

APPENDIX A: GREENWAY PLAN

Greenway Plan

Trail Classifications

The trails in the greenway system should adhere to one of the following types.

Class A - these trails may be either designed as 1) an eight foot wide paved surface with a center stripe and a dual lane or, 2) an eight foot wide compacted crushed-stone trail. Both these trail types will require public access opportunity from trail to stream edge/bank and be ADA and bicycle accessible (see drawing).

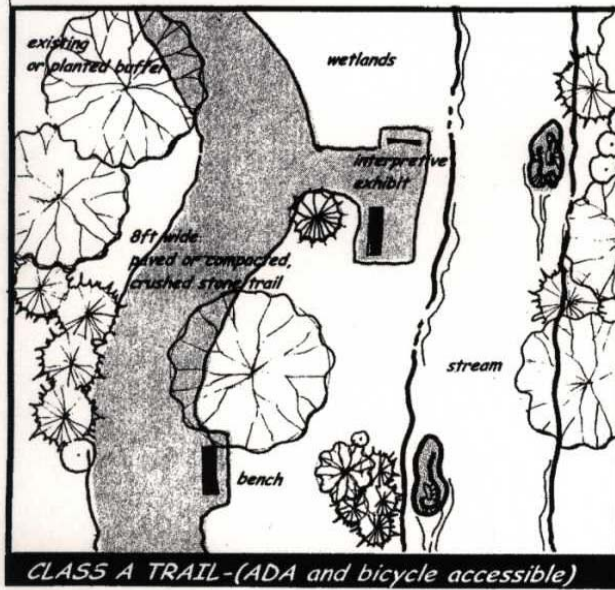
Class B - no surfacing, minimum clearance (4 to 5 feet wide) - thirty feet wide public access (“primitive” trail, similar to those found in places such as Ivy Creek Natural Area, Crab Tree Falls, Humpback Rock, and portions of the Appalachian Trail). This trail will require public access opportunity from the trail to the stream bank (see drawing).

It is the intent of the County that the majority of the trails within the greenway system be primitive in nature (Class B), except in those areas where ADA and bicycle accessibility is desired (Class A). A “primitive” type trail is the least expensive to construct and maintain. This type of trail minimizes impervious surface, which helps reduce runoff concerns. Therefore, most trails in the greenway system will be class B in nature. Class A type trails will be located primarily in and near parks and major activity areas.

See following pages for trail cross-sections.

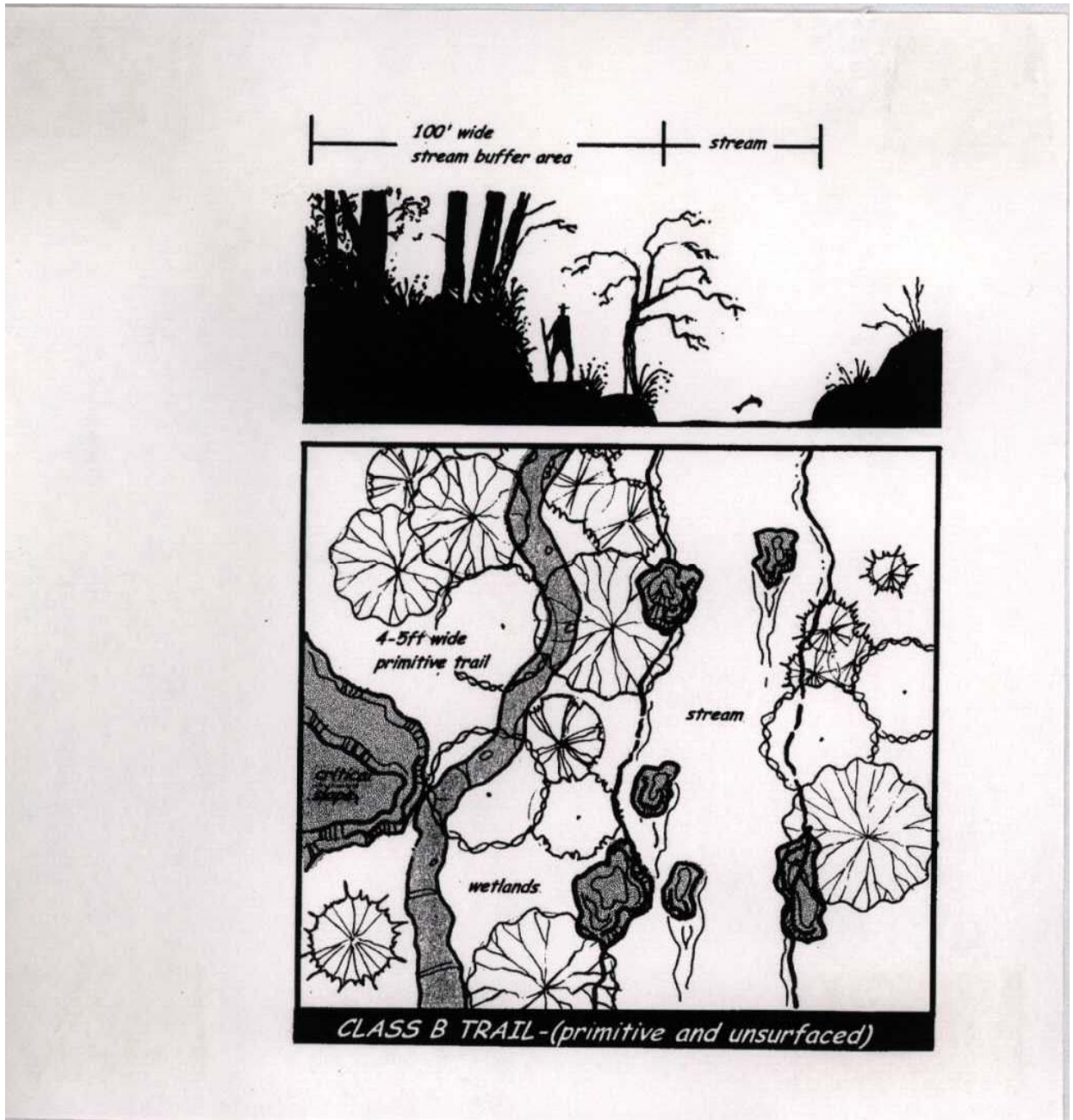
Class A Trail Cross-section

100' wide stream buffer area | stream



CLASS A TRAIL-(ADA and bicycle accessible)

Class B Trail Cross-section



Trail Locations

If possible, trails should be located near the water course within the County's designated stream buffer areas. Stream buffers include a 100 foot buffer along all perennial streams and non-tidal wetlands which are contiguous to the perennial streams. Stream buffers are also located along intermittent streams in water supply protection areas, and include the limits of the floodplain in water supply protection areas and other rural land. All the greenway segments proposed in this section are planned to be located along water areas designated as perennial streams. There will be many locations along rivers and streams where, due to constraints such as topography, soil types, wetlands, habitats or an owner's unwillingness to make available needed property, a trail will have to deviate away from the water body in order for a contiguous path to be provided. It is likely that most trails in the County will need to meander back and forth from the stream or river in order to avoid these constraints. In some cases, constraints may be such that a trail can not be constructed in certain sections. Trails should not be built on critical slopes (slopes 25% or greater), non-tidal wetlands, or areas identified in the Critical Resources Inventory as areas not to be disturbed.

The location of many trails may not allow large buffer areas to be provided between the greenway trail and adjacent property. In these cases, plantings may be needed to provide privacy for adjacent landowners. Plantings may also be used to improve unsightly views, or protect areas under threat of erosion. Adequate barriers or buffers are an important assurance to adjacent landowners that development of the greenway will not have a negative impact or in any way endanger their properties. Site-specific barrier decisions should be made as land and easements are acquired. Existing natural barriers should be used to the greatest extent possible.

Below are the recommended trail types for the various greenway segments along streams/rivers. These recommendations are conceptual in nature and the exact type and location of the trail provided will ultimately depend on the community, topography and resources available (See Maps):

RIVANNA RIVER:

North/East Side

- From Fluvanna County west to a tributary stream located just east of State Farm Boulevard (Class B trail--North side of River).
- From a point near Overlook Apartments to Pantops Shopping Center property (Class B trail--North side of River).
- From Pantops Shopping Center north to Darden Towe Park (Class A trail--East side of River).
- From Darden Towe Park to Key West Subdivision (Class B trail--East side of River).
- From Meadow Creek Parkway/Powell Creek to the South Fork Rivanna Reservoir Dam (Class B--North side of River).

South/West Side

- From Milton Airport west to Interstate 64 (Class B trail--South side of River).
- From Pen Park to Route 29 (Class B trail--West and South side of River).
- From the South Fork Rivanna Reservoir boat launch to a point 1200' south (Class A & B trails-- South side of River).
- From a point east of the Earlysville Road Bridge to the Ivy Creek Natural Area (Class B trail--South side of River).

JACOB'S RUN/NORTH FORK RIVANNA RIVER:

- Jacob's Run and the North Fork Rivanna River from Chris Greene Lake to eastern boundary of the Hollymead Development Area, Pritchett Lane (Class B trail).

MOORE'S CREEK:

- From Route 20 west to Biscuit Run (Class B trail--South side).
- From Biscuit Run to Old Lynchburg Road (Class A trail--South side).
- From Old Lynchburg Road to Sunset Avenue (Class B trail--South side).
- From Sunset Avenue to Stribling Avenue (Class B trail--North side--City property).
- From a point west of the Route 29/250 Bypass to the Ragged Mountain Reservoir (Class B trail--North side).

MEADOW CREEK:

- From the Rivanna River (Pen Park) to Brookmill Subdivision (Class B trail--portions of trail in the City)

BISCUIT RUN:

- From Moore's Creek to a point located near the Lake Reynovia Subdivision. (Class A trail).
- From the Lake Reynovia Subdivision to the southern boundary of the Neighborhood 4 and 5 Development Area (Class B trail).

POWELL CREEK AND TRIBUTARY (HOLLYMEAD):

- From the South Fork Rivanna River to Lake Hollymead and Jefferson Village (Class B trail).

POWELL'S CREEK (CROZET):

- From Jarmans Gap Road/Orchard Acres to Crozet Avenue (Class B trail).

LICKINGHOLE CREEK:

- From the Lickinghole sedimentation basin to Brookwood Subdivision (Class B trail).

SLABTOWN BRANCH:

- From Crozet Avenue west to the Brownsville/Henley School complex (Class B trail).

PARROT BRANCH:

- From Beaver Creek Reservoir west to Crozet Elementary (Class B trail).

JAMES RIVER:

- From Fluvanna County west to Nelson County (Class B trail).

Recommendations:

Minimize the size and scale of trails in most areas (Class B trails) to reduce the impact on the natural environment, surrounding properties and contain construction and maintenance costs.

Provide class A trails where ADA and bicycle accessibility is desired.

Locate trails within the County's designated stream buffer area and provide a buffer between the trail and adjacent properties when possible. Use existing natural barriers to the greatest extent possible.

Provide barriers and/or buffers when necessary to delineate the edge of the right-of-way or easement, especially where natural barriers do not establish a logical separation.

Do not build trails on critical slopes, wetlands or areas identified in the Critical Resources Inventory.

River/Stream Crossings

Due to the high costs associated with construction of pedestrian bridges, in all cases crossing of major water bodies will utilize existing bridges. Steps or ramps should be constructed to allow access from the greenway to the bridge. Bridge design (i.e. striping or pedestrian barrier) may have to be altered to facilitate safe pedestrian crossing. Use of the following bridges is recommend to facilitate the crossing of a water course (See Maps):

- North Fork Rivanna River - Route 29 Bridge (Seminole Trail)
- South Fork Rivanna River - Route 29 Bridge (Seminole Trail)
- Rivanna River - Route 250 East (Free Bridge) (Richmond Road)
- Rivanna River - Route 729 Bridge (North Milton Road)

- Moore's Creek – Route 742 Bridge (Avon Street Extended)
- Moore's Creek - Route 781 Bridge (Sunset Avenue)
- Moore's Creek - Route 780 Bridge (Old Lynchburg Road)
- Moore's Creek - Route 20 South Bridge (Scottsville Road)

Small bridges to cross feeder streams may also be required, especially along the Rivanna and James Rivers. Prior to constructing a bridge over a feeder stream, alternatives to providing the bridge must be explored. This may include the routing of the trail along an existing road or sidewalk system.

Recommendations:

Use existing bridges to cross major water bodies in lieu of constructing a pedestrian/bicycle bridge.

Prior to constructing a pedestrian/bicycle bridge over a feeder stream, alternatives to a bridge crossing must be thoroughly explored.

Off-River Trails (Providing a Contiguous Greenway System)

Because of the topography along various water courses and/or other types of constraints, it is either impossible or very costly to construct a trail. In these areas, an off-river trail system will be needed for a contiguous greenway system. Off-river trail connectors may utilize sidewalks, asphalt pathways, existing rights-of-way, easements, etc. These areas are identified as “areas for further study” on the concept map and include (See Maps):

- Woolen Mills to the Thomas Jefferson Visitors Center area (Moore's Creek).
- Fontaine Avenue Research Park area (Moore's Creek).
- Crozet Avenue Area (Powell's Creek/Slabtown Branch).
- Lickinghole Sedimentation Basin area (Lickinghole Creek).
- Rivanna Reservoir/Woodburn Road area (Rivanna River).

Recommendation:

Work with the Greenway Advisory Committee and property owners within identified “study areas” to develop an off-river trail system that will allow for construction of a continuous greenway system.

Trail Access Point Classifications

Access points should follow the hierarchy presented below.

G1 - public parking-facilities such as restrooms, picnic areas, etc.-possible boat access.

G2 - public parking-no major facilities-possible boat access.

G3 - neighborhood access-parking/other facilities possible-public or private access.

Major Public Access Points (G1) are to be located at established activity centers such as parks where facilities such as parking areas, drinking fountain, rest room facilities, trash receptacles, etc. are presently provided. They provide a full range of facilities and services.

Minor Public Access Points (G2) are to be located at areas where G-1 amenities such as restrooms, water fountains, picnic areas, etc. are not feasible. These access points can be located at schools, offices or at major commercial areas. They provide parking, trail access and possibly boat access opportunities.

Provide Smaller **Neighborhood Access Points (G3)** at residential developments. The provision of facilities such as parking, picnic tables, etc. should be determined by the developer/neighborhood association. These access points may be either public or private. If the access is private then the County would not maintain the area. It is expected that as new neighborhoods are developed along the greenway system, additional Neighborhood Access Points beyond what is identified on the Greenway Concept Map will be provided.

Trail Access Point Locations

Distance between access points should not exceed 2 miles at any point along the trail, if possible. Public access points should be located at various intervals to allow hikes of various lengths. Future and existing residential and larger commercial developments adjacent or nearby a proposed greenway section should be encouraged to provide access to the greenway trails. Existing and planned bicycle routes, sidewalks and other off-river type trails should connect to access points when feasible. In some cases, access points will not be located adjacent to the greenway system. In these cases, an off-river trail will be utilized to access the greenway. Also, access points that serve an ADA, and bicycle-accessible trail (Class A) should have a similar type trail that provides a connection.

Recommended locations for access to the greenway system include (See Maps):

RIVANNA RIVER:

G-1 Access Points

Darden Towe Park

Pen Park

Ivy Creek Natural Area

G-2 Access Points

Pantops Shopping Center

State Farm Insurance Company Office Building

Peter Jefferson Place

Milton Boat Landing
Rivanna River Water Treatment Plant property
Polo Grounds Road (Route 643 at Route 29)

G-3 Access Points

Glenmore
Key West
Riverrun
Dunlora
Carrsbrook/Northfields

University of Virginia Airport

MOORES CREEK:

G-1 Access Point

Azalea Park (City-will need to cross Old Lynchburg Road Bridge to access the south side of Moores Creek)

G-2 Access Points

Ragged Mountain Reservoir
Fifth Street Office Building
Avon Street Area
Quarry Park (City-will need to cross Route 20 bridge to access the south side of Moore's Creek)
Woolen Mills Area

G-3 Access Point

Country Green
Fontaine Avenue Research Park

JACOB'S RUN/NORTH FORK RIVANNA RIVER:

G-1 Access Point

Chris Greene Lake

G-2 Access Point

Towers Land Trust/Pritchett Lane

G-3 Access Points

North Fork Business Park/Camelot Subdivision
Towers Land Trust

MEADOW CREEK:

G-2 Access Point

Seminole Square

BISCUIT RUN:

G-2 Access Point

Southern Parkway Bridge area

G-3 Access Points

Mill Creek North

Lake Reynovia

POWELL CREEK (HOLLYMEAD):

G-2 Access Points

Hollymead/Sutherland Schools

Meadow Creek Parkway/ Powell Creek Bridge area

G-3 Access Point

Jefferson Village

Lake Hollymead Dam

POWELL'S CREEK (CROZET):

G-2 Access Point

Orchard Acres Park area

PARROT BRANCH:

G-1 Access Point

Beaver Creek Reservoir

G-2 Access Point

Crozet Elementary

SLABTOWN BRANCH:

G-2 Access Point

Henley/Brownsville School Complex

LICKINGHOLE CREEK:

G-3 Access Point

Western Ridge/Brookwood Subdivisions

JAMES RIVER:

G-2 Access Points

Town of Scottsville

Howardsville

Hatton Ferry

Warren Ferry

Recommendations:

Work with existing commercial and office property owners to explore opportunities to provide major access points to the greenway. Have the commercial areas and trail promote one another. Encourage commercial property owners to provide orientation of some uses such as restaurants toward the river.

Encourage larger new residential and nonresidential developments to include greenway access points in their development plans.

Access points should be located at various intervals throughout the trail system to provide a variety of hiking opportunities.

Trail Facilities and Standards

BOAT ACCESS: Provide boat access at appropriate locations along the Rivanna and James River. Boat access may be provided at any public access point; however, the following locations should be targeted for the provision of boat access or the improvement of an existing boat access.

- Rivanna Reservoir*
- Darden Towe Park
- Route 29 at South Fork Rivanna
- Milton Airport
- Milton*
- Hatton Ferry*
- Warren*
- Scottsville*
- Howardsville*

*Boat access currently provided.

PARKING AREAS: Provide parking areas at public trail access points (G1 & G2;G3 optional). The primary design consideration for a parking area is simplicity. The parking area should harmonize with its surroundings, be a functional space with a clearly understandable circulation system. The lot should also have clearly marked spaces and a safe entrance and exit coordinated with traffic flows from adjacent roadways. Handicapped parking spaces need to be provided. In commercial areas, parking can be provided on the existing lot if excess parking spaces exist. New parking areas should only be constructed in cases where an existing parking area can not be utilized.

BENCHES: When designing or purchasing a bench, consider user comfort, simplicity of form and detail, ease of maintenance, durability of finish, and resistance to vandalism. Provide benches primarily at major accesses and scenic overlooks, rather than along the trail to minimize disturbance along the trail corridor. Site benches on an opportunistic basis.

PICNIC AREAS: Site picnic areas at major access points (G1) where they can provide for the maximum comfort and enjoyment of the user. Because of their relative large size and high level of activity, picnic areas should be set back sufficiently from circulation pathways so they will not interfere with activities on the trail.

SIGNAGE: The role of the trail signs is to aid and instruct users. Signs are of three types: 1) regulatory; 2) warning; and 3) guidance. Generally, regulatory signs give the operational requirements of the trail such as rules of the trail (i.e. no use after dark, no motorized vehicles-bicycle yield to pedestrians). Warning signs indicate existing or potential hazardous conditions on the trail such as significant grade change and changes in surface conditions. Guidance signs provide trailside information to orient the trail users geographically. These signs can be both directional and informational. Directional signs often point out nearby support facilities and local

points of interest. Informational signs include distance markers as well as “you are here” signs which orient the user. These signs should also indicate the milepost and distance to the next access trail and estimated time and distances of various hikes. Informational signs can also serve an interpretive role, pointing out elements like historic sites, locations of historic events, and areas of ecological significance. Trails are transportation corridors, and therefore recognizable transportation signs should be adapted for trail use. Although trails should borrow the conventional highway signs, it is not necessary to erect large highway signs on the trail. The scale of the trail is much smaller, so smaller signs are appropriate.

Recommendations:

Provide facilities on an opportunistic basis and in a manner consistent with the standards in this section.

Provide boat access at appropriate locations, as feasible.

Provide parking as necessary and feasible at major trail access points.

Greenway Partners

Possible partners that can provide assistance in implementing the County's greenway system include:

Rivanna Trails Foundation - The Rivanna Trails Foundation is a non-profit organization that is dedicated to the development, maintenance and protection of greenway trails in the area. The County will rely heavily on this organization for the development and implementation of the greenway system.

Local Development Community - Developers may increase the marketability of their homes as well as providing a valuable amenity by contributing to the greenway system through dedicating land and constructing trails.

Private Landowners - Any landowner whose land (or part of it), because of its location and condition, might be included in a greenway could play an important role in contributing to the creation of the network. Landowners can protect their land through a variety of voluntary methods, the most common of which is a conservation easement. Easements may provide permanent protection and may be tailored to the landowners needs and wishes. Also, land owners may wish to donate or sell their land for the establishment of the greenway.

Friends of the Trail Groups, Neighborhood Groups, Church Groups, Garden Clubs, Girl and Boy Scouts - These groups may provide many services such as: 1) physical labor performed through an "Adopt a Trail" program- (i.e. litter cleanup, brush cutting, minor bridge repair, and even construction of support facilities such as benches, picnic tables and kiosks); 2) fund raising to pay for trail construction and structures; and 3) developing maps, news letters and other publications to educate users and improve the quality of their experience on the trail.

Citizens for Albemarle - Citizens for Albemarle is dedicated to protecting and enhancing the local environment and can provide assistance in the location of trails to minimize impact on environmental resources.

Preservation Alliance of Virginia -The alliance is a statewide organization whose membership is composed of local organizations concerned with the protection of historic and natural resources. This group can provide the County information on areas of historic significance and possible preservation techniques.

Virginia Outdoors Foundation - The Virginia Outdoors Foundation was created by the General Assembly in 1996 to focus private philanthropy on the preservation of Virginia's open space lands, including its natural, scenic, historic and recreational areas. The foundation accepts open space easements and gifts of land, money and securities, encourages development of public policies supporting conservation efforts, and provides assistance to property owners who wish to protect their land. The foundation can be used to provide technical assistance in the formation of a land trust for greenway land or land donated to the foundation may be included in the greenway system.

Virginia Department of Historic Resources - The Virginia Department of Historic Resources is the state agency responsible for the identification and protection of Virginia's historic, architectural and archaeological resources. The department administers an ongoing statewide survey to identify historic resources, encourages public participation in efforts to preserve these resources and nominates properties to the Virginia Landmarks Register and the National Register of Historic Places. This department can provide the County technical assistance in the identification and preservation of resources within the greenway system.

Virginia Department of Forestry - The Department of Forestry manages over 50,000 acres of forest land around the commonwealth. It also prepares management plans for landowners, which include a description of timber, a map and recommendations for management, wildlife and aesthetic objectives. In addition to these components, such plans take into account possible recreational uses. The department can assist the County by suggesting the possible incorporation of greenway trails on identified properties.

City of Charlottesville - The County can work with the City in preparing and applying for grants for the funding of the greenway system.

U.S. Department of Labor - Summer youth employment program can provide labor.

Effect on Property Values and Crime

The most comprehensive study to date that refutes the negative impact of trails is "The Impacts of Rail-Trails" study. This study looked at the effects of trails in three diverse areas across the country. Overall, landowners indicated that they used the trails frequently. For example, in the East Bay region near San Francisco, 99 percent of the neighbors living along the suburban Lafayette/Morago use the trail (Source: Moore-The Impact of Rail-Trails). A study of Seattle's Burke-Gilman Trail shows similar results with adjacent owners making frequent use of the trail. This study points out that two of the trail's most vocal opponents now believe the trail is the best thing that ever happened to the neighborhood (Source: Seattle Engineering Department and Office for Planning, "Evaluation of the Burke-Gilman Trail's Effect on Property Values and Crime").

The Burke-Gilman study and a study of trails in Minnesota specifically addressed crime. Both studies showed that landowners' concerns about crime diminished once the trail was established. The studies also refuted the idea that trails foster crime toward trail neighbors; the incidence of crime was actually lower in homes located on the trail versus those in surrounding neighborhoods (Source: Seattle Engineering Department and Office for Planning, "Evaluation of the Burke-Gilman Trail's Effect on Property Values and Crime and Trails for the Twenty-First Century").

Methods of Obtaining Land

The following describes in more detail the most common methods of obtaining land which could be used to implement the Albemarle County greenway network.

Purchase at Full Market Value - The cost of buying land at full market value is prohibitive; however, the County or a land trust may consider buying certain critical segments that would allow the connection of the greenway system.

Bargain Sale - A landowner may transfer title of land or a partial property interest, at a price below market value. Generally, a landowner obtains tax benefits as well as direct cash for this transaction. If the organization buying the property is tax-exempt, the land owner may be able to take a charitable contribution deduction for the difference between the actual sale price and the fair market value of the property.

Donation - This is the easiest method of transferring land, as it requires no cash outlay on the part of the recipient land trust or County, and the property can change hands with relative speed. A donation offers the greatest tax benefits to the owner.

Bequest - An individual landowner may wish to consider making a bequest of property in a will, which allows the landowner full use of the land during his or her lifetime.

Conservation Easement - A conservation easement is a legal agreement a property owner makes regarding development of his or her property. Landowners who grant conservation easements make their own choice about whether to open their land to the public. Some landowners can convey certain public access rights, such as allowing fishing or hiking in specific places. Others may not convey public access rights. Some easements may simply protect a scenic view, or wildlife or plant habitats. Granting an easement may result in tax savings.

Sources of Greenway Funding

The following is a list of possible funding sources:

- **County's Capital Improvement Program** - The Capital Improvements Program (CIP) serves as the major financial planning guide for County expenditures towards capital facilities and equipment over a five-year period.
- **Intermodal Surface Transportation Efficiency Act (ISTEA)** - The ISTEA recognizes the transportation value of bicycling and walking and offers mechanisms to increase consideration of bicyclists' and pedestrian needs. The ISTEA offers significant to enhance local pedestrian and bicycle programs with federal aid funding. Federal funds must be matched with 20% from local funds. The County has received an ISTEA grant for the

construction of the greenway trail from Free Bridge to Darden Towe Park.

- **The National Recreational Trails Fund (Symms Act)** - The Symms Act establishes a program for allocating funds for recreational trails and trail related projects.
- **Surface Transportation Program (STP) Funds** - STP funds may be used for either the construction of bicycle transportation facilities and pedestrian walkways, or non-construction projects (such as brochures, public service announcements, and route maps).
- **Virginia Environmental Endowment** - Grants are available for a variety of studies, public participation, and design in the areas of land management, water resource management, local environmental improvement, and environmental law and public policy. Other Virginia Localities have received grants for greenway planning.
- **Fund Raising Campaign** - The County or other organization can initiate a fund raising campaigns to pay for the construction of the trail, trail structures like bridges, and amenities such as trailside rest areas.

Maintenance

COST ESTIMATES

Construction of Proposed Trail System

CLASS A TRAILS: 16,159 linear feet x \$12 per linear foot=\$193,908*

CLASS B TRAILS: 263,208 linear feet x \$3 per linear foot=\$789,624*

Bridges, Steps and Ramps: \$15,000 x 6 bridges=\$90,000*

*(These costs were estimated assuming that the County would entirely fund the construction of the trail system. While it safe to assume that the County will have to contribute funds to the construction of the trail, it is expected that many of the trail segments will be funded through grants and much of the labor will be provided by volunteers/civic groups).

Maintenance Costs - \$511 per 1,000 linear feet of trail.

Additional Costs may include: 1) Land Acquisition; 2) Landscaping; 3) Flood Damage; 4) Additional Personnel; and 5) Upgrading Access Points.

Map 2 - 13 Greenway Plan Trail Locations

Map 2 - 14 Greenway Map 1: James River Greenway

Map 2 - 15 Greenway Map 2: Crozet Area

Map 2 - 16 Greenway Map 3: Moore's Creek & Biscuit Run

Map 2 - 17 Greenway Map 4: Rivanna & Meadow Creek

Map 2 - 18 Greenway Map 5: Village of Rivanna

Map 2 - 19 Greenway Map 6: Hollymead & Piney Mountain

