed or heavily traveled roadways having inadequate space for bicyclists, and uninterrupted by driveways and intersections for long distances. b) On long, narrow bridges...." *Page 20*
- "It is important to recognize that the development of extremely wide sidewalks does not necessarily add to the safety of sidewalk bicycle travel. Wide sidewalks might encourage higher speed bicycle use and can increase potential for conflicts with motor vehicles at intersections, as well as with pedestrians and fixed objects." *Page 58*

Shared Use Paths and Bicyclists

- **Shared use paths and on-road facilities:** "Shared use paths should not be used to preclude on-road bicycle facilities, but rather to supplement a system of on-road bike lanes, wide outside lanes, paved shoulders and bike routes." *Page 33*
- **Intersections of roads and shared use paths:** "For a roadway user (at a path crossing), a clear message must be presented in a location where it will be seen by that user. Traditional treatments have included (various signs), or flashing yellow lights at the crosswalk. ... In recent years, new applications have been developed, including...'zebra-style' or colored pavement crosswalks, which are far more visible than traditional designs...." *Page 53*

On-Road Bicycle Facilities



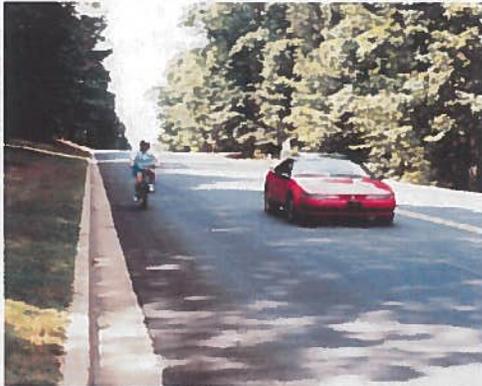
Typical Rural Road:
Unpaved shoulder or no shoulder.



Shared Roadway—Paved Shoulders
4 feet wide recommended; however any additional width is better than none.



Shared Roadway—Wide Outside Lane—outside vehicle travel lanes that provide adequate width for both motor vehicle and bicycle travel.
14' shared travel lane recommended.



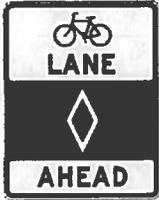
Bike Lane—designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.



Shared Use Path—A bikeway physically separated from motorized vehicular traffic by an open space or barrier.



Signage—Some Examples

		
<p>Route Identification</p>		<p>Route Identification</p>
		
<p>School Crossing</p>		<p>Use with Warning or Ahead signs</p>
		
	<p>Equestrian Crossing/Ahead</p>	

Ancillary Facilities

Ancillary facilities are the supporting facilities that help contribute to the success of a bicycle network. These can include secure bicycle parking, bicycle lockers, and showers and restroom facilities for the long distance recreational rider. In the case of multi-use off-road trails additional accommodations for horses, such as watering troughs, may be warranted. Some ancillary facilities may include:

- Bicycle racks
- Bicycle lockers
- Shower facilities
- Water fountains
- Rest areas
- Benches
- Hitching posts
- Water troughs for horses

Multi-Use (Off-road) Trails

Shared or Multiple-use trails in urban settings generally call for an eight to ten foot hard surface trail with a parallel, yet separate, soft surface and are usually parallel to existing roadways. Most of the shared use trails in the region will be backcountry and not parallel to a highway; therefore, the standards referenced here were taken from the *2000 Virginia Greenways and Trails Toolbox* prepared for the Virginia Department of Conservation and Recreation (DCR). NOTE: Trails developed with Virginia Department of Transportation (VDOT) and Federal Highways Administration (FHWA) funding must meet AASHTO standards, which require a 10-foot width with 2-foot shoulders. A summary of VDOT and FHWA recommended bicycle, pedestrian, and equestrian accommodations is attached in Appendix C.

Multiple-Use Trail Widths

Use Groups	Urban	Suburban	Rural	DCR Backcountry
All non-motorized users	14 feet	12 feet	10 feet	8 feet; 10 feet if heavy use
All non-motorized users, except equestrian	12 feet	10 feet	8 feet	8 feet; 10 feet if heavy use

Source: *Trails for the Twenty-First Century, Rails to Trails Conservancy*
Virginia Greenways and Trails Toolbox, DCR

Vertical Clearance

Equestrian	10 feet
If not equestrian	8 feet

Trail Surfaces

Hard Surfaces	User Groups	Limitations / Benefits
Soil cement	No equestrian	
Granular stone (limestone, sandstone, crushed rock)	Hikers, bikers, joggers, runners Conditional use by equestrian; mountain bikers, road bikers, physically challenged (Minimum 3/8" for wheelchairs)	Life expectancy of 7-10 years with spot repairs
Asphalt	No equestrian	
Concrete	No equestrian	
Soft Surfaces	User Groups	Limitations / Benefits
Natural surface	Equestrian, hikers, runners	Less preparation of trail bed; Must be properly sloped, well drained
Wood chips	Equestrian, hikers, runners	Decompose rapidly; needs replacing every 2 years; Decaying humus retains water-may become slippery

Granular stone if crushed to a very fine material and densely compacted, holds up well under heavy use and is less intrusive to the natural environment than asphalt or concrete. If asphalt or concrete are used, a parallel soft surface “lane” or shoulder should be included to accommodate equestrians.

Equestrian Facilities

Many of the off-road trails will be suitable for shared use with equestrians. Some considerations for equestrian users include:

- A separate, soft-surfaced trail is preferable
- Railing heights on bridges need to be taller
- Rest areas must be designed with tie-ups, water troughs, etc.
- Horses prefer simple water crossings over bridges. If a bridge is necessary, provide mounting blocks or space at the ends of the bridges for dismounting (to lead horses across)

Multiple Use Trail Etiquette

- Bicyclists yield to equestrians and hikers
- Hikers yield to equestrians
- All users should allow for passing.

Signs and brochures for multi-use trails should include “rules of the trail.”

Pedestrian & Bicycle Facilities Cost Estimates

The following cost estimates are taken from

Source: Virginia Department of Transportation

COST ITEM	UNIT COST*	SOURCE
Shared Use Path (10 feet)-Off-road (paved)	\$180,000 per mile	VDOT (2006)
Bike Lanes, 5 feet on each side with curb/gutter, urban typical section	\$540,000 per mile	VDOT (2006)
Bike Lanes, 5 feet on each side, rural typical section	\$240,000 per mile	VDOT (2006)
“Shoulder Wedging,” –retrofit paved shoulders onto existing road	\$110,000 per mile	VDOT/RRPDC (2006)
Signs	\$50--\$200 per sign	VDOT (2003)
Pavement Markings		VDOT (2003)
Lines (4")-(linear foot)	\$1.00 / LF	
Stencils (average per stencil)	\$120.00 each	
Storage:	\$670-\$930	VDOT (2000)
Locker (2 door/2 bicycle each)	\$325-\$730	
Sidewalks (5' wide)	\$90,000 per mile	VDOT (2006)
Provide pedestrian signal phase	\$30,000 each	VDOT (2006)
Provide pedestrian crosswalk	\$9,000 each	VDOT (2006)

**Unit Cost does not include right-of-way or bridge costs.*

Off-Road Trail Construction Costs

Source: The Virginia Greenways and Trails Toolbox, 2000

TYPE OF WORK	UNIT	COST PER UNIT
Surveying/Staking	1,000 LF	\$15,000
Clearing/Stump Removal	Acre	8,000
Grading (10' wide trail bed)	1,000 LF	10,000
Culvert (8" galvanized steel, 10' long)	Each	300
Check Dam	Each	200
Seeding (by hand)	Acre	2,000
Wood Chip Tread (6' wide)	1,000 LF	1,300
Crushed Stone Tread (6' wide)	1,000 LF	7,500
2" thick Asphalt Tread (6 wide)	1,000 LF	12,000
Large Sign (wood face and post)	Each	200
Small Sign (wood face and post)	Each	100
Bench (wood with iron frame)	Each	400
Trash Can (fiberglass)	Each	250

LF = linear feet

V. Need and Benefit

- **Transportation**—Cycling can help relieve traffic congestion by offering an alternative to those short trips to run errands or commuting. A bike offers another option to people without a driver's license or access to motor transportation.

The National Bicycling and Walking Study (Federal Highway Administration 1994) offers these findings: Bicycling and walking are two of the oldest and simplest, and in many ways most efficient and economical, means of transportation available. They are healthy, non-polluting forms of personalized transportation and do not consume limited natural resources. Costly infrastructure is not required since they can utilize the existing infrastructure if modified to meet their needs. Walking and bicycling are available to all segments of society—people of all ages and socioeconomic levels. Unfortunately, in this the age of the automobile people, mostly out of habit and convenience, are more likely to hop in a car for even those trips of a few blocks or couple of miles.

Additionally, roadway improvements to increase the safety of bicyclists and pedestrians also enhance safety for motorist. For instance a bicycle study in New York states that the addition of four-foot wide paved shoulders on rural, two-lane roads has been shown to reduce run-off-road, head-on, and sideswipe motor vehicle crashes by 29 percent, while eight-foot wide shoulders yielded a 49 percent reduction. Widening improvements can also result in decreased roadway edge degradation, thus increasing road longevity and saving money in maintenance costs. High motor vehicle speed is responsible for a large percentage of all crashes and a major deterrent for would-be cyclists and pedestrians. Speed reduction and “traffic calming” measures have been successful in many communities in improving safety for the motorized and non-motorized public alike. Therefore communities need to make easy and inexpensive bicycle friendly improvements, which would in turn increase the quality of life for their residents.

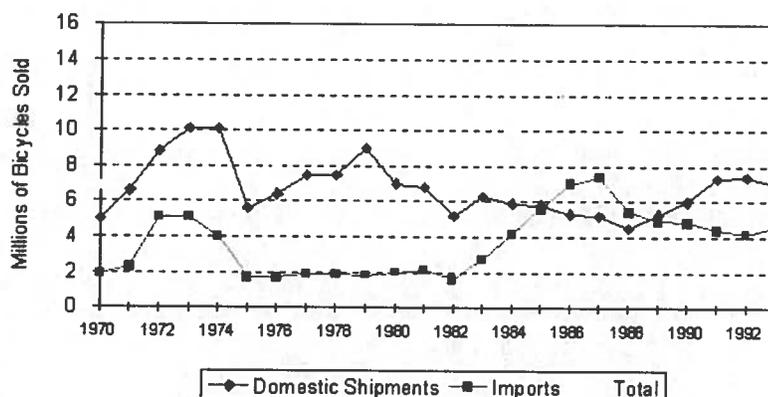
- **Healthy Communities**—An excellent form of physical activity, walking and bicycling can help alleviate conditions leading to heart disease, such as diabetes, high blood pressure, high cholesterol, and obesity.

A recent U.S. Center for Disease Control handbook, *Promoting Physical Activity Among Adults*, states, “the most effective activity regimens may be those that are moderate in intensity, individualized, and incorporated into daily activity.” So, in addition to those people who bike long distances for pleasure and exercise, just a short bicycle trip or walk to shop, work, and school on a regular day-to-day basis can be an effective fitness routine.

- **Quality of Life**—The quality of life of a community with greenways, trails and biking facilities is enhanced. A community with these amenities is more desirable to homebuyers and businesses.
- **Recreational Benefits**— Based on the 2006 Virginia Outdoors Survey, the two highest needs for outdoor recreation in the next five years are for walking and hiking trails and for increased public access to recreational waters of the state. The 2006 survey found that 39% of the public surveyed felt trails for bicycling were needed. This high ranking of perceived need may be expressing a desire by the public to have safe places to bicycle. Approximately 5% of all those surveyed actually mountain bike and 20% road bike. However, 40% of those same respondents felt there was a need for trails for bicycling. Given this response rate, the provision of safe places to bicycle could increase the popularity of this activity. Visiting historic sites, and natural areas, jogging, and hiking were also listed among the twenty most popular activities. This “fun” benefit also translates into an economic cluster: tourism.
- **Economic Benefits**—Trails, greenways and on-road bicycling can provide economic benefit to a region through many avenues. Organized tour groups and clubs (biking and horseback riding), as well as, individual bicycle and pedestrian tourists impact the local economy as customers of motels, bed and breakfasts, eateries, even the gas stations that put gas in the car for the trip home. Need for more support establishments such as bike repair and sales shops, additional restaurants and lodging, can result from increased visitation by the non-motorized tourist. The following section will attempt to quantify this benefit.

Economic Impact

The following is taken from The Adirondack North Country Bicycle Master Plan and is a summary of other economic studies of trails and bicycling:



There are a number of bicycle studies that have attempted to quantify the economic impact of bicycling in local economies. In most instances, the approach is to quantify the average daily expenditures of bicyclists. A few other studies have examined the impact of bicycle trails on property values in close proximity to the trail system. There are also research efforts that

quantified the economic benefit of increased bicycling related to air pollution costs, road construction budgets, etc. Some of the findings of these studies are briefly described below.

A study done in Pennsylvania: *Allegheny Valley Rail-Trails Feasibility and Development Plan* assessed the economic impacts of bicyclists to the local economy (Lord and Strauss 1994). Based on survey data, users of the Oil Creek State Park trail spent an average of \$25.85 per person per day (PP/PD) for a total economic impact of \$1.8 million annually. Two-thirds of the 22,700 visitors in 1991 came from out-of-state.

In a 1992 National Park Service report, *The Impact of Rail Trails: A Study of Users and Property Owners from Three Trails*, the economic impacts of trail users were measured (Moore et. al. 1992). This NPS report described the impacts of three trails, in Florida, California, and Iowa. The daily average expenditures per person were: \$3.97 (CA), \$9.21 (IA), and \$11.02 (FL). Overall the economic benefits were substantial with users numbering in the hundreds of thousands for each trail. Results also showed slight increases in property values to adjacent landowners with minimal problems cited by landowners.

A Wisconsin study, *The Economic Impact of Bike Trails: A Case Study of the Sugar River Trail* (Lawson 1986) concluded that communities that are intersected by this trail enjoy substantial economic benefit from nonresident use, with nonresident's average daily expenditures (\$10.21) nearly twice as high as residents (\$5.44). There were nearly 59,000 users in 1985.

A study done on property values, *Evaluation of the Burke-Gilman Trail's Effect on Property Values and Crime* done by the Seattle Engineering Department (1986) concluded that property near the trail was significantly easier to sell and that it sells for more -- averaging 6% higher -- compared to similar land not near the trail. In addition, adjacent landowners reported minimal problems.

One study looked beyond expenditures, to the economic benefits of bicycling to individuals, communities, and society. An analysis done for the Minnesota State Bicycle Plan (Minnesota Department of Transportation 1992) attempted to calculate the financial savings from increased use of bicycles. The premise is that each additional mile traveled by bicycle for shopping, school, commuting, etc., is one less mile traveled by automobile, resulting in less gasoline consumption, less pollution, fewer auto repairs, less wear-and-tear on roads, etc. The savings per bicycle mile traveled is estimated to be as high as \$1.64 per bicycle mile traveled, allocated as follows: out-of-pocket savings to consumers (\$.58), highway capital investment savings (\$.84), and taxes and other general public savings (\$.22).

Using the conservative estimate of a 2 mile commute per day each way by bicycle in a five day work week, multiplied by a 6 month bicycling season in the North Country Region, the savings per bicyclist totals \$852. Out-of-pocket savings for the bicyclist herself during the 6 months would be \$302, about the price of a new bicycle, or the price of a round-trip ticket to Florida.

Location	Type of Bicycling	Year	Average Expenditure Per Person Per Day	Other Economic or Use Information	Source
Iowa	RAGBRAI: Ride across state	yearly		Total expenditures: \$1 million during 8 days	Blumenthal (1987)
Seattle	Trail System	1986		6% increase in property values.	Seattle Planning (1987)
Wisconsin	Day Use: Trail System	1986	\$5 - \$10	59,000 users in 1985.	Lawson (1986)
Wisconsin	Day Use: Trail System	1988	\$25		Moore et. al. (1992)
Colorado	Day Use: Trail System	1989	\$51 - \$100	Out-of-State visitors spent \$100/day.	Summit County (1992)
Pennsylvania	Day Use: Trail System	1991	\$26	Total impact: \$1.8 million annually	Lord & Strauss (1993)
CA, IA, & FL	Day Use: Trail System	1992	\$4 - \$11		National Park Service (1992)
Canton, NY	Bicycle Rally	1992	\$77	Total expenditures: \$319,696.	Lally (1992)
Minnesota	Commuting	1992		Savings per bicycle mile traveled: \$1.64.	Minnesota DOT (1992)
Vermont	Bicycle Touring	1992	\$115	32,500 visitors spent \$13.1 million in 1992.	Burgess (1992)
Vermont: Stowe	Day Use: Trail System	1993		3,000 users in one day (9/5/93).	Lusk, Ann (personal comm.)
NY North Country	Bicycle Touring	1993	\$52	Groups of 5 or less people, primarily guided.	Holmes, et. al. (1994)

Finally, in research directed specifically at bicycle touring, as in the research carried out for this project, the owner of a successful bicycle touring business in Vermont estimated that in 1992, 32,500 out-of-state bicycle tourists in Vermont contribute as much as \$13.1 million to the state's economy. Of the total expenditures, lodging comprised 30%, food 21%, bicycle services and outfitters 22%, and personal expenses the remaining 27%. Additionally, the employment and indirect expenditures of bicycle touring companies contribute significantly to the local communities where they are located. In 1986, a Vermont bicycle touring company was sold for \$1 million; another was sold in 1987 for a reported \$3 million (Burgess 1992).

Overall, these studies demonstrate the potential positive economic impacts of bicyclists and bicycling on local economies. Local merchants in restaurants, retail stores, bike shops, and the lodging industry feel the impact.

The above studies deal mostly with bicycling; as stated earlier the counties of Southside have existing and planned equestrian trails as well. This user group also spends money and time and needs support businesses—tack shops as well as restaurants and lodging.

In 2006, Chmura Economics & Analytics conducted a study of the potential economic impact of the Tobacco Heritage Trail on Southside Virginia. In summary they surmised conservatively that the multi-use trail "... could attract over 197,000 visits a year, with direct spending of \$3.5 million in the region. Adding the indirect and induced effect, trail visitor spending can generate \$4.6 million in sales in the region and create 61 jobs. Most of those jobs are in industries providing services for visitors such as restaurants, lodging, and retail. Current tourism resources in the region, such as the three state parks, Buggs Island Lake, Lake Gaston, auto-racing events, and historic and cultural attractions, is expected to boost the visitors to Tobacco Heritage Trail beyond the benchmark estimates of 197,000..."

Annual Economic Impact of Tobacco Heritage Trail-- Source: IMPLAN Pro 2003 and CEA				
	Direct	Indirect	Induced	Total
Spending Impact				
Rental Car	\$60,351	\$12,815.40	\$10,095.45	\$83,261
Lodging	\$885,141	\$133,841.41	\$196,948.87	\$1,215,931
Food	\$704,090	\$145,512.46	\$119,182.41	\$968,784
Gas	\$409,043	\$56,452.94	\$108,006.14	\$573,502
Shopping	\$1,046,076	\$90,082.46	\$275,638.46	\$1,411,797
Other	\$248,108	\$72,870.99	\$28,225.65	\$349,204
Total	\$3,352,807	\$511,576	\$738,097	\$4,602,480
Employment Impact				
Rental Car	0	0	0	0
Lodging	11	1	1	13
Food	12	1	1	14
Gas	9	0	1	10
Shopping	20	1	2	23
Other	0	0	0	1
Total	52	3	6	61

As these studies show this market niche has great potential for development. Successful establishment of this industry will require marketing and provision of safe and attractive facilities. Marketing efforts may include bicycle maps, bicycle shops (and for the equestrians, tack shops), bicycle events, bicycle and trail riding club events, press releases, and magazine articles.

What Cyclists Want

A 1993 survey of primarily touring cyclists in upstate New York showed that the mean age of bicyclists was 45 years, two thirds of the respondents were male, and their households had a mean income in \$60,000 to \$69,999 range. The average time traveled (distance driven) to use trails in the study region was six hours. Seventy-five percent stated they usually rode on paved roads without a bicycle lane. Dedicated bicycle lanes were preferred by 27%, while another 27% preferred paved roads without a bike lane.

This group of primarily touring cyclists took an average of 43 recreational rides of ½ day or less in the previous year; 86% of the rides averaged between one and six hours. One third (37%) enjoyed ½ day rides and another third preferred longer tours of 3 or more days. The average distance biked in a single day varied from 30 to 39 miles. The length of a trip in days varied from one day to two weeks; the average was 5.

Most of the survey group preferred day trips; however, 63% had toured by bicycle for three or more days. As such logistics are critical to the riders and 47% preferred the aid of a good bicycle map. Attributes of a good area to ride were: scenery, low traffic volume, varied terrain, good roads, small towns, and people.

The touring cyclist would be classified User Group A or experienced riders. The survey discussed above deals with on-road facilities. The introduction of off-road trails opens the door to the less experienced rider as well as more user groups—equestrians, hikers, and depending on the location and surface treatment, handicapped persons, and skaters.

In summary, a review of studies from around the country found that users of trail systems from out of the region spend an average of \$100 a day or more while in the area. The touring cyclists prefer a varied, rolling terrain and appreciate beautiful natural scenery, cultural and historic sites all of which Southside Virginia has in abundance. The bicyclists prefer rides of 30 to 40 miles in length and maps are very important in their decision to visit an area. Many cost effective measures are available to promote bicycling riding through enhanced safety, signage, and mapping. Making the counties bike and pedestrian friendly through the provision of signage, bike racks, drinking fountains, curb ramps, and sidewalk maintenance programs would benefit residents and visitors alike.

When designating and signing bike routes consideration should be given to surrounding counties as almost all bicycle routes will arrive, and lead, to somewhere else. A regional planning approach is an effective means for developing facilities that appeal to the broadest range of users and cyclists and to develop promotional materials.

What Equestrians Want

In Virginia, there are over 225,000 horses that provide over 25,000 full time jobs (1995 Virginia Horse Industry Profile, by the Virginia Equine Education Foundation, Inc.). The number one use of the horse in Virginia is recreational trail riding. Trail riders enjoy long distance riding opportunities as well as cyclists but obviously need to be separated from traffic. Trailheads must accommodate horse trailers and trucks and overnight facilities for the horses as well as riders.

Rails to Trails

Dedicated trail systems are proven to be valuable tourist attractions, as well as providing safe recreational opportunities for cyclist, equestrians, hikers, and nature lovers. Railroad rights-of-way are the most cost-effective way of developing off-road trails for multiple user groups, and can provide bicyclists with alternate routes for more heavily traveled highways. Once rail rights-of-way have passed into private hands it can be difficult, time-consuming and perhaps cost prohibitive to bring those areas back into the public domain. A not-for-profit corporation, Roanoke River Rails to Trails formed in 2004 to acquire abandoned rail corridor in Southside Virginia from the railroad company, Norfolk Southern. The right of way is being developed as a greenway system known as the Tobacco Heritage Trail, named to reflect the area's long agrarian history and the region's principal industry for centuries.

As the Virginia Outdoors Survey noted, bicyclists desire safe areas for riding. Equestrians need space aware from traffic as well. These abandoned rights of way offer this unique opportunity to Southside Virginia to offer its residents and visitors a wonderful community asset—greenways.

VI. Background & Inventory

A. The Region: Southside Planning District

Southside Planning District, located in the Piedmont region of Virginia along the North Carolina border, encompasses more than 2,000 square miles and three counties—Brunswick, Mecklenburg and Halifax. Much of Lake Gaston and John H. Kerr Reservoir are located within these counties and therefore the area is often called “Lake Country.” The counties are part of the Tobacco Belt reflecting the agricultural heritage that has defined the region for centuries.

In 2000 approximately 88,000 persons were residing in Southside Planning District, which was an increase of 8.5 percent since the 1990 Census. The population centers are the twelve townships. Additionally there is a concentration of housing developments around the lakes. The 2000 Census of Population indicated that 24% of the region’s residents lived within the incorporated limits of a town. The overall population density is 44 persons per mile.

Regional Economy

While the Planning Area counties are rural, they are in excellent proximity to large regional markets and have an outstanding transportation system, which includes an interstate and several U.S. highways, two municipal and one regional airport. The region has an abundance of resources including educational facilities, industrial and residential sites, medical services, outdoor recreational facilities and the two lakes comprising over 1,100 miles of shoreline. These resources enhance the area’s competitive advantage as an attractor of people and business.

Historically agricultural, tobacco in particular, has been the major source of income for most families in Southside. This began to change in the 1960s when manufacturing—primarily textiles—began to grow in importance. However, this region has been experiencing an economic decline in the last few decades as farming became less and less viable for the small farmer. Due to the Tobacco Buyout Bill, which eliminated tobacco market quotas and price supports, most tobacco farming is expected to shift to the large corporate operations, seek to alternative crops or agri-businesses or leave farming entirely. Additionally in recent years, the region has been devastated by industry closings and downsizing of its major employers as the textile industry moved to take advantage of cheap labor in Mexico and overseas. Since 2000, approximately 4,000 jobs have been lost in Planning District 13; of these 43% or 1,600 were in the textile/apparel sector. The Southside Planning District unemployment rate for February 2007 was the highest in the state—6.1% while statewide the rate was 3.2%. From 2001 to 2005 the District experienced an average unemployment rate of 8.2 percent. In comparison, the state average unemployment rate over the same time period was 3.7 percent.

The lakes have been helping to redefine the area in part as a retirement and vacation destination. In 1995 a survey conducted by Century 21 Real Estate Corporation ranked the South Hill-Lake Gaston area the number one second home market in the South.

As traditional manufacturing and agricultural jobs disappear, local economic development offices strive to develop new strategies and programs to improve the economy and attract new innovative businesses. These programs include workforce training, infrastructure improvements including water and wastewater treatment facilities, provisions for high-speed communications, development of business and industrial parks, downtown redevelopment, provision of community facilities and development of the tourism industry as a further attractor of business and people to the area.

The provision of a quality place to live, with a safe efficient transportation network and well-rounded community facilities for its residents and visitors, as well as existing and relocating businesses, figures prominently in the regional economic development strategy.

Resources

To develop the bike and trail network points of interest were identified. These included historical sites and homes, parks, bird and nature viewing areas, boat launches (for river access). Other centers of interest particularly in the urban area were noted such as schools, shopping and business areas. Potential corridors, scenic roads, abandoned rail lines, and public utility easements were also identified and evaluated. The following is a brief summary of some of the area's resources for the trails network.

Highways

The Southside Planning District encompasses 2,000 square miles with 2,572 miles of improved roadways. Of these roadways 2,143 are secondary and 392 miles are primary highways. Thirty-six miles are interstates and are restricted access. To the extent possible most of the heavily traveled primary routes were avoided as identified bicycle routes due to traffic volumes and speed.

U.S. Route 58 connects the three counties and Interstate 85 crosses Mecklenburg and Brunswick. These routes make travel to the area convenient however at times may be an obstacle to bicycle travel.

2000 VDOT Mileage Tabulation

	Brunswick	Halifax	Mecklenburg	SPDC Total
Hard Surface	476.53	759.11	540.70	1,776.34
All Weather Surface	110.22	88.70	167.32	366.24
Light Surface	0.00	0.00	0.00	0.00
Un-Surfaced	0.07	0.00	0.00	0.07
Total Secondary Mileage	586.82	848.21	708.02	2,143.05
Total Primary Mileage	87.80	146.24	158.79	392.83
Interstate (Restricted Access)	20.77	0.00	16.21	36.21

Three counties and 12 towns are within the district boundaries. Three of the towns—Chase City, South Boston and South Hill are urban systems and maintain their own streets.

The nationally designated US Bike Route 1 travels through the center of Mecklenburg County, along Routes 4, 674, 669, and 634.

Geography

Three major rivers dominate the geography. John H. Kerr Reservoir, a 50,000-acre impoundment of the Roanoke River, begins at the confluence of the Staunton (Roanoke) and the Dan Rivers in Halifax County. Another impoundment of the Roanoke River in North Carolina created Lake Gaston, a 20,000-acre lake impacting Mecklenburg and Brunswick Counties. The Meherrin River forms the northern boundary of Mecklenburg and bisects Brunswick County. The Meherrin in Brunswick and the Staunton River in Halifax are designated State Scenic Rivers and offers water trail opportunities for paddling enthusiasts. The Dan and Banister Rivers in Halifax also offer water trail potential.

Railroads

By the 1920s there were approximately 360 miles of active railroad within these counties; since 1970, 208 miles have been abandoned.

There are three rail lines remaining in the District: The Norfolk-Southern from Brookneal through South Boston and into North Carolina (a spur off this line provides coal to the Clover power plant—1 train per day with 2 trips inbound and outbound), the Norfolk-Southern from Emporia to Lawrenceville (primary customer Lawrenceville Brick and Tile, and the Virginia Southern Division of the North Carolina and Virginia Railroad (operated as a short line from Burkeville to Oxford, NC). The Virginia Southern short line, known as the Virginia-North Carolina Railroad, passes through Chase City and Clarksville and currently serves the Mecklenburg Cogeneration Plant and has limited traffic since the closing of the Russell Stover and Burlington Industries plants in Clarksville.

The former Seaboard Airline Railroad now owned by CSX was abandoned but plans are underway to rebuild it as a High Speed Rail Line with a trail/greenway adjacent.

Southside rail corridors abandoned since the 1970s by Norfolk Southern and Norfolk Western were built in the late nineteenth and early twentieth centuries as three separate railroads—the Atlantic and Danville, the Richmond and Danville and the Virginian. These rail corridors are forming the nucleus for the Tobacco Heritage Trail effort.

The Tobacco Heritage Trail is the system of long distance recreational, multi-use, non-motorized trails, resulting from the efforts of the RRRT. More than 150 miles of abandoned railroad corridor have been identified within the Southside Planning District counties of Brunswick, Halifax, and Mecklenburg. Some connections via utility easements and other off-road easements, such as the flowage easement of the John H. Kerr Reservoir along the Dan and Staunton Rivers, will be needed. It is anticipated that where on-road is the only practical method for connectivity, county roads will be utilized and identified with unified trail signage. The fully developed Tobacco Heritage Trail is anticipated to extend into other Southside counties including Charlotte, Lunenburg, Greensville and Pittsylvania, and connect with other communities' greenways and trails. The Virginia Beach Pipeline, much of which is located on the abandoned Virginian Railroad, offers the potential for a connection all the way to the Hampton Roads area.

Roanoke River Rails to Trails, Inc. (RRRT) is a consortium of Southside Virginia localities organized to facilitate acquisition and development of the abandoned railroad rights-of-way in the area in order to create a major long distance off-road recreational trails network. The group has formed a corporation with representation from the Planning District counties of Halifax, Mecklenburg, Brunswick and the towns of South Boston, Halifax, Clarksville, Boydton, South Hill, La Crosse, Brodnax, Alberta, and Lawrenceville. Representation is not exclusive to the Southside Planning District and also includes Charlotte and Dinwiddie Counties and the town of Drakes Branch.

B. Local Background, Destinations & Design Considerations

Halifax County

Halifax is the largest county in the district including 819.3 square miles. More than 995 miles of improved roads traverse the county; of which 848 miles are secondary. The major urban centers—towns of South Boston and Halifax—are located generally in the center of the county. The Staunton (Roanoke), the Dan River and the Banister River are the major waterways within Halifax County.

Staunton River State Park is located on the peninsula formed by the merging of the two rivers. A significant tourist draw, it is one of the original six state parks in Virginia that opened in 1936. In addition to cabins, campsites, boating access, swimming pool, recent improvements to the park include extensive equestrian/hiking trails, as well as stabling facilities and campsites geared toward the trail riders.

Located approximately up the Staunton River is the Staunton River Battlefield State Park, site of a Civil War battle centered on a strategic railroad bridge. The park offers hiking and bicycle trails. Mulberry Hill Plantation, located just to the north of the Battlefield Park in Charlotte County, has been acquired by the Department of Conservation Resources and is being incorporated into the State Park. The abandoned railroad corridor from Randolph and the Battlefield State Park to Keysville has the potential of being developed as a rail trail, which would expand the trails network regionally.

The Staunton River Trail, a 20+-mile hiking and horse trail following primarily the U.S. Army Corps of Engineers flowage easement along the Staunton River connecting the two state parks is under development in the County. This backcountry trail is to be primitive, requiring minimal vegetative clearing and removal of large woody debris. Some treadway improvements may be needed but will be challenging and limited do to the periodic flooding. For this trail, width will be cleared to 6 to 8 feet wide and 8 feet high. See the "Feasibility Study: The River Trail" prepared by the Virginia Department of Conservation and Recreation, 1998, for a more detailed trail analysis. The trail will be divided into three phases or segments for development and design. The first phase extends from the equestrian trails existing within Staunton River State Park to the intersection of Dryburg Road and Difficult Creek. A trailhead parking area is planned at this location. The second phase will continue to the U.S. 360 crossing of the Staunton River. Parking is available at the existing DGIF boat landing. The final phase will extend the trail to the Staunton River Battlefield State Park.

Clarkton Bridge, located further upriver of the Battlefield, offers great nature watching and connectivity to Charlotte County. Built at the beginning of the twentieth century, the bridge is

eligible for listing as a Virginia Landmark and on the National Register of Historic Places, as having “local” (as opposed to statewide or nationwide) significance. The bridge, deemed unsafe and unnecessary by VDOT, has been saved through the efforts of the Clarkton Bridge Alliance for use as a bike/pedestrian bridge and nature-viewing platform.

Twenty miles of abandoned railroad right-of-way are located in Halifax County, extending west of downtown South Boston to the Pittsylvania County line. An existing multi-purpose trail along this right-of-way is located in Pittsylvania County beginning at the county line and connects to the city of Danville. The Prizery, a historic structure in downtown South Boston located near the abandoned railroad, has been resurrected as a welcome center and community arts facility. Trailhead facilities—showers and restrooms—have been constructed in the building.

The County has developed several driving tours and these were utilized when identifying the on-road bike routes. A list of sites of interest was developed for the driving tours and was referred to for this project as well.

The Central section of the Virginia Birding and Wildlife Trail will have eleven nature viewing sites located in Halifax. Locations of the Birding Sites are shown on the Halifax County Recreational Initiatives map.

River Road (SR 659) is designated as a Virginia Byways for their “high aesthetic or cultural value.” In 2006, Virginia Routes 360 and 344 (Scottsburg and MacDonald Roads) leading to the Staunton River State Park were added as Virginia Scenic Byways.

Planning Considerations

Cyclists in the advisory group discussed and recommended routes that provided a pleasant and safe ride. In the outlying areas of the county, emphasis was placed on routes that not heavily traveled, offered diverse topography, and attractive surroundings. Also in these areas riding for recreation and exercise were considered primarily. In the urban areas of South Boston and Halifax, safe routes to schools, work places, shopping areas, parks and other recreational facilities were also considered.

South Boston

Within South Boston emphasis was also placed on cross-town connections. Edmunds was selected as the major east west connection. Main Street is the best north-south route to connect several residential areas with the downtown central business district, the High School and Middle School and Centerville, a large retail shopping area.

North Main Street

An impediment to the north-south route is the segment of Route 129, North Main Street, from Hamilton Boulevard and Dan River Church Road. This two-lane urban roadway is narrow and heavily traveled although it is a residential neighborhood. There exists a total lack of sidewalk or shoulder width. With the exception of a few short portions that have curb and gutter, the entire roadway width is dedicated to drivable surface. The speed limit is 35 miles per hour. Many of the homes have direct driveway access to the street. The Merritt Hills residential subdivision has three access points to North Main with no turning lanes. Although tractor-trailers are prohibited, all other motor vehicles, bicyclists and pedestrians utilize the street. The latest available traffic count, October 1999, was 9,350 vehicles in on e 24-hour period. The only other north-south alternative is US 501, Halifax Road, which is dual lane, open to truck traffic and has a 45-mile per hour speed limit and also has no sidewalks. The worn grass adjacent to the travel lanes attest to the need for some pedestrian and bike accommodation.

To bypass the heavily traveled Halifax Road/North Main section of Centerville and still offer continuity, an off-road section is proposed utilizing a portion of the new Lowe's parking lot and the un-built but platted Treemont Street, which passes behind the businesses that front on Halifax Road (US 501) and could provide a link to Golf Course Road. For a "safe route to school" another very short (100') easement is needed to connect Tabernacle Trail to the streets linking the Middle School and High School.

The Prizery in downtown South Boston has trailhead facilities including showers, rest rooms, maps and information within the welcome center, parking, and bike racks. Its location makes it a hub for several of the proposed off-road trails—the South Boston-Pittsylvania County rail corridor, the Dan River Trail, Clover Rail with Trail—as well as the on-road bike routes. Adjacent to the Prizery are the Southern Virginia Higher Education Center and the rest of the South Boston Central Business and Tobacco Warehouse Districts. Downtown South Boston maintains a pedestrian friendly layout, but with the exception of the Prizery, bicycle facilities such as racks, storage, and showers are non-existent. Food and overnight accommodations are readily available in the town also.

Berry Hill & Riverstone

The Berry Hill Conference Center may play a significant role in connecting other major points of interest in town to the River Road Virginia Byway. Berry Hill is situated nearly three (3) miles west of the Prizery on the South Boston- Pittsylvania County Rail Corridor and is a point of interest in itself. The town of South Boston recently purchased several hundreds of acres of mostly floodplain land just south of the Berry Hill site, most of which is programmed for passive recreational uses (hiking and biking, bird watching), conservation, tree planting, and historic interpretation regarding General Nathaniel Greene's "Crossing of the Dan" as he was pursued by British Lord General Cornwallis from Guilford Courthouse, or present day Greensboro, North

Carolina. In 2007 Founders College purchased the Berry Hill site for a liberal arts college. While plans are still emerging, an equestrian center and an inn may be located at the college. Facilities for bicycle and equestrian trails will be in even greater demand for the students.

Riverstone Technology Park is located on the north side of U.S. 360 and across the Dan River from the Berry Hill Conference Center. Pedestrian and bike paths have been incorporated into the Park plan of development. The plans call for the creation of trail utilizing the abandoned railroad bed to connect downtown South Boston, Berry Hill Conference Center and Riverstone Technology Park. An alternate return to downtown South Boston on the southern side of the Dan will utilize floodplain property and a sewer easement. A pedestrian bridge will be needed to cross the Dan at the Berry Hill trail connection and at the railroad crossing and US 501 near the Prizery. This route will encourage commuting to the business corridor on U.S. 360. Bike/pedestrian friendly signalization will be necessary to encourage crossing of U.S.360 from Riverstone Technology Park.

Halifax

Sidewalks are located in Downtown Halifax, along Main Street (U.S. 501) from the railroad on the south to the 501 turn-off to the north. The addition of walkways along Main Street (360) to the Banister River would be beneficial to the town's planned greenways system. Sidewalks are also located along Mountain Road from Main Street to approximately 500 feet west of Library Lane. Halifax has considerable historic interest and improved walkways connecting the downtown to visitor sites would not only encourage residents of the town to walk to the downtown, but would also enhance heritage tourism and visitation. Mountain Road is an officially designated Historic District and is part of a walking tour. The sidewalks on Mountain Road are not conducive to this activity as they are narrow uneven and very unsafe. Sidewalks in the courthouse/business district also need considerable improvements. A sidewalk condition assessment found some sections lacked curb and gutter and causing flooding problems. Uneven surfaces and walkways cluttered with signs are also creating safety concerns.

Road width is adequate on Main Street for bicycles, however it is heavily traveled. Traffic calming measures need to be pursued. To provide another downtown connection as well as a connection to the facilities at Mary Bethune Complex, an opportunity has been identified for an off-road trail along a sewer easement located on Toot's Creek and a tributary. Landmark Design Group in its *Halifax Downtown Revitalization Plan* recommends connecting the downtown walkways and the proposed greenways.

Connections between Halifax and South Boston are planned utilizing Love Shop Road (614) and Cowford Road (651) for the on-road option and a sewer easement for an off-road alternative.

The sewer easement extends northward from North Main Street in South Boston to the Halifax Sewage Treatment Plant and Toot's Creek greenway.

Scottsburg & Virgilina

Scottsburg, Virgilina, and the unincorporated village of Clover grew around the railroads built in the early twentieth century. The railroads have gone taking most of the towns' business. These towns, as well as South Boston and Halifax are now poised to benefit from the railroads again. The towns can serve as way stations, providing refreshment, rest and repair stops for cyclists utilizing on-road bicycle routes or multi-use rail trails.

Scottsburg is an entry to the Staunton River State Park. An active railroad line passes through both Clover and Scottsburg. Originally this rail line connected to other lines to the north in Charlotte County; now it is a light duty spur from the Norfolk Southern line in South Boston to serve the Clover Power Plant and from the power plant north has been abandoned. The Halifax Trails Plan designates the section of rail line from just east of South Boston to Clover as a Rail With Trail. This will provide a fully off-road connection from downtown South Boston to the Staunton River Battlefield State Park and its trails along the abandoned rail line and northward into Charlotte County. Staunton River Battlefield State Park also is a trailhead for the Staunton River Trail, which follows the river from the state park on Buggs Island Lake.

Virgilina is located on the now abandoned Norfolk, Franklin and Danville Railroad. Local equestrians have informally utilized much of this rail right of way until storms caused trees to fall across the pathway blocking access. The Trails plan calls for the acquisition of the right-of-way (or easements to use) and conversion to a multi-use trail connecting Mecklenburg County through Virgilina to Alton Post Office, with the potential of connection to the Virginia International Raceway (VIR). The right of way curves southward into and through Milton, North Carolina before turning back to the north and VIR. Public roads parallel much of this right of way, offering on-road alternatives for cyclists as this rail trail is developed.

State Route 49 and/or a rail trail located on the former NF&D west of Clarksville offers a biking or hiking connection between Virgilina and Clarksville in Mecklenburg County.

Sappony Trail--THT

A portion of the NF&D in Halifax County is to be developed as part of the Sappony Trail.—The Christie area of Halifax and adjacent Person County, N. C. is the tribal home to the High Plains Community of the Sappony Tribe. The current tribal enrollment is approximately 850 members. The community is developing a 2.5-mile multi-purpose trail, the Sappony Trading Path that will highlight five of the community's culturally significant sights. The Trail would allow the community to actively promote a healthy lifestyle through the encouragement of exercise. The Sappony Trail will overlap a portion of the Tobacco Heritage Trail. Much of the THT route has Native American historical ties.

Mecklenburg County

Mecklenburg encompasses 819.3 square miles and includes five towns. The county has 708 miles of secondary roadways. Its two lakes—Johns H. Kerr Reservoir and Lake Gaston—provide major recreational attractions. Additionally the Meherrin River, which forms the county's northern border has potential as a blue-way or water trail.

Buggs Island/John H. Kerr Reservoir, a 50,000-acre lake with 300 miles of shoreline, is owned and operated by the U.S. Army Corps of Engineers, making the majority of the property surrounding the lake accessible to the public. John H. Kerr Dam & Reservoir is a 50,000-acre lake with 800 miles of shoreline in Virginia and North Carolina. There are 30 recreation areas around Kerr Reservoir, including five campgrounds, swim beaches, picnic areas, hiking, nature trails, marinas available for public use. There are 26 wildlife management areas on Kerr, totaling over 10,000 acres.

Occoneechee State Park is located on a wooded peninsula of Buggs Island Lake near the town of Clarksville and adjacent to U.S. 58. The park encompasses 2,690 acres and is a haven for anglers, vacation campers and nature lovers. Occoneechee offers boat-launching facilities, hiking and equestrian trails, campgrounds, cabins and exhibits on the history of the Occoneechee Indians. The park is approximately 1.6 miles via State Route 702 from the Tobacco Heritage Trail right-of-way at Jeffress and a safe connection from the park to the trail will be needed.

Lake Gaston, privately owned by Virginia Power, has less public access with only four boat landings in the Planning District to provide public access from the Virginia side to the 20,000-acre lake, but offers residential appeal. Lake Gaston has developed as a residential and second home area and the weekend homeowners greatly impact travel on State Routes 903 and 626 (in Brunswick), the main access roads that service Lake Gaston. Biking accommodations on Highway 903 around the lake would be an amenity attractive to potential and existing homeowners, as well as visitors to the area.

Towns—

Clarksville, with its newly revitalized downtown revitalized, offers many resources for overnight as well as day visitors. The Cove under development will provide a link for water travel, pedestrian to downtown and a destination for cyclists to enjoy the lake and downtown. Bicycle routes need to be chosen through town. Walking tours would be beneficial as well as there are many historic homes and buildings. Prestwold, an eighteenth century plantation home open to the public, and Occoneechee State Park, are located a short distance outside of Clarksville.

Chase City, a few miles north of Clarksville, is the home to MacCallum More Museum and Gardens. Other historic homes and a revitalized downtown with restaurants and convenience

stores make Chase City a good bicycling destination. Chase City is also designated as an “on-road” route of the Tobacco Heritage Trail. State Route 47, which was designated a Virginia Scenic Byway in 2006, connects Chase City to South Hill.

Boydton, located at the center of Mecklenburg County, adjacent to U.S. Route 58, is the county seat. The historic town is undergoing a downtown revitalization and is a resource for food and gas for the traveling public and trail users. Randolph Macon College site is included on the Civil Rights in Heritage Education Tour and has signage with a pull-off on U.S. Route 58. The town is the site of the Boyd Tavern, a historic stagecoach and tavern, which has been restored by a non-profit foundation and is open to the public on a part time basis. Formerly a stop on the Norfolk, Franklin & Danville Railroad, the town is located on the future Tobacco Heritage Trail.

South Hill, the largest town in Mecklenburg is located at the intersection of US Routes 1 and 58 and Interstate 85. The town offers a variety of restaurants, motels and gas stations and convenience stores. The South Hill Model Railroad Museum, the Virginia S. Evans Doll Museum and the Tobacco Farm Life Museums are located in the town. In addition to designated bike routes through town, a connection across Interstate 85 to the Tobacco Heritage Trail in La Crosse is needed. The town residents would benefit from improved pedestrian and biking access to the commercial areas, business parks, South Hill Elementary, recreational parks—Centennial Park and Parker Park—and to the Tobacco Heritage Trail (THT).

Downtown **La Crosse** was located at the crossing of the Atlantic and Danville Railroad and the Seaboard Airline Railroad. The La Crosse Hotel was constructed to cater to the railroad traffic and employees. These railroads abandoned in the 1970s and 1980s are expected to bring new life to the area and town as the Tobacco Heritage Trail and the Southeast High Speed Rail (SEHSR). La Crosse anticipates being a passenger stop on the SEHSR and the La Crosse Hotel is planned to be a passenger station as well as a trailhead facility for users of the Tobacco Heritage Trail.

Brunswick County

Brunswick County covers 569 square miles and includes 3 towns. The county has 587 miles of secondary roadways. The county is bisected by the Meherrin River, designated a Scenic River in 2006, and has potential as a regional blue-way or water trail.

As Lawrenceville, the Brunswick County seat, was roughly the mid-point between Norfolk and Danville, the town emerged as a railroad headquarters for the Atlantic and Danville Railroad when it was originally developed. Support structures located there included freight and passenger depots, terminal shops for service and repair of cars and engines, coaling chute and water tank, carpentry shop, warehouse, and an eight-stall engine roundhouse and turntable. In addition to the railroad, housing was constructed for the railroad workers. Now the town will be a significant trailhead for the Tobacco Heritage Trail. The town has many of the necessary amenities to support trail and bicyclists—food, gas, B&Bs. The A&D roundhouse site in Lawrenceville has been identified as the site for a trailhead facility for the beginning of the Tobacco Heritage Trail in Brunswick County. It will house a railroad museum, as well as rest facilities and travel information.

Civil Rights in Heritage Education Tour

Lawrenceville is also home to St. Paul's College, a historically African American liberal arts college founded in 1888 by Dr. James Solomon Russell. The town has several sites on the Civil Rights in Heritage Education Driving Tour.

Fort Christanna, is located two miles south of Lawrenceville, was erected on the banks of the Meherrin River in 1714 during Alexander Spotswood's administration as Royal Governor. Spotswood established Fort Christanna on the rising ground above the banks of the south side of the Meherrin River. The bike route has been designated to connect the town to the fort site. The gravel access road, Fort Hill Road, needs surfacing for safe bicycling.

Tobacco Heritage Trail-- Virginian Railway

A second leg of the Tobacco Heritage Trail is located in northern Brunswick County. Completed in 1909, the Virginian Railway was a modern well-engineered railroad with all new infrastructure. Now abandoned, Roanoke River Rails-to-Trails, Inc. has plans to purchase and develop the right of way as a segment of the Tobacco Heritage Trail, which offers future trail connection to Tidewater Virginia via the Virginia Beach pipeline. In the 1990s the City of Virginia Beach purchased the right of way from near Purdy to the Hampton Roads area to transfer water withdrawn from Lake Gaston to supplement the city's needs.

Alberta

The town of Alberta has extensive railroading history as the former crossroads of the Seaboard Airline Railroad and the Virginia Railroad. Now the town will be at the crossroads of the Southeast High Speed Railroad (former Seaboard Airline Railroad) and the Tobacco Heritage Trail: Virginian Branch. The town will offer a downtown trailhead, as well as camping at the Alberta School Park. Southside Virginia Community College is located approximately one mile south of the town on Route 46. The Seaboard Airline Depot and a water tank still stand.

Southeast High Speed Rail:

The construction of the Southeast High Speed Rail (SEHSR) will require some relocation of rail right-of-way in order to provide a smoother alignment to reach the required speeds. Also some highway realignment to limit at-grade crossings—a major safety concern for high speed trains. This relocation will provide opportunities for off-road trails linking to the planned THT. Additionally if linear corridors could be developed adjacent to or generally shadowing the rail corridor a much-needed north-south link for the Tobacco Heritage Trail and the East Coast Greenway would be possible. This would not necessarily mean bicyclists or pedestrian would be within a few feet of a speeding locomotive. Appropriately designed facilities could be developed to the extent possible adjacent but outside of, and separate from, the constructed railroad facilities. This corridor could be developed through Mecklenburg, Brunswick and Dinwiddie counties. NOTE: NCDOT has said they could identify the trail footprint and draft the preliminary design at the same time as the environmental documents are done at a cost of \$371,000 (2007).

Wilson Kautz Raid/ "Trail"

A regional driving tour commemorating the Wilson Kautz Raid coincidentally parallels the Virginian rail corridor and future rail-trail, and has interpretive stops in Brunswick as well as neighboring counties. Wilson-Kautz Raid Route is a component of the Lee's Retreat Tour. With the fall of Petersburg, Virginia, General Robert E. Lee retreated across Southside Virginia to Appomattox Court House where he surrendered. Lee's Retreat Trail consists of a 20-stop driving tour, through six counties connecting Petersburg to Appomattox.

Brodnax

The former NF&D (A&D) traveled through Brodnax. In the 1980s the former rail right-of-way was acquired by VDOT, paved and absorbed into the secondary road system. While providing access to Brodnax Mills and some homes, the road is still lightly traveled and is the connection of two legs of the Tobacco Heritage Trail. Brodnax will serve as a trailhead. The former depot is still located in the downtown, and could house a rest facility for the trail.

VII. Funding Sources

Public Funding Sources

A number of sources of funding for bicycle and pedestrian facilities are available through the Virginia Department of Transportation and other state and federal agencies.

Virginia Department of Transportation

- *Transportation Enhancement Program*
 - Eligible categories include “bicycle and pedestrian facilities” and “bicycle and pedestrian safety and educational activities.”
 - Match: 20% minimum (money, labor, donations of land or materials, or combination)
 - Annual competitive application process; reimbursable funds

- *Recreational Access Program*
 - Purpose to provide access to public recreational facilities or historic sites operated by state, locality or local authority
 - Application must be made by county or town in which facility is located
 - Year-round competitive application process; reimbursable funds
 - No match; no application deadline

- *Hazard Elimination Program*
 - To improve areas where there are abnormally high incidences of crashes, including railroad crossings
 - Annual competitive application process; reimbursable funds
 - Match: 10%
 - Funding Limit: \$500,000
 - Due date: June 30 or sooner

- *Revenue Sharing Program*
 - Provides additional funding to construct, improve, or maintain primary and secondary roadways. Bicycle facilities are most often funded through the Revenue Sharing Program as part of a roadway widening project not included in the *Virginia Transportation Development Plan*.
 - Annual competitive application process
 - Match: 50%
 - Funding Limit: \$500,000/County
 - Due date: Varies

- *Rural Rustic Roads Program*
 - This program provides a practical approach to paving low volume roadways and preserves the rural ambience. While not intended for bikeway construction, some desirable bike routes are un-surfaced making them unsafe for road bikes so this program benefits bicyclists as well.
 - 50—1,000 Vehicles Per Day
 - Must be included in Secondary Six Year Program

- *National Highway System*
 - NHS funds may be used to construct bicycle transportation facilities on land adjacent to any highway on the National Highway System.
 - US 58 and US 360 are part of the NHS (“Other” NHS Route)

- *Highway Construction Funds*
 - Bicycle facilities may be built in conjunction with the construction of new roadways and roadway improvements.
 - Road project must be in the *Virginia Transportation Development Plan*.

- *Virginia Scenic Byways Program*
 - Discretionary funding available including construction of facilities along scenic byway for use of bicyclist and pedestrians.
 - Annual competitive application process; reimbursable funds
 - Match: 20%
 - Due date: To VDOT by June 15 or sooner

- *Public Lands Highways Program (probably not useful for Halifax)*
 - Project, including pedestrian and bicycle related, must provide or improve access to federal land that is also served by a public lands highway.
 - Annual competitive application process; reimbursable funds
 - Match: None; 100% Federal funds
 - Funding Limit: Typically \$500,000
 - Due date: To VDOT by mid-June 15

- *Transportation and Community System Preservation Program*
 - Program designed to encourage governments to integrate transportation services with community needs (community development, environmental protection, preservation of green space, access to jobs and services).
 - Annual competitive application process; reimbursable funds
 - Match: None; 100% Federal funds
 - A total of \$270 million is authorized for this Program in FY's 2005-2009.

- *Safe Routes to School (SRTS)*

- The SRTS program uses federal transportation funds to improve and enhance the safety of pedestrian and bicycle facilities and related infrastructure construction projects for bicycle and pedestrian safety and traffic calming projects. To be eligible for these funds, the project must be located on any state highway or on any local road. Projects must correct an identified safety hazard or problem on a route that students use for trips to and from school. Federal reimbursement rate is 90%.

Department of Conservation and Recreation

- *Virginia Recreational Trails Fund*

- Purpose to provide and maintain recreational trails and trails-related facilities; funds may be used for acquisition, development, maintenance, or restoration.
- Annual competitive application process; reimbursable funds
- Match: 20% Local; 80% Federal funds
- Funding Limit: Average award approximately \$55,000
- Due date: Varies

National Park Service

- *Land and Water Conservation Fund*

- Provides money to federal, state and local governments to purchase land, water and wetlands for the benefit of all Americans.
- Land is bought from landowners at fair-market value (unless the owner chooses to offer the land as a donation or at a bargain price).
- <http://www.nps.gov/ncrc/programs/lwcf/protect.html>

- *Rivers and Trails Assistance Program*

- Rivers & Trails does not give grants or loans. Instead of money, Rivers & Trails supplies a staff person with extensive experience in community-based conservation to work with a local group on a project for a preset duration, typically one to three years during a project's infancy.

Virginia Department of Motor Vehicles

- *402 Highway Safety Program—Annual Grants*

- Applications must identify a specific safety issue and present plan to address issue; New programs or expansion of existing program
- Annual competitive application process; reimbursable funds
- Match: None

- Due date: To DMV by April 14 for localities and by May 31 for state agencies and non-profits
- Pedestrian Safety has been identified as a National Priority Area and is therefore eligible for Section 402 funds.
- 402 funds can be used for a variety of safety initiatives including conducting data analyses, developing safety education programs, and conducting community-wide pedestrian safety campaigns.

Virginia Tourism Corporation

- *Cooperative Marketing Fund*
 - For promotion, marketing, and advertising Virginia's tourism opportunities
 - Annual competitive application process
 - Match: 50% Local; 50% State
 - Due date: Varies

- *Matching Grants Marketing Program*
 - To stimulate and create tourism marketing and provide assistance to small tourism programs
 - Competitive application process that occurs twice a year
 - Match: 50% Local; 50% State
 - Due date: Varies
 - Maximum: \$5,000 per application

Private Funding Sources

- *Bikes Belong Coalition*--Maximum \$10,000
- *Kodak American Greenways Awards Program*—a partnership project of the Eastman Kodak Company, The Conservation Fund, and the National Geographic Society, provides small grants to stimulate the planning and design of greenways in communities throughout America. Maximum \$2,500. Usual amount \$500-1,500.

Other

- Corporate Donors
- Gifts, Memorials and Endowments
- Adopt a Trail / Adopt a Trail Feature (e.g. bench, light)

VIII. Plan Strategies

A successful bicycling and recreational trails program is more than a well-designed bike route and trails network. It relies greatly on supporting education, encouragement, and enforcement programs (the 3Es”).

Education

Comprehensive public information and education programs are important to raise community awareness and improve both bicyclist’ riding and traffic skill and motorists’ attitude toward bicyclists. Some ways and programs that may be used to educate both bicyclists and motorists on fundamental “rules of the road” are:

- “Bike Smart! Virginia”—promotes bicycle helmet use among children using a guidebook that equips educators and other community leaders with resources encouraging helmet use.
- Bicycle safety rodeos—teaches benefits of bicycling and cycling safety skills to the community
- Ride-Like-a-Pro safety events—part of national program to increase safety awareness and skills through training events and media interest; collaboration with local, regional, and state organizations.
- Helmet programs—demonstrations on proper fit, reduced helmet prices, free helmet giveaways through hospitals, private organizations, local police departments
- Public service announcements
- Community youth bicycle safety initiatives-through youth and school groups, recreation programs
- Adult bicycle programs—to educate adult bicyclists on today’s “rules of the road” for bikes and helmet use.

Encouragement

Programs and initiatives that encourage bicycling and overall trail use are important in creating a “user-friendly” trails system. This is particularly important when targeting the long-distance rider and tour groups. Methods to encourage trail use include:

- Trail/Bicycle maps/brochures—include information on other attractions such as scenic roads, intermodal connections, historic sights and recreational areas, as well as, area accommodations and facilities.
- Web site information
- Bicycle clubs
- Statewide or regional bicycle guides—Virginia Bicycling Guide; Rails-to-Trails Conservancy guidebooks

- Bicycle tours
- Bike to Work Week
- Health benefits
- Bikes with transit

Enforcement

Enforcement of bicycle laws and regulations is an important component in providing a safe bicycling environment.

Potential enforcement methods include:

- Bicycle rules of the road
- Police on bikes
- Park rangers on bikes
- Helmet ordinances
- Bicycle crash reporting
- Bicycling ticketing programs

Safe-Routes-to-Schools (SRTS)

Opportunities for children to bike or walk to school even exist in rural communities. SRTS programs use a variety of education, engineering and enforcement strategies that help make routes safer for children to walk and bicycle to school and encouragement strategies to entice more children to walk and bicycle. In addition to the “3Es” mentioned above, the SRTS program adds “Engineering” by including some design solutions to some common problems with walking or biking to schools. Engineering is a broad concept used to describe the design, implementation, operation and maintenance of traffic control devices or physical measures, including low-cost as well as high-cost capital measures. It focuses on tools that work to create safe routes by improving paths, creating safer crossings and slowing down traffic.

Bikeways & Trails Network

The system of urban and rural trails has been designed to accommodate several user groups. This network of multi-use facilities winds throughout the counties and utilizes both on and off-road trails in order to create the opportunity for a satisfying long distance tour or just an evening of exercise. Routes were selected with regional connectivity in mind so that even longer trips may be accomplished. While off-road system is under development sections of on-road routes may be utilized.

On Road Bicycle Routes

In the rural areas since virtually all roads in the county are great for bike riding according to local cyclists, the committees opted to identify routes that would in general be the road less traveled—fewer daily vehicle trips—while connecting area attractions and providing a visually interesting ride. In the urban sectors attention was paid to places of work, schools and shops. Routes currently popular with local riders were noted. In Brunswick and Mecklenburg, the routes used by Bike Virginia were incorporated as much research was done to select those routes. Connections to area parks and recreational attractions were emphasized. See Appendix B for traffic volumes for recommended bicycle routes.

Off-Road Shared Use Trails

This plan strives to accommodate primarily three classes of non-motorized trail users—hikers and/or other pedestrians, bicyclists, and equestrians. It also recognizes that some trail corridors may not always be suitable for all three uses due to topography, and soil conditions. Safety mechanisms must be carefully considered when trails intersect with public roads and rail—as well as to busy private drives and roadways.

IX. Recommendations

Maps of the recommended Bicycle Routes and Trails Network are included as Appendix D.

General Recommendations

1. Support local law enforcement departments bicycle safety programs to promote helmet use among children and adults
2. Develop adult and children's education programs focusing on bicycle and pedestrian rules and safety, as well as, trail safety and etiquette.
3. Encourage local organizations, clubs and businesses to implement programs for the maintenance, signing, construction of trails and trailheads.
4. Develop bike route and/or trails maps for print and distribution
5. Develop trails maps for web site use.
6. Pursue inclusion of regional trails and biking facilities in guidebooks and Virginia Bicycling Guide
7. Recommended Bicycle and Pedestrian Facilities Improvements

Bike Route Recommendations

1. Improve existing roadway shoulders during general maintenance, scheduled improvements and new construction to accommodate cyclists and pedestrians.
2. Pave road shoulders as roads are repaved; paved shoulders are safer and more pleasant to walk and ride upon.
3. When adequate pavement width exists re-stripe to designate area for bike travel.
4. Utilize existing utilizes corridors for biking and walking. New utility easements should be written so as to allow pedestrian or public access.
5. Actively preserve available rights-of-way for future construction of recreational paths.

6. Ensure signals are timed to allow adequate time for persons to cross roadways. Devote special attention to areas with children and senior citizens.
7. Marked crosswalks: installing distinctive road textures/paving in crosswalks and include highly visible striping.
8. Provide bike racks and benches at schools, and major population, employment, and shopping centers.
9. Enhance bicycle/pedestrian linkages from residential areas to employment centers and shopping centers through the additional construction of sidewalks and bikeways. Reinforce natural pedestrian thoroughfares when constructing new walkways. Footpaths generally show the most direct route between two points.
10. Improve street lighting to enhance bicycle/pedestrian safety and security.
11. Incorporate facilities to safely accommodate pedestrians and bicycles on existing automobile bridges. Construct separate pedestrian/bicycle bridges and tunnels where no safe alternative exists.
12. A regional approach to route designation and signage should be considered.
13. Coordinate placement of "Share-The-Road" signs with VDOT residency. Utilize sparingly on those roadways designated as a Bike Routes. Use signs as tool to educate and give notice to the motorized public.
14. All towns would benefit from individual bike plans identifying specific cycling and pedestrian needs on a more localized scale than is possible with a regional plan.

Off-Road Trails Facilities Recommendations

1. Trail segments should be usable by people with disabilities.
2. Off-road trails will be developed to comply with AASHTO standards, or with custom trail standards set forth for the Tobacco Heritage Trail if part of that system. Off-road trails not part of a state or Federally funded project may be developed to comply with design guidelines set forth in the *Virginia Greenways and Trails Toolbox* at a minimum.
3. On shared pathways trail etiquette signage should be placed appropriately.

4. Develop regionally to ensure connectivity.
5. Coordinate signage regionally.
6. Use bollards or some other method to ensure only non-motorized modes utilize the trails.
7. Install safety mechanisms where trails intersect with public roads and rail, busy private drives and roadways.
8. Ensure rail trails are cleared to a width adequate for emergency response vehicles to access. Identify viable access points. Provide mile markers on trails.
9. On backcountry trails, work with emergency responders to develop an evacuation plan. Place mile markers on trail.

Water Trails

1. Utilize VDOT bridge maintenance ROW and other public property for water access to the extent possible.

APPENDIX

- A. VDOT Policy for Integrating Bicycle and Pedestrian Accommodations**
- B. Traffic Count information**
- C. Notes for Bicycle, Pedestrian and Equestrian Accommodations**
- D. Bicycle & Trails Plan Map**

Virginia Department of Transportation
Policy for Integrating Bicycle and Pedestrian Accommodations

1. Introduction

Bicycling and walking are fundamental travel modes and integral components of an efficient transportation network. Appropriate bicycle and pedestrian accommodations provide the public, including the disabled community, with access to the transportation network; connectivity with other modes of transportation; and independent mobility regardless of age, physical constraints, or income. Effective bicycle and pedestrian accommodations enhance the quality of life and health, strengthen communities, increase safety for all highway users, reduce congestion, and can benefit the environment. Bicycling and walking are successfully accommodated when travel by these modes is efficient, safe, and comfortable for the public. A strategic approach will consistently incorporate the consideration and provision of bicycling and walking accommodations into the decision-making process for Virginia's transportation network.

2. Purpose

This policy provides the framework through which the Virginia Department of Transportation will accommodate bicyclists and pedestrians, including pedestrians with disabilities, along with motorized transportation modes in the planning, funding, design, construction, operation, and maintenance of Virginia's transportation network to achieve a safe, effective, and balanced multimodal transportation system.

For the purposes of this policy, an accommodation is defined as any facility, design feature, operational change, or maintenance activity that improves the environment in which bicyclists and pedestrians travel. Examples of such accommodations include the provision of bike lanes, sidewalks, and signs; the installation of curb extensions for traffic calming; and the addition of paved shoulders.

3. Project Development

The Virginia Department of Transportation (VDOT) will initiate all highway construction projects with the presumption that the projects shall accommodate bicycling and walking. Factors that support the need to provide bicycle and pedestrian accommodations include, but are not limited to, the following:

- project is identified in an adopted transportation or related plan
- project accommodates existing and future bicycle and pedestrian use
- project improves or maintains safety for all users
- project provides a connection to public transportation services and facilities
- project serves areas or population groups with limited transportation options
- project provides a connection to bicycling and walking trip generators such as employment, education, retail, recreation, and residential centers and public facilities
- project is identified in a Safe Routes to School program or provides a connection to a school
- project provides a regional connection or is of regional or state significance
- project provides a link to other bicycle and pedestrian accommodations

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- project provides a connection to traverse natural or man-made barriers
- project provides a tourism or economic development opportunity

Project development for bicycle and pedestrian accommodations will follow VDOT's project programming and scheduling process and concurrent engineering process. VDOT will encourage the participation of localities in concurrent engineering activities that guide the project development.

3.1 Accommodations Built as Independent Construction Projects

Bicycle and pedestrian accommodations can be developed through projects that are independent of highway construction, either within the highway right-of-way or on an independent right-of-way. Independent construction projects can be utilized to retrofit accommodations along existing roadways, improve existing accommodations to better serve users, and install facilities to provide continuity and accessibility within the bicycle and pedestrian network. These projects will follow the same procedures as those for other construction projects for planning, funding, design, and construction. Localities and metropolitan planning organizations will be instrumental in identifying and prioritizing these independent construction projects.

3.2 Access-Controlled Corridors

Access-controlled corridors can create barriers to bicycle and pedestrian travel. Bicycling and walking may be accommodated within or adjacent to access-controlled corridors through the provision of facilities on parallel roadways or physically separated parallel facilities within the right-of-way. Crossings of such corridors must be provided to establish or maintain connectivity of bicycle and pedestrian accommodations.

3.3 Additional Improvement Opportunities

Bicycle and pedestrian accommodations will be considered in other types of projects. Non-construction activities can be used to improve accommodations for bicycling and walking. In addition, any project that affects or could affect the usability of an existing bicycle or pedestrian accommodation within the highway system must be consistent with state and federal laws.

3.3.1 Operation and Maintenance Activities

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.

3.3.2 Long Distance Bicycle Routes

Long distance bicycle routes facilitate travel for bicyclists through the use of shared lanes, bike lanes, and shared use paths, as well as signage. All projects along a long distance route meeting the criteria for an American Association of State Highway and Transportation Officials

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(AASHTO) or *Manual on Uniform Traffic Control Devices* (MUTCD) approved numbered bicycle route system should provide the necessary design features to facilitate bicycle travel. Independent construction projects and other activities can be utilized to make improvements for existing numbered bicycle routes. Consideration should be given to facilitating the development of other types of long distance routes.

3.3.3 Tourism and Economic Development

Bicycling and walking accommodations can serve as unique transportation links between historic, cultural, scenic, and recreational sites, providing support to tourism activities and resulting economic development. Projects along existing or planned tourism and recreation corridors should include bicycle and pedestrian accommodations. In addition, the development of independent projects to serve this type of tourism and economic development function should be considered and coordinated with economic development organizations at local, regional, and state levels, as well as with other related agencies. Projects must also address the need to provide safety and connectivity for existing and planned recreational trails, such as the Appalachian Trail, that intersect with the state's highway system.

3.4 Exceptions to the Provision of Accommodations

Bicycle and pedestrian accommodations should be provided except where one or more of the following conditions exist:

- 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 bicycle and pedestrian 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)
- bicycle and pedestrian travel is prohibited by state or federal laws

3.5 Decision Process

The project manager and local representatives will, based on the factors listed previously in this section, develop a recommendation on how and whether to accommodate bicyclists and pedestrians in a construction project prior to the public hearing. The district administrator should confirm this recommendation prior to the public hearing. Public involvement comments will be reviewed and incorporated into project development prior to the preparation of the design approval recommendation. When a locality is not in agreement with VDOT's position on how bicyclists and pedestrians will or will not be accommodated in a construction project, the locality can introduce a formal appeal by means of a resolution adopted by the local governing body. The resolution must be submitted to the district administrator to be reviewed and considered prior to the submission of the design approval recommendation to the chief engineer for program development. Local resolutions must be forwarded to the chief engineer for program development for consideration during the project design approval or to the Commonwealth

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Transportation Board for consideration during location and design approval, if needed for a project. The resolution and supporting information related to the recommendation must be included in the project documentation.

The decisions made by VDOT and localities for the provision of bicycle and pedestrian travel must be consistent with state and federal laws regarding accommodations and access for bicycling and walking.

4. Discipline Participation in Project Development

VDOT will provide the leadership to implement this policy. Those involved in the planning, funding, design, construction, operation, and maintenance of the state's highways are responsible for effecting the guidance set forth in this policy. VDOT recognizes the need for interdisciplinary coordination to efficiently develop, operate, and maintain bicycle and pedestrian accommodations.

Procedures, guidelines, and best practices will be developed or revised to implement the provisions set forth in this policy. For example, objective criteria will be prepared to guide decisions on the restriction of bicycle and pedestrian use of access-controlled facilities. VDOT will work with localities, regional planning agencies, advisory committees, and other stakeholders to facilitate implementation and will offer training or other resource tools on planning, designing, operating, and maintaining bicycle and pedestrian accommodations.

4.1 Planning

VDOT will promote the inclusion of bicycle and pedestrian accommodations in transportation planning activities at local, regional, and statewide levels. These planning activities include, but are not limited to, corridor studies, small urban studies, regional plans, and the statewide multimodal long-range transportation plan. To carry out this task, VDOT will coordinate with local government agencies, regional planning agencies, and community stakeholder groups. In addition, VDOT will coordinate with the Virginia Department of Rail and Public Transportation (VDRPT) and local and regional transit providers to identify needs for bicycle and pedestrian access to public transportation services and facilities.

4.2 Funding

Highway construction funds can be used to build bicycle and pedestrian accommodations either concurrently with highway construction projects or as independent transportation projects. Both types of bicycle and pedestrian accommodation projects will be funded in the same manner as other highway construction projects for each system (i.e., interstate, primary, secondary, or urban). VDOT's participation in the development and construction of an independent project that is not associated with the interstate, primary, secondary, or urban systems will be determined through a negotiated agreement with the locality or localities involved.

Other state and federal funding sources eligible for the development of bicycle and pedestrian accommodations may be used, following program requirements established for these sources.

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These sources include, but are not limited to, programs for highway safety, enhancement, air quality, congestion relief, and special access.

VDOT may enter into agreements with localities or other entities in order to pursue alternate funding to develop bicycle and pedestrian accommodations, so long as the agreements are consistent with state and federal laws.

4.3 Design and Construction

VDOT will work with localities to select and design accommodations, taking into consideration community needs, safety, and unique environmental and aesthetic characteristics as they relate to specific projects. The selection of the specific accommodations to be used for a project will be based on the application of appropriate planning, design, and engineering principles. The accommodations will be designed and built, or installed, using guidance from VDOT and AASHTO publications, the MUTCD, and the *Americans with Disabilities Act Accessibility Guidelines (ADAAG)*. Methods for providing flexibility within safe design parameters, such as context sensitive solutions and design, will be considered.

During the preparation of an environmental impact statement (EIS), VDOT will consider the current and anticipated future use of the affected facilities by bicyclists and pedestrians, the potential impacts of the alternatives on bicycle and pedestrian travel, and proposed measures, if any, to avoid or reduce adverse impacts to the use of these facilities by bicyclists and pedestrians.

During project design VDOT will coordinate with VDRPT to address bicyclist and pedestrian access to existing and planned transit connections.

Requests for exceptions to design criteria must be submitted in accordance with VDOT's design exception review process. The approval of exceptions will be decided by the Federal Highway Administration or VDOT's Chief Engineer for Program Development.

VDOT will ensure that accommodations for bicycling and walking are built in accordance with design plans and VDOT's construction standards and specifications.

4.4 Operations

VDOT will consider methods of accommodating bicycling and walking along existing roads through operational changes, such as traffic calming and crosswalk marking, where appropriate and feasible.

VDOT will work with VDRPT and local and regional transit providers to identify the need for ancillary facilities, such as shelters and bike racks on buses, that support bicycling and walking to transit connections.

VDOT will enforce the requirements for the continuance of bicycle and pedestrian traffic in work zones, especially in areas at or leading to transit stops, and in facility replacements in accordance with the MUTCD, *VDOT Work Area Protection Manual*, and *VDOT Land Use*

Virginia Department of Transportation
Policy for Integrating Bicycle and Pedestrian Accommodations

Permit Manual when construction, utility, or maintenance work, either by VDOT or other entities, affects bicycle and pedestrian accommodations.

VDOT will continue to research and implement technologies that could be used to improve the safety and mobility of bicyclists and pedestrians in Virginia's transportation network, such as signal detection systems for bicycles and in-pavement crosswalk lights.

4.5 Maintenance

VDOT will maintain bicycle and pedestrian accommodations as necessary to keep the accommodations usable and accessible in accordance with state and federal laws and VDOT's asset management policy. Maintenance of bike lanes and paved shoulders will include repair, replacement, and clearance of debris. As these facilities are an integral part of the pavement structure, snow and ice control will be performed on these facilities.

For sidewalks, shared use paths, and bicycle paths built within department right-of-way, built to department standards, and accepted for maintenance, VDOT will maintain these bicycle and pedestrian accommodations through replacement and repair. VDOT will not provide snow or ice removal for sidewalks and shared use paths. The execution of agreements between VDOT and localities for maintenance of such facilities shall not be precluded under this policy.

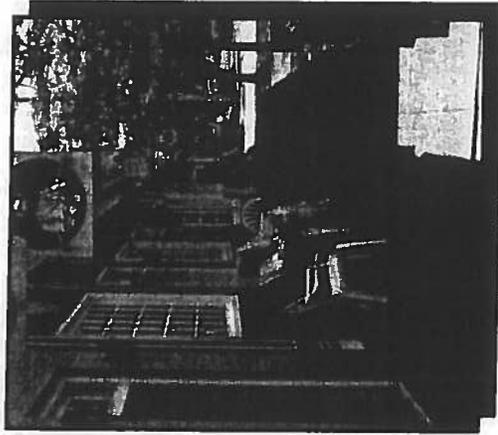
5. Effective Date

This policy becomes effect upon its adoption by the Commonwealth Transportation Board on March 18, 2004, and will apply to projects that reach the scoping phase after its adoption.

This policy shall supersede all current department policies and procedures related to bicycle and pedestrian accommodations. VDOT will develop or revise procedures, guidelines, and best practices to support and implement the provisions set forth in this policy, and future departmental policies and procedural documents shall comply with the provisions set forth in this policy.

Transportation Enhancement Program Workshops

Workshop Notes for Bicycle, Pedestrian, and Equestrian Accommodations

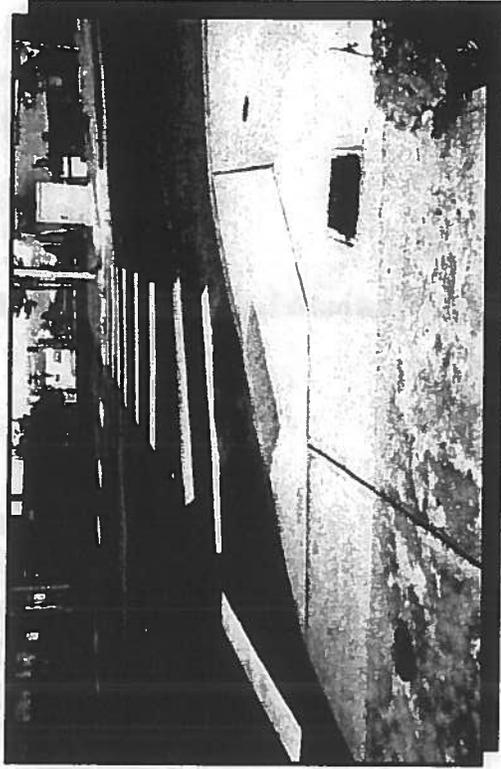


Sidewalks

Public sidewalks include any exterior walkway in the public right-of-way intended for pedestrian use.

Quick design notes:

- 5-foot preferred minimum width and 3' of clear area (accessible route) around fixed objects (trees, benches, signs, etc.)
- Surfaces should be firm, stable, and slip resistant
- Surfaces should have a cross slope not exceeding 2 percent
- Should drain towards street/road
- Should be clear of obstructions between 27 and 80 inches (vertical clear area)
- Changes in level should not exceed 1/4 inch
- Driveway crossings must include a level travel area at least three feet in width
- Paved surface must be carried over gravel driveway
- Separation from roadways by curbs, planting strips, or other barriers is preferred
- Lighting must follow parameters set in Code of Virginia §2.2-1111.B.3
- Surfaces on both sides need to be flush with the sidewalk surface



Curb Ramps

A curb ramp provides a change in level for access to and across other travel ways from sidewalks and other pedestrian facilities.

Quick design notes:

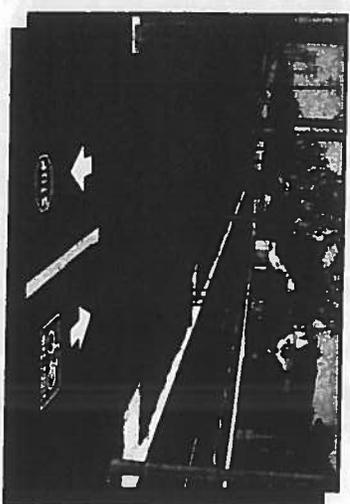
- Make sure enough room is provided for ramps and landings per VDOT IIM 55
- Orient ramps perpendicular to the curb, not skewed, so users will not have to negotiate changes in grade and cross slope at the same time
- Truncated domes must be used as the detectable warning surface when a pedestrian travel way crosses a vehicular travel way
- Provide one curb ramp for each crossing movement where feasible
- Coordinate locations with crosswalks, stop bars, signals, and signs
- Where site development conditions prohibit full compliance, make as many elements compliant as possible
- Use curb ramps or at grade crossings for medians and islands.
- Provide a 70% color contrast between detectable warning surface and surrounding sidewalk surface

Note: When projects limits are set at an intersection, accessibility on all corners of the intersection should be evaluated, but improvements to the opposite corners are not compulsory under the current guidelines.



Shared Use Paths

A shared use path (top left) is a physically separated travel way that carries two directions of non-motorized traffic



Quick design notes:

- 10-foot minimum width
- 2-foot level, graded area from the edge of the path
- 3 feet of clearance between edge of path and fixed objects (trees, edges of signs)

- 3 feet between the edge of the path and the outer right-of-way limits
- 7-foot preferred separation, 5-foot minimum, between path and the back of curb or edge of pavement
- Grades should be kept to a minimum, no more than 5% where possible
- Surfaces should be firm, stable, and slip resistant
- Curb ramps must be the same width as the shared use path
- For a crossing of a gravel road or drive, a minimum of 3 feet of the road or drive adjacent to the path should be paved to prevent edge raveling and tracking of gravel
- Use appropriate signing and pavement markings (MUTCD when signing for motor vehicle crossings, and in urban or suburban areas)

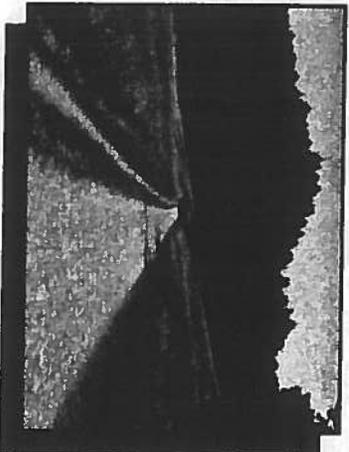
Note: Shared use paths should not be used in developed areas with many drive crossings.

Shared Use Hiking, Biking, and/or Equestrian Trails

A shared use trail (top right), like a shared use path, is a physically separated travel way that carries two directions of non-motorized traffic over an unpaved surface, such as crushed rock aggregate (typically utilized by hikers, trail bikes and/or equestrians) in rural areas.

Quick design notes:

- 10-foot preferred width
- 2-foot level, graded area from edge of path
- 3 feet of clearance between edge of path and fixed objects (trees, edges of signs)
- 3 feet between the edge of the path and the outer right-of-way limits



- 7-foot preferred separation, 5-foot minimum, between path and the back of curb or edge of pavement
- Grades should be kept to a minimum, no more than 5% where possible
- Non-paved aggregate surfaces should be firm, stable, and slip resistant

- Use appropriate signing and trail markings (MUTCD when crossing or in context with roadways)
- Include way finding signage and markers where appropriate
- Separate trails are preferable for trail bikes and equestrians.
- Where shared use is required, literature should be exhibited at a trail head or signage placed along the trail indicating how to properly share the trail with other users.
- All trail amenities must be ADA accessible, even where only a portion of the trail is accessible.
- Interpretive sites (signs) should be positioned such that they are readable by all user groups
- For trailheads, pedestrian and accessible routes should not cross vehicular routes

Way Finding Systems for Shared Use Hiking, Biking, and/or Equestrian Trails

In rural areas where frequent landmarks are absent and surroundings may be unfamiliar, a way finding system that includes trailheads (with location and destination mapping), directional signs, mile markers and information packets (trail rules, safety, self guided tours, etc.) become an integral part of a successful shared use trail project.

User orientation for any facility is key in providing a safe and enjoyable experience for all users and will more likely result in a return trip.

