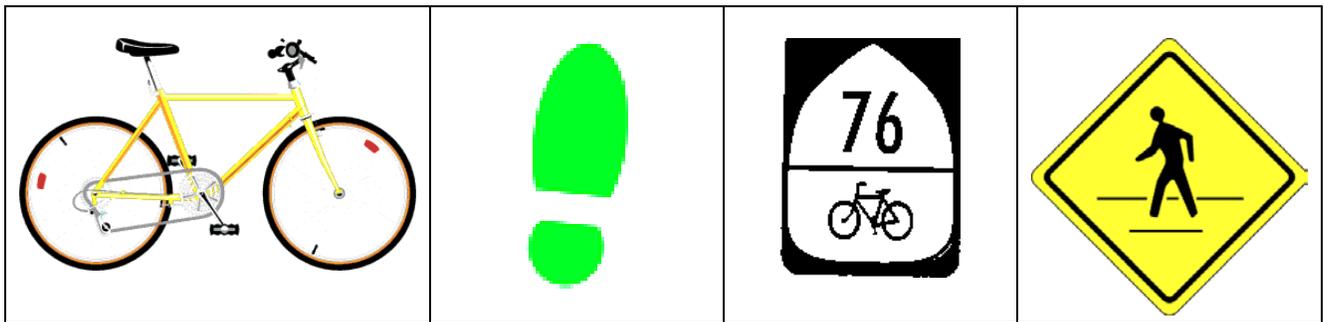


# *Jefferson Area*

## *Bicycle, Pedestrian, and Greenways Plan*



*Prepared by the*

Thomas Jefferson Planning District Commission

*in cooperation with*

Albemarle County  
Fluvanna County  
Greene County  
Louisa County  
Nelson County  
City of Charlottesville  
University of Virginia  
Virginia Department of Transportation  
Federal Highway Administration

**Adopted by:**

**Jefferson Area Bicycling and Walking Advisory Committee - July 24, 2001**  
**Charlottesville-Albemarle Metropolitan Planning Organization - April 12, 2004**  
**Thomas Jefferson Planning District Commission - April 1, 2004**



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## Introduction

The Thomas Jefferson Planning District is fortunate to have a number of features conducive to bicycle riding and walking. Variable topography, a mild climate, enticing destinations, and beautiful views are just some of the reasons it is interesting to walk or ride in and through the region. Numerous bicycle routes, including the TransAmerica Trail (BikeCentennial Route 76) and races carve their way through the area, and the country roads are prized by racers and recreational bikers. The Appalachian Trail, the nation's premiere long distance walking trail also traverses the area, and the region's many old towns and communities are small enough to be conducive to pedestrian travel.

Bicycling and walking offer advantages over using other modes of transportation. Bicycles are cheaper to purchase, license, insure, and operate than motor vehicles, they do not burn fossil fuels, and they do not pollute. Cycling is faster than walking and healthier than riding a bus. Bicycles also take up less space on the road and in the parking lot than cars or even motorcycles. Walking is the cheapest, cleanest and simplest form of transportation, but requires the most amount of time, so distances traveled are generally much shorter than any other mode. Each mode, when coordinated well with transit, has increased range and functionality.

Cycling and walking under current conditions can be risky. One of the factors contributing to unsafe travel is the general lack of facilities in the region. Bicycle riders need bike lanes in the city, roadway bike paths and paved shoulders in the country, and trails for children and others who can't ride with automobile traffic. Existing facilities do not yet provide for continuous bicycle travel between destinations. Bicycle parking facilities are sparse, and frequently do not provide the desired level of security and weather protection. Riding along the existing road network and finding parking, as pleasant as it may seem in a car, is often less than enjoyable or safe for cyclists. Walking can be unpleasant and unsafe in areas without adequate facilities. Sidewalks are often discontinuous, can be overgrown with vegetation, and are a common location for obstacles such as utility poles and street signs. Walking in snowy conditions or at night adds to the potential danger when facilities are not properly maintained. The presence and speed of automobiles is a large safety concern to travelers.

The purpose of this plan is to provide information and guidance on development of facilities and other accommodations to enhance safe bicycle and pedestrian travel within the Thomas Jefferson Planning District. This plan will also satisfy the Virginia Department of Transportation requirement that a roadway be identified in a locally adopted bicycle or pedestrian plan before improvements can be made. Descriptions are given as to how localities can create and maintain safe and efficient walking and biking systems, linking people to the services they need. An overall network is proposed that connects the many communities of the region, and smaller networks proposed for within those communities. The plan also identifies methods for increasing awareness among the public, especially automobile drivers, about the needs of walkers and cyclists. Implementation and funding issues are discussed, as well. This plan offers recommendations for both physical improvements and programs aimed at improving bicycle and pedestrian facilities and safety.

This plan is designed so that it can easily be incorporated into local plans. It begins with a description of existing conditions, demand and need, and possible facility types for both bicycles and pedestrians. What follows are plans for each locality, including reference to any existing plans. Each local plan has a pedestrian and bicycle section, including maps. Links to localities surrounding the planning district are coordinated with those localities' plans.

While the majority of the facilities described and recommended in this regional bicycling and walking plan will be on-road, off-road trails and greenways proposed in the Thomas Jefferson Regional Greenway Plan have been included in this plan. Corridors identified for exploration as potential greenways and trails in this plan will complement the existing and proposed greenways and off-road trails under development in the region. These trails may be for either bicycle or pedestrian use, some may be for both, and others may be restricted to use by horses and all-terrain-vehicles.

Public input was invaluable to the development of this plan. Local system users have the most and best information about conditions and needs. Information and ideas were gathered from committee members, which include citizens and local officials, and public visioning and draft plan review sessions were advertised and held in each locality. Local biking clubs and organizations were invited to the meetings, and attendance was fair at each.

Implementation of the recommendations of this plan will provide a coordinated and safe multi-modal system to serve citizens and visitors in the region with access to most common destinations, services within communities, and links between towns, villages, and the Charlottesville urban area.

## Existing Conditions

The Thomas Jefferson Planning District Commission lies in the western piedmont of Virginia, on the eastern foothills of the Blue Ridge Mountains. The region has a temperate climate, beautiful countryside and landscapes, charming small villages and towns, numerous historical, cultural and natural attractions, and is home to approximately 200,000 people. Within close proximity to urbanized areas including Richmond and Washington D.C., the Charlottesville area attracts tourists and recreation seekers who enjoy the region's pleasant country setting with less traffic than the bigger cities. Both a cross-country bicycle route, the TransAmerica Trail, and a cross-country pedestrian route, the Appalachian Trail, cross the district, which is a rather unique situation.

The region is home to a number of bicycle riders and pedestrians. The facilities that exist to support their choice of travel are well used. In the City of Charlottesville and urban Albemarle County, sidewalks and bicycle lanes are common, and the two modes of travel are used for transportation as well as recreation. Although facilities exist in the urban area, a complete network has not yet been put into place. The City of Charlottesville, along with the Charlottesville Area Bicycling Alliance, is starting a free bike usage program in 2002. In rural areas, most cycling and walking is done within villages and service areas, while some riders commute between and from these communities to Charlottesville and other nearby urban areas. Bicycle facilities in rural areas are almost non-existent, but many cyclists still ride for both work and pleasure in the region.

In general, about five percent of the population rides bicycles or walks regularly to work. Albemarle County conducted a bicycle ridership survey in 1990 that indicated the most popular destination points, type of bicycle trips being taken, and the roads most heavily used. That survey revealed that more people would ride bikes if more facilities existed. The most recent survey, conducted by UVA Civil Engineering student Marty Quinn in 2001, showed the average trip length for commuters was 2.6 miles, and that most riders use helmets. Stores and attractions along BikeCentennial Route 76 report having a good number of cycling clientele.

Local public transit providers CTS and JAUNT allow cyclists to bring their bikes, which means a person can cycle from a rural residence to a transit stop, and connect to any part of the region, then use the bicycle to complete the trip after disembarking transit. Bicycle parking is not provided at most transit stops, but racks can sometimes be found nearby. Bicycle and pedestrian access to stops may be limited by lack of sidewalks or bicycle lanes leading to and from stops. CTS is developing plans to make improvements to its entire service, which will include some provision of racks and lockers for bicycles. Pedestrian connections to transit are good in the inner urban area, but can be lacking elsewhere.

There are public and private bicycle trails at various locations in the region. Many Albemarle County parks offer bicycle trails, with Walnut Creek being perhaps the most popular. The University's Observatory Hill trails are well-known mountain biking facilities. Wintergreen Resort in Nelson County offers mountain biking (down Stoney Creek to Nellysford) with shuttle bus return routes back to the top of the mountain. Wintergreen also rents bicycles and offers more casual riding.

A number of shops in the region offer bicycle sale and maintenance. Clubs exist that create group and social riding opportunities and work to improve cycling conditions and planning. There are a number of scenic or recreational routes that are shown in tourism brochures, and a handful of organized races and charity rides that occur in the warmer months. Charity walks and fun runs also occur regularly, there are organized regular walks for exercise, and many of the regions small towns and historic areas offer walking tours.

There is reference to bicyclists and pedestrians in some local comprehensive plans and related ordinances. Albemarle County and the City of Charlottesville adopted a joint bicycle plan in 1991. Fluvanna County adopted its bicycle plan as part of its 2000 Comprehensive plan. The City of Charlottesville has a new Bicycle and Greenways master plan, and a standing sidewalk plan. Each of these plans are coordinated with this plan, and/or can be updated to coordinate with this regional plan. There are currently no bicycle and pedestrian coordinators on local staffs, other than regional VDOT engineers.

The region is taking the first major step in establishing a comprehensive bicycle and pedestrian network by developing and adopting this plan. One of few regions in the Commonwealth to have a bicycle plan, it will be home to the only regional pedestrian plan. Given this early start, the region should strive to establish a first-class system for inter-modal travel that can be used and admired daily by citizens and visitors.

## Goals and Objectives

### GOAL 1: Provide a comprehensive and coordinated regional bicycling and walking system.

- Objective: Provide safe bicycle and pedestrian access to public facilities, employment and commercial centers, schools, residential areas, and recreation and tourism attractions.
- Objective: Integrate bicycles and pedestrians into planning for transportation and land development.
- Objective: Ensure consistency among local plans, designs, and facilities in the region.
- Objective: Provide adequate support facilities for the travel networks.
- Objective: Encourage developers to include bicycle and pedestrian access in projects.
- Objective: Integrate bicycle and walking networks with transit systems.
- Objective: Preserve and restore walking and bicycle access when roadways expand.

### GOAL 2: Provide safe bicycle and walking networks, convenient for all users.

- Objective: Provide a system that serves expert, intermediate, and novice users of all ages.
- Objective: Provide a system that serves recreational and utilitarian user needs.
- Objective: Create a network easily used by residents, guests, and tourists.
- Objective: Develop a system that meets or exceeds VDOT and AASHTO standards.
- Objective: Minimize potential conflicts between bicycles, motor vehicles, and pedestrians.
- Objective: Provide signage, markings, and physical improvements to ensure safe and easy usage.
- Objective: Provide and maintain riding surfaces free of obstructions, trash, gravel, and other hazards.
- Objective: Develop improved methods of bicycle accident data gathering, analysis, and retrieval.

### GOAL 3: Educate the public of bicycling and walking advantages, facilities, safety and regulations.

- Objective: Develop a comprehensive public information and education program to raise the community's awareness and enjoyment of walking and bicycle riding facilities.
- Objective: Inform public of health and environmental benefits to further entice users.
- Objective: Incorporate maps of facilities into standard transportation and tourist maps.
- Objective: Inform bicyclists and pedestrians of their responsibility in relation to traffic.
- Objective: Educate bicyclists and drivers on the rules of the road and bicycle safety.

### GOAL 4: Establish a system to coordinate steady implementation of the plan.

- Objective: Establish priorities for facility development consistent with funding priorities while maintaining flexibility to develop any segment of the system as opportunities permit.
- Objective: Develop facilities which are cost efficient to construct and maintain.
- Objective: Maintain awareness of and pursue all potential funding sources.
- Objective: Hire staff at each locality or regionally in charge of grant writing, plan coordination, and other activities that will provide the necessary support to implement the plan.

## User Types and Needs

### Bicyclists

Bicyclists can generally be defined as one of three types:

- Group A** are advanced bicyclists with experience who can operate under most traffic conditions. They use a bicycle like a motor vehicle, and want fast, direct access to destinations. They are comfortable riding with courteous vehicular traffic.
- Group B** are basic bicyclists who are casual or new adult and teenage riders with less confidence of their ability to operate in traffic without special provisions for bicycles. They prefer to use low traffic roads or have designated right-of-way.
- Group C** are children and pre-teen riders whose roadway use is initially monitored by adults. They often travel slower and less directly than others, and require designated right-of-way and calm, alert traffic. Where possible, these riders should use off-road facilities for maximum safety.

Cyclists, as vehicles, are allowed full use of the roadway, and must abide by the same rules as motor vehicles. All cyclists require safe space in which to operate, a continuous route between destinations of interest, and appropriate signage to help guide them as they travel. Cyclists need to be visible to automobile traffic, pedestrians, and the signals that control all traffic. Safe zones to stop and rest at are useful to every rider type, since physical strain and emergency situations can arise while riding. Secure parking is essential in any area to make sure the bicycle can provide a return trip.

## **Pedestrians**

Generally, pedestrians are people moving on foot. The pedestrian category also includes people pushing strollers, in wheelchairs, walking dogs, skating, jogging, and carrying packages. They range from toddlers to the very elderly, and include all social groups. Every trip begins and ends as a pedestrian action, so everyone is a pedestrian at regular and various times and places in their lives.

Pedestrians can be grouped in a similar manner as cyclists, but the classifications have less effect on facility design. Adult commuters walk daily to work or college, and require reasonably direct routes to keep travel time down. General pedestrians include all people who are walking through shopping and service areas, from home to a friend's house, and typically on short, purposeful trips. They require safe access to multiple services. Special pedestrians include children and those with impairments. This group may require special facilities or assistance when traveling, and facility improvements for these travelers are generally helpful to everyone.

No matter what type of pedestrian or purpose of trip, however, all pedestrians have basic needs. Safety is the primary need for pedestrians, who are often the most exposed to the dangers of high-speed traffic (including bicycles). A safe system includes designated separate space for pedestrians that is free of potentially dangerous obstacles and keeps the pedestrian visible to other traffic. Width and surface of facilities is important depending on setting. Urban areas should have solid surface walks with adequate room for many users at one time. Rural travel can be accommodated on narrower dirt trails, gravel shoulders, or even paved shoulder facilities since traffic of all types is lower. A directional system is necessary to keep pedestrians aware of where they are and what routes of travel are available to them. Weather protection should be offered to pedestrians since they are exposed while traveling.

The most important tools a pedestrian uses when traveling are sensory organs and brainpower. Only an aware and educated individual will act in a safe manner when presented with the numerous decision points along any given pedestrian route. Information and training programs are essential to any community striving for safe walking conditions. Because automobile traffic is the largest threat to pedestrians, both educational and physical improvements should include drivers.

## Locating Potential Routes

The basic concept of this plan is to connect destinations with bicycle and pedestrian facilities so that use of these modes of travel is possible throughout the region. Routes are selected generally by the density of services and residents they connect and the usage of the corridor connecting them. Connections to existing sidewalks, bicycle lanes, and multi-use trails are also important.

### Locating Bicycle Facilities

The procedure for planning and designing a bicycle facility is:

1. Select the type of bicyclist; A, B or C or a combination of these.
2. Select the roadway design treatment or type of facility.
3. Design the facility in accordance with VDOT, FHWA and AASHTO Guidelines.

Routes are determined and classified based on: connectivity to destinations, roadway geometry and classification, safety concerns (especially vehicular traffic patterns), current usage, and availability of alternative routes.

Continuity: Incomplete street networks can restrict continuous bicycle travel. Bikeways should be located on roads which offer continuity for several miles.

Directness: Bikeways should lead to destinations without wandering too far off course.

Access: Bikeways should be accessible to the intended users.

Traffic Volume and Speed: More of either requires more intense bicycle facilities.

Roadway Width: Road width is vital to bicycle safety, and need depends on vehicular traffic.

Safety: The fact that a particular road poses significant accident potential to bicyclists should not eliminate it from a proposed system. Accident potential can be minimized through facility design. Inexperienced bicyclists will not feel safe on high traffic roadways, but experienced cyclists may prefer these facilities because of directness.

Trucks and Buses: Trucks and large vehicles adversely affect bicycle travel due to their width and aerodynamics. Buses often utilize the right portion of the road and shoulder to pick up riders. Roads containing a high volume of either of these vehicles should be avoided if possible.

On-Street Parking: Where it may be necessary to designate bikeways along roads that allow on-street parking, design measures should be used to minimize conflicts.

Attractiveness: Scenic value is particularly important to recreational bicyclists, and facilities should be located in scenic areas to the extent practical. Greenways should be

encouraged as part of the bicycle network.

Maintenance: Bicycle facilities should be located in areas where they can be regularly and easily maintained. Arterial and collector roads have the best potential for meeting this standard.

#### *Limited access highways*

Freeways can be a part of a bicycle network in Virginia. These roads are usually not signed, and with high-speed traffic can be unpleasant, but they should be considered when developing a bicycle network. Interchanges require special design attention. The Commonwealth Transportation Board sets policy on which limited access highways can be used. In the Thomas Jefferson Planning District, the only highways with restrictions on bicycle travel are Interstate 64 and Route 29 Bypass from .7 miles north of the 29/250 interchange to .5 miles north of the Rivanna River.

### **Locating Pedestrian Facilities**

Pedestrian activity is either intra-community (in-town) or inter-community (between towns). The majority of facilities recommended in this plan will be intra-community, as most people only walk for quick trips, and distances generally discourage walking between towns in the region.

#### Intra-community facilities:

Connect points within a town or residential area and are used regularly by members of a community. Every public service center and commercial activity in a town or village should be within pedestrian reach. A proper network connects all services and residential areas, and provides safe crossing of roads. Intra-community facilities should interconnect and provide numerous options for routes. At least one side of every active street in town areas should have a pedestrian facility. Where possible, pedestrians should be separated from automobile traffic by as large a distance as possible without putting walkers too far from services. Pedestrian facilities are essential near schools.

#### Inter-community facilities:

Connect points between towns or residential areas, or radiate out into the country from a population or service center. These are generally used for recreation, but may be useful to long-distance walking commuters. Roads that are improved for bicycling by adding paved shoulders may become more useful to pedestrians, but this plan is not recommending on-road inter-community facilities due to high-speed automobile traffic

Recommendations from the Thomas Jefferson Regional Greenways Plan for off-road trails include major stream and utility corridors, as well as along major highways and connecting schools with residential areas. It is recommended that off-road trails be used to connect towns and villages to keep travelers away from vehicular traffic.

# Facility Design Guidelines

## Bicycle Facility Design Guidelines

Choosing the appropriate facility type is important. No one type of bicycle facility or highway design suits every bicyclist. Within any given transportation corridor, bicyclists may be provided with more than one option to meet the travel needs of all potential users. The controlling feature in the design of every bicycle facility is its location, whether it is on the roadway or on an independent alignment.

In rural and some urban sections of highway with scattered development, it is recommended that the facility be designed for Group A bicyclists. In developed areas near parks, schools, recreation areas, etc., it is recommended that the facility be designed for Group B and C bicyclists. Separate bike paths are recommended in areas where bicyclists are expected to be children, pre-teen or casual recreation riders.

VDOT, the locality, and other interested parties will work to determine the appropriate facility type at the time of project planning. The Transportation Planning Division will recommend to the road designer the inclusion of a bikeway on a particular project. Discussion will take place at the scoping meeting concerning the expected type of bicyclist that will use the facility and the type of facility to be designed. The district, locality, Transportation Planning Division and other interested parties will provide input. The roadway conditions will be examined for potential problems specific to bicyclists. Three sets of pertinent plans, profiles and typical sections on appropriate projects are to be provided to the Location and Design Bicycle Facilities Coordinator prior to field inspection. In no case will a bikeway be designed with criteria less than those contained in the VDOT/AASHTO Design Guidelines. See Appendix B for VDOT policy on participation in the development of bicycle facilities.

The Bicycle Compatibility Index (BCI) may be used to help determine proper roadway treatment for bicycle use. The BCI is an emerging national standard, developed by the Federal Highways Administration, for quantifying the bike-friendliness of a roadway. While other level-of-service indices relate to traffic capacity, BCI measures bicyclist comfort level for specific roadway geometries and traffic conditions. Roadways are scored A to F, with A rated as the most attractive for cyclists. Many professionals feel that a BCI grade of C is the minimum acceptable grade for casual cyclists. The Charlottesville Area Bicycle Alliance (CHABA) website at <http://www.homestead.com/chaba> describes the BCI in detail.

The choice of highway design will affect the number and 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 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 experienced and many casual adult riders will use the shoulder for the sake of speed and convenience.

Facilities for bicyclists should be planned to provide continuity and consistency for all users. Children using a path to get to school should not have to cross a major arterial without some intersection controls. Shoulders and bike lanes should not end abruptly and unannounced at an intersection or busy stretch of highway.

Measures must be taken to ensure that a bicycle facility is designed for safety and convenience. In order to maintain consistency in planning and development of facilities, this plan recommends using the guidelines set forth in VDOT's *Bicycle Facility Guidelines*, the AASHTO *Guide for the Development of Bicycle Facilities*, and Federal Highway Administration's *Selecting Roadway Design Treatments to Accommodate Bicycles*.

The following are the four types of facilities described in AASHTO and VDOT guidelines, and locations where they may be appropriate.

### **Shared Roadways**



Most bicycle travel in the United States today occurs on streets and highways without bikeway facilities. In some instances, a community's existing street system may be fully adequate for efficient bicycle travel and signing and striping for bicycle use may be unnecessary. In most cases, such routes should only be designated as bikeways where there is a need for enhanced continuity with other bicycle routes.

The most critical variable affecting the ability of a roadway to accommodate bicycle traffic is width. Adequate width may be achieved by providing paved shoulders or wide outside lanes. In order to provide adequate passage for cyclists and vehicles, most roadways should be at least 28 feet wide, with 10 foot vehicular lanes and 4 feet of bicycle space on each side.

*Paved Shoulders* - Paved shoulders should be at least 4 feet wide to accommodate bicycle travel. However, where 4-foot widths cannot be provided, any additional shoulder width is better than none at all. A shoulder width of 5 feet is recommended from the face of guardrail, curb or other roadside barriers. It is desirable to increase the width of shoulders where higher bicycle usage is expected. Additional shoulder width is also desirable if motor vehicle speeds exceed 50 mph, or the percentage of trucks, buses, and recreational vehicles is high, or if static obstructions exist at the right side of the roadway. On rural and urban collector and local roads and streets, provide minimum 4 foot wide paved shoulders when:

- a) Design Year ADT > 2000 VPD, with > 5% total truck and bus usage, or
- b) The route is an AASHTO Approved Interstate Bicycle Route or designated as a bicycle route on a locality's thoroughfare plan and the graded shoulder width is 6 feet or greater.

According to the VDOT *Design Guidelines on Paved Shoulders*: The Materials Division will recommend the pavement design and depth of shoulder courses on a project-by-project basis. All asphalt-paved shoulders should be smooth asphalt surface course. The purposes of paved shoulders are to: reduce accidents and related costs, save maintenance costs, provide “lateral support” for mainline pavement allowing longer service life, provide additional area for bicyclists, pedestrians, and over-width vehicles. Paved shoulders are effective with normal pavement edgeline markings installed to maintain paved shoulder area and are economically justifiable.

### *Wide Outside Lanes*



Wide outside lanes for bicycle use are usually preferred where shoulders are not provided, such as in restrictive urban areas. 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 bicyclists and motorists. In general 14 feet of usable lane width is the recommended width for shared use in a wide outside lane. The gutter pan should not be included as usable width. On stretches of roadway with steep grades where bicyclists need more maneuvering space, the wide outside lane should be slightly wider where practicable (15 feet is preferred). The 15-foot width may also be necessary in areas where drainage grates, raised reflectors, or on-street parking effectively reduce the usable width. With these exceptions in mind, widths greater than 14 feet that extend continuously along a stretch of roadway may encourage the undesirable operation of two motor vehicles in one lane, especially in urban areas, and therefore are not recommended. In situations where more than 15 feet of pavement width exists, consideration should be given to striping bike lanes or shoulders.

### **Signed Shared Roadway**

Signed-shared roadways are designated by bike route signs, and serve either to provide continuity to other bicycle facilities (usually bike lanes) or designate preferred routes through high-demand corridors. Typical treatment is the “Share the Road” signage. The distinction between shared roadways and signed-shared roadways is that signed are those that have been identified by signing as preferred bike routes. VDOT will provide special bicycle route signs only along designated routes, such as Interstate Bicycle Route 76.

## **Bike Lane or Bicycle Lane**



Bike lanes are established with pavement markings and signing and are intended to delineate the right of way assigned to bicyclists and motorists. Designated lanes provide for more predictable movements by bikes and cars. Bike lanes also help to increase the total capacities of highways carrying mixed bicycle and motor vehicle traffic. Urban settings will typically use a bike lane to accommodate bicyclists. Delineating bike lanes is not recommended on rural paved shoulders.

Bike lanes should be one-way facilities and carry bike traffic in the same direction as adjacent motor vehicle traffic. Two-way bike lanes on one side of the roadway are not recommended. In general, on one-way streets, a bike lane should only be placed on the right side of the street.

### *Bike Lane Widths*

The recommended width of a bike lane is 5 feet from the curb to the bike lane stripe on roads without a gutter pan, and 4 feet on curb and gutter roads. Greater bike lane widths are desirable where substantial truck, bus or recreational vehicle traffic exists, or where vehicle speeds exceed 50 mph.

### *Bike Lanes and Turning Lanes*

Bike lanes complicate bicycle and motor vehicle turning movements at intersections. It is preferable to continue the same width of bike lane through the intersection. Locations where a bike lane approaches an intersection, the lane should continue parallel to the left of a vehicular right turn lane.

## **Shared Use Path**



Shared use paths are facilities on exclusive right-of-way and with minimal cross flow by motor vehicles. Users are non-motorized and may include bicyclists, in-line skaters, roller skaters, wheelchair users (both non-motorized and motorized) and pedestrians including walkers, runners, and people with baby strollers and people walking dogs. Shared use paths are most commonly designed for two-way travel. When paths are planned, it is desirable to provide paths on both sides of the roadway to decrease the likelihood of children crossing the road.

Generally, shared use paths should be used to serve corridors not served by streets and highways or where wide utility or former railroad right-of-way exists, permitting such facilities to be constructed away from the influence of parallel streets. Shared use paths should offer opportunities not provided by the road system. They can provide a recreational opportunity or, in some instances, can serve as direct commute routes if cross flow by motor vehicles and pedestrians is minimized. Shared use paths should be 10 feet wide (12 feet for in-line skaters) with 3 feet of side clearance.

### General Design Guidelines for Bicycle Facilities

#### *Roadway Surfaces*

Pavement surface quality and smoothness is important because bicycles do not have as much shock-absorbing capacity as motor vehicles. Standards for materials have not been established because construction details will depend on the soil bearing capacity and other conditions peculiar to the site. Construction joints should be saw-cut to provide a smooth ride. Surfaces should also be skid resistant. Broom or burlap finishes are preferred to trowel finishes. When creating a shared roadway or paved shoulder, the surface material should be smooth, and should not have steep drop-offs or cracks.

#### *Pavement Markings*

Pavement markings may be more useful for bicyclists as compared to road signs since they are more directly within the bicyclist's cone of vision. They may take the form of line patterns, lane lines and transverse lines. Lines denoting travel ways should be 6 inches thick. In addition, word and symbol messages may be used on bike lanes. Lane lines follow normal highway practice. Thermo plastic striping may be slippery when wet. On shared road facilities, a stencil of a bicycle painted on the road surface every so often will help remind drivers that cyclists use the road.

#### *Raised pavement markers*

Raised pavement markers may be used to highlight travel lanes at night or in rain, when visibility is low. If markers exist or are installed along a designated bicycle route, they should be appropriately located and designed so as not to interfere with bicycle travel. VDOT's policy is to not install reflective pavement markers along the outside edge line of a travelway.

#### *Structures*

Bicyclists tend to ride a distance of 32 to 40 inches from the road edge and it is important that the surface be smooth and free of structures. Drain inlets and utility covers that extend into this area may cause bicyclists to swerve, and reduce the usable width of the lane. Parallel bar grate inlets are particularly dangerous to bicyclists. These should be replaced by bicycle-safe inlets. Curb inlets should be used on all new construction and should replace old grates wherever possible on existing roads. Where immovable structures exist, the bike lane width may need to be adjusted accordingly.

### *Rumble strips*

Where installed to discourage or warn motorists they are driving on the shoulder, are not recommended where shoulders are used by bicyclists unless there is a minimum clear path of 1 foot from the rumble strip to the traveled way, 4 feet from the rumble strip to the outside edge of paved shoulder, or 5 feet to adjacent guardrail, curb or other obstacle. If existing conditions preclude achieving the minimum desirable clearance, the width of the rumble strip may be decreased or other appropriate alternative solutions should be considered. Rumble strips should not be continuous, but should have a pattern of spaces that allow cyclists to avoid objects (broken glass, road damage, disabled vehicles) that may be in the paved shoulder lane. The width of these spaces should be increased when truck or bus traffic is frequent.

### *On-Street Parking*

When there is on-street parking on roadways, the bicycle riding location should be between parked cars and moving motor vehicles. 12 feet of combined bicycle travel and parking width should be the minimum for this type of shared use. Striping should be provided to delineate the parking stalls. Bike lanes should never be placed between the parking lane and curb line.

### *Intersections*

The design of intersections is crucial because of the potential conflicts that may arise due to the relative difference in speeds of motor vehicles and bicycles and the low visibility of bicycles. Bike lane pavement markings generally should not be provided through intersections or crosswalks, and may drop off just before the intersection. Turn lanes create special problems, and treatments can be found in design manuals. Traffic signals at intersections should be checked to ensure they accommodate cyclists. Camera mounted traffic signal switches are recommended over in-ground loop detectors.

### *Interchanges*

Interchanges have considerable traffic movements and require special treatment to accommodate bicycle travel. Options for establishing bicycle facilities in and through highway interchanges are included in facility design manuals. Where possible, routes that cross limited access highways and do not have interchanges should be used.

### *Railroad crossings*

Railroad crossings present a particular hazard to the narrow wheels of bicycles, and should be treated to improve bicycle safety. Rubber, concrete, or wood placed between the tracks and the pavement eliminate the dangerous gaps that can trap tires and will provide a smoother travel surface. Tracks at other than right angles to the roadway present a larger hazard and should be treated first.

### *Traffic Control Signs*

Signs should be located sufficiently in advance of the conditions they indicate to permit the bicyclist to take the necessary actions. Share the Road signs should be located along popular bicycle routes, near playgrounds or schools, and along segments of road without designated lanes and with poor geometrics. Warning signs should be kept to a minimum so that the possibility that they will be ignored due to overuse is reduced. Signs should point out when a bicycle route turns.

### *Lighting*

Bicycle routes used at night may need lighting. Lighting for bikeways on existing roads can be served by the existing lighting system. All lighting should comply with local zoning ordinances.

### *Traveler facilities*

For bikeways located on existing rights-of-way, restroom facilities for motor vehicles can be shared by bicyclists. Restroom facilities should be expanded as bicycle use increases. Water fountains, rest stops, and trash cans should also be available to cyclists.

### *Bicycle Parking*

Racks and other parking accommodations should be provided at destinations. Parking should be provided at major trip attractors and park and ride lots. Parking provisions should be made for both long-term or commuter parking and short-term or convenience parking. Bicycle lockers or attended storage areas are suitable for commuter parking. Bicycle parking should be weather sheltered as much as possible and located so that bicycles will not be damaged by motor vehicles. Parking facilities should not interfere with normal pedestrian or vehicle traffic. (See Appendix G)

### *Transit*

Coordination of bicycle networks and facilities with public transit considerably increases the range of possible use of bicycles. Most area transit services are now equipped to carry bicycles, either on racks (CTS) or inside the vehicle (JAUNT). Transit stops could be equipped for bicycle parking, as well, particularly major stops and transfer points.

### *Park and Ride Lots*

These commuter lots should be accessible to cyclists, and should also be equipped with bicycle racks. Service to and from these lots will allow cyclists to make shorter rides to connect with longer distance travel options. Provision of this opportunity could reduce the need for urban area parking lots as more people can cycle to work, especially if transit services the park and ride lots.

## **Pedestrian Facility Design Guidelines**

### **Sidewalks**

The sidewalk is the pedestrian right of way, and should be treated in the manner that roadways are treated for vehicles. A sidewalk should have a smooth, regular surface, be free of obstacles, and provide a safe and logical travel route for pedestrians. Walkways must be maintained regularly to remove overgrowing vegetation, potholes or cracks, or crumbling sections. Water should not puddle substantially along a walkway. Sidewalks should exist continuously along at least one side of a street, both sides where necessary.

Public sidewalks include any exterior walkway (surfaced or un-surfaced) in the public right of way intended for pedestrian use, whether raised to curb height, separated horizontally by a parkway, or surfaced for pedestrian use along the shoulder of a roadway. Although most public sidewalks border streets and roadways, pedestrian streets developed in urban areas and public pedestrian easements that do not parallel vehicular ways but are part of a pedestrian circulation network in the public right of way are also included.

The passage along or within a sidewalk or shared use path should be clear of obstructions underfoot, overhead, or in between. Utility obstacles, such as overhead wire poles, street signs, fire hydrants, and other structures should not be placed in the right-of-way. Street furniture should not interfere with walkers. This includes items such as awnings, banners, signs, newspaper racks, mailboxes, water fountains, and telephones. Tree branches and other vegetation should be trimmed back on a regular basis. Minimum clear width of a continuous passage should be 36 inches, or 3 feet.

Where right of way exists, sidewalks should be a minimum of 60 inches, or 5 feet wide. Running slope minimums should match established slopes for adjacent roadways. Cross slopes, like driveway aprons, should be minimized and sloped properly. A buffer between the sidewalk and roadway edge of greater than two feet helps create a pleasant and safe sidewalk experience, especially if the buffer can be planted and used for utilities or other obstacles.

Surfaces should be stable, firm and slip resistant. Gratings in public sidewalks should have spaces no greater than ½ inch wide in the direction of traffic flow, and should not be located in the continuous passage. Public sidewalks should be raised to curb height or separated from vehicular ways by curbs, planted parkways, or other barriers, which should be continuous except where interrupted by driveways, alleys, or connections to accessible elements. Unseparated public sidewalks may be constructed along undeveloped frontages of rural roadways.

In rural villages and towns, as well as along country roads, crushed gravel makes a less urban appearance and does not require curb and gutter. Creating a smooth shoulder with this treatment will improve pedestrian conditions with low impact. Paved shoulders installed for improved bicycling conditions on rural roads should help pedestrians as well.

### **Crosswalks**

Marked (painted) crosswalks that identify the pedestrian right-of-way and remind motorists of their potential presence are a basic element of the pedestrian system in urban areas. They should be uniform in position and color throughout a locality in order to provide a consistent pattern of greatest utility to pedestrians and motorists. Crosswalks do not physically separate vehicles and pedestrians, and can give pedestrians a false sense of security.

Any intersection with a traffic signal should have painted crosswalks, and pedestrian controlled or timed signals. Curb extensions, bulb outs, or neck downs reduce the amount of roadway a pedestrian must cross and help reduce the speed of automobile traffic, and should be used at dangerous or busy intersections. Design should keep in mind use by handicapped persons who usually need curb ramps, and may require audible signals and detectable surfaces. Also consider use at night when lighting on roads can create unsafe conditions and design facilities based on amount of pedestrian usage (wider in more urban areas).

Right turns on red present a potential safety concern for pedestrians crossing at intersections, because many motorists do not look for pedestrians as they turn. This is particularly true where traffic volumes are high and pedestrian volumes are relatively low. The potential for disallowing or limiting right turns on red was assessed in this study and discussed at public workshops. Because such limits would have a major impact on traffic flow, there was little support for this concept in urban areas. However, increased enforcement to decrease the "roll-and-go" behavior of motorists combined with increased pedestrian safety education is recommended.

### *Mid-block crossings*

These are painted (or other) crosswalks not located at an intersection. They are most useful in suburban settings with larger blocks, and are best when timing of adjacent traffic signals create consistent gaps in vehicular traffic. Crossing refuges can be created with median strips, or center islands, to provide pedestrians with a safe zone and allow them to cross traffic one-way at a time.

### *Grade separated crossings*

Bridges to carry non-automobile traffic over and under busy roadways might be needed to cross large roadways with relatively uninterrupted traffic flow, such as interstate highways. These facilities physically separate vehicles and pedestrians, virtually eliminating the possibility of conflict between the two. They are much more expensive than conventional crossings. Most design types are overpasses due to the large costs of digging out a roadbed. Underpasses create a more pedestrian friendly and accessible crossing. They can also be useful in urban settings where buildings can act as the risers, and pedestrians cross the road at a second or third floor level. Improper design can lead to inadequately used facilities, inaccessibility, and potential criminal activity, including harm to the roadway beneath or pedestrians as they cross.

### *Interchanges, roundabouts and traffic circles*

These are not usually pedestrian-friendly and should only be installed if proper amenities or alternatives are in place.

### *Railroad crossings*

Sidewalks or asphalt should extend up to the railroad tracks at a crossing point. Where public sidewalks cross rail systems at grade, the surface of the continuous passage should be level and flush with the rail at the outer edge and between the rails. Rubber, wood or asphalt crossbucks should be placed between the rails to ensure smooth travel for pedestrians, and especially wheelchairs and strollers.

### *Curb Ramps*

A public sidewalk curb ramp is required to provide access to and from sidewalks, or continuous passage sidewalk spaces for persons with mobility impairments. This includes users of wheelchairs, canes, crutches, walkers, and persons with perception limitations, such as visual or audio impairments. Pedestrians who have mobility impairments will benefit most from design approaches that minimize physical barriers to travel and maneuverability. Pedestrians with cognitive and sensory impairments should have access to information on the pedestrian environment that is necessary for independent travel. Pedestrians who use crutches are particularly susceptible to cross slope when traveling downhill. Children, whether on foot or wheels, are primary users of sidewalks, and are significantly less able to compensate for cross slope than adults.

### *Transit*

If a person cannot walk to a bus stop and wait for a bus, transit is not accessible to them. Pedestrian accommodations to and at transit stops are vital. All stops should have a hard surface to stand on that is free of puddles. Benches to sit on are useful when time between buses is long. Trees provide shade in the summer, and snow removal at stops helps keep service useful in the winter. Trash cans provided at transit stops will be used by pedestrians, too, helping keep streets and buses litter-free.

# Proposed Bicycle and Pedestrian Network

## **Bicycle Network**

A growing number of area residents and guests ride bicycles on a regular basis. In order to provide for their safety and comfort, roads must be improved region-wide. Within developed, particularly urban and town areas, bicycle lanes should facilitate travel. Parking racks and lockers are necessary at most destinations, including transit stops and Park and Ride lots. Travel between communities along the region's many scenic rural roads can be improved with paved shoulders, shared roadway facilities, climbing lanes, pull-outs, and other features, depending on the amount of use and design of each roadway. Share the Road signage will increase the safety and awareness of all users. Greenways and shared-use trails will interconnect the entire region, complementing the on-road network of facilities to create a useful network joining many destinations.

### *The TransAmerica Trail (BikeCentennial Route 76)*

Interstate Bicycle Route-76 runs across the United States from Yorktown, Virginia to Astoria, Oregon, through the Thomas Jefferson Planning District. VDOT provides signage along the route, and VDOT will provide the necessary design features to facilitate bicycle travel for all proposed projects involving major construction or redevelopment along the route. A recent report to VDOT inventoried conditions along the route and makes specific recommendations, including signage and roadway improvements, for each County.

## **Pedestrian Network**

Residents and guests of the region should be able to safely walk to nearby employment, schools, and services on a regular basis and have access to recreation walking opportunities. Major public facilities should have some form of pedestrian access, and any activity or destination that attracts children should be connected to the pedestrian network. Gaps in any existing networks should be filled as a first priority. Walkways should be part of every new development, and efforts should be made to retrofit streets that need them.

This plan classifies pedestrian facilities as *intra-community* (within a population or service center) and *inter-community* (between population or service centers). Major pedestrian facilities, like sidewalks, are recommended in developed communities of moderate size, including villages, towns, and the urban area. Commercial areas and service centers where automobile traffic is heavy should have sidewalks to keep pedestrians safe and separate. Rural roads and low-density neighborhoods should not require sidewalks, but separate trails or other designated right-of-way is recommended.

## **Greenways and Multi-use Trails**

Greenway trails and other paths are the pedestrian travel method of choice in rural settings. They allow safety from automobiles and provide the proper setting from which to view and enjoy the countryside while walking. Trails should be promoted wherever possible, especially when they connect communities. Establishing routes for trails now will help their development as right-of-way or easements and other needs can be sought before and as land is developed, rather than waiting for development to occur, then attempting to create the trail. Plans for trails are discussed in the separate Thomas Jefferson Regional Greenways Plan.

Many roads in the Planning District have parallel utility corridors suitable for off-road multi-use trails. Primary highways like 29, 250, 15, 6, and 33 should utilize this amenity where possible for the best safety and enjoyment for both bicyclists and pedestrians.

## Albemarle County

This plan represents Albemarle County’s priority pedestrian and bicycle projects for the first quarter of the twenty first century. The intent of this plan is to ensure the safety and comfort of all roadway users, particularly within and connecting developed and developing areas. Albemarle County has a wide variety of community types and settings, and may benefit from many facility types across the spectrum.

### *Existing Conditions*

#### **Bicycle**

Bicycle usage has become increasingly prominent in Albemarle County both for transportation and recreational purposes, particularly for the urban and student population in and around the City and University, and for weekend cyclists throughout the County. Bikeways currently exist on roads such as Hydraulic Road, Rio Road, 5<sup>th</sup> Street/Old Lynchburg Road, and along Fontaine Avenue. Trails for mountain biking are located at Walnut Creek, Ragged Mountain, Ivy, Mint Springs, and Darden-Towe parks, as well as Observatory Hill near the University. Bike racks can be found at some shopping centers and schools, and tourist destinations, like Ash-Lawn along the TransAmerica Trail. The urban area has challenges due to the large size of roads and high volume of traffic, whereas rural areas may suffer narrow roads and high-speed traffic.

#### **Pedestrian**

The urban area of Albemarle County has the majority of the locality’s pedestrian facilities, which include sidewalks along Route 29, Rio Road, and Hydraulic Road, as well as some along neighborhood streets and trails. While a majority of the walkways in the County have been constructed by the private sector in conjunction with land development and VDOT, several have been constructed through County efforts, including walkways on Whitewood Road, Old Brook Road, and Greenbrier Drive. Some asphalt facilities, separate from, but adjacent to roadways, exist along Georgetown Road, Fontaine Avenue, Avon Street, Fifth Street Extended, and Old Lynchburg Road. The rural communities of Scottsville and Crozet have sidewalks. Outside of the urban area and small rural communities, public walking infrastructure is nearly non-existent.

### *Local Plans and Ordinances*

#### **Comprehensive Plan**

Albemarle County has a significant amount of pedestrian and bicycle language in its *Comprehensive Plan* (1996-2016). This includes a desire to “develop a transportation system which employs a variety of modes, including the provision of walkways and bicycle facilities”, and recommends a review and update of subdivision, zoning, and site plan codes to ensure future development occurs in a bicycle- and pedestrian-friendly manner. Other ideas in the plan include establishing a fund for improvements and aligning land use with transportation. Pedestrian and bicycle access improvements are planned to complement and enhance the mass transportation system by improving access to bus stops and places of economic activity.

In 1991, the Albemarle County Board of Supervisors adopted the *Bicycle Plan for the City of Charlottesville and Albemarle County* as an amendment to the Comprehensive Plan (published under separate cover). This plan recommends locations and designs for development of a bicycle network. Routes designated in that plan cover much of the County, and are included in this plan.

In 2001, the County adopted the *Development Initiative Steering Committee (DISC)* report, aimed at determining what style and pattern of development is appropriate for County development areas, also known as the *Neighborhood Model*. The relevant text of that report follows:

The Neighborhood Model proposes a walkable community, with sidewalks and paths provided in new development and a variety of destinations within a five-minute walk for residents. Pedestrian orientation requires a high degree of coordination among the other principles. All elements - density, building placement, street and path connections, and mixture of uses -- must be designed with pedestrians in mind. The result should be a walkable community that reinforces all of the other goals for the neighborhood.

Pedestrian orientation, by definition, is designing neighborhoods at a human scale. Walking is convenient only when all of the elements of development fit the proper dimensions. A true test of walkability is when children can safely walk or bike to school or activities rather than being driven.

Another test is the ability of someone to walk to work. Providing sidewalks is only one part of the picture. Streets must also be connected to offer various routes. Density is needed to provide destinations. Siting parking lots behind buildings gives pedestrians a shorter and safer approach. Trees along streets and in parking lots provide shade and make walking comfortable. Mixed uses place destinations in walking distance of residents. Paths and open space make walking safe and pleasant. As the list below shows, the entire form of the neighborhood determines whether people will find walking useful and pleasant.

In addition to streets, pedestrian paths and bikeways can interconnect areas. They do not have to be vehicular in nature. For example, as shown in the section on parks and open space, open space corridors can link neighborhoods to each other and to other sites. Bus and train routes also provide for connection and, when used, reduce reliance on the single-occupancy vehicle.

#### PEDESTRIAN ORIENTED NEIGHBORHOODS

The following techniques are offered to achieve the goal of having pedestrian-oriented neighborhoods that let residents walk to work, to friends' homes, to parks, to shopping, and to cultural centers.

##### Suggested application of Sidewalks:

- Sidewalks should be provided along all vehicular thoroughfares except high-speed, limited access highways.
- Sidewalks should typically be separated from the roadway by a planting strip, except in commercial areas.
- Sidewalks should typically be provided on both sides of a street, except where there is no development along one side of the street or where topography or vegetation precludes provision.
- Sidewalk widths vary, depending on their use.

Greenways are discussed in the *Natural Resources and Cultural Assets, Open Space Planning* section of the *Comprehensive Plan (1999)*. Albemarle County's objective is to: "Establish a Countywide network of greenway trails for conservation, recreation, transportation, and education throughout Albemarle County, and linked to trails in the City of Charlottesville". The plan describes a 52 mile system of Class A (paved, urban trails which allow bicycles) and Class B (dirt surface, pedestrian only) trails, and includes details of proposed corridors, which are shown on the maps in this document. Maintenance, funding, an advisory committee, and partnership issues are also discussed.

## **Area and Special Plans**

The *Town of Scottsville Comprehensive Plan* (1999) calls for pedestrian oriented commercial growth in the downtown area and development of walking paths to enhance scenic attractions. It also supports needed improvements to the Town's transportation networks and encourages VDOT to include walkways and bikeways in future road improvements. Particular emphasis should be given to connecting the downtown area to the uptown commercial center with walkways and bikeways, and to connecting both to Paulett Town. With a school nearby and elderly residents, the town recognizes the need for pedestrian mobility. Scottsville has a historic walking tour which should be enhanced with proper walking facilities where needed. The recently opened Canal Basin Square project includes a walk along the river levee from downtown to Dorrier Park, and the Scottsville Historic Streetscape enhancement project is improving walkways in the main part of downtown.

The *Crozet Master Plan* (2004) includes

The *Pedestrian-Obstacle Study* (1985-1988) recommends walkway improvements as well as specific recommendations for improving or installing streetlights, crosswalks, signals, intersection channels, signs, bus stops, and other roadway improvements. The *Route 29 Pedestrian Study* includes recommendations for the urban area of Route 29, north of Charlottesville to Airport Road. *The Real Accessibility Study* (1998) performed by TJPDC identifies measures to improve bicycle and pedestrian connectivity to services. Each of these studies focuses mainly on the urban portions of the County.

## Related Ordinances

Albemarle County's *Subdivision Ordinance (1998)* requires sidewalk on one or both sides of the road in developments of 2 units/acre or more, and commercial/industrial areas where necessary.

Albemarle County's *Zoning Code (1998)* seeks to minimize vehicular/pedestrian conflicts at entry and parking areas, has sign regulations to ensure pedestrian safety, and concrete requirements for sidewalks.

Specifically, section 32.7.2.8. spells out County requirements for sidewalks:

“Provision shall be made for sidewalks and pedestrian walkways which will enable pedestrians to walk safely and conveniently between buildings on the site and from the site to adjacent property. When feasible, pedestrian underpasses or overpasses are to be encouraged in conjunction with major vehicular routes. Provision shall be made where appropriate for pedestrian walkways in relation to private and public areas of recreation and open space such as schools, parks, gardens, and areas of similar nature. Connection shall be made wherever possible of walkways and bicycle ways with similar facilities in adjacent developments. All sidewalks and curbs and gutters proposed to be accepted for maintenance by the Virginia Department of Transportation shall be built in accordance with construction standards of the Virginia Department of Transportation and shall conform to the provisions of section 15.2-2021 of the {County} Code. All other sidewalks and walkways shall conform to section 15.2-2021 of the {County} Code and shall be of material, specifications and design approved by the county engineer. Sidewalks and pedestrian walkways may be required on one or both sides of streets to the reasonable satisfaction of the commission or the agent in residential subdivisions of a proposed density of two (2) or more dwelling units per acre and in commercial and industrial developments whenever determined that the same are reasonably necessary to protect the public health, safety and welfare and that the need therefor is substantially generated by the proposed development.”

The Town of Scottsville's *Zoning Ordinance (1996)* requires traffic patterns which minimize hazards to pedestrian traffic, encourages pedestrian access through parking areas to commercial buildings, prohibits any sign which “obstructs free or clear vision, or otherwise causes hazards for vehicular, bicycle or pedestrian traffic by reason of location, shape...”. The site plan section of the ordinance (24.11.2.7) specifically describes sidewalk standards, including inter-building, parcel, and development access, facilities in public and school areas, and possible requirements on both sides of the street in developments of 2 lots per acres density or more.

Samples of bicycle and pedestrian friendly ordinance language can be found in Appendix G.

*Proposed Network and Facilities*

**Bicycle Plan**

Urban Area

Proposed *primary bicycle routes* in the urban area of Albemarle County include:

<b>Route number</b>	<b>Road name</b>
20	Stony Point Road / <b>Scottsville Road</b>
<b>29</b>	<b>Seminole Trail</b>
29 business	Fontaine Avenue
240	Crozet Avenue / Three Notched Rd (Crozet)
250	Richmond Road / Ivy Road
<b>606</b>	<b>Dickerson Road</b>
631	Rio Rd. East-west/ 5th St Extd.
<b>643</b>	<b>Polo Grounds Road</b>
649	Airport Road / Proffit Road
<b>654</b>	<b>Barracks Road</b>
<b>656</b>	<b>Georgetown Road</b>
684	Mint Springs Road (Crozet)
697	Jarman's Gap Road (Crozet)
<b>742</b>	<b>Avon Street Extended</b>
<b>743</b>	<b>Hydraulic Road</b>
<b>780</b>	<b>Old Lynchburg Road</b>
866	Greenbrier Drive (west of 29 to Whitewood)
<b>1315</b>	<b>Commonwealth Drive</b>
1403	Berkmar Drive
<b>1438</b>	<b>Hilton Heights Road</b>
<b>1455</b>	<b>Whitewood Road (replaces Greenbrier connector)</b>
--	<b>Meadowcreek Parkway (proposed)</b>

*(routes not in the adopted 1991 plan are in bold)*

Proposed *secondary*, or *neighborhood level bicycle routes* in the urban area include:

Route number	Road Name
601	Old Ivy Road
<b>643</b>	<b>Rio Mills Road</b>
<b>659</b>	<b>Woodburn Road</b>
780	Old Lynchburg Road
781	Sunset Avenue Ext'd.
<b>851</b>	<b>Dominion Drive</b>
854	Carrsbrook Drive
855	Faulconer Drive
<b>875</b>	<b>Country Green Road</b>
877	Stagecoach Road
1116	Riverbend Drive
1140	South Pantops Drive
1150	Mill Creek Dr.
<b>1340</b>	<b>Pepsi Place</b>
1404	Westminster Road
1407	Bennington Road
1411	Inglewood Drive
1415	Idlewood Drive
1417	Woodbrook Drive
1418	Brookmere Road
1419	Clarke Lane
1421	Elk Drive
1427	Northfield Road / Hillsdale Drive
<b>1118</b>	<b>Peter Jefferson Parkway</b>
<b>1520</b>	<b>North Hollymead Drive</b>
<b>1721</b>	<b>Timberwood Blvd</b>
<b>1720</b>	<b>Timberwood Parkway</b>
<b>1670</b>	<b>Ashwood Boulevard</b>
<b>0302</b>	<b>Massie Road (UVA area)</b>
<b>0302</b>	<b>Copeley Road (UVA area)</b>

*(routes not in the existing 1991 plan are in bold)*

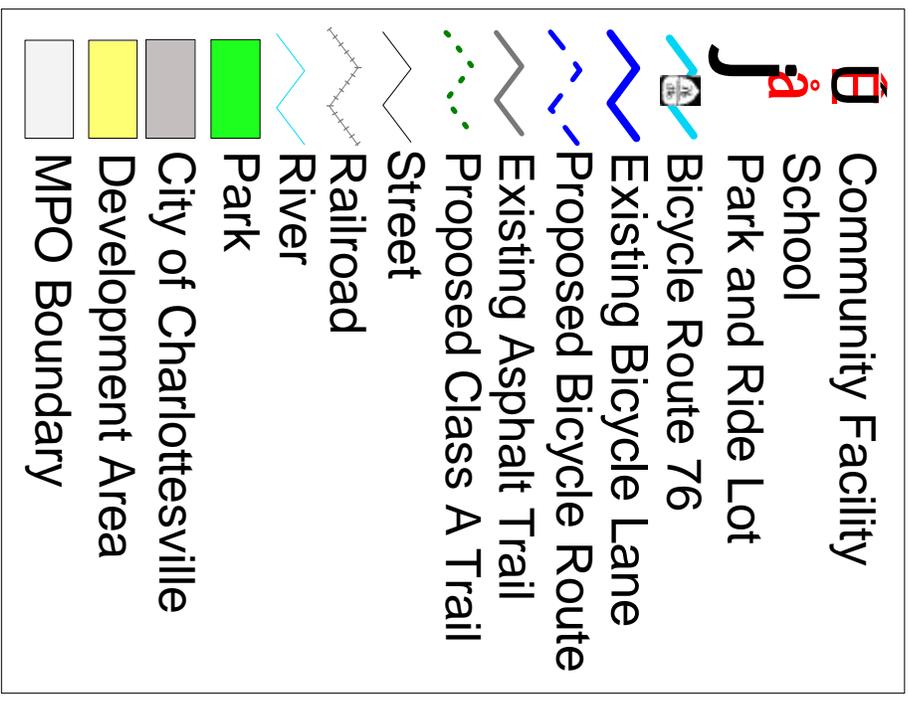
Generally, any road or street in the urban area or a designated development area should be considered for bicycle facilities, since these areas will have the densest population and commercial, social, and cultural activity.

Bike Route 76 should be a priority since it is an advertised biking route, and generally has more bicycle traffic than other rural routes.

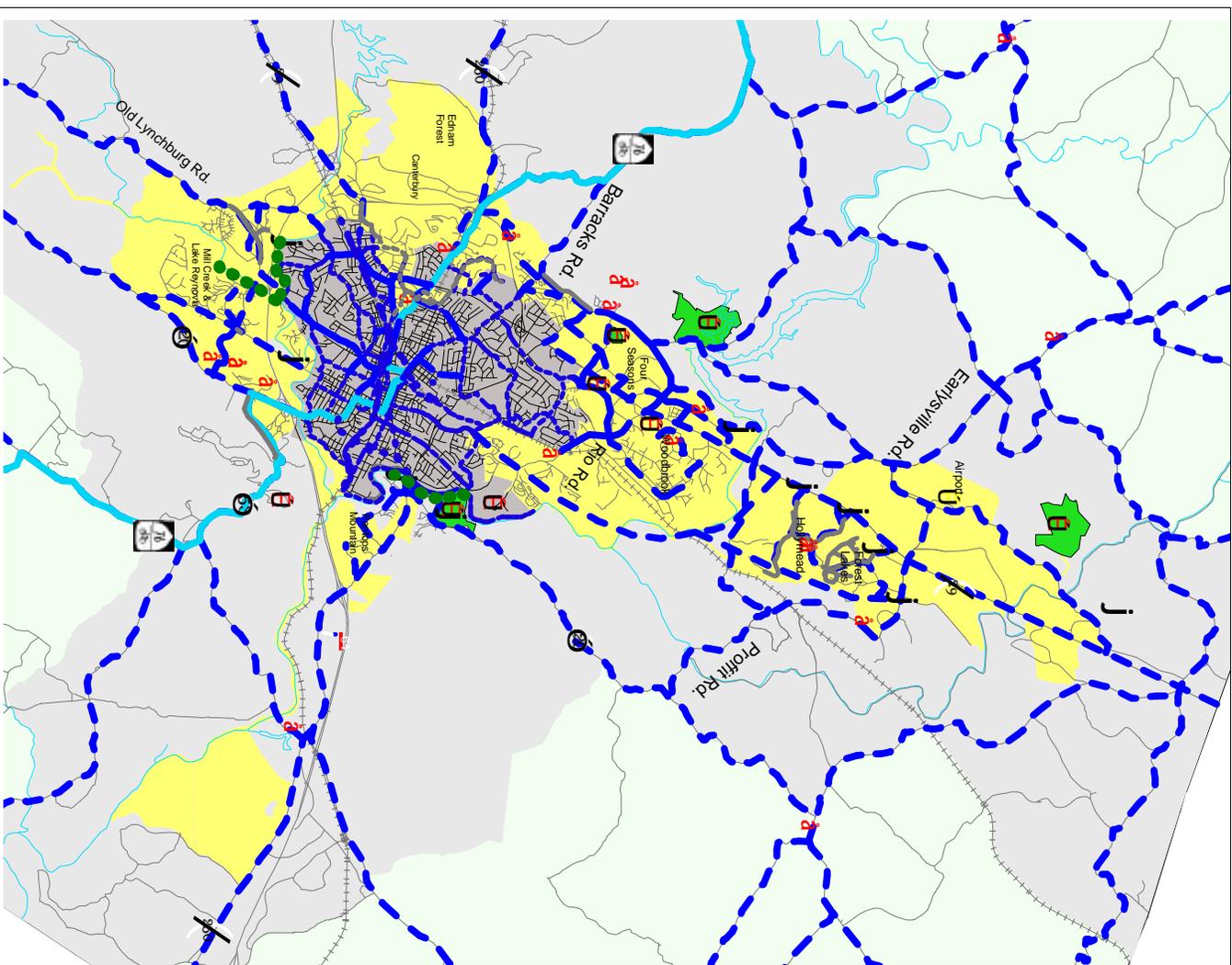
Connections with transit and Park and Ride lots should be a priority in the plan. Railroad crossings in pedestrian areas or on bicycle routes should have paved shoulders for multi-modal safety. Routes 679, 744, 641, 602, 708, 640, 642, 611, and 1310 would benefit from this improvement. If paved shoulders are provided for bicyclists, they can be utilized by pedestrians in narrow rights-of-way, where a sidewalk or trail would be difficult to build.

# Albemarle County Urban Area Proposed Bicycle Routes - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for bicycle travel at this time.



Prepared by the Thomas Jefferson Planning District Commission  
 Sources: US Census TIGER data, TJPDC, VDOT, Albemarle County  
 No Scale  
 July, 2002



Rural Area

Proposed *primary rural bicycle routes* include those roads that radiate out from the urban area as well as some outlying roads that connect to create a system. These routes will connect to the major rural communities of Scottsville, Crozet, Earlysville, and North Garden, and to surrounding counties.

Route number	Road Name
<b>6</b>	<b>Irish Road</b>
<b>20</b>	<b>Stoney Point Road / Scottsville Road</b>
<b>22</b>	<b>Louisa Road</b>
<b>29</b>	<b>Seminole Trail</b>
<b>53</b>	<b>Thomas Jefferson Parkway (whole length in County)</b>
151	Critzer's Shop Road
<b>231</b>	<b>Gordonsville Road</b>
240	Three Notch'd Road / Crozet Avenue
<b>250</b>	<b>Rockfish Gap / Ivy Road / Richmond Road</b>
601	Garth Road / Old Garth Road / Old Ivy /Free Union Road
631	Old Lynchburg Road
<b>654</b>	<b>Barracks Road</b>
<b>743</b>	<b>Earlysville Road / Advance Mills Road</b>
<b>810</b>	<b>White Hall Road / Brown's Gap Tpk. / Dyke Road</b>

*(routes not in the existing 1991 plan are in bold)*

Proposed new Albemarle County roads that should have bicycle facilities include: Meadowcreek Parkway, Timberwood Parkway (1720), Worrell Road, and the Avon/Fifth Street Connector.

In the Town of Scottsville, Valley Street (Route 20), Main Street (Route 6), Bird St. (T-1301), Warren St. (T-1302) and Page St. (T-1303) are proposed for improved bicycle facilities.

In Crozet, bike routes are proposed along Three Notched Road (240), White Hall Road (810), Rockfish Gap Turnpike (Route 250), and the TransAmerica Trail.

Albemarle County policy provides paved shoulders along primary roadways when they are re-paved. This is creating bicycle facilities along sections of major corridors, which will eventually connect together.

In western Albemarle County, the TransAmerica Trail utilizes Routes 614 and 601 which both contain high traffic volumes. The possibilities of facility improvements along these roadways are low due to limited rights-of-way. Because of this, the high potential for bicycle/vehicle conflict will continue along this bicycle route. A recently completed consultant study recommends that routes 677 (Old Ballard Road) and 678 (Decca Lane) or 636 (Batesville Road) be used rather than 614/601. Missing signs along the route should be replaced.

Proposed *secondary rural bicycle routes* include:

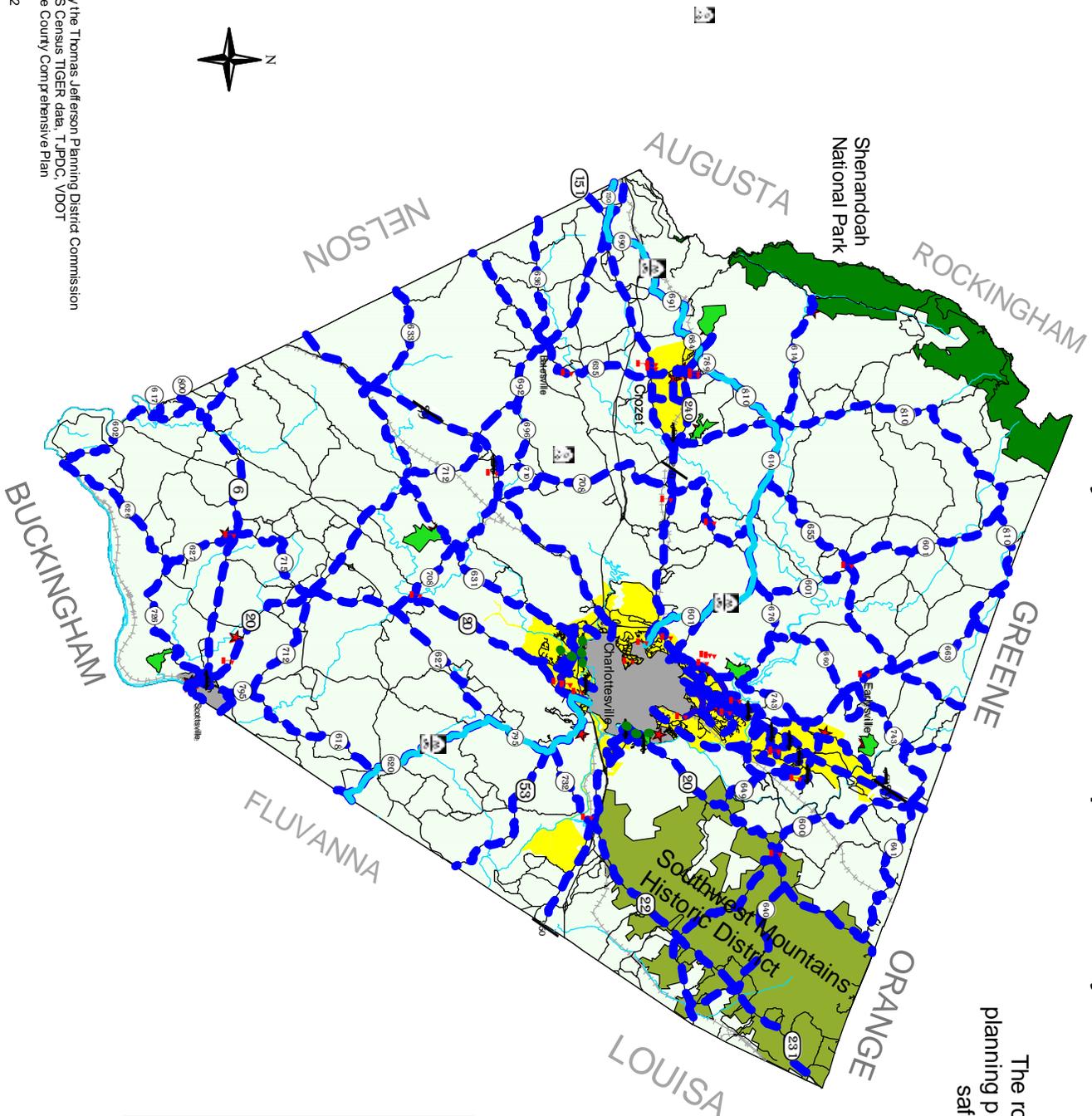
<b>Route number</b>	<b>Road Name</b>
<b>600</b>	<b>Watts Passage Road / Stony Point Pass</b>
<b>603</b>	<b>Plunkett Road</b>
<b>604</b>	<b>Buffalo River Road</b>
614	Garth / Sugar Hollow Road
618	Jefferson Mill Road
619	Ruritan Lake Road
620	Rolling Road
<b>622 (part)</b>	<b>Albevanna Spring Road (Scottsville)</b>
626	James River / Langhorne Road
627	Carter Mountain / Green Mountain / Porters Road
<b>633</b>	<b>Heard's Mountain Road</b>
<b>635</b>	<b>Miller School / Craig's Store Road</b>
<b>636</b>	<b>Batesville Road</b>
<b>637</b>	<b>Poplar Spring Road (Scottsville)</b>
<b>640</b>	<b>Turkey Sag Road</b>
<b>641</b>	<b>Burnley Station Road</b>
649	Proffit Road
<b>660</b>	<b>Cove Garden/ Reas Ford / Earlysville Forest</b>
663	Simmons Gap Road
664	Markwood Road
665	Buck Mountain /Millington Road
671	Millington / Davis Shop Road
676	Owensville / Woodlands / Tilman Road
684	Mint Springs Road
690	Greenwood Station / Newtown Road
691	Jarmans Gap / Greenwood / Ortman Road
<b>692</b>	<b>Plank Road</b>
696	Edge Valley Road
708	Dry Bridge / Taylor's Gap / Red Hill / Secretary's Road
710	Taylor's Gap Road
712	Plank / North Garden / Coles Rolling Road
715	Esmont Road
<b>726</b>	<b>James River Road / Warren Street</b>
729	Buck Island / Milton Road
732	Milton Road
738	Morgantown Road
750	Old Turnpike Road
<b>773</b>	<b>Pat Dennis Road (Scottsville)</b>
789	Buck Road
795	Blenhiem / Presidents Road & James Monroe Pkwy
<b>800</b>	<b>Schuyler Road</b>
839	Whipoorwill Road
1177	Dunlora Drive

*(routes not in the existing 1991 plan are in bold)*

These routes will connect the communities of Owensville, White Hall, Mountfair, Browns Cove, Boonesville, Nortonsville, Earlysville, Esmont, Free Union, Greenwood, Crozet, Batesville, North and South Garden, Keene, Ivy, and Red Hill as well as Sugar Hollow, Shenandoah, Walnut Creek, Mint Springs, and Totier Creek Parks, and the airport, Ash Lawn, and Monticello.

# Albemarle County Rural Area Proposed Bicycle Routes - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for bicycle travel at this time.



- ★ Community Facility
- 🏫 School
- 🚲 Park and Ride Lot
- 🚲 Bicycle Route 76
- 🚲 Existing Bicycle Lane
- 🚲 Proposed Bicycle Route
- 🚲 Proposed Class A Trail
- 🛣️ Street
- 🌊 River
- 🚊 Railroad
- 🌳 Park
- 🏘️ Town or City Boundary
- 🟡 Development Area



Prepared by the Thomas Jefferson Planning District Commission  
 Sources: US Census TIGER data, TJPDC, VDOT  
 Albemarle County Comprehensive Plan  
 No Scale  
 March, 2002

## Pedestrian Plan

Pedestrian facilities typically include sidewalks and crosswalks, as well as trails and paths, traffic signals, road shoulders, curb extensions, median islands, lighting, benches, and other amenities.

Sidewalks should be at least 5 feet wide and be separated from the roadway by two feet or more. Sidewalks should have nearby trees for shade and rain protection. Entries into shopping centers need improvements to help carry pedestrians from the sidewalk along major roads up to store fronts. Crosswalks should have curb cuts and can be enhanced with curb extensions and median or “porkchop” islands. School crossings should be especially safe, and may include a 15m mph speed zone, and a crossing guard during student arrival and departure hours.

Major residential areas without sidewalks or trails should install them where needed, especially along collector roads. New roads, such as Hillsdale Extd. and the Crozet Connector, should have walkways on both sides and safe crossings at intersections. New commercial developments, like the proposed Albemarle Place and Hollymead Town Center, should include full pedestrian access.

Jefferson Area Bicycle, Pedestrian, and Greenways Plan

Urban Area

Sidewalks proposed in the urban area of Albemarle County:

Road Name and number	From	To	Location	Comments
<b>Stony Point Road (Rte 20)</b>	<b>Route 250</b>	<b>Fontana Drive</b>	<b>East side</b>	
Scottsville Road (Route 20)	Mill Creek Drive	City Limit	North side	Interchange
Seminole Trail (Route 29)	North of Airport (1515)	South of Airport (1721)	Both sides	
Richmond Rd. (Rte 250 E)	Route 20	Peter Jefferson Place	Both sides	
	Peter Jefferson Place	Route 616	South side	Trail
<b>Airport Road (649)</b>	<b>Route 29</b>	<b>Route 606</b>	<b>Both sides</b>	
Angus Road (1425)	Route 29	Best Buy	South side	
<b>Avon Street Extd. (742)</b>	<b>Stoney Creek</b>	<b>Mill Creek</b>	<b>East side</b>	
Belvedere				
Berkmar Drive (1403)	Route 29	Rio Road	North Side	
Branchlands Blvd (1694)	Route 29	Hillsdale	Both sides	
<b>Commonwealth Dr (1315)</b>	<b>Hydraulic Rd.</b>	<b>Greenbrier Drive</b>	<b>East side</b>	
	Westfield	Dominion Drive	East side	
<b>Dominion Drive (851)</b>	<b>Route 29</b>	<b>Commonwealth Drive</b>	<b>North side</b>	
Dunlora Drive (1177)	Rio Road	Dead End		
<b>Fontaine Ave. (29 Bus.)</b>	<b>Research Park</b>	<b>Maury/JPA</b>	<b>Both sides</b>	
	29/250 interchange	Reservoir Road	North Side	
Georgetown Green (1460)	Townhouses	High school		Trail
Georgetown Road (656)	Terrell	Englewood Drive	West side	
Greenbrier Drive (866)	Route 29	Mill Park	South side	
<b>Hillsdale Drive</b>	<b>Rio Road</b>	<b>Greenbrier Drive</b>	<b>Both sides</b>	<b>Fill gaps</b>
Hilton Heights Rd. (1438)	Route 29	Walmart	South side	
Hydraulic Road (743)	Route 29	Georgetown Road	North side	
	Whitewood Road	Four Seasons Dr.		
	Michie Drive	Route 250 By-pass	South side	
<b>Ivy Road (Rt. 250 West)</b>	<b>City Limit</b>	<b>Boar's Head Inn</b>	<b>South side</b>	
Lambs Road (657)	Hydraulic Road	School entries	West side	
Old Ivy Road (601)	Route 250	Huntington Village	East side	
Old Lynchburg Road (631)	Oak Hill	City Limit		Trail
Pepsi Place (1340)	Route 29	Hillsdale Drive Connector	Both sides	New road
Pen Park Lane (768)	Rio Road	Existing walks to Park	North side	
<b>Proffit Road (649)</b>	<b>Route 29</b>	<b>Lankford Hills (Rt 1504)</b>		
Reservoir Road (702)	Fontaine/Old 29	Ragged Mountain Reservoir	North side	Future trail
Rio Road (631)	Route 29	City limit	South side	
	Route 29	Alb Sq. Shopping Center	North side	
South Pantops Drive (1140)	State Farm	Existing walks at Carriage Hill	North side	
Stagecoach Road (877)	Oak Hill Market			
State Farm Blvd (1117)	Route 250	South Pantops Dr.	West side	
Whitewood Road (1455)	Hydraulic Road	Greenbrier Drive	Both sides	
Woodbrook Drive (1417)	Route 29	Brookmere Dr	South Side	
	Route 29	Berkmar Drive	North side	
Mountainwood Road (1112)	Old Lynchburg	Oak Hill		

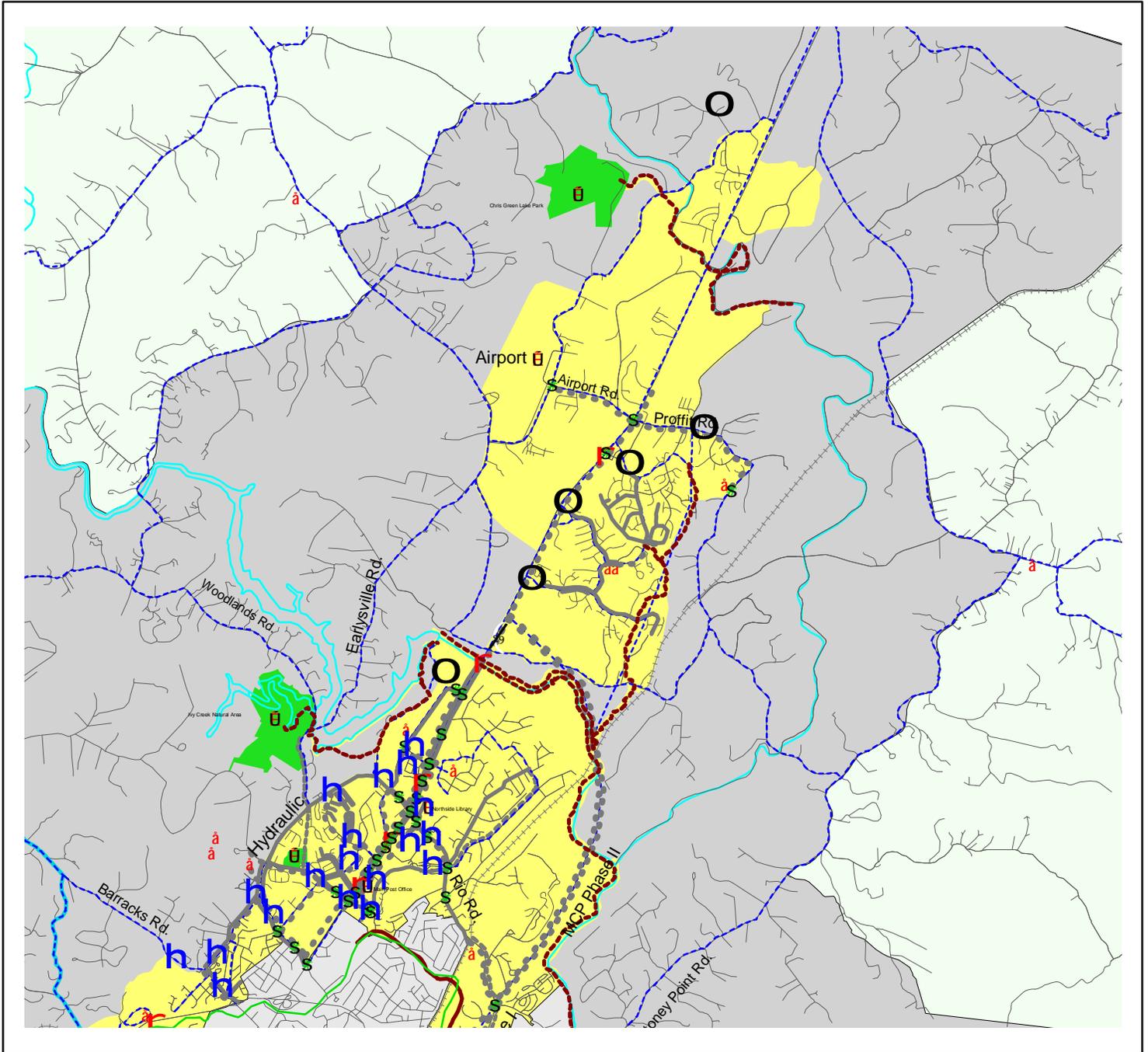
Important urban area crosswalk improvements include:

Road Name	Intersection	Improvements
Seminole Trail (Rt 29)	Airport/Proffit Road	Ped phase signal
	Albemarle Square Court	Ped phase signal
	Branchlands Blvd	Ped phase signal
	Shoppers World - Fashion Sq. Mall	Ped phase signal
	Greenbrier Drive	Ped phase signal
	Hydraulic Road	Ped phase signal or grade sep.
	Main Post Office	mid block
	Myers Drive	mid block
	Rio Road	Ped phase signal or grade sep.
	Rivanna River – south fork	Underpass using trail system
	Seminole Court	Ped phase signal
	Timberwood Parkway	Ped phase signal
	Woodbrook Drive	Ped phase signal
	250 By pass	St. Anne’s School / Darden / Law
Route 20		Overpass or ped phase signal
State Farm Road		Overpass or ped phase signal
Rio Road (631)	Albemarle Square – Fashion Square	Underpass?
	Greenbrier Drive	Ped phase signal
	Hillsdale Dr. / Northfield	Ped phase signal
	Old Brook	Ped phase signal
	West of 29	mid-block
	Berkmar Drive	Ped phase signal
Greenbrier Drive (866)	Pen Park Lane -To Pen Park	Ped phase signal
	West of 29	mid-block
Hillsdale Drive	Multiple locations between Greenbrier and Rio	Median islands and paint
Hydraulic Road (743)	Route 29	Ped phase signal or grade sep.
	West of Route 29	mid-block
	Commonwealth Drive	Ped phase signal
Stony Point Rd (Rte 20)	At Darden Towe Park / Fontana	Striped crosswalk
Scottsville Rd (Rt. 20)	At PVCC	Ped phase signal
Avon Street (742)	At Cale Elementary school	mid-block - guard for kids?
Proffit Road (649)	At Baker-Butler Elementary school	Striped crosswalk
Berkmar Drive	Woodbrook Road	Ped phase signal

Rural communities which are bisected by major roads, such as Crozet, Covesville, and Earlysville, should have at least one safe crossing point for pedestrians. Locations where an off-road trail intersects a road should include a crossing feature, whether at-grade or not.

# Albemarle County Northern Urban Area Pedestrian Plan - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for pedestrian or bicycle travel at this time.

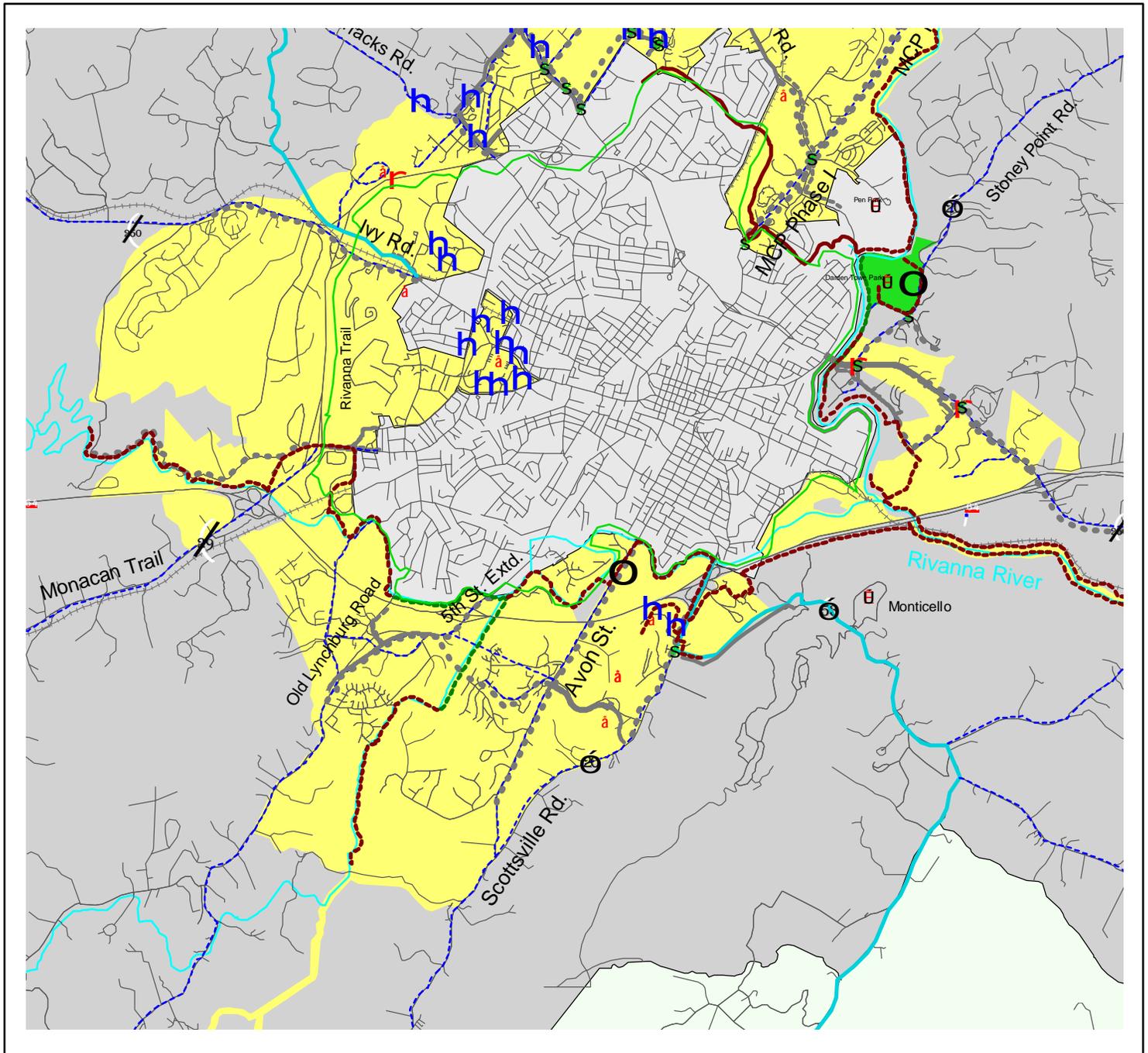


	School		Existing Sidewalk / Asphalt trail
	Community Facility		Proposed Sidewalk
	Transit Stop		Existing Class B Trail
	Park and Ride lot		Proposed Class B Trail
	Park		Proposed Class A Trail
	Development Area		Proposed Crosswalk
	MPO Boundary		Proposed grade separated x-ing
	City of Charlottesville		Proposed Bicycle Route
	Street		Railroad

Prepared by the Thomas Jefferson  
Planning District Commission  
Source: US Census TIGER data, TJPDC  
Albemarle County, VDOT  
No scale  
May 1, 2002

# Albemarle County Southern Urban Area Pedestrian Plan - draft

The routes depicted on this map are for planning purposes only  
and do not depict routes safe for pedestrian or bicycle travel at this time.



	School		Existing Sidewalk / Asphalt trail
	Community Facility		Proposed Sidewalk
	Transit Stop		Existing Class B Trail
	Park and Ride lot		Proposed Class B Trail
	Park		Proposed Class A Trail
	Development Area		Proposed Crosswalk
	MPO Boundary		Proposed grade separated x-ing
	City of Charlottesville		Proposed Bicycle Route
	Street		Railroad

Prepared by the Thomas Jefferson  
Planning District Commission  
Source: US Census TIGER data, TJPDC  
Albemarle County, VDOT  
No scale  
May 1, 2002

## *Trails*

Off-road connections between residential areas, services, natural areas, parks, and points of interest can be provided using greenway trails. These can be located inside a road corridor, like the Georgetown Road path is, or away from roads, as the Rivanna Trail is. Most trails are planned for very localized use, to get around communities and crossroads safely, or to experience natural settings for recreation. Long distance trails may eventually connect communities across the County. Some options for trails include old railway beds, floodplains, and expanded rights-of-way in road corridors.

Trails can be multi-modal, to allow walkers and bicyclist, and even horses where desired. Depending on use requirements, trails can have either soft or hard surface. The facilities should be separated from the roadway to provide maximum safety and room for movement, but also integrate with on-road bicycle and pedestrian facilities. Links to natural areas and parks are another use for trails, which can also be used as buffers to protect water and wildlife. Not all trails should be paved, and some should be for general public use while others would serve more exclusive neighborhood trails.

Property owner consent is necessary before developing trails on non-public right-of-way. Residents have expressed a desire for more multi-use trails separated from the road rather than concrete sidewalks. This allows for more safety, and a much more pleasant walking experience. Major roads have a utility line pathway, generally adjacent to the road and clear of trees, which could be used as an off-road trail corridor, especially if the utilities are placed underground. Cooperation with adjacent localities should continue to ensure that trails complement each other and connect well.

Proposed urban area trails include:

- Avon Street Extended from Stoney Creek Drive to Mill Creek Drive.
- Route 20 north from Fontana to Route 250
- Barracks Road from Georgetown to Garth
- 5<sup>th</sup> Street extended from City Limit to C.O.B. South/Old Lynchburg trail
- Key West subdivision to Darden Towe Park
- Dunlora to Pen Park
- up to Ragged Mountain reservoir
- Biscuit Run
- Morey Creek to City (Redfields area)
- Riverrun
- Glenmore
- along the Rivanna
- bridge over the Rivanna to connect Darden Towe and Pen Parks
- near the Rivanna reservoir
- along Moore's Creek,
- along the Route 29 utility west side corridor
- along the Route 250 Bypass corridor
- along the east side of Forest Lakes and Hollymead (Powell's Creek).
- Redfields to Fontaine

Proposed Rural area trails include:

- along the James and Rivanna River corridors (both forks)
- Garth Road to White Hall and Crozet, improving the BikeCentennial 76 route
- Earlysville area – connecting to Airport Road
- Crozet: local trails, and connection with Afton tunnel and C-ville
- Jacobs Run
- Along Owensville Road
- Old Warren Railroad, which connects Alberene and Schuyler to the James River
- Improved connections to the Appalachian Trail
- Warren to Schuyler
- Ragged Mountains

## Crozet

Crozet has a solid network of walks upon which to build a complete system, and the master plan calls for more walkable neighborhoods. Much of the sidewalk on main roads is buffered from the road, with good potential for tree planting. A number of stores, churches, and restaurants have walkways to their door. The stop light in the center of Crozet has pedestrian controlled timing and crosswalks in place. The asphalt walks under the train trestle downtown with concrete curbs separating them from the roadway provide an alternative to concrete sidewalks.

The shopping center on 240 needs a better pedestrian entryway. There is a no parking sign obstacle in front of Crozet Country Club Store that could be relocated. Cracked or crumbling walks and overhanging vegetation create difficulty and should be treated. The library entrance could be more pedestrian friendly. Curb cuts are needed at many locations.

### ADD ANHOLD STUDY

Recommended additions to the existing network include walks on:

Road Name (Number)	From	To	Location
Buck Road (789)	Railroad Avenue	Crozet Avenue	East
Blue Ridge Ave (1201)	Jarman Gap Road	McComb Street	
Carter Street (1201)	Jarman Gap Road	McComb Street	
McComb Street	Blue Ridge Avenue	Crozet Avenue	
Crozet Avenue (810)	Oak Drive	The Square	East
	Railroad Tracks	Elementary School	East
	Walk at old school	White Hall Road	West
	Route 250	Jarman Gap Road	West
Hilltop Street (691)	Crozet Avenue	Cladius Crozet Park	South
Jarman Gap Road (691)	Route 684	Carter Street	North
McAllister/Birchwood (1214)	Neighborhood	Old School on Crozet Ave.	Trail
Mint Springs Park Rd (684)	Railroad Avenue	Mint Springs Park	North
Proposed 240/250 connector	240 (Three Notched Road)	Route 250	Both sides
Proposed 240/Park Rd. connector	240 (Three Notched Road)	High Street	North
Railroad Avenue (788)	St George Avenue	Mint Springs Park Rd	North
St. George Ave (1202)	Existing walk	Buck Road	North
	Church	White Hall Road	North
Three Notched Rd (240)	Crozet Avenue	Library	South
	Crozet Avenue	Existing sidewalk	North
	Mechum's River development	Proposed 240/250 connector	Both sides
White Hall Road (810)	Crozet Avenue	Railroad Avenue	East
All new roads in Crozet Master Plan			Both where possible

The Crozet community is bisected by large roads and the railroad, and so crossings are important to keep the community cohesive. Future trails and streets may provide need for additional crossings. Crossing improvements recommended in the Crozet area include:

Road Name (Number)	From	To	Location
Crozet Avenue	St. George Ave.		
	Jarman's Gap Road		
	Post Office/Blue Goose		
	Oak Street		
	Tabor Street		
	Lickinghole Creek (for greenway)		
Three Notched Rd	240/250 connector		
	Jefferson-Madison library		
	shopping areas		
Route 250	Henley	Western Albemarle	Overpass
Lanetown Road	Pleasant Grove Trail	Pleasant Grove Trail	
CSX railroad	Downtown, between ACME and Con-Agra, improve 810		

Bicycle facilities should be put on 240 (Crozet Avenue), Jarman Gap, and 810 in the development area, and through neighborhoods and on trails, where appropriate. Trails for bicycles parallel to existing roads or railroads could be built along Railroad Avenue to connect the community with Mint Springs Park and the Crozet Tunnel which should be open for trail use in the future.

Traffic calming and proper road design can make streets safer for all users, whether or not specific facilities exist, and this a part of Crozet's overall community plan.

A greenways-trails network should serve as an armature for both the preservation of natural riparian resources and to serve as a connected network for pedestrian movement, as well as to help foster a sense of community and civic pride. Most proposed trails follow streams including Slabtown Branch, Powell Creek, Lickinghole Creek, Parrot Branch, and the Beaver Creek Reservoir, and are located within the 100-foot buffer area. Connections to parks, schools, and other community facilities are also proposed. Where possible, the system will tie into town travel facilities, including sidewalks and bike lanes. Trail types and surfaces will vary by terrain, setting, and expected use. Eventually a community group similar to the Rivanna Trails Foundation could be set up to operate the system in Crozet.

## Town of Scottsville

The sidewalks in the older downtown area of Scottsville are wide and shaded along Valley Road (Route 20) and Main Street (Route 6), and are less common and pleasant on side streets. There are benches, trees, trashcans and other amenities that make walking enjoyable. Side streets have light and calm traffic, and pedestrians are generally comfortable walking in the road.

A pedestrian connection to the shopping district in the northwest part of town is the first priority. This could be made along Route 20, or by using side streets like Harrison, Mountain View, Warren St. and James River Road to separate pedestrians from heavy automobile traffic on Routes 20 and 6. Either sidewalks or trails could fulfill this need. A connection to Paulett Town along James River Road would be helpful.

Some street signs in Scottsville are planted in the roadway, not the sidewalk. This option might be explored in other areas with sidewalk obstacles. Older sidewalk surfaces are in need of some repair.

### Sidewalks

Safe and direct sidewalks are necessary for creating a pedestrian-friendly environment. They provide connections to residences, public facilities and commercial services, as well as a place for pedestrians to interact and take part in various community activities. Sidewalks should be wide enough to accommodate movement and amenities such as lighting, landscaping, and street furniture. Suggested sidewalk widths for a downtown area range between 8-12 feet, 6 feet of which must be clear from obstructions. Furthermore, every block of a main street needs places to sit, such as benches, low walls, or wide steps. Benches should face towards buildings or each other rather than the street to provide a more pleasant view. Buffering the sidewalk with trees separates pedestrians from the adjacent roadway and provides protection from sun and rain. This makes the sidewalk area a more attractive and comfortable pedestrian experience.

Downtown Scottsville already contains wide sidewalks with landscaping and furniture. The town is undergoing a streetscape project to improve the downtown pedestrian environment. Beyond the downtown, sidewalks needed to complete the Town's network include:

Road Name (Number)	From	To
Route 20	Route 726	Route 795
Route 6	West Town Limit	James River Road
Harrison Street	Warren Street	Bird Street
Warren Street	Harrison Street	James River Road
James River Road	795	Route 6
Jackson Street	Near Valley	
East Main Street	Scottsville Museum	
Old Scottsville School		
Shopping Center Parking lot	Route 6 and 726	Storefront walkway

### Street Crossings

Safe crossings of roads are necessary to provide pedestrians with full access to all parts of town.

Curb extensions are recommended in downtown Scottsville at the intersection of:

- Route 20 with Mountain Vista Rd., Warren St., Clements St., and Bird St.
- Route 6 at South St. and Ferry St.
- Warren and Harrison

Enhanced crossings are recommended on:

- Route 20 at Main St., Bird St., Clements St., Warren St., and Mountain Vista Rd.,
- Route 6 West at 726 and 20,
- and on Route 6 east at Ferry Street and South Street.

### Trails

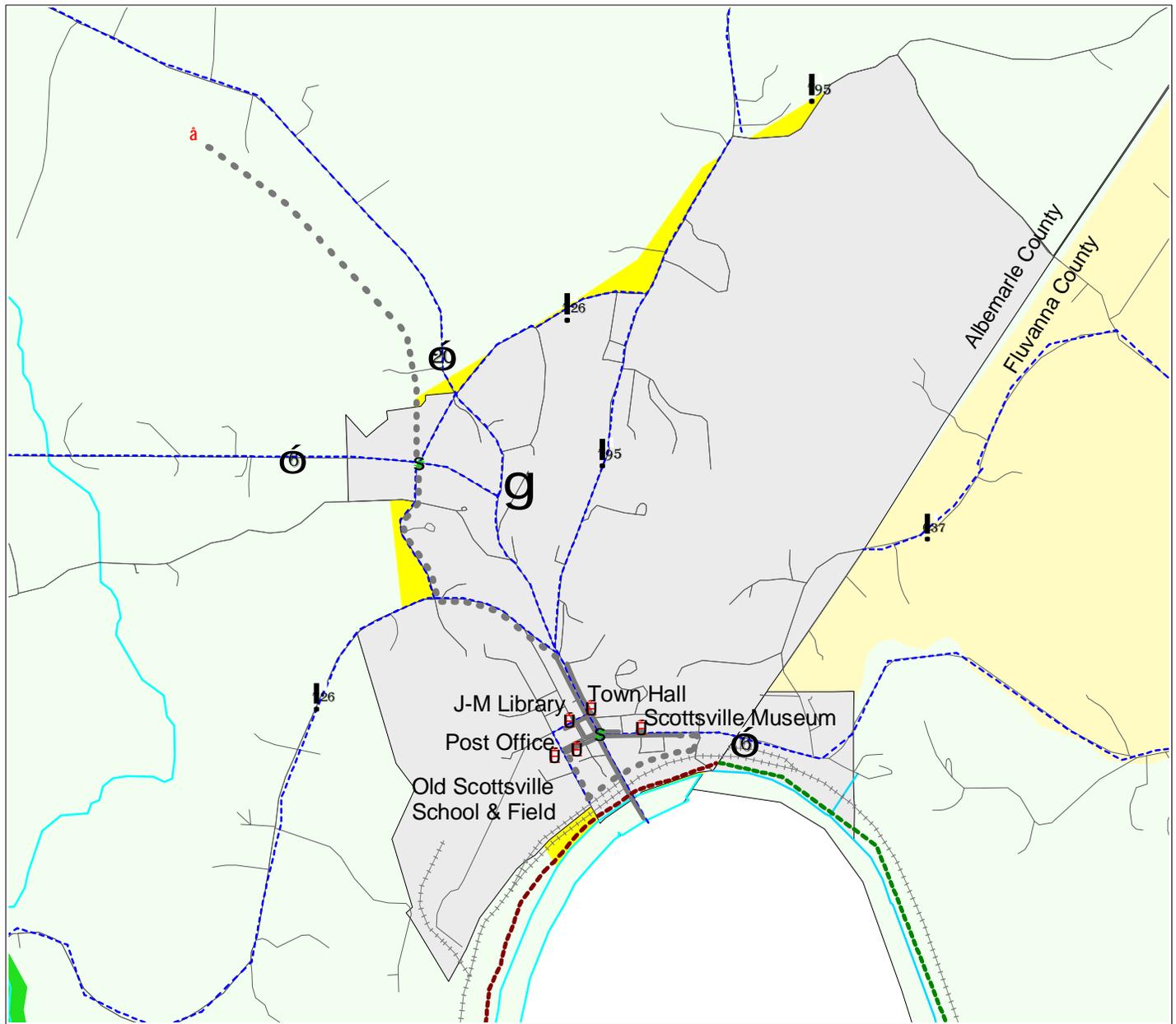
In Scottsville's rural setting, trails provide an appropriate solution for pedestrian and bicycle connectivity as well as for recreation and tourism. Recommended trails follow:

- the James River (incl. Levee Walk) to Totier Creek Park, Hardware River WMA, and Hatton Ferry,
- Mink Creek from Route 20 to Paulett Town, using sewer alignment
- James River Road
- Mountain Vista Road
- High Meadows, Hayman and Baldwin Avenue,
- Jefferson Street to the Confederate cemetery, and
- connect the shopping center to the elementary school.

The proposed town by-pass, if built, should include walkways on the bridge and a multi-use trail along its length, town-side for easiest local access.

# Town of Scottsville Pedestrian Plan - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for pedestrian or bicycle travel at this time.



	Existing Sidewalk		Community Facility
	Proposed Sidewalk		School
	Proposed Crosswalk		Park and Ride lot
	Proposed Greenway		Park
	Proposed Class B Trail		Town Boundary
	Proposed Bicycle Route		Development Area
	Street		Residential Area
			Railroad

Prepared by the Thomas Jefferson  
 Planning District Commission  
 Source: US Census TIGER data, TJPDC, VDOT  
 No scale  
 June 2002

## Fluvanna County

### *Existing Conditions*

#### **Bicycle**

Biking in Fluvanna County is generally for recreational purposes. Riders might follow the BikeCentennial Route 76 trail, or simply travel along the County's many back roads offering scenery and varying topography. In the rural communities, cycling may be used for short trips. Currently, no on-road facilities exist to support the use of bicycles in the County.

#### **Pedestrian**

Fluvanna County's rural setting, with low-density and narrow roads, can limit pedestrian mobility. The majority of the County does not have designated pedestrian ways. Those who walk generally do so along the side of the road. In towns and communities, little sidewalk exists. Palmyra and Columbia each have a few narrow walks. Fork Union has sidewalks along 15 and 6, with curb ramps and frequent buffers, but there are utility poles in the walkways. The only crosswalks in the County are also in Fork Union. Recreational trails are under development at the Pleasant Grove property.

### *Local Plans and Ordinances*

#### **Comprehensive Plan**

Fluvanna County's *Comprehensive Plan (2000)* includes a bicycle plan and map in the transportation portion. Pedestrian plans are included in the text of the document. Fluvanna seeks to encourage the development of sidewalks and trails in new subdivisions and sidewalks in commercial areas. For bicycles, the plan includes improving bicycle access to roads, erecting more signs, clearly identifying Route 76, and providing lanes on all roads and bridges wide enough to accommodate them. All routes in the comprehensive plan are duplicated in this plan.

Fluvanna County's Comprehensive Plan *Vision for 2020* states:

“In these designated growth areas, subdivisions and businesses are linked by hard surface paths so that bicycling and walking are a practical means of transportation between residential and commercial areas. Public trails at Pleasant Grove and other locations in the county provide recreational opportunities for walking, biking, and horseback riding. In areas around Palmyra, trails provide additional access to the area's destination points. Pedestrian and bicycle access are also provided in other appropriate settings, such as across bridges and in rural subdivisions and towns. ... Children are able to walk to a park or playground. ... The new bridge at Palmyra is designed to accommodate both bicycles and pedestrians.”

According to the plan, Fluvanna County is particularly interested in trails and off-road facilities for both pedestrians and bicycles where possible, including Pleasant Grove.

## Area and Special Plans

The *Town of Columbia Plan* (1980) seeks to develop recreational facilities, including bicycle and walking paths.

The *Fluvanna Heritage Trail Master Plan* (2000) details plans for pedestrian and bicycle facilities in the Palmyra area.

## Related Ordinances

The Fluvanna County *Subdivision Ordinance* (1994) seeks to connect cul-de-sacs with pedestrian paths (7.1.3), and the *Zoning Code* (1992) mentions walkways and trails for higher density developments (R-3), addresses parking area design to consider pedestrian circulation (13.7-1.4), and recommends reasonable pedestrian access to, from and within sites (19.7.1.d.5).

It is recommended that bicycle and pedestrian friendly language be added to the appropriate section(s) of these codes before development occurs. Samples of bicycle and pedestrian friendly ordinance language can be found in Appendix G.

## *Proposed Network and Facilities*

### Bicycle Plan

Recommended additions to Fluvanna’s existing plan include those routes in **bold** in the table below. A minor correction to the existing plan is designating all of route 630 between 601 and 659.

#### *Proposed primary bicycle routes*

<b>Route number</b>	<b>Road Name</b>
6	Boston Road
15	Courthouse / Venable Road
53	Tabscott Road
<b>250</b>	<b>Richmond Road/Three Chopt Road</b>

This network will connect the communities of Palmyra, Fork Union, Zion Crossroads, Cunningham, Lake Monticello, Nahor, Columbia, Bremono Bluff, Dixie, Kidds Store, Cohasset, and Scottsville with each other, and to Albemarle, Louisa, Goochland and other counties. The primary routes will service the majority of the County’s public facilities, including schools, parks, natural areas, park and ride lots, government center, and provide some access to the Rivanna River.

*Proposed secondary bicycle routes*

Fluvanna’s secondary bicycle network will allow more residents, including those in Antioch, Johnson Store, Kents Store, Wilmington, Stage Junction, Bybee, and Troy to reach the primary network, provide more connections other counties, and improve conditions for recreational riders.

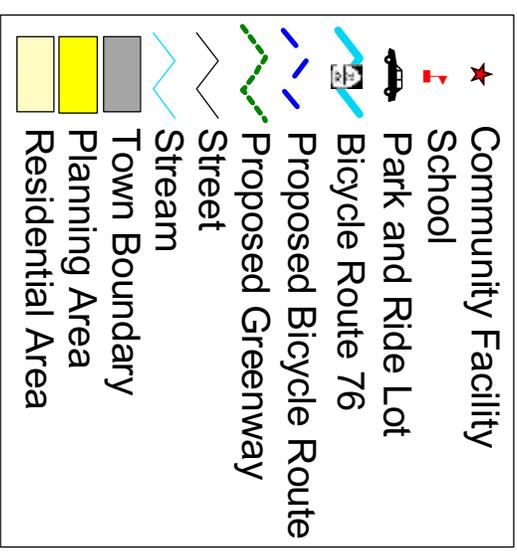
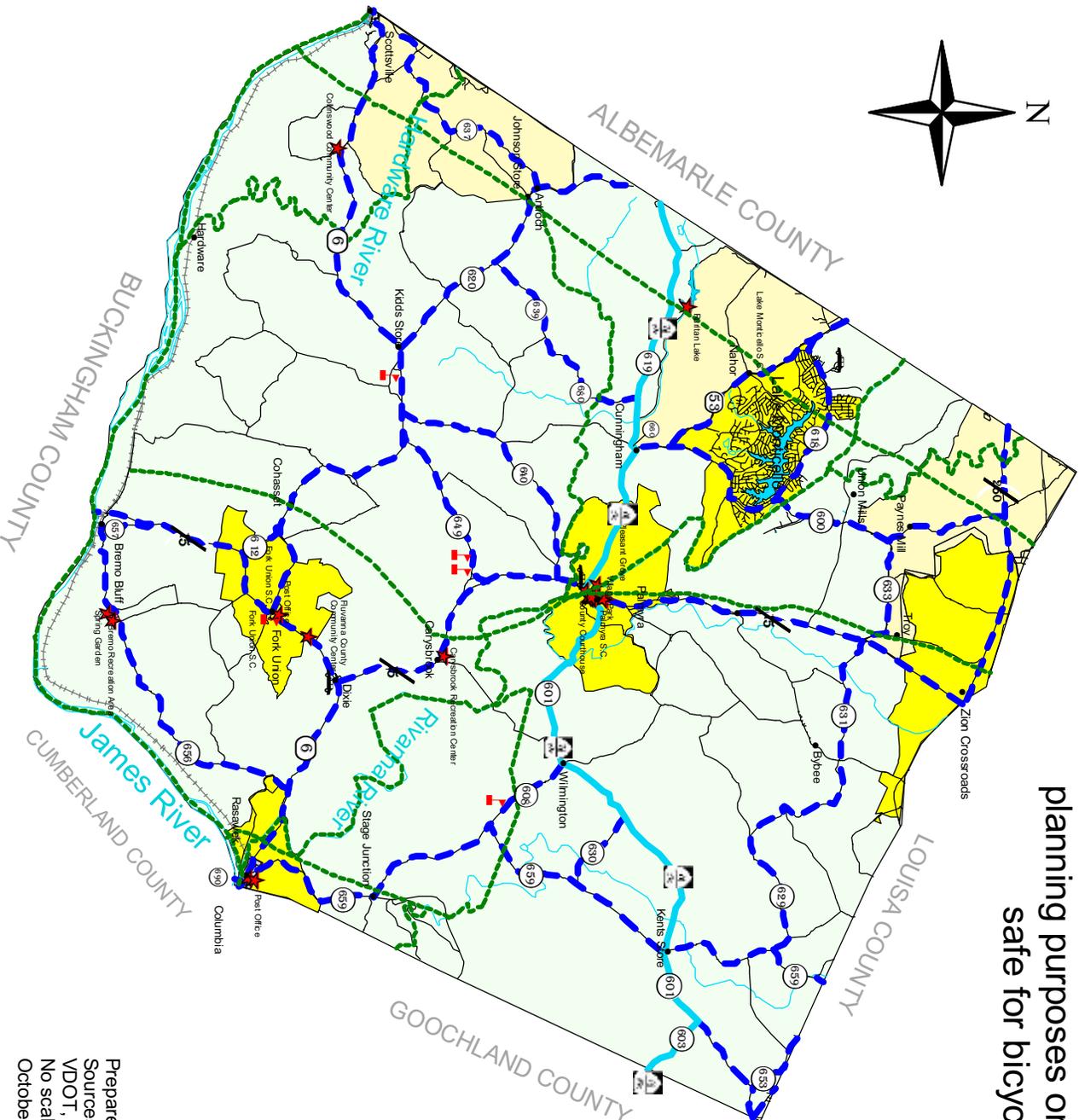
<b>Route number</b>	<b>Road Name</b>
<b>600</b>	<b>Boston Road / Paynes Mill Road</b>
601	Courthouse / Venable Road
603	Tabscott Road
<b>608</b>	<b>Wilmington Road</b>
612	Winnsville Drive
618	Martin Kings / Lake Monticello Road
619	Ruritan Lake Road
620	Rolling Road
629 (part)	Deep Creek Road
630 (part)	Plain Dealing Road
631 (part)	Hunters Lodge Road
633 (part)	Mechunk Creek Road
<b>637</b>	<b>Poplar Spring / Antioch Road</b>
<b>639 (part)</b>	<b>Long Acre Road</b>
640 (most)	Haden Martin Road
<b>649</b>	<b>Central Plains Road</b>
653	Three Chopt Road
656	Bremo Road
<b>657</b>	<b>Bremo Bluff Road</b>
659	Stage Junction Road / Cedar Lane / Kents Store Road
660 (small part)	Ruritan Lake Road
<b>680</b>	<b>Middle Fork Road</b>
<b>690</b>	<b>Columbia Road</b>

*Proposed Recreation routes*

The Fluvanna Heritage Trail in the central part of the County will provide some recreational opportunities for bicyclists, as will other potential greenway trails discussed in the *Thomas Jefferson Regional Greenways Plan*, including along the Rivanna and James Rivers. Plans to convert portions of the abandoned Airline railroad along Route 15 near Palmyra may create bicycling opportunities. There is mention of creating a Three-Chopt bicycle route, which would be recreational and tourism related, like the existing Bike Route 76.

# Fluvanna County Proposed Bicycle Routes - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for bicycle travel at this time.



Prepared by the Thomas Jefferson Planning District Commission  
 Sources: US Census TIGER data, TJPDC, VHB,  
 VDOT, Fluvanna County Comprehensive Plan  
 No scale  
 October 18, 2001

## **Pedestrian Plan**

### *Intra-Community Facilities*

#### Palmyra

Specific attention should be paid to getting pedestrians along and across Route 15, which has heavy truck traffic. Sidewalks should be extended along Main Street all the way to Village Park, and possibly near the Old Stone Jail. When a new bridge is constructed over the Rivanna at Palmyra, it will include pedestrian access, which will connect the town to services just over the river, including Pleasant Grove. Brick walkways may enhance the historic feel of the village.

#### Town of Columbia

This community may need expansion and repair of existing sidewalks, especially along Route 6 (Saint James St.), up T-1104 (Washington Street) to the post office and major churches in town, eastern Fayette St, and along Saint Patrick Street, including over the bridge to Cumberland County.

#### Fork Union

Fork Union needs some sidewalk added along Route 15 at the north and south ends of the community, relocation of a few obstacles and perhaps more street trees. A median in Route 15 located at the FUMA crosswalk would help pedestrians cross more safely.

#### Zion Crossroads

If development creates residential use and more activity, this area may need pedestrian controlled signals at the intersection of 15 and 250 and sidewalks to connect services.

#### Lake Monticello

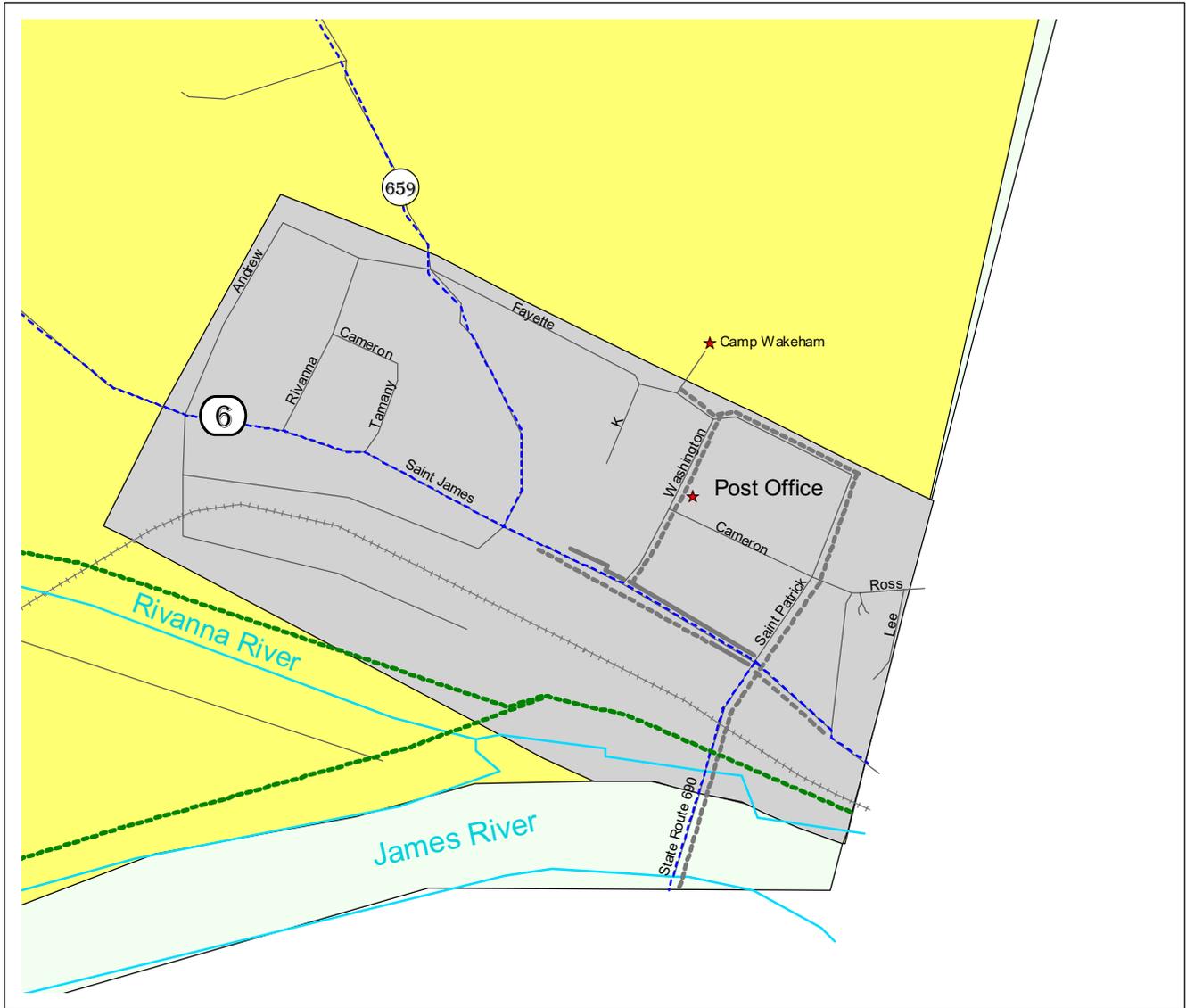
The area might benefit from sidewalks near the Food Lion shopping center, but generally large distances prevent most residents of the lake from walking to services outside of the community gates.

### *Inter-Community facilities*

Off-road connections between residential areas, services, and points of interest can be accomplished along greenway trails. The Fluvanna Heritage Trail is an evolving trail system along the Rivanna River near Palmyra. Recommendations from the *Thomas Jefferson Regional Greenways Plan* include trails along the length of the Rivanna and James rivers, as well as the Hardware River, Mechunk Creek, the middle fork of Cunningham Creek, and Byrd Creek. Natural gas pipeline corridors should be explored for potential use as greenway trails, as should the abandoned Virginia Airline railroad bed parallel to Route 15 from the James River through Louisa County to Gordonsville. This trail system would connect many recreational and historical points of interest in the County, and be useful to residents and tourists. Property owner consent will be necessary to develop any trails proposed in non-public right-of-way.

# Town of Columbia Pedestrian Plan - draft

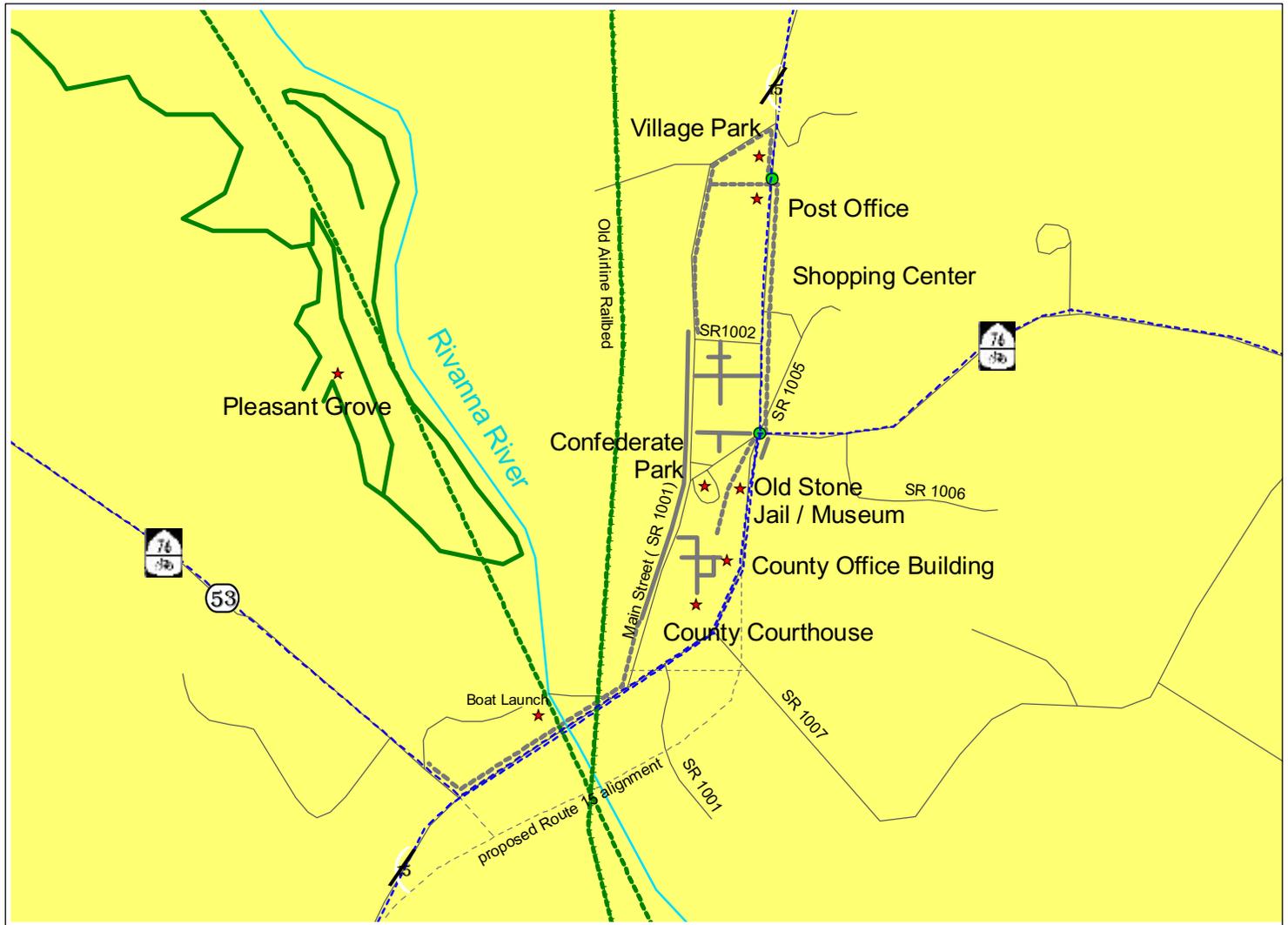
The routes depicted on this map are for planning purposes only and do not depict routes safe for pedestrian or bicycle travel at this time.



Prepared by the Thomas Jefferson  
Planning District Commission  
Source: US Census TIGER data, TJPDC, VHB  
Fluvanna County  
No scale  
October 18, 2001

# Palmyra Pedestrian Plan - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for pedestrian or bicycle travel at this time.



Prepared by the Thomas Jefferson  
 Planning District Commission  
 Source: US Census TIGER data, TJPDC, VHB,  
 VDOT, Fluvanna County  
 No scale  
 October 18, 2001

## Greene County

### *Existing Conditions*

#### **Bicycle**

Greene County roads offer great potential for bicyclists, with wonderful scenery and topography, and on some roads, very little automobile and/or truck traffic. People travel from all over to ride the backcountry roads in the area. The Tour de Trump has come through the County, and riders using Skyline Drive may come down into Greene County at times.

Greene County Transit operates in and around the County and to and from Charlottesville on weekdays. They do not allow bicycles on board, but with service door-to-door, this is not a concern.

#### **Pedestrian**

Pedestrian activity in Greene County is generally limited to Stanardsville and the Ruckersville area and south. People also walk in residential areas, where traffic is lighter, and on their own private lands and trails. The Appalachian Trail comes through the western mountain of the county. As the Route 33 By-pass was built around Stanardsville, many people jogged or walked along the roadway, which demonstrates a need for facilities for pedestrian use in the area.

### *Local Plans and Ordinances*

#### **Comprehensive Plan**

The transportation section of Greene County's *Comprehensive Plan* (1997) includes desires to reduce congestion, pollution, and energy use through improved roads, facilities, and services (including bicycle and pedestrian), seeks pedestrian access to shopping and services, and calls for the Tourism Board to assist in establishing bicycle/hiking trails. The Ruckersville section of the comprehensive plan includes ideas for inter-modal travel along Route 29, particularly for bicycles, and seeks pedestrian and bicycle access to shopping and services.

#### **Area and Special Plans**

The *Stanardsville Town Plan* (1984) seeks a network of sidewalks and bicycle paths.

#### **Related Ordinances**

The Greene County *Zoning Ordinance* (1995) has some provision for pedestrian infrastructure in certain higher density development types, including site plan requirements. The *Subdivision Ordinance* (1973) has no bicycle or pedestrian language.

It is recommended that bicycle and pedestrian friendly language be added to the appropriate section(s) of these codes before development occurs. Samples of bicycle and pedestrian friendly ordinance language can be found in Appendix G.

*Proposed Network and Facilities*

**Bicycle Plan**

*Proposed primary bicycle routes*

Greene County’s primary bicycle corridors will connect Stanardsville with Ruckersville, and allow travel in all directions to nearby communities like Charlottesville and Madison. They will also connect most public facilities and service areas as well as provide access to Shenandoah National Park. Much of Route 33 already has wide shoulders, and can be maintained for use by cyclists.

<b>Route number</b>	<b>Road Name</b>
29	Seminole Trail
33	Spotswood Trail
33 By-pass	Spotswood Trail/Main Street
230	Madison Road
810	Dyke Road

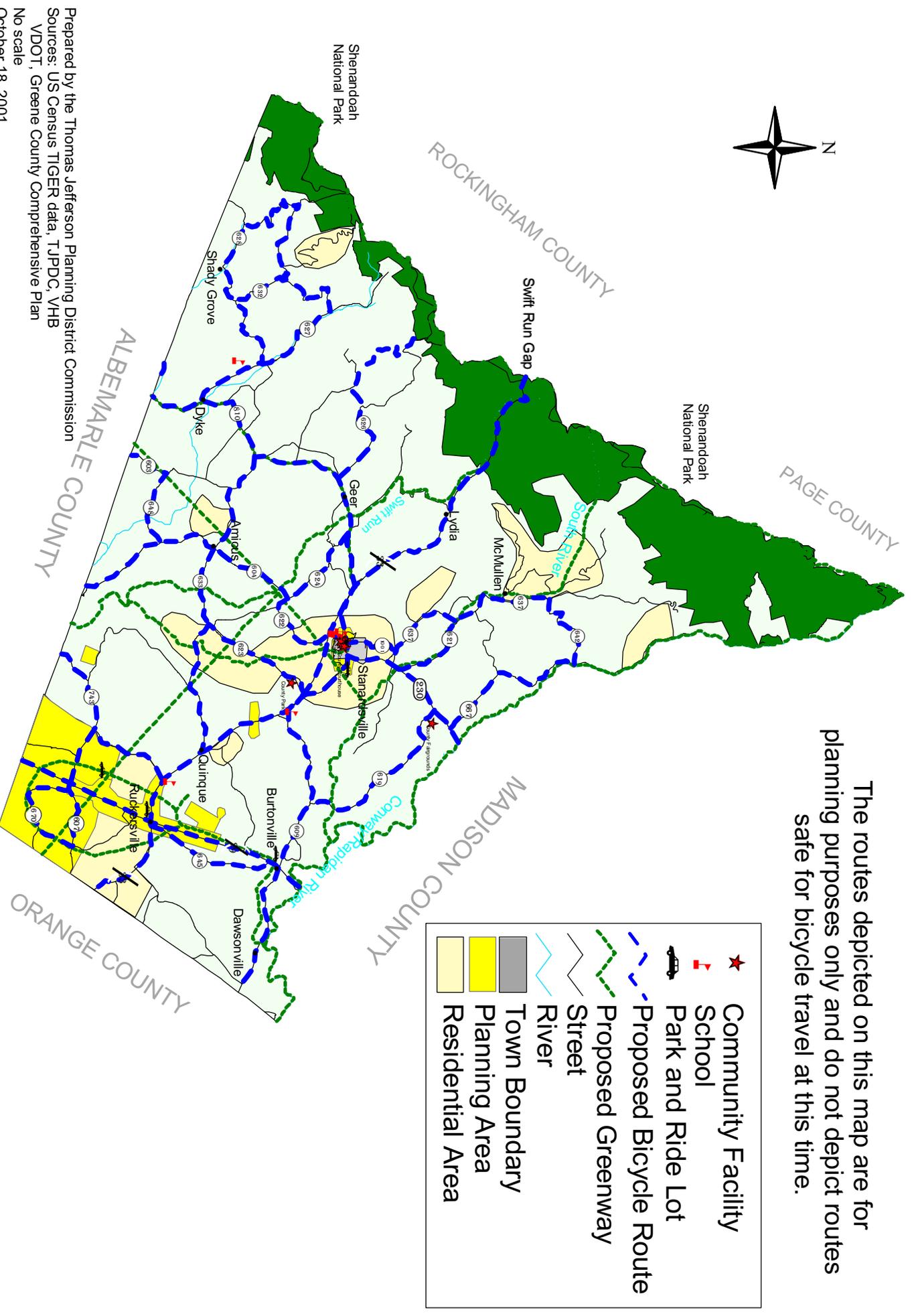
*Proposed secondary bicycle routes*

These roads should have improvements made to allow for safer travel but do not necessarily need continuous paved shoulders. These routes will allow more residents, including those in most small residential communities, to connect to the primary system. Bicycle facilities should be required on any Route 29 parallel access roads through Ruckersville, if those roads are constructed. Potential greenway trails, will also offer recreational bicycling options.

<b>Route number</b>	<b>Road Name</b>
603	Bingham Mountain Road
604	Celt Road
607	Matthew Mill Road
609	Fredericksburg Road
619	Dundee Road
621	South River Road
622	Celt Road
623	Swift Run Road
624	Pea Ridge Road
626	Snow Mountain Road
627	Bacon Hollow Road
628	Simmons Gap Road
632	Wyatt Mountain Road
633	Amicus Road
637	Octania / South River / Pocosan Road
642	Simms Road
645	Moore Road
648	Chapman Road
667	Middle River Road
670	Preddy Creek Road
743	Advance Mills Road
1001	Ford Avenue

# Greene County Proposed Bicycle Routes -draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for bicycle travel at this time.



- ★ Community Facility
- 📍 School
- 🚗 Park and Ride Lot
- Proposed Bicycle Route
- Proposed Greenway
- Street
- ~ River
- ▬ Town Boundary
- ▬ Planning Area
- ▬ Residential Area

Prepared by the Thomas Jefferson Planning District Commission  
 Sources: US Census TIGER data, TJPDC, VHB  
 VDOT, Greene County Comprehensive Plan  
 No scale  
 October 18, 2001

## **Pedestrian Plan**

### *Intra-Community Facilities*

#### Town of Stanardsville

Main Street (Route 33), Court Street (T-1002), Ford Avenue (Route 1001), Shiloh Road (T-1003), and Madison Road (230) should have continuous, clear walkways for most of their length in town. The Stanardsville Historic Walking Tour uses most of these streets, and good walkways would support this tourism activity. The crossing over Main Street between the school complex and stores should be improved by adding a well-marked crosswalk, and perhaps signs or lights to make drivers aware of pedestrians. Completing the sidewalk to the shopping center along the north side of Main Street is another needed improvement. Removing obstacles in Stanardsville walkways, especially utility poles and street signs, would make the existing system more pleasant and safer to use. Tree plantings near walkways will help improve use in unpleasant weather.

#### Ruckersville

A pedestrian phase traffic light signal should connect shopping and services at the intersection of Routes 29 and 33. Pedestrian connections to services near the highway may need improvements. Any plans to improve Route 29 through Ruckersville should include means to provide pedestrian access to and across the highway and service roads.

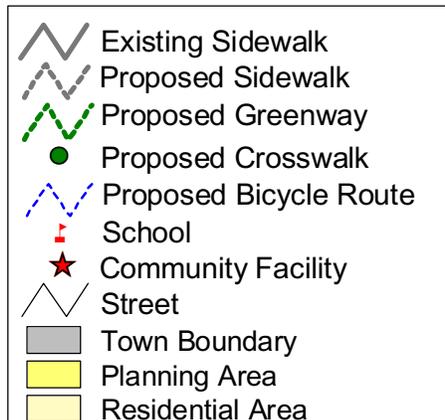
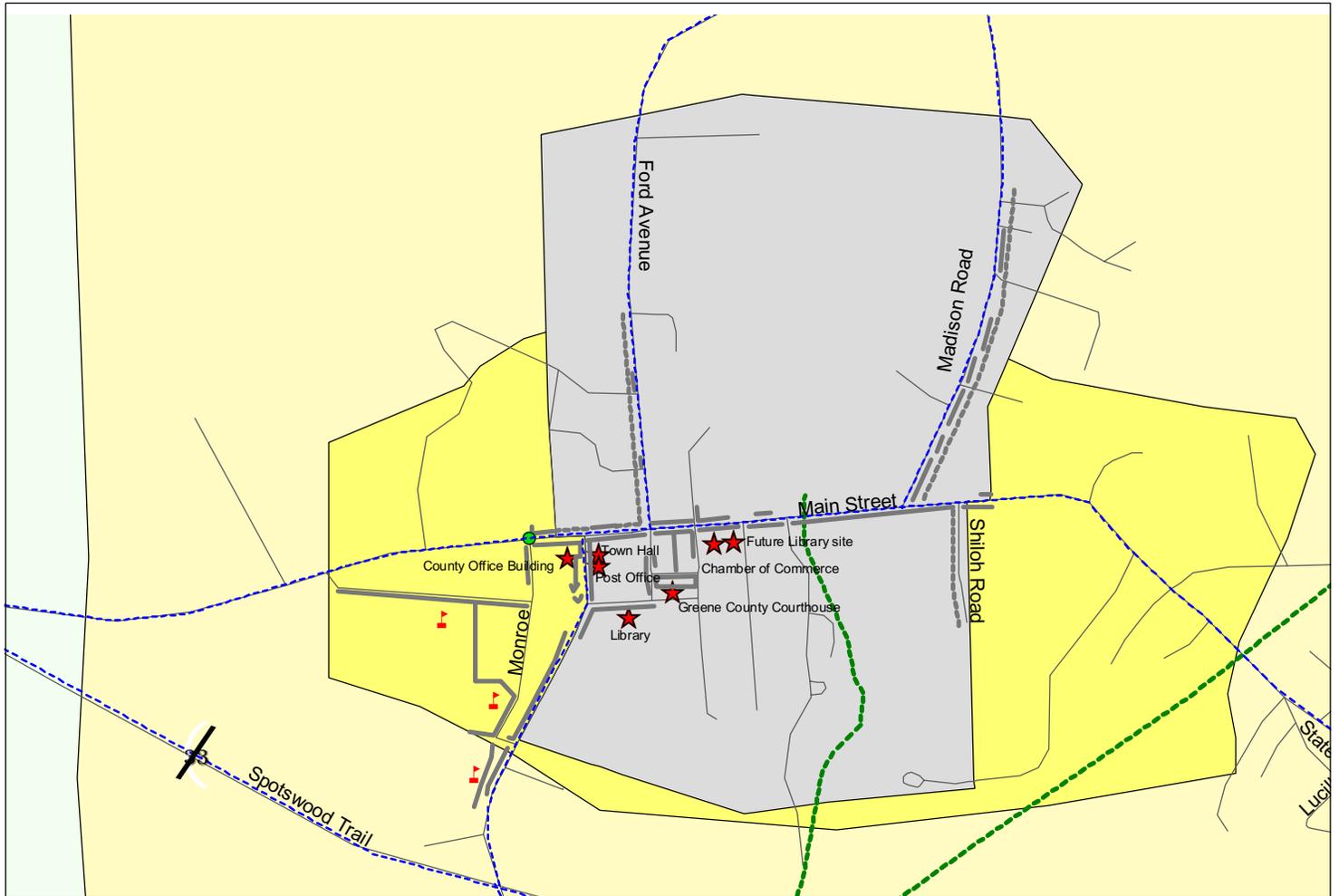
Preddy Creek and the Twin Lakes area are developing, and any new construction should consider pedestrian access. For example, the Fried development along 29 near Preddy Creek will have an internal trail system according to plans, but does not show improvements to get residents to services on Route 29 at Matthew Mill Road (607). As the County develops, more areas may reach density and population levels that necessitate sidewalk construction.

### *Inter-Community facilities*

Off-road connections between residential areas, services, and points of interest can be accomplished along greenway trails. Recommendations from the *Thomas Jefferson Regional Greenways Plan* include trails parallel to Route 29, along the Conway, Rapidan, and South River corridors, along Swift Run, in the “lakes area”, and along the natural gas pipelines crossing the County. These trails would connect most residential and service areas, as well as providing access to and from recreational areas like Shenandoah National Park. Property owner consent will be necessary to develop any trails proposed in non-public right-of-way.

# Town of Stanardsville Pedestrian Plan - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for pedestrian or bicycle travel at this time.



Prepared by the Thomas Jefferson  
 Planning District Commission  
 Source: US Census TIGER data, TJPDC, VHB  
 No scale  
 October 18, 2001

## Louisa County

### *Existing Conditions*

#### **Bicycle**

Numerous exceptionally attractive bicycle routes are offered by the secondary and back roads found throughout the County. Louisa County is also host to approximately twenty-five miles of the TransAmerica cross-country bicycle route, formerly known as BikeCentennial '76. Thousands of long distance cyclists use this route during the warm months. In the future, these roads will likely be increasingly valuable for tourism. Such irreplaceable recreational and scenic resources should be preserved and enhanced to allow for safe passage of both vehicular traffic and cyclists, while preserving their scenic nature. Long-term consideration must be given to creating and preserving routes for the recreational, transportation, and tourism requirements of bicyclists on County roads.

Louisa County has the only on-road bicycle lanes in a rural setting in the whole district, a short section of paved shoulders on Route 618 near Bumpass, part of the BikeCentennial Route 76 cross country trail. JAUNT, which services the County, allows cyclists to board with their bike.



Bike Route 76



Louisa's bike rack

#### **Pedestrian**

The majority of pedestrian activity and facilities are in the towns of Louisa and Mineral, and near County schools. Recent court square improvements have included upgrades to sidewalk facilities in Louisa. Mineral's sidewalks are in the northwest areas of town. Each town has a good portion of walks along major roads, many with a grass buffer area in which to plant trees. Each town also has a few sections of sidewalk with obstacles, including signs, mailboxes and parking meters, but generally, walking in the towns is reasonably pleasant. The largest problem facing pedestrians is crossing traffic along the main roads, which cut through the heart of each town. This is a particular problem at rush hours. Railroads also run through each town, but do not seem to create a barrier to pedestrian travel in these small towns. People walk along country roads in some areas of the County, and on residential side streets with little traffic.



Courthouse area sidewalks and signs



Main Street commercial district

## *Local Plans and Ordinances*

### **Comprehensive Plan**

Louisa County's *Comprehensive Plan* (2001), states:

#### **“BICYCLE AND PEDESTRIAN ROUTES**

Numerous exceptionally attractive bicycle routes are offered by the secondary and back roads found throughout the County. Louisa County also is host to approximately twenty-five miles of the TransAmerica cross country bicycle route, formerly known as Bike Centennial '76. Thousands of long distance cyclists use this route during the warm months. In the future these roads will likely be increasingly valuable for tourism. Such irreplaceable recreational and scenic resources should be preserved and enhanced to allow for safe passage of both vehicular traffic and cyclists, while preserving their scenic nature. Long term consideration must be given to creating and preserving routes for the recreational, transportation, and tourism requirements of those using the County's road on bicycles.

No formal bicycle or pedestrian plan has been adopted by Louisa County, but the Jefferson Area Bicycling and Walking Committee includes representation from Louisa County and will develop a series of proposals for consideration by the County. Bicycle routes proposed to date include primary Routes 15, 22, and 33, along with secondary Routes 605, 700, and 652.”

### **Area and Special Plans**

The *Town of Mineral Plan* (1980) includes plans to build sidewalks along Mineral Avenue from 4<sup>th</sup> to 9<sup>th</sup> Streets, as well as other sidewalks (see Town of Mineral sidewalk plan), and a survey of residents reported in the plan identifies sidewalks and bike lanes as needs.

The *Town of Louisa Plan* (1980) states that sidewalks are built and maintained by the town, and that a lack of sidewalks is a disincentive for people to walk. Residents surveyed desire more sidewalks, and some have recently been installed and improved around the courthouse.

Plans for the towns are to show connection to proposed County facilities, and are not part of this plan.

### **Related Ordinances**

Louisa's current *Zoning* and *Subdivision Ordinances* (1987) do not contain material relevant to bicycle and pedestrian planning and may therefore require some additions in order for this plan to be properly implemented.

It is recommended that bicycle and pedestrian friendly language be added to the appropriate section(s) of these codes before development occurs. Samples of bicycle and pedestrian friendly ordinance language can be found in Appendix G.

## *Proposed Network and Facilities*

### **Bicycle Plan**

Improvements along the majority of these routes may include signage, spot improvements, and possibly striped lanes in the towns and developed areas. Wider shoulders may be helpful on some roads, which improves safety for all users. New bridges should be wide enough for bicycles. Bicycle racks should be installed in public places as the opportunity arises. Town and school areas should be improved first, along with extremely unsafe rural spots. Special treatment may enhance Route 76.

*Proposed primary bicycle routes*

These routes will connect the towns of Louisa and Mineral, and other communities, including Trevilians, Boswells Tavern, Cuckoo, Gum Spring, Gordonsville, Locust Creek, Lake Anna, and Zion Crossroads, as well as most county schools, park and ride lots, and points of service and interest.

Route number	Road Name
15	James Madison Highway
22	Louisa Road / Davis Highway
33	Spotswood Trail / Jefferson Highway
208	Courthouse Road / Zachary Taylor Highway / New Bridge Road
250	Three Notch Road / Broad Street Road
522	Zachary Taylor Hwy / Pendleton Road / Cross Country Road

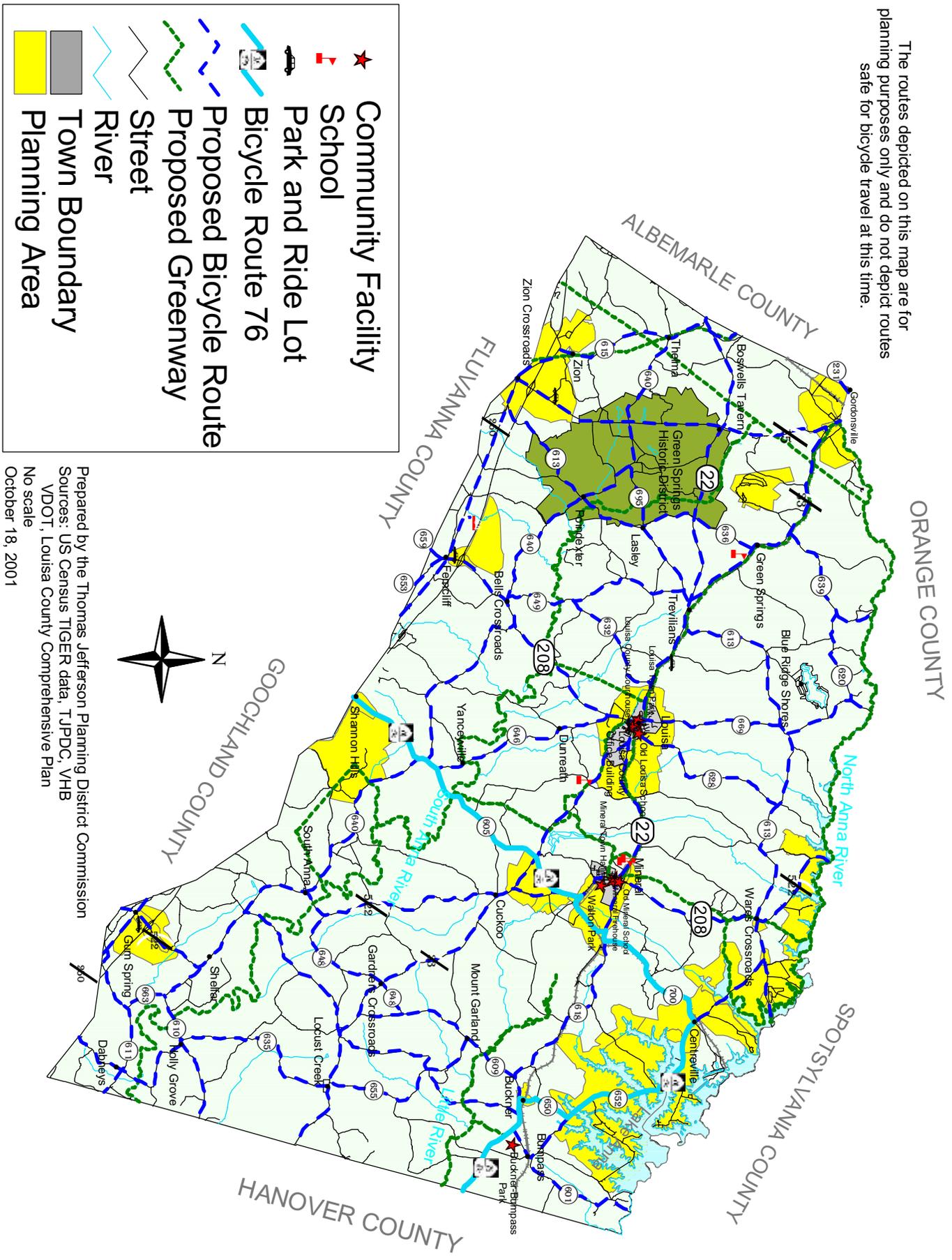
*Proposed secondary bicycle routes*

Louisa County's secondary bicycle network will connect residents of Thelma, Dabney, Wares Crossroads, Lasley, Zion, Mount Garland, Fredericks Hall, Southanna, Shannon Hills, Yanceyville, Buckner, and Bumpass to the primary network and provide safer recreational opportunities.

Route number	Road Name
601	Bumpass / Greene's Corner / Diggstown / Wickham / Payne's Mill / Orchid Road
605	Shannon Hill / Willis Proffitt Road
609	Buckner Road
610	Holly Grove Drive
611	Octagon Church / Oakland Church / Dongola Road
613	Oakland / Goldmine / Poindexter / Mansfield Road
615	Columbia / Mahanes / Zion Road
618	Fredericks Hall / Belsches Road / East First Street
620	Vawter Corner Road
628	Bibb Store Road / Fredericksburg Avenue
629 (part)	Cartersville Road (to connect 640 with 522)
632	Waldrop Church Road
635	Willow Brook / Factory Mill Road / West Chapel Drive
636	Valentine Mill Road
639	Doctor's / Mallory's Ford Road
640	Jack Jouett Road / Old Mountain Road
646	Yanceyville Road
648	Gardners / Jouett School Road
649	Byrd Mill Road
650	Pottiesville Road
652	Kentucky Springs Road
653	Grace Johnson Road
655	Bethany Church Road
659	Kents Store Road
663	Owens Creek Road
669	Ellisville Drive
695	Hamilton Road
700	Johnson / Mica Road
231	Gordon Avenue

# Louisa County Proposed Bicycle Routes - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for bicycle travel at this time.



Prepared by the Thomas Jefferson Planning District Commission  
 Sources: US Census TIGER data, TJPDC, VHB  
 VDOT, Louisa County Comprehensive Plan  
 No scale  
 October 18, 2001

## **Pedestrian Plan**

### *Intra-Community Facilities*

#### Town of Louisa

Walks should be constructed along Church Street, Patrick Henry Street, Cutler Street, and School Street to connect residents to the activity fields at the old Louisa School. Portions of McDonald Street, and Ashley need walkways to complete the southern circuit of town. Walks should be built on Lyde Avenue to connect Jouett Square town homes to Main Street. The shopping centers at 22 and 33 may need pedestrian walks to connect to Main Street and Route 33, which each need sidewalk to service the shopping centers. Pedestrian crossings at the signalized intersections along Main Street (22) need some improvement. A crosswalk may need to be painted across Ellisville Road (Route 669) at West Street. Railroad crossings may need improvements to allow continuous travel over the tracks, especially on Fredericksburg Rd, where vehicular traffic is frequent. Obstacles in sidewalks, including mostly street signs, should be relocated or removed in Louisa.

#### Town of Mineral

The 1980 *Town of Mineral Plan* has a sidewalk plan, much of which remains to be built, including sidewalks on both sides of Mineral Avenue (Route 522) through most of town, some walks in the industrial area around 5<sup>th</sup> (1110) and 6<sup>th</sup> (1120) Streets east and Louisa Avenue (1107), and a section of sidewalk on Lee Street (1101) in the northeast corner of town. Some sort of pedestrian connection to the school and athletic field complex west of town of Route 22 is needed, and can be provided either on-road or off. Median crosswalk islands or curb extensions would be useful along Mineral Avenue, which is relatively wide. Because traffic is so light on most other town streets, sidewalks are probably not necessary. Tree plantings along the existing sections of sidewalk on the north end of Mineral Avenue have created a pleasant walking environment, which will only improve as the trees grow larger. Trees should complement new walks built in town to continue that trend. Railroad track crossings should be well designed to reduce any separation of the town by the tracks.

### *Inter-Community facilities*

Greenway trails can provide off-road connections between residential areas, services, and points of interest. Recommendations from the *Thomas Jefferson Regional Greenways Plan* include trails along the Route 33/Route 22 and CSX Rail corridor through the center of the County, the South and North Anna Rivers and Lake Anna, the “Mineral Rail Trail” along abandoned railroad by Contrary Creek servicing the mines, Northeast Creek and its reservoir, Little River, and along natural gas pipelines crossing the County. These trails would connect most residential and service areas, as well as providing access to many scenic and historical sites. Property owner consent will be necessary to develop any trails proposed in non-public right-of-way.

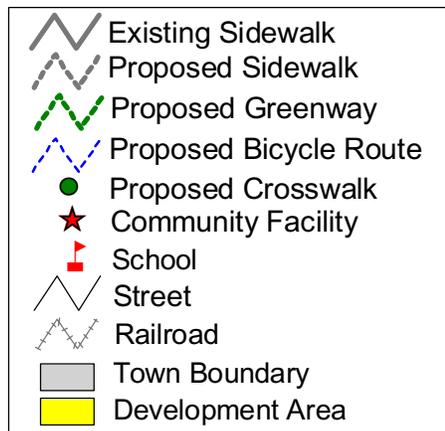
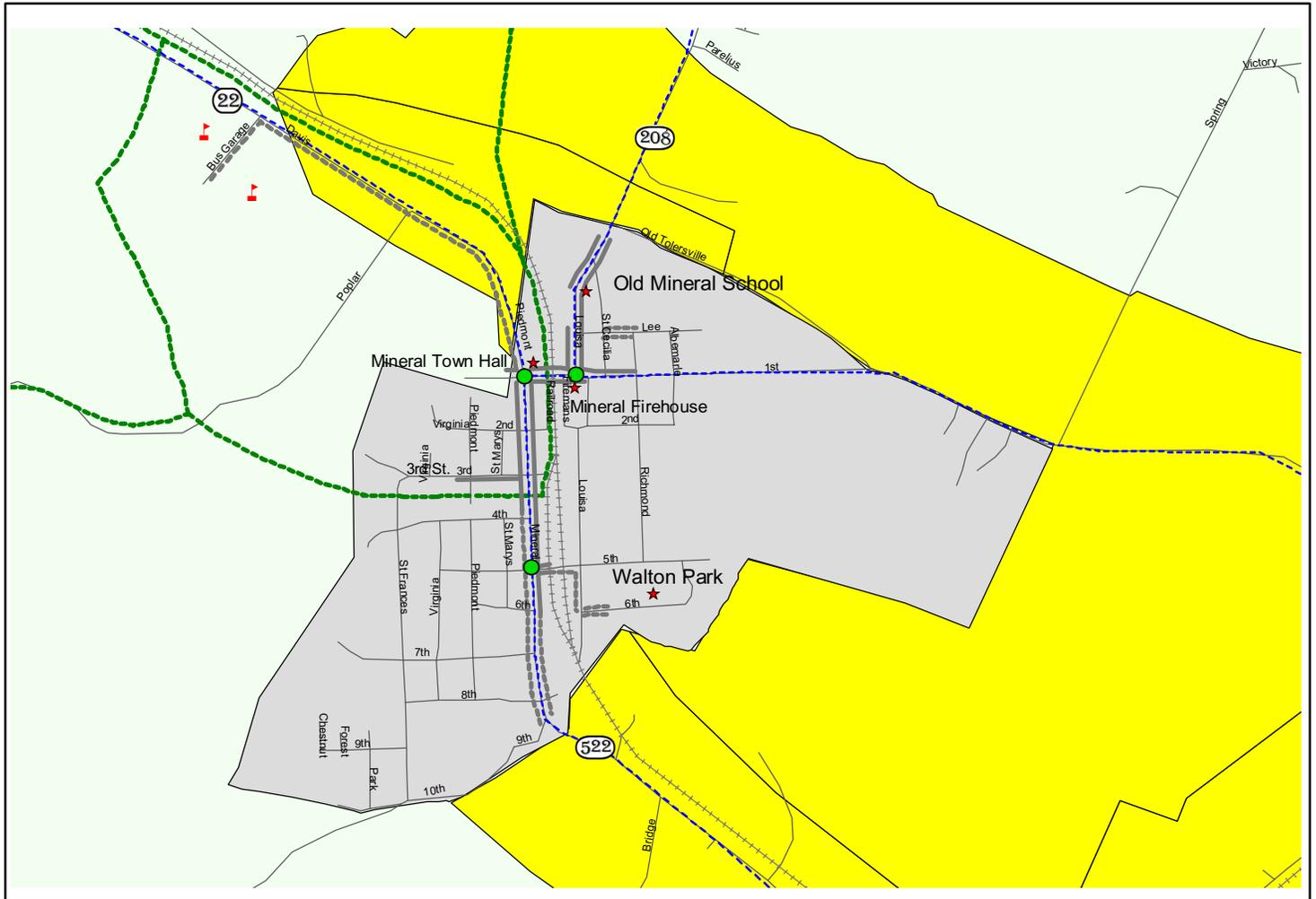
### *Costs for improvements*

Some approximate costs for multi-modal improvements include:

Share the Road sign – 3 per mile	\$72
Bicycle Lane – striped and signed	\$2,000 per mile
Sidewalk with curb and gutter	~\$30 per foot
without curbing	~\$15 per foot
Crosswalk Island	\$6,000-\$10,000
Trail – varying surface types	\$10,000-40,000 per mile

# Town of Mineral Pedestrian Plan - draft

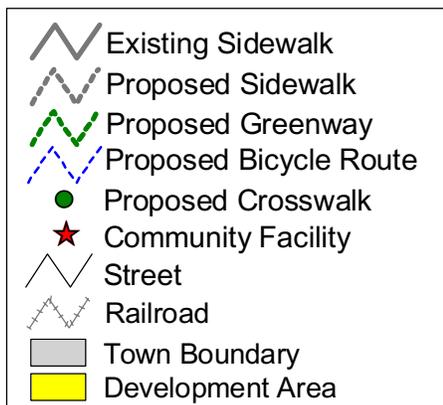
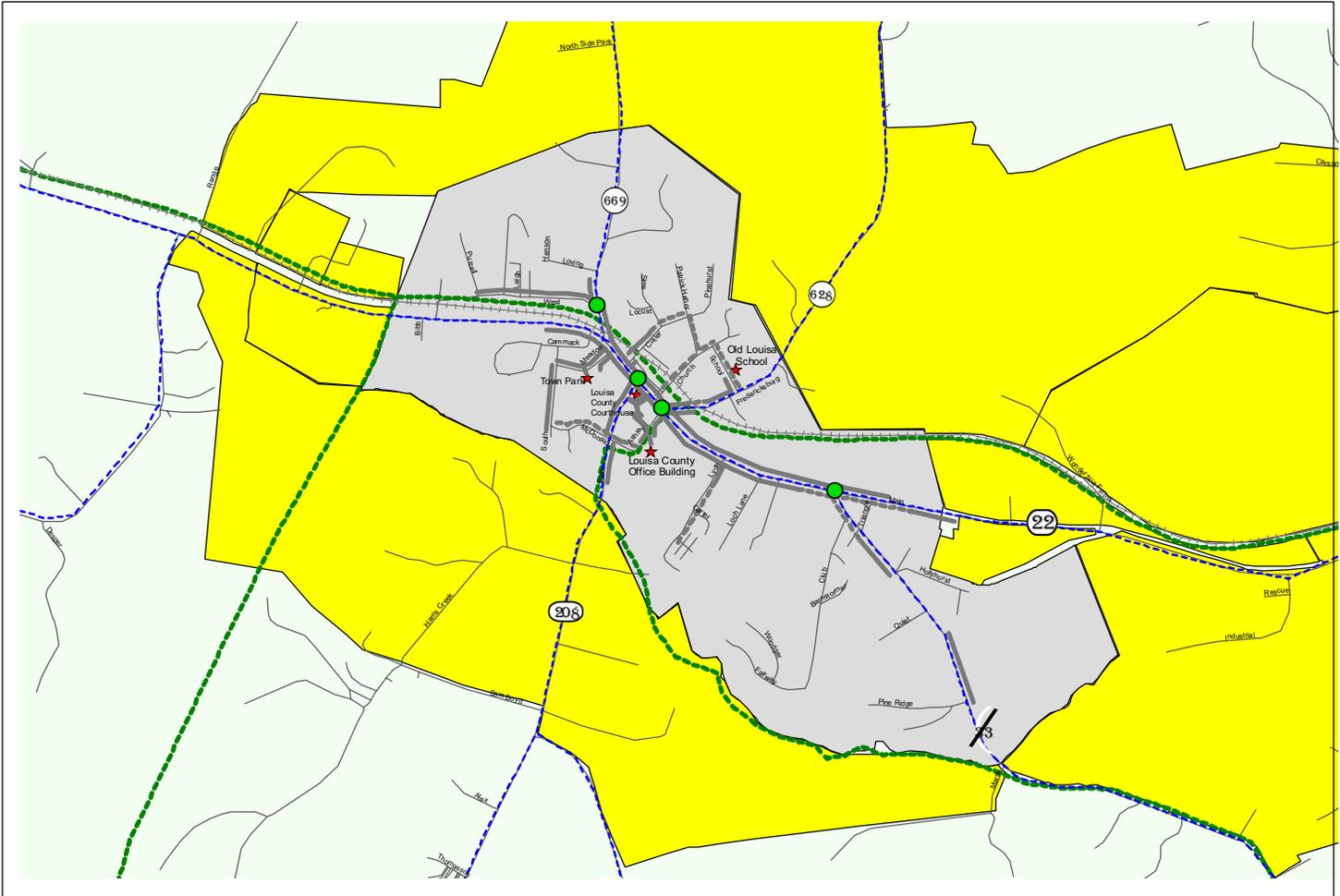
The routes depicted on this map are for planning purposes only and do not depict routes safe for pedestrian or bicycle travel at this time.



Prepared by the Thomas Jefferson  
 Planning District Commission  
 Source: US Census TIGER data, TJPDC, VHB  
 October 18, 2001

# Town of Louisa Pedestrian Plan - Draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for pedestrian or bicycle travel at this time.



Prepared by the Thomas Jefferson  
 Planning District Commission  
 Source: US Census TIGER data, TJPDC, VHB  
 No scale  
 October 18, 2001

## Nelson County

### *Existing Conditions*

#### **Bicycle**

This rural region offers miles and miles of tranquil country roads winding past meadows, orchards, and streams. With gentle rolling hills near the James River and challenging terrain in the Blue Ridge Mountains, Nelson County has something for all skill levels.

The physical terrain, which makes Nelson County attractive to the recreational bicyclists, also makes bicycle transportation between population centers more difficult. The mountains and the limited number of passes between them have channeled all transportation onto the few possible routes, and these routes have become the primary road system for Nelson County. The primary roads must be used in any bicycle transportation plan because there are generally no alternative routes. The possible exception is part of Route 6 east of Route 29.

The Blue Ridge Parkway is a major bike route along the western edge of Nelson County. Between 56 and 250 it is part of the BikeCentennial Route 76 across the country, which continues down 250, through Afton on 151, and into Albemarle on 750. There are recreational routes (paved and unpaved) that connect with and sometimes overlap the primary and secondary roads used for bicycle transportation. Besides the Parkway routes, the Nelson County Tourism office promotes the Oak Ridge Loop, the Walton's Mountain Museum Loop and the Woodson's Mill Loop on their web site and in brochures. Bed and breakfast inns and bicycle groups have developed other unofficial recreational routes.

None of these routes have been improved for bicycle travel nor have they been officially approved as bicycle routes, with the exception of the BikeCentennial Route 76. This plan is to designate the routes to be part of the planned bicycle routes of the future so that as opportunities arise and funding is available, the routes can be improved to accommodate bicyclists in a safe, economical and efficient manner.

#### **Pedestrian**

The size and rural nature of Nelson County make pedestrian travel between population centers a rare occurrence. There are sidewalks in Lovingston and Gladstone and trails across private lands, but generally speaking, there is little in the way of public pedestrian infrastructure in the County. When people do walk long distances, they do so along the road or its shoulder. Depending on the speed and occurrence of cars, which varies across the County, conditions range from potentially pleasant to positively dangerous.

### *Local Plans and Ordinances*

#### **Comprehensive Plan**

The most recent version of the Nelson County *Comprehensive Plan* (1994) has very little reference to bicycles and pedestrians. The County desires to “seek avenues to obtain public access to County rivers for recreational users, and encourage development of appropriate recreational, bicycle and hiking trails” (pg 10), to support its tourism economic development goals. Nelson County is currently updating its comprehensive plan, and it is anticipated that there will be more material for bicycle and pedestrian improvements in the 2001 update.

#### **Area and Special Plans**

The *Route 29 Corridor Development Study* recommends bicycle lanes along the proposed parkway section between Nellysford and Charlottesville and sidewalks or trails in urbanized areas.

#### **Related Ordinances**

The *Subdivision Ordinance* (1997) states that sidewalks shall be built to VDOT standards. There is nothing pertaining to bicycles or pedestrians in the *Zoning Ordinance* (1997). There is discussion of updating both the zoning and subdivision ordinances after the comprehensive plan has been updated.

It is recommended that bicycle and pedestrian friendly language be added to the appropriate section(s) of these codes before development occurs. Samples of bicycle and pedestrian friendly ordinance language can be found in Appendix G.

*Proposed Network and Facilities*

**Bicycle Plan**

The first task in developing a bicycle plan for the County is to identify the highways and routes that are now being used as well as others needed for a comprehensive system of routes to meet transportation and recreation needs. This plan in no way implies that these routes are now safe for bicycling. It does identify the routes that the county would like to be improved in the future to enhance the safety of users, drivers and cyclists, and notifies the Virginia Department of Transportation of the County's intention and desires.

Transportation Routes

*Primary bicycle routes*

Routes 29 and 151 are the primary north-south routes through Nelson County, between Albemarle and Amherst counties, and with minor exceptions, there are no reasonable alternative routes available. These routes must be used to approach the two largest commercial areas of the county: Lovingsston and Nellysford. Through Lovingsston, both Business 29 and the by-pass should be treated for bicycle use.

Routes 6 and 56 are the primary east-west routes through the county connecting the Blue Ridge Parkway to Albemarle, Buckingham and Appomattox Counties in the east. A section of Route 6 north of Afton is part of the BikeCentennial Route 76. Because of the large mountains in the middle of the county, Route 6 and 56 are the primary links between the north-south routes of 151 or 29. Route 60 crosses east-west across the southern tip of the county.

Not only are the primary roads necessary for any bicycle transportation between the communities of Colleen, Oak Ridge, Arrington, Lovingsston, Shipman, Wingina, Schuyler, Piney River, Massies Mill, Montebello, Wintergreen, Nellysford, Woods Mill, Avon, and Afton, they are often required for even short trips within the communities because there are no alternative routes. The majority of County public facilities are along these corridors as well.

These roadways should be improved with paved shoulders when reconstructed, according to VDOT policy, to make regular travel possible. Spot improvements should be made at the areas of most concern as soon as possible.

Share the Road signs should be installed on Route 6 from 250 to 29, on Route 151 from 250 to Amherst County, on Route 56 from the Blue Ridge Parkway to Buckingham County and on Route 250 between the Blue Ridge Parkway and Route 6 (part of the Bike Centennial 76 Route).

<b>Route number</b>	<b>Road Name</b>
6	Afton Mountain Road, Irish Road, River Road
29	Thomas Nelson Highway
56	Crabtree Falls Highway, Tye Brook Road, James River Road
60	Richmond Highway
151	Critzer Shop Road, Rockfish Valley Highway, Patrick Henry Highway

*Secondary bicycle routes*

Nelson County’s secondary bicycle network roads will allow more residents to access the primary network, as well as improving conditions for recreational riders. This network includes the 750 (BikeCentennial Route 76) in the Afton area, 636 (to Albemarle) and 638 in the Avon area, 635 in the Greenfield area (to Batesville), 634 in the Nellysford area, 664 in the Wintergreen area, 655 connecting Roseland, Colleen and Arrington, 665 in the Arrington area, 739 between Route 29 and Amherst (a possible Route 29 alternate), 622 through Gladstone, 650, 710, 653, and 647 in the Shipman area, 639 between Shipman and Schuyler, and 617, 693 and 800 (to Albemarle) in the Schuyler area. These routes should be treated as transportation corridors and improved accordingly (including pull-outs and climbing lanes) for use at more than a recreational level.

Route number	Road Name
617	
622	
634	Adial Road
635	Batesville Road
636	
638	
639	
650	
653	
655	
665	
647	
664	
693	
710	
739	
750	
800	

Recreation bicycle routes

The Blue Ridge Parkway runs along the western border of the county, and between 56 and 250 is part of the BikeCentennial Route 76, which descends the mountain on 250, 151 to Afton and 750 into Albemarle. These are nationally known bicycle routes. Nelson Tourism, local bed and breakfast inns and the Nelson Bicycling Alliance also promote recreational rides within Nelson County. These routes tie into and often use both the secondary and primary routes, and provide access to recreational areas. These additional routes would be added to the plan to include the best known and promoted recreational routes: 631 and 840 in the Afton area; 611 crossing Ennis Mountain; 633 (Taylor Creek Rd.); 680, 685(part), 686(on both sides of 56), 687 and 814 in and around the George Washington National Forest; 699, 724, 666, 778, 676, 673 and 672 are used in the Massies Mill, Lowesville and Piney River area; 778 and 675 to Piney River would connect with the Virginia Blue Ridge Rail Trail being built along the Piney and Tye Rivers; at the eastern end of the trail 739, 657, 654, and 655 would connect to the James River, and 657 would connect to Route 60 to access the James near Gladstone; 626 and 647 follow the James River between Gladstone and Norwood; 626 would follow the James to Howardsville and Albemarle County; 722 between Shipman and Schuyler and into Albemarle; 617 along the Rockfish River; 639 between the Rockfish River and Route 6; 651, 718, 766, 624 and 623 in the Lovingston area and 613, 619, 634, and 776 (part) in the Woods Mill area.

The Virginia Blue Ridge Rail Trail along the Piney and Tye Rivers will eventually connect cyclists from the Blue Ridge Parkway down the mountains to the James River. A proposed Rockfish River Trail will also offer some recreational opportunities for cyclists in Nelson County and would connect 617, one of the most beautiful, paved and level bike routes in the county along the Rockfish River, to Schuyler.

## **Pedestrian Plan**

### *Intra-Community Facilities*

Sidewalks and trails will provide for safe and convenient access to services for residents in existing and future community areas in Nelson County. Lovington, Nellysford, Schuyler, Colleen, Shipman, and Arrington, are areas that may benefit from sidewalks, while trails and improved shoulders can service pedestrians in less dense communities. Signs warning about pedestrian activity may be placed at village approaches, but care must be taken to avoid creating clutter or disrupting scenic views. Commercial centers and public facilities should have internal pedestrian circulation systems that provide safe travel from the street to the entryway, especially where vehicular parking areas are large or busy.

*Lovington:* A crossing of Route 29 between Lovington's downtown and developments on the west side of highway 29 is necessary for safety, especially with a large grocery store across the highway. The Route 29 Corridor Development Study recommends an overpass at this location. The existing sidewalk network can be completed by adding walks along Court Street, extending Main Street walks to all services, and possibly reaching down Front St. to 29. Improvements should include removing street sign obstacles and burying utilities. Trees should be planted along all streets to create a pleasant walking environment in Lovington.

*Nellysford:* Sidewalks should be installed along 151, or connecting to various store walkways in the village center. Walks should be integrated into any new service roads or developments in the village area. Nellysford should have at least one well-marked crossing of 151.

### *Inter-Community facilities*

Paved shoulders along many primary and secondary roads would offer an easier surface for pedestrians traveling between communities in the County. High-speed traffic along these roads will always exist, and pedestrians will not be completely safe as long as they travel in close proximity to automobiles.

Greenway trails should be utilized to connect communities where the opportunity exists. Trails are the most appropriate pedestrian right-of-way in rural settings. They offer safety from automobiles, pleasant views and sounds, and have far fewer environmental impacts than paving roads and laying sidewalks. Nelson County communities are often found in valleys and streambeds, which lend themselves well to trails. Schools, commercial and service districts and residential areas should be linked with trails wherever possible. Cul-de-sacs can be connected with foot trails to create a continuous pedestrian path while restricting automobile traffic.

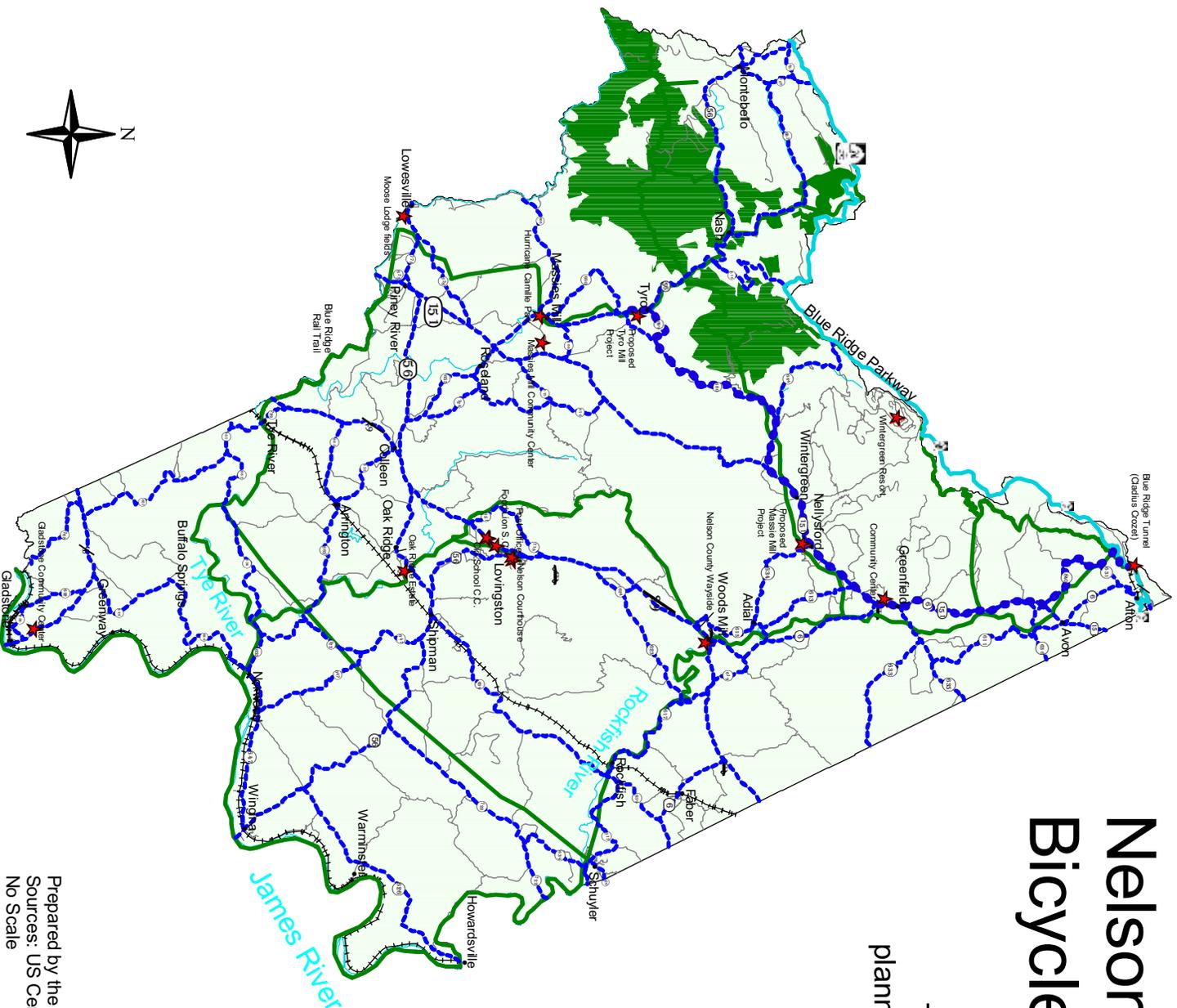
The Blue Ridge Trail, currently under planning and development, will offer a pedestrian path from Piney River to the Norfolk-Southern rail line east of Highway 29 on an abandoned railroad along

scenic river corridors, including the Tye. A similar trail could be developed along the Rockfish River, and James River, creating a diamond of trails encircling the County (when the Appalachian Trail is considered) and connecting most major communities. Deer Rocks and Fortune Cover trails also offer some recreational opportunities to the public.

Recommendations from the *Thomas Jefferson Regional Greenways Plan* include trails on all large rivers, through the County center along various creeks connecting Oak Ridge and Lovingston, in the Hawkins/Findlay Mountain area to Schuyler, and a spur to connect Montebello with the Appalachian Trail. Utility corridors should be explored for potential use as greenways trails in Nelson County. Property owner consent will be necessary to develop any trails proposed in non-public right-of-way.

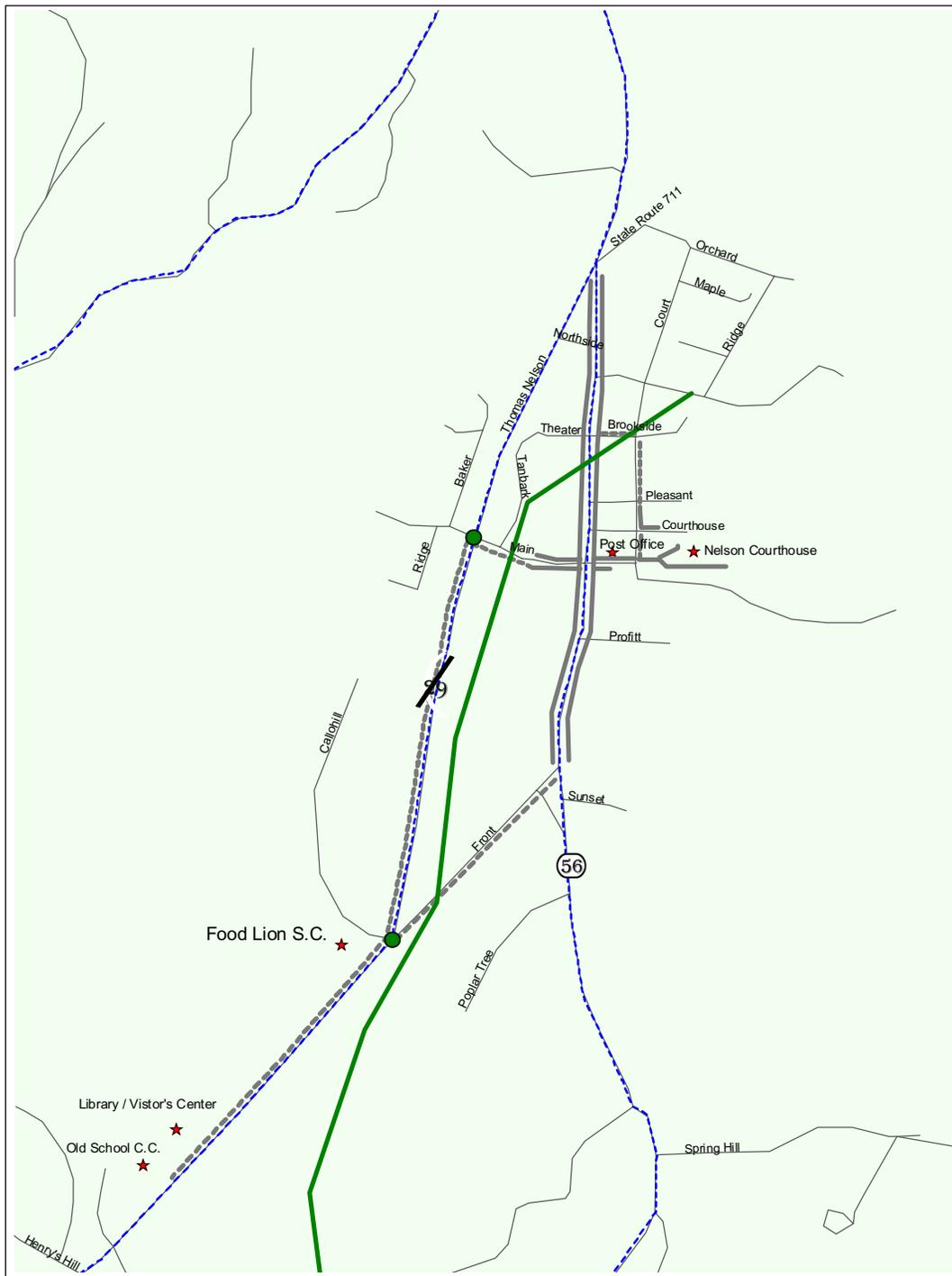
# Nelson County Proposed Bicycle Routes - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for bicycle travel at this time.



# Lovingston Pedestrian Plan - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for pedestrian or bicycle travel at this time.

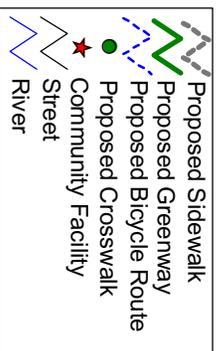
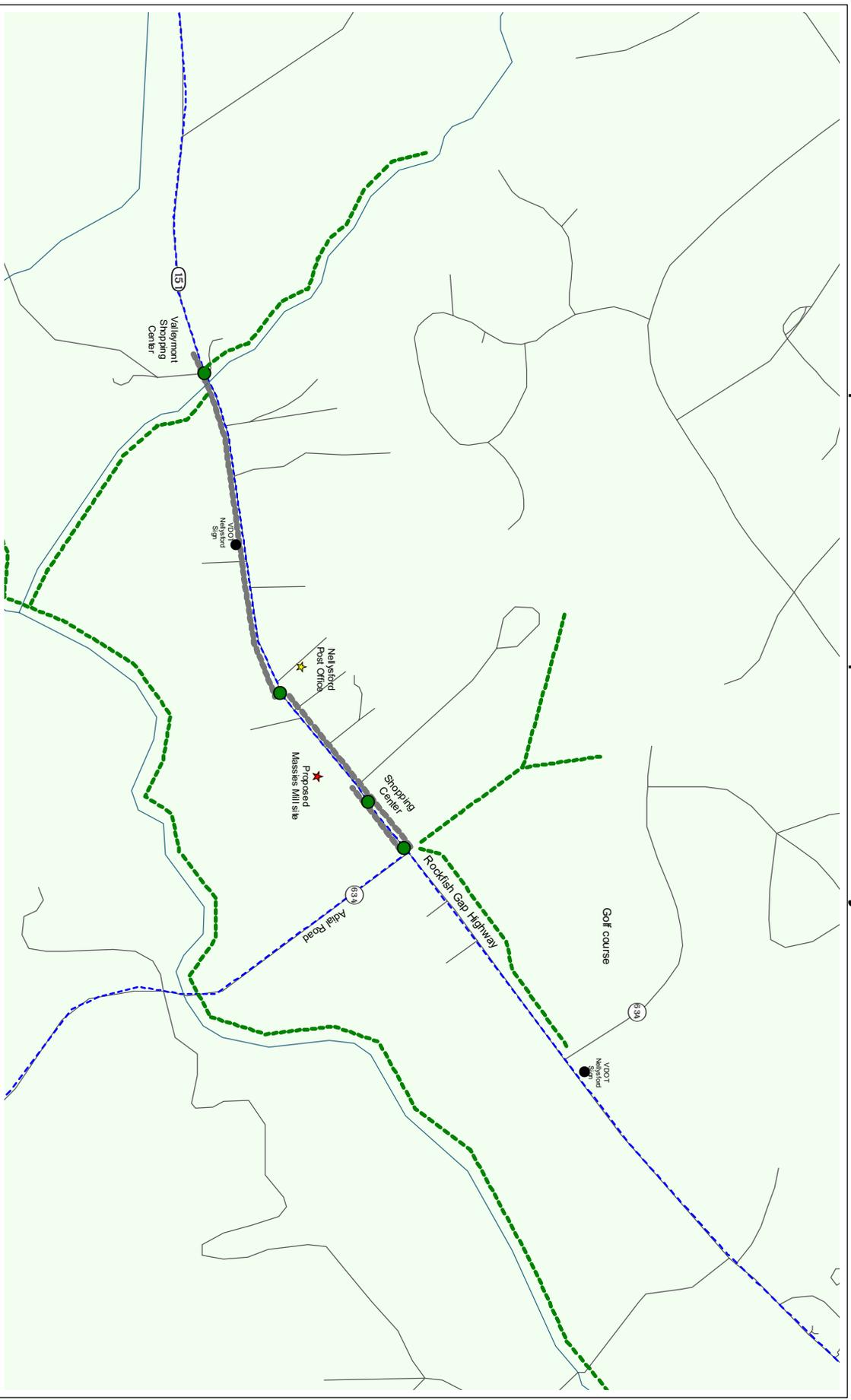


-  Existing Sidewalk
-  Proposed Sidewalk
-  Proposed Greenway
-  Proposed Bicycle Route
-  Proposed Crosswalk
-  Community Facility
-  Street

Prepared by the Thomas Jefferson  
 Planning District Commission  
 Source: US Census TIGER data, TJPDC  
 No scale  
 September 6, 2001

# Nellysford Pedestrian Plan - draft

The routes depicted on this map are for planning purposes only and do not depict routes safe for pedestrian or bicycle travel at this time.



Prepared by the Thomas Jefferson  
Planning District Commission  
Source: US Census TIGER data, TJPDC  
No scale  
June 24, 2002

## University of Virginia

The University of Virginia places a great emphasis on improving bicycle and pedestrian transportation across on University grounds in its *Master Plan* (June 1998). The centerpiece of the plan is a circulation spine, called the Groundswalk, connecting all major sectors of the campus, giving priority to bicycle and pedestrian transportation over private automobiles. In general, the University bicycle and pedestrian planning is closely coordinated with the Charlottesville and Albemarle plans.

### **The Groundswalk**

On the University Grounds, the Groundswalk will consist of an upper, more urban route that follows the existing road system, as well as a more informal bike/hike trail paralleling Meadow Creek, which the Master Plan calls for daylighting in the areas where it has been put in underground pipes. The upper Groundswalk route will follow Massie Road, cross over Route 29 North on a bridge, and then follow Rugby and McCormick Roads. Major implementation phases of this project will include construction of the bridge over Emmet Street and new path behind Lambeth Colonnades (scheduled for construction in 2002-2003), and the restriction of McCormick Road to use by bicycles, pedestrians and transit vehicles. In other sections of the upper Groundswalk, existing roads will be improved to provide sidewalks and bicycle lanes, on the model of the newly widened Rugby Road.

The construction of the riparian section of Groundswalk will be accomplished along with the future daylighting of Meadow Creek. The path will follow the Creek through the Dell between Alderman Rd. and Emmet St., wrap around the edge of Nameless Field, and parallel Emmet St. through Carrs Hill Field and Lambeth dormitories. Another section of trail will follow the Meadow Creek tributary at Copeley Hill, connecting the Law and Darden Schools to Emmet St.

### **Bicycle**

University policy discourages the use of bicycles on sidewalks. Therefore, it is a high priority of the University to work with the City to establish a safe and continuous system of bike lanes on the roads adjacent to or connected to the University grounds. In conjunction with the City of Charlottesville, the University developed a plan for improving the JPA corridor adjacent to the campus, which provides a continuous system of bicycle lanes from West Main St. to Emmet St. through road widening and/or re-apportioning the existing road width.

### **Pedestrian**

The *University Master Plan* seeks to foster a more collegial academic environment by creating a circulation system that encourages walking rather than driving between destinations. Strategic infill development throughout the academic grounds in order to keep facilities within walkable distance of one another is one primary means of achieving this goal. In addition, the improvement of the pedestrian environment through construction of sidewalks, lighting, safer intersections and crosswalks is a high priority. In particular, the City and the University have identified the need for a sidewalk where none currently exists along the north side of Jefferson Park Avenue.

## City of Charlottesville

### *Existing Conditions*

Charlottesville, as the primary urban area of the planning district, has by far the majority of existing bicycle and pedestrian infrastructure, usage, and future demand for use. The City also has a number of plans in place or under development, so this regional plan refers to City efforts and offers suggestions for ensuring coordination with Albemarle County and the University of Virginia.

### *Local Plans and Ordinances*

The *Charlottesville Comprehensive Plan (2000)* includes a large amount of language dealing with bicycle and pedestrian provisions, and explains how the City plans to include these modes of transportation in its overall development process.

The *2003 Bicycle and Greenways Master Plan* is the on-road bike plan and off-road trails plan.

The City maintains a list of 100 priority sections of sidewalk to build, and constructs them as funding is available. More sidewalks are being built with recent changes allowing neighborhoods to allocate dollars towards specific projects.

### *Proposed Network and Facilities*

#### **Bicycle**

On-road facilities that coordinate with Albemarle County plans, but are not listed in the 1991 Plan include:

Avon Street to City limit  
Old Lynchburg Road  
5<sup>th</sup> Street Extended  
Old Ivy Road  
Angus Road  
Rio Road (just east of 29)  
Hillsdale Drive  
Route 250 East  
Hydraulic Road east of Route 29

The 1991 plan has a discrepancy between the text and map for the Monticello Avenue/Road area.

#### **Pedestrian**

The City sidewalk plan does not need any adjustment at this time. Construction has increased in pace recently, and there are various plans to remove obstacles and provide ADA accessibility city-wide.

Trails are recommended along Biscuit Run, Sunset Ave., Rivanna River, Meadow Creek, Woolen Mills, CATEC, and Moore's Creek at 5<sup>th</sup> Street.

## Implementation

There are a number of steps to take after this plan is created in order to see its recommendations become a reality. The plan must first be adopted in each locality and incorporated into local comprehensive plans, zoning and subdivision ordinances as they are updated. Copies should be sent to VDOT (both state and district offices) and other agencies. Once the plans are in place, facility development can begin. The success of this plan depends upon initiation and coordination of public and private efforts at many levels. It is essential that broad citizen input and support from bicyclists, pedestrians, motorists, and other groups be developed during the implementation phase.

### Government Process Activities

- Adopt the plan and provide approved copies to notify all necessary agencies and departments.
- Update comprehensive, zoning and subdivision codes to align with needs in this plan.
- Put all recommendations into TIP and other transportation plans.
- Establish a bicycle and/or pedestrian planner as a staff position in local governments.
- Maintain citizen committees to implement the recommendations of this plan.
- Develop measures of effectiveness for evaluating attainment of goal and objectives.
- Review and update the plan every five years depending on progress and growth trends.
- Enforce speed limits and traffic laws regarding interaction with bicycles and pedestrians.

### Planning Activities

- Survey area roads for pedestrian and bicycle usage to help determine facility needs.
- Apply the Bicycle Compatibility Index (BCI) to roadways designated as bike routes in this plan to determine existing conditions and help identify needs for improvements.
- Include bicycle and pedestrian traffic in overall level of service analysis for all roads.
- Create and adopt minimum facility standard based on the speed and volume of adjacent traffic.
- Establish road smoothness standards and regular cleaning cycle for bicycle routes.
- Establish computer-modeling capacity for bicycle and pedestrian traffic.
- Continue regional cooperation with neighboring localities and the State in planning and development.
- Investigate alternative alignment for the Interstate Bicycle Route-76 where needed.
- Investigate options for building alongside active railroads and utility corridors.
- Support efforts to put freight on rail to reduce the number of through-trucks on area roadways.

### Design and Construction Activities

- Identify worst hazards and barriers and mitigate or remove them.
- Determine what type of treatment each road should receive so it can be improved accordingly.
- Implement vehicular traffic calming where needed to improve bicycle and pedestrian safety.
- Develop facilities in a manner that is based on the priorities determined by observed need and use.
- Incorporate facilities as part of road improvements from design to construction and maintenance.
- Regardless of priorities, bicycle facilities should be provided along any designated road segment when an opportunity exists, in conjunction with a road project or through private contribution.

### Funding Activities

- Establish regional fund for construction and maintenance of facilities.
- Provide annual funding in Capital Improvement Programs for bikeway improvements
- Budget for maintenance (painting crosswalks and lane markers, resurfacing sidewalks, sweeping).
- Utilize all possible funds including state, federal and private funds for the construction of facilities.
- Create and link to tourism routes to build support for development of facilities.

## Financing Improvements

Even the best of plans are of little value if not implemented, and financing improvements is a large part of implementation. There are a variety of methods, described below, which can be used to channel needed dollars to the appropriate groups to make changes and improvements. In general, public monies are expended on such efforts, and almost always, public entities perform the work required. There are opportunities for volunteer assistance with construction activities, and groups other than public bodies often take the role of advocating and educating, so there is a niche for non-public dollars as well.

Included below are sources of money that exist today and ideas for new sources or changes in allocations that will provide more funding for multi-modal travel improvements.

### State Funding Sources

The *Virginia Department of Transportation* provides funding for roadway projects on a variable match basis with localities. VDOT also constructs enhancement projects and offers some funds for recreational access. VDOT will most likely fund a portion of every project in some way. A locality can speed or slow the development of facilities by controlling matching contributions to highway projects. The local Board of Supervisors must take formal action to approve the Secondary Road funds and road projects, and can affect the amount of funding for bicycle and pedestrian improvements.

The *Virginia Department of Conservation and Recreation* has funding available generally for off-street recreation-focused facilities and access roads. The Virginia Outdoor Grant is one such program.

The *Virginia Department of Rail and Public Transit* can assist with rail and transit improvements.

Virginia local and state tourism entities are beginning to fund trails and bicycle facilities.

### Potential State funding sources

VDOT requires a 50% local match for new bike/pedestrian/transit versus 2% match for new roads. Match percentages could all be set at the same level to eliminate any state bias in the type of facilities provided. VDOT could also fund more bicycle and pedestrian improvements as independent projects (not in association with any vehicular roadway improvements).

“Bike VA” or “Walk VA” license plates could be made, with a portion of sales going to support projects to improve multi-modal travel.

## **Federal Funding Sources**

The *Federal Highway Administration* administers the TEA-21 grant program. Bicycle and pedestrian projects are eligible for funding through federal surface transportation programs under the Transportation Efficiency Act for the 21<sup>st</sup> Century (TEA-21). Eligibility does not guarantee funding, and states and MPOs have most of the control over project selection and priorities for funding. Funding is generally restricted to federal-aid roadways, and will not cover local roads, except STP, Bridge Program, and Hazard Elimination funds.

### *TEA-21 programs offering bicycle and pedestrian funding:*

- National Highway System (NHS) funds (section 1006) may be used to construct bicycle transportation facilities on land adjacent to any highway on the NHS. These funds are also available for constructing pedestrian walkways.
- Surface Transportation Program (STP) Funds (section 1007) may be used to construct bicycle transportation facilities related to safe bicycle use. Traffic calming can be funded with these monies, which can also fund staff coordinator positions. 10% of STP funds are used for Transportation Enhancement Activities, which can include provision of facilities for bicyclists/pedestrians and preservation of abandoned railway corridors.
- Federal Transit Program - Title 49 U.S.C. (as amended by TEA-21) allows the Urbanized Area Formula Grants, Capital Investment Grants and Loans, and Formula Program for Other than Urbanized Area transit funds to be used for improving bicycle and pedestrian access to transit facilities and vehicles. Eligible activities include investments in "pedestrian and bicycle access to a mass transportation facility" that establishes or enhances coordination between mass transportation and other transportation. This may include providing bicycle shelters and parking facilities in or around transit facilities, or to install racks or other equipment for transporting bicycles on transit vehicles. One percent of Urbanized Area Formula Grants is designated for TEAs that support cyclist and pedestrian access to transit.
- Hazard Elimination and Railway-Highway Crossing programs - Ten percent of each State's STP funds is set-aside for these programs, which address bicycle and pedestrian safety issues. Each State is required to implement a Hazard Elimination Program to identify and correct locations which may constitute a danger to motorists, bicyclists, and pedestrians. Funds may be used for activities including a survey of hazardous locations and for projects on any publicly owned bicycle or pedestrian pathway or trail, or any safety-related traffic calming measure.  
23 USC Section 130 and 152.

### *National Park Service*

- Federal Lands Highway Funds (section 1032) may be used to construct bicycle transportation facilities in conjunction with roads, highways and parkways.
- Land and Water Conservation Fund (LWCF)
- Urban Park and Recreation Recovery Program (UPARRP)
- Historic Bridges Program

National Recreational Trails Funds (section 1302) may be used for a variety of recreational trails programs to benefit bicyclists, pedestrians and other non-motorized users. Projects must be consistent with a Statewide Comprehensive Outdoor Recreation Plan required by the Land and Water Conservation Fund Act.

Scenic Byways Program funds (section 1047) may be used to construct bicycle facilities only along designated scenic highways

Highway Safety Research and Development (Section 403) program: Research, development, demonstrations and training to improve highway safety (including bicycle and pedestrian safety).

The *Department of Transportation* has a State and Community Highway Safety Grants program (section 402), which can fund educational programs. DMV Programming and Educational Grants and Mini Grants. Local and State governments and 501(c)3 organizations are eligible to apply for DMV grants. Public/private partnerships are essential. Eligible projects include developing materials (rodeos, fairs, guide, map).

Job Access and Reverse Commute Grants: support projects, including bicycle-related services, designed to transport welfare recipients and eligible low-income individuals to and from work.

Most federal-aid highway funding requires a state or local match of 20%, which can take the form of funds, materials or services. Funds from other federal programs (HUD Block Grants, Land and Water Conservation Fund) may be used to match Transportation Enhancement, Scenic Byways, and Recreational Trails program funds up to 100 percent.

### **Local Funding sources**

Capital Improvement Programs

General funds appropriations

Towns and cities can use urban road money

Sheriffs/Police may have money available to teach bicycle and pedestrian laws and traffic concerns.

Bicycle licensing or user fees, fines and penalties, and income from auction of unclaimed bikes.

#### Potential Local funding sources

Prioritizing VDOT secondary or urban roads fund money

Utility billing “round-up”, where payments can be rounded up to the next dollar, with the change going to support facility construction and improvement (Blacksburg, VA)

Meals and tourism taxes earmarked for improvements

### **Private Funding Sources**

Developer's Contributions

Neighborhood Associations

Bicycle or walking clubs

Local Service Organizations (Lions Club, Rotary Club, Ruritans, Civic League, Junior League, etc.)

Non-profit support - (American Lung Association: Clean Air Challenge)

Individual or corporate donations

#### Potential private funding sources

”Yard sale” – fund a yard (distance) of trail.

Brick purchases, buy a brick for the sidewalk.

## Public Information, Education and Safety

Comprehensive public information and education programs can be implemented to raise the community's awareness and improve the safety for bicyclists and pedestrians. The City of Charlottesville, Rideshare and CTS have some programs, brochures and videos in place that can be considered for more use in the region. Below are some recommended steps for increasing pedestrian and bicycle safety.

### Education

Create programs that increase motorists' awareness of bicyclists and pedestrians and educates them on proper driving techniques that will reduce the potential for accidents.

Create programs that educate pedestrians and bicyclists of all ages on the "rules of the road", proper riding techniques, and potential dangerous situations that arise while traveling (i.e., crosswalks, doors opening on parked cars, bus stops, and roadway barriers).

Increase public awareness of cyclists and walkers through public service announcements, slide presentations, bumper stickers, maps, safety outreach teams, bicycle and walk day or week, bicycle rodeos, and materials on proper use of sidewalks, bicycles and bicycle facilities.

Encourage schools, civic organizations, public agencies, and clubs to sponsor education programs.

### Programs

Encourage bicyclists to wear adequate equipment, such as helmets, brightly colored clothing and kneepads, to make bicycling safer.

Prepare and disseminate bicycle maps identifying suitable and unsuitable bikeways throughout the area and provide a brief description of each. This differs from the map of planned facilities.

Encourage employers to provide bike racks or lockers, showers and washrooms to encourage employees to bike to work.

Encourage bike racks and lockers at transportation transitional points such park and ride lots and major bus stops.

Include directions on how to walk or ride a bike to destinations in advertising and brochures.

### Safety

Install Share the Road signs along primary bicycle corridors and include share the road in education.

Eliminate obstacles that make pedestrians hard to see, improve lighting and vegetation clearance.

Encourage a coordinated regional volunteer bicycle registration program, backed by adequate enforcement and publicity. Utilize a number of registration locations, including government offices, police stations, fire stations, and libraries.

Improve accident reporting procedures such that a complete picture of causative factors can be determined, thereby allowing subsequent corrective measures to be obtained.

Devise an effective enforcement program that is characterized by consistency, emphasis on proper registration, adequate and appropriate penalties, and positive attitudes of police.

Institute a program that deals effectively with youthful bicyclists who are observed violating traffic and safety laws.

Create or improve street and sidewalk cleanliness programs through either volunteer or public efforts.

The FHWA website [http://safety.fhwa.dot.gov/programs/ped\\_bike.htm](http://safety.fhwa.dot.gov/programs/ped_bike.htm) has safety and education resources for bicycles and pedestrians.

## Appendix A – Definitions

Definitions (adapted from Oregon Bicycle and Pedestrian Plan and the CATS 2015 Plan)

**ACTIVITY CENTERS:** Neighborhoods, commercial areas, and employment sites which attract or generate travel.

**ARTERIAL (STREET):** A street designated to carry traffic, mostly uninterrupted, through an urban area, or to different neighborhoods within an urban area.

**BICYCLE:** (Code of VA) A device propelled solely by human power having pedals, two or more wheels, and a seat height of at least 25 inches from the ground when adjusted to its maximum height. A bicycle shall be a vehicle while operated on the highway.

**BICYCLE FACILITY:** A general term denoting improvements and other provisions made by public agencies to accommodate or encourage bicycling, including roadway improvements, signage, bicycle parking and storage facilities, and shared roadways not specifically designated for bicycle use.

**BIKE LANE:** A portion of a roadway which has been designated by striping and pavement markings for the preferential or exclusive use of bicyclists.

**BIKEWAY:** A bikeway is created when a road has the appropriate design treatment for bicyclists, based on motor vehicle traffic volumes and speeds: shared roadway, paved shoulder, bike lane, bicycle boulevard, or separated from the roadway multi-use path.

**CATS 2015:** (Charlottesville Area Transportation Study for the year 2015) The long range transportation plan developed by the Charlottesville-Albemarle Metropolitan Planning Organization.

**COLLECTOR (STREET):** A street designated to carry traffic between local streets and arterials, or from local street to local street.

**CROSSWALK (Code of VA)** that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or, in the absence of curbs, from the edges of the roadway; or any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.

**GRADE:** A measure of the steepness of a roadway, bikeway or walkway, expressed in a ratio of vertical rise per horizontal distance, usually in percent; e.g. a 5% grade equals 5 m of rise over a 100 m horizontal distance.

**GRADE SEPARATION:** The vertical separation of conflicting travelways with a structure.

**GREENWAY:** Natural corridor often used for bicycle and pedestrian trails.

**HIGHWAY:** A general term denoting a public way for purposes of travel, including the entire area within the right-of-way.

**LOCAL (STREET):** A street designated to provide access to and from residences or businesses.

**MOTOR VEHICLE:** A vehicle that is self-propelled or designed for self-propulsion.

**MULTI-USE PATH:** A path physically separated from motor vehicle traffic by an open space or barrier and either within a highway right-of-way or within an independent right-of-way, used by bicyclists, pedestrians, joggers, skaters and other non-motorized travelers.

**MULTI-MODAL:** Including more than one mode of transportation (road, transit, bicycle, pedestrian, water, air, rail).

**PAVEMENT MARKINGS:** Painted or applied lines or legends placed on a roadway surface for regulating, guiding or warning traffic.

**PEDESTRIAN:** A person on foot, in a wheelchair or walking a bicycle.

**PEDESTRIAN FACILITY:** A facility provided for the benefit of pedestrian travel, including walkways, crosswalks, signs, signals, illumination and benches.

**RECREATIONAL BICYCLIST:** This bicyclist's objective is not necessarily reaching a specific destination, but instead to exercise and enjoy the scenery. Scenic roadways with meanders, overlooks, and points of interest are usually desirable features.

**RIGHT-OF-WAY:** A general term denoting publicly owned land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

**RIGHT OF WAY:** The right of one vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian.

**ROADWAY:** The paved portion of the highway.

**SHARED ROADWAY:** Bikeway where bicycles and motor vehicles share a travel lane.

**SHOULDER:** Portion of a highway contiguous to the travel lanes provided for pedestrians, bicyclists, emergency use by vehicles and for lateral support of base and surface courses.

**SHOULDER BIKEWAY:** A type of bikeway where bicyclists travel on a paved shoulder.

**SIDEWALK:** A walkway separated from the roadway with a curb, constructed of a durable, hard and smooth surface, designed for preferential or exclusive use by pedestrians.

**TEA-21:** (Transportation Equity Act for the 21<sup>st</sup> Century) the most recent federal transportation legislation. TEA-21 updates planning regulations implemented initially in ISTEA.

**TRAFFIC CONTROL DEVICES:** Signs, signals or other fixtures, whether permanent or temporary, placed on or adjacent to a travelway by authority of a public body having jurisdiction to regulate, warn or guide traffic.

**TRAFFIC VOLUME:** The given number of vehicles that pass a given point for a given amount of time (hour, day, year). See ADT.

**UTILITARIAN BICYCLIST:** This type of bicyclist's objective is to reach a specific destination such as work or school. This type of bicyclist places importance on the directness of bikeways, acceptable grades and minimization of delays.

**VDOT SIX-YEAR IMPROVEMENT PROGRAM:** Updated every June, shows funding allocations and timelines for transportation improvements throughout the state.

**VEHICLE:** Any device in, upon or by which any person or property is or may be transported or drawn upon a highway, including vehicles that are self-propelled or powered by any means.

**WALKWAY:** A transportation facility built for use by pedestrians, including persons in wheelchairs. Walkways include sidewalks, paths and paved shoulders.

#### Abbreviations:

AASHTO:	American Association of State Highway and Transportation Officials
ADA:	Americans with Disabilities Act
ADT:	Average Daily Traffic
CIP:	Capital Improvement Program
CTB:	Commonwealth Transportation Board
CTS/UTS:	Charlottesville Transit Service/University Transit Service
FHWA:	Federal Highway Administration
ISTEA:	Intermodal Surface Transportation Efficiency Act
JAUNT:	Jefferson Area United Transit
MPO:	Metropolitan Planning Organization
MUTCD:	Manual on Uniform Traffic Control Devices
STP:	Surface Transportation Program- FHWA funding program for roads
TIP:	Transportation Improvement Program
TJPDC:	Thomas Jefferson Planning District Commission
UVA:	University of Virginia
VDOT:	Virginia Department of Transportation
VDRPT:	Virginia Department of Rail and Public Transportation

## Appendix B - VDOT Policy on Participation in the Development of Bicycle Facilities

CTB resolution Dec. 20, 1990 established VDOT's policy on participating in the planning and construction of bicycle facilities.

Bicycle facilities can include shared wide highway lanes, paved highway shoulders, bicycle lanes, bicycle paths, multipurpose paths, and other physical improvements to better accommodate bicyclists. Local governments are encouraged to develop bicycle facilities on a local and regional basis in order to satisfy the need within each geographic area. VDOT's participation in bicycle facilities is principally oriented toward facilities that may be constructed with the roadway improvement as part of the highway construction project.

VDOT will participate in comprehensive bicycle facility planning in the urbanized areas (population greater than 50,000) of Virginia as part of the Continuous, Comprehensive, and Cooperative (3C) transportation planning process. When requested, VDOT may provide technical or financial assistance to all other local governments and Planning District Commissions in developing a comprehensive bicycle facility plan. Bicycle facilities may be constructed for access purposes when the conditions in the Bicycle Access Facilities Guideline are met.

VDOT will consider financially participating in the construction of a bicycle facility where all the following conditions are satisfied:

The bicycle facility will not impair the safety of the bicyclist, motorist, or pedestrian, and is designed to meet current AASHTO guidelines and/or VDOT guidelines.

The bicycle facility will be accessible to users and will form a segment located and designed pursuant to a comprehensive bicycle plan that has been adopted by the local jurisdiction or is part of the AASHTO approved Interstate Bicycle Route System.

It is reasonably expected that the bicycle facility will have sufficient use in relation to cost to justify the expenditure of public funds in its construction and maintenance, or the bicycle facility is a significant link in a comprehensive bicycle system that is needed for route continuity.

VDOT will initiate bicycle facility construction only at the request of the affected local government, with the exception of the AASHTO approved Interstate Bicycle Route System.

The bicycle facility design plans shall be coordinated with the affected local government and approved by VDOT prior to any official implementation by VDOT.

The bicycle facility is constructed concurrently with a highway construction project with the exception of the conditions listed in the Bicycle Access Facilities and Existing Roads, section of this document. All proposed highway projects involving major construction or redevelopment along the AASHTO approved Interstate Bicycle System should provide the necessary design features to facilitate bicycle travel along those routes. VDOT may elect not to participate in the construction of a bicycle facility even if all the conditions listed under VDOT Bicycle Facility Participation are met.

### **VDOT Funding Guidelines**

For a VDOT approved bicycle facility project that is constructed concurrently with a highway project, VDOT may financially participate as follows:

Primary System: In all jurisdictions, except towns under 3,500 population, where VDOT maintains the primary system highways, all additional preliminary engineering, right of way, and half of the construction costs for the bicycle facility may be borne by the primary system highway construction funds allocated for the Construction District. For the following exceptions, the additional costs may be borne totally by the primary system funds allocated:

Towns under 3,500 population

Relocated existing bicycle facilities

Paved shoulders and shared roadways where provisions for such are necessary to provide proper motor vehicle traffic service

AASHTO Approved Interstate Bicycle System

## Jefferson Area Bicycle, Pedestrian, and Greenways Plan

**Secondary System:** In Counties and towns, where VDOT maintains the secondary system highways, all additional preliminary engineering, right of way, and half of the construction costs for the bicycle facility may be borne by the secondary system highway construction funds allocated for the County. For the following exceptions, the additional costs may be borne totally by the primary system funds allocated:

Relocated existing bicycle facilities

Paved shoulders and shared roadways for highways functionally classified as arterials or collectors where provisions for such are necessary to provide proper motor vehicle traffic service

AASHTO Approved Interstate Bicycle System

**Urban System:** In all cities and towns that maintain their own highways, the cost of additional preliminary engineering, right of way, and construction of bicycle facilities may be borne by the Urban System construction funds allocated to the locality with the same local match required by law for construction of the highway project

**AASHTO Approved Interstate Bicycle Route System:** For all bicycle facilities located along the AASHTO Approved Interstate Bicycle Route System on the primary and secondary systems, the costs of additional preliminary engineering, right of way, and construction of the bicycle facility may be borne totally by the funds allocated by law for those systems. The additional costs for the Interstate Bicycle Route System projects on the Urban System may be borne by the urban funds allocated to the locality with the same local match required by law for construction of the highway project.

### **Bicycle Access Facilities**

VDOT may participate in the development of bicycle access facilities to serve public recreational areas and historic sites based on the current Recreational Access Fund Policy.

### **Existing Roads**

In some instances, for route continuity, bicycle facilities may be routed over existing facilities which are not planned for expansion. In these cases, the facilities are an operational feature and usually result in the identification of a bike lane, restriction of parking, or some other physical modification to accommodate bicycle travel. It is necessary for the Transportation Planning Engineer to coordinate with the District Administrator, the District Traffic Engineer, and appropriate Divisions in the Central Office to assure agreement on the method of treatment for a bikeway over an existing route. All the conditions of VDOT Bicycle Facility Participation Guidelines and VDOT Funding Guidelines need to be met except the bicycle facility is not required to be constructed concurrently with a highway construction project. VDOT's financial participation and funding will be the same as specified in VDOT Funding Guidelines.

### **Major Developments and Site Plans**

When bicycle facilities are considered as part of the total development of a property where the road system will be maintained in the future by VDOT and the local government requires bikeways in new developments, the following conditions must be satisfied:

The bicycle element of the entire plan for the development must be Reviewed and approved by the local government prior to final approval by the Transportation Planning Engineer. Appropriate Review must be made, and communication regarding the resolution of bicycle facility systems must be carried on between the Resident Engineer, District Traffic Engineer, and the Transportation Planning Engineer.

Along any roadways identified in the site plan, which will be maintained in the future by VDOT, a bike path may be incorporated into the development parallel to but off of the right of way dedicated for street purposes. The maintenance and the responsibility for operating the bike path would fall on the owner, which would be the locality, the developer, or other entity with the responsibility of maintenance of the common land of the development and not the responsibility of VDOT. The bike path right of way will be exclusive of the road right of way; thus, future changes and/or modifications in the bike path would not be the responsibility of VDOT.

Bikeways within the VDOT right of way shall be designed to meet AASHTO and VDOT guidelines.

For major developments and site plans where the road system will not be maintained in the future by VDOT, all bicycle facility connections to VDOT maintained facilities shall be subject to review and approval by the District Administrator.

source: VDOT Bicycle Facility Guidelines May 23, 2000

## APPENDIX B – VDOT Statewide Intermodal Long Range Transportation Policy Plan 1995

Incorporate intermodal planning including planning for bicycle and pedestrian and telecommuting facilities in the transportation planning efforts at the state and regional levels.

### 5.0 Planning Factors:

#### 3. Strategies for Incorporating Bicycle and Pedestrian Facilities in Appropriate Projects

The Virginia Department of Transportation has been proactive in its integration of bicyclists and pedestrian needs into the transportation planning process. VDOT funds paved shoulders, shared lanes, bike lanes and trails as well as bicycle racks and lockers.

VDOT has a Bicycle Advisory Committee that notifies local bicycle clubs of planned highway projects so that they can provide input on the need for bicycle facilities. A VDOT transportation planning staff member reviews highway plans to determine if the project coincides with recommendations contained in local bike plans. VDOT has established two interstate bicycle routes. VDOT and the Bicycle Advisory Committee are presently preparing a statewide bicycle suitability map.

In July, 1994, VDOT and the Bicycle Advisory Committee developed a draft-planning guide for local governments, regional planning agencies and MPOs to assist them in developing bike plans for their areas. Technical assistance is also provided by VDOT staff for the development of local bicycle plans.

VDOT currently is reviewing its policy for participation in the cost of pedestrian facilities. Before programming, all projects are reviewed by staff to determine the need for pedestrian facilities. One source of funding for both pedestrian and bicycle projects is Virginia's Enhancement Funds.

## APPENDIX B – VDOT Subdivision Street Requirements

### 24 VAC 30-90-170. Sidewalk

- A. The installation of sidewalk is not a requisite for the department's acceptance of a subdivision street. However, sidewalk located within the dedicated right-of-way, whose construction is either voluntary or a requirement of the governing body, may be accepted for maintenance subject to its compliance with the following standards.

Sidewalks may be accepted on (i) streets adjacent to and in the immediate vicinity of multiple businesses, public buildings, or public recreational facilities, or (ii) on subdivision streets within the specified range of the governing body's policy regarding pedestrian transportation between home and school.

B. Criteria:

1. Sidewalk on one or both sides of through streets within one mile {1.6 km} of all existing elementary schools, and one and one half miles {2.4 km} of all existing intermediate and high schools, will be eligible for maintenance. This criteria shall also apply to sidewalk on streets in the vicinity of proposed schools, the construction of which is included in a County's five-year capital improvement budget.
2. Sidewalks on streets adjacent to and in the immediate vicinity of multiple commercial businesses or public facilities will be eligible for maintenance. Immediate vicinity shall mean up to 1,000 ft {300 m} beyond zoning line.
3. Sidewalks along any permanent cul-de-sac or loop street will be eligible for acceptance only if the street is the principal route for pedestrian access to a residential area having a land use density of four or more units per acre {4 hectare} and the provisions of either provision 1 or 2 of this subsection are satisfied.
4. In situations not herein addressed, sidewalks may be approved for maintenance eligibility after individual study and joint concurrence by the resident engineer and the governing body.

C. Standards.

1. When used with a curb and gutter typical section, sidewalk shall be located as prescribed in 24 VAC 30-90-370. Sidewalk shall be constructed not less than four feet {1.2 m} wide by four inches {100mm} deep, except as required by 24 VAC 30-90-370 D2c, on a compacted subgrade, and in accordance with the departments specifications for hydraulic cement concrete sidewalk.

On shoulder and ditch typical sections, asphalt concrete sidewalks may be acceptable when located behind the ditch line in cut sections and behind the guardrail in fill sections. Such sidewalks shall be at least four feet {1.2m} wide by four inches {100mm} deep and at a grade and elevation compatible with the adjacent roadway element. Hydraulic cement concrete sidewalk on shoulder and ditch typical sections will not normally be accepted. However, they may be approved if their construction is on an alignment and grade considered by the resident engineer to be compatible with the eventual conversion of the street to a curb and gutter section.

2. Sidewalk underdrain shall be provided in accordance with the departments Standard UD-3

- D. Auxiliary sidewalk. Sidewalk that is deemed ineligible for department acceptance under the provisions of either subsection A or B or both of this section shall be considered an auxiliary pedestrian facility and may occupy the dedicated right-of-way of a subdivision street provided:
1. The auxiliary sidewalk is constructed to standards prescribed under subsection C of this section.
  2. The liability for the auxiliary sidewalk is accepted by the governing body and the responsibility for its future maintenance is assured under terms of a permit, agreement, or other legal instrument satisfactory to the department under one of the following conditions:
    - a. The governing body accepts the responsibility to administer the future repair and replacement of the auxiliary sidewalk.
    - b. The department may administer the future repair, maintenance or replacement of the auxiliary sidewalk upon the official request of the governing body provided it agrees to reimburse the department for all costs incurred in the associated activities.
- E. Non Standard sidewalks. Nonstandard sidewalks that meander horizontally or vertically, or both, relative to the roadway may be permitted. However, the department will not accept responsibility for their maintenance. A permit which clearly specifies the applicant's responsibility for the sidewalk's maintenance and related activities shall be obtained from the department to the extent it will encroach upon the street's right-of-way. The permit applicant shall be a county, incorporated town, or other agency which has perpetual maintenance capability. These sidewalks may be constructed of asphalt, concrete, gravel, or other stabilizer convenient to the applicant.

**24 VAC 30-90-370 Acceptable curb and gutter designs.**

- D. Pedestrian considerations.
1. Where curb and gutter is used without a sidewalk facility, a relatively flat, graded area, at least 2.5 feet {.75m} in width, shall be provided behind the back of curb.
  2. Where sidewalk is used in conjunction with curb and gutter the following shall apply:
    - a. Standard CG-6 – Sidewalk may abut the back of the curb.
    - b. Standard CG-7 – A separation, not less than three feet {.9m} in width, shall be provided between the back of curb and sidewalk.
    - c. Roll top – A separation, not less than three feet {.9m} in width, shall be provided between the back of curb and sidewalk. Further, roll top curb may only be used adjacent to sidewalk that has a minimum thickness of seven inches {180mm} where crossed by driveways.

## Appendix C - FHWA Virginia Division Policy on Bicycle and Pedestrian Facilities

Today, bicycle and pedestrian facilities play an increasingly important role in providing a balanced, intermodal transportation system. As stipulated in TEA-21, these facilities are to be considered in conjunction with all projects involving new construction and reconstruction of transportation facilities, except where prohibited.

This provision of TEA-21 is being implemented through guidance developed by FHWA and US DOT. The FHWA Virginia Division Office is committed to this effort of making bicycle and pedestrian facilities an integral part of Virginia's transportation system. This effort is being documented in the following policy as we work with VDOT and other partners to implement the bicycle and pedestrian provisions of TEA-21:

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

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

The FHWA Virginia Division Office will work with VDOT in developing specific criteria and thresholds to be used in the above determinations.

## Appendix C - FHWA Virginia Division Policy on Bicycle and Pedestrian Facilities

To help ensure the success of this policy, the FHWA Virginia Division Office has committed personnel and other resources as follows:

Actively participate in technology sharing and the various VDOT or Virginia bicycling committees.

Planners will encourage and actively assist in the development of statewide and regional plans to include the intermodal aspect of biking and walking.

Environmental specialists will ensure that bicyclists and pedestrians are adequately considered in the National Environmental Policy Act (NEPA) process.

Safety specialists and others will promote the safety aspects of bicycling and walking.

Field operations engineers and others will consider bicycle and pedestrian facilities to be an integral part of a Federal-aid project and will review plans for their inclusion.

Federal participation will be withdrawn on any major project that severs an existing bicycle or pedestrian route, unless an alternate route exists or is provided.

Bicycle and pedestrian facilities should be funded at the same federal-state ratio as the typical highway improvement.

Typically, the termini for a highway improvement and a corresponding bicycle and pedestrian facilities will be the same. However, this may not always be prudent. Therefore, in the scoping and design processes, termini for the bicycle and pedestrian facilities should be considered independently from the roadway termini.

Compliance with this policy will be achieved through Federal oversight; program and process reviews and through the review and approval processes carried out during the planning, design, right-of-way, and construction stages of individual projects.

## Appendix D - Charlottesville-Albemarle Bicycle Survey

Number of surveys: 162

Number of people in households surveyed: 456

Type of bike	TOURING 24	OFF-ROAD 142	RACING 118
CHILDREN'S	14	SPARES 11	TANDEM 5
ALL-PURPOSE	4	TRACK 2	CITY-BIKES 3
HYBRID	1	UNSPECIFIED 9	
TOTAL	325		
AVERAGE NUMBER BICYCLES/PERSON	0.71		
NUMBER BICYCLE RIDERS	351		

### REASONS TO RIDE:

RECREATION	197 (Touring 112, Trails 56, Unspecified 29)
EXERCISE	146
TRANSPORTATION	113
RACING	7
ENVIRONMENTAL REASONS	2
UNSPECIFIED	5

Factors which inhibit riding:	Personal Safety 111	Cleanliness 6
Lack of parking 56	Little Cargo Space 5	
Lack of facilities 48	Weather 4	
Too much time/effort 17	Theft 2	

Usual DESTINATIONS:	University of Va 114	Barracks Rd. Shops 98
Parks 55	Fashion Square/Rio Rd 53	
Downtown 34	K-Mart/Seminole Trail 48	Pantops/East 250 25
College 20		Piedmont Comm.
Rural Towns 20	Schools (mostly High Schools) 18	
Rural non-town 11	Skyline/Blue Ridge Parkway 7	

### Factors Making Neighborhoods FAVORABLE for Bicycle use:

Low Traffic 8	Good Road 5
Access to side streets 4	Sidewalks 2
Unspecified 2	Speed Limit 1

### UNFAVORABLE for Bicycle use:

No Shoulders 22	Too High Traffic 12
High Speed Cars 12	Narrow Streets 11
No Bike Paths 5	Hills 4
Too Dangerous 3	Parked Cars 2
No Sidewalks 2	Unspecified 3

### ROUTES THAT WOULD INCREASE BICYCLE USE:

University of Virginia 99	Downtown 85
Shopping Centers 70	Work Place 66
Parks 65	School 35
Other 32	

## Appendix E – Bikeway Cost Estimates

\*Source: Charlottesville Public Works Department

1. CONSTRUCTION COST ESTIMATES:	Cost Per Mile				
<u>A. Bike Paths</u>					
Signing (2 signs per mile)				\$108	
Striping and Stenciling:					
Concrete surface; 8 feet wide 3-inch deep strip paving				\$168,960	
Asphalt; 8 feet wide; 4 inch depth with subgrading blading; soil treatment and compaction				\$42,492	
Asphalt concrete surface, 8' wide, 4" aggregated base with 2" surface				\$33,670	
Zia stone 5.5 inch base, 2" asphalt concrete surface				\$21,745	
Enzymatic treated 5.5" base (penepreme and chips) rolled and compacted				\$7,821	
 <u>B. Bike Lanes</u>					
Signing: (8 signs per mile)				\$192	
Striping and stenciling				\$2,057	
Grate modification				<u>\$480</u>	
Total				\$2,729	
 <u>C. Bike Routes</u>					
Signing: (3 signs per mile)				\$72	
Striping and stenciling				\$2,057	
Grate modification				<u>\$480</u>	
Total				\$2,609	
 2. SIGN COST ESTIMATES					
Bike Route and picture (18" x 24")				\$26	
Bike X-ing and picture (30" diamond)				\$24	
Supplemental sign (18" x 24")				\$76	
Turning Vehicles Yield to Bikes (24" x 30")				\$33 Bike Lane Only (24" x 24")	
Stop sign and picture (14" x 18")				\$20	
No parking (12" x 18")				\$18	
Direction Sign (12" x 12")				\$16	
Begin/End Sign (6" x 24")				\$16	
No Motor Vehicles (8" x 24")				\$11	
 3. STRIPING AND STENCILLING COST ESTIMATES					
<u>A. Striping</u>					
4" solid white or green line				\$1,580	
4" dashed white line (15' paint, 25' gap)				\$1,800	
4" double yellow line				\$2,160	
 <u>B. Stenciling</u>					
Street messages @ \$30 each (3 per mile)				\$90	
Cross stripe at intersections @ \$60 each (2 per mile)				\$120	
Total				\$210	
 4. ANNUAL MAINTENANCE COST ESTIMATES					
<u>A. Bike Paths (costs per mile)</u>					
Signs	\$92	Striping	\$60	Stencils	\$100
Sweeping	\$240	Litter cleanup	\$288	Drainage & shoulder blading	<u>\$480</u>
				Total	\$1,260
 <u>B. Bike Lanes (costs per mile)</u>					
Signs	\$720	Striping	\$240	Total	\$960

**Pedestrian cost estimates**  
 source: FHWA, Safer Journey

1. CONSTRUCTION COST ESTIMATES:	Cost
<u>Sidewalk Construction</u>	
Curbing	\$15 / linear foot
Walkways	\$11 /sq. ft.
Curb ramp	\$800-\$1500 each
Curb extensions	\$2,000-\$20,000 per corner
Median refuge / Center Island	\$6,000-\$9,000
	\$10,000-\$30,000 (raised and landscaped)
<u>Crosswalks:</u>	
Regular striped	\$100 each
Ladder	\$300 each
Patterned concrete	\$3,000 each
Adjusting light timing:	2-3 staff hours
New signal equipment	\$20,000 each intersection

## Appendix F – Federal Funding Opportunities

	NHS	STP	HEP	RHC	TEA	CMAQ	RTP	FTA	TE	BRI	402	PLA	TCSP	JOBS	FLH	BYW
Bicycle and Pedestrian Plan		X				X						X	X			
Bicycle lanes on roadway	X	X	X	X	X	X		X	X	X					X	X
Paved Shoulders	X	X	X	X	X	X				X					X	X
Signed Bike Route	X	X			X	X									X	X
Shared-use Path	X	X			X	X	X			X					X	X
Single tack hike/bike trail							X									
Spot improvement program		X	X		X	X										
Maps		X				X					X					
Bike racks on buses		X			X	X		X	X							
Bicycle parking facilities		X			X	X		X	X							X
Trail/highway intersection	X	X	X		X	X	X									X
Bicycle storage/service center		X			X	X		X	X				X	X		
Sidewalks, new or retrofit	X	X	X	X	X	X		X	X	X					X	X
Crosswalks, new or retrofit	X	X	X	X	X	X		X	X						X	X
Signal Improvements	X	X	X	X	X	X										
Curb cuts and ramps	X	X	X	X	X	X										
Traffic Calming		X	X	X	X	X							X			
Coordinator Position		X				X							X			
Safety/Education position		X				X					X					
Police patrol		X				X					X					
Helmet promotion											X					
Safety Brochure/Book						X					X					
Training						X					X					

### KEY

- |  |   |
|--|---|
| NHS National Highway System                    | BRI Bridge  |
| STP Surface Transportation Program             | 402 State and Community Traffic Safety Program                          |
| HEP Hazard Elimination Program                 | PLA State/Metropolitan Planning Funds                                   |
| RHC Railway-Highway Crossing Program           | TCSP Transportation and Community and System Preservation Pilot Program |
| TEA Transportation Enhancement Activities      | JOBS Access to Jobs/Reverse Commute Program                             |
| CMAQ Congestion Mitigation/Air Quality Program | RTP Recreational Trails Program   |
| FLH Federal Lands Highways Program             | FTA Federal Transit Capital, Urban & Rural Funds                        |
| BYW Scenic Byways                              | TE Transit Enhancements   |

## Appendix G - Sample Bicycle and Pedestrian Ordinance Language

### **Definition of Bicycle and Pedestrian should be in ordinances**

Bicycle: a device upon which any person may ride, propelled by human power through a belt, chain or gears, and having either two or three wheels (over 10 inches in diameter) in a tandem or tricycle alignment.

Pedestrian: a person on foot, in a wheelchair, using a skateboard, rollerskates, or in-line skates, or walking a bicycle.

### **Provision of Pedestrian and Bicycle right-of-way and paths**

A subdivider may be required to provide pedestrian and bicycle facilities for the use and safety of the residents of the subdivision.

Sidewalks, bike lanes, or trails can be required or requested in

*Specific land use types:* commercial subdivisions; schools, playgrounds, shopping centers, transportation and other community facilities.

*Certain density of development:* subdivisions with lots size x or less, subdivision of x lots or more multiple-family developments of x units or more, a subdivision containing over x acres.

Where noted in *comprehensive plan or master plans*

Exceptions can be pre-stated: funeral parlor, automobile repair or body shop, gas station, car wash, etc.

A developer can be asked to (construct and) dedicate to the public or homeowners association such additional land as may be necessary, or to provide a permanent easement. Location and width of the easement must be approved by the agent and shown on all required subdivision plans.

### ***Location***

Walking and bicycle paths should be provided where possible, linking internal common open space areas with peripheral open space areas and adjacent neighborhoods.

Developers can be required to provide pedestrian access onto the site. Pedestrian access should be coordinated with existing development to provide circulation patterns between developments.

Pedestrian walkways should form an on-site circulation system that minimizes the conflict between pedestrians and traffic at all points of pedestrian access to on-site parking and building entrances, and between buildings.

Pedestrian access points may be required at all pedestrian arrival points to the development including the property edges, adjacent lots, abutting street intersections, crosswalks.

The agent may approve the location of a pedestrian and bicycle way other than in a street right-of-way in a subdivision where such pedestrian and bicycle way shall be maintained by a homeowners association.

### ***Design Standards***

Pedestrian/bicycle way right-of-way widths of at least ten to twelve feet (10-12') are recommended.

Bicycle trails may be constructed of asphalt concrete, portland cement concrete, pea-gravel, or other material creating a relatively smooth riding surface.

Bicycle lanes shall be lanes within improved roadways for the use of bicycles only. Vehicle parking in such areas should be prohibited. Lanes should be clearly marked with signs and pavement striping as required by the Traffic Engineer.

Pedestrian access and walkways should comply with VDOT or locality standards and meet the following minimum design standards:

- A. Access and walkways should be well-lit and physically separated from driveways and parking spaces by landscaping, berms, barriers, grade separation or other means to protect pedestrians from vehicular traffic;
- B. Access and walkways should be a minimum of 5 feet of unobstructed width and meet locality standards for surfacing of walkways or sidewalks;
- C. Access should be usable by mobility impaired persons and shall be designed and constructed to be easily located by the sight-impaired pedestrian by either grade change, texture or other equivalent means;
- D. A crosswalk may be required when a walkway crosses a driveway or a paved area accessible to vehicles. Raised crosswalks or speed bumps may be required at all points where a walkway crosses the lane of vehicle travel.

Street signs, mailboxes, utility poles, fire hydrants and other infrastructure should be located outside of the pedestrian right of way (behind the sidewalk) wherever possible. Requiring utilities to be placed underground can significantly reduce problems with obstacles in limited rights-of-way.

Vegetation should be planted (set back) far enough from the sidewalk to not encroach into the walking space.

Pedestrian/bicycle ways may also be used for utility and drainage purposes if so noted on the plat and approved by the Engineering Department.

### **Bicycle Parking**

A locality can request or require at least one bicycle parking slot for every x required motor vehicle parking spaces to be provided in all commercial districts and non-residential developments. A minimum and maximum number of spaces may be required. Bicycle parking may not be required where fewer than x automobile parking spaces are required. Where the expected need for bicycle parking for a particular use is uncertain due to unknown or unusual operating characteristics of the use, the Zoning Administrator can authorize that construction and provision of x percent of the parking be deferred.

Bicycle parking spaces should be at least 2 feet by 6 feet, with twenty-four inch clearance from the centerline of each adjacent bicycle and at least eighteen inches from walls or other obstructions. An access aisle should be provided as well.

Structure upon which the bicycle may be locked through its frame at two points by the user and should be designed to accommodate U-shaped locking devices. All lockers and racks must be securely anchored to the ground or the building structure to prevent the racks and lockers from being removed from the location. A portion may be provided as long term parking, safe and secure from vandalism and theft, and protected from the

elements. Outdoor bicycle parking facilities can be surfaced in the same manner as the motorized vehicle parking area and shall be equally level, and maintained to be mud and water free.

Bicycle parking facilities should be located in a clearly designated, visible, safe and convenient location. Bicycle parking should not impede pedestrian or vehicle traffic flow, and should be well lit for nighttime use. The facility location should be at least as convenient as the majority of auto parking spaces provided. Can require location within x feet of the building entrance.

The number of bicycle parking spaces provided can be determined by the Zoning Administrator, who may consider the number of dwelling units or lodging rooms, students, employees, and auto parking spaces. Officials may reduce bicycle parking facilities for patrons when it is demonstrated that bicycle activity will not occur at that location;

Any property owner required to have bicycle parking may elect to establish a shared bicycle parking facility with any other property owner within the same block to meet the requirements.

**Off-Street Bicycle Parking Guidelines**

Land Use	Bike Space
Dwellings/lodging rooms/ Fraternities/sororities/clubs/lodges	1 per dwelling unit or 3 lodging rooms
Hotels/Health Care	1 per 20 employees
Galleries/museums/libraries	1 per 10 auto spaces
Schools/colleges	1 per 10 employees plus 1 per 5 students
Commercial, manufacturing, places of assembly, recreation, entertainment, and amusement	1 per 10 auto spaces
Miscellaneous/other	To be determined by the zoning administrator based on the guideline for the most similar use listed above.

**Site Plan Review**

Copies of preliminary site plans for proposed developments can be submitted to a pedestrian & bicycle committee, coordinator or planner, as well as the usual departments and agencies.

## Greenways and Trails

Local zoning codes can give density or other bonuses for dedicating land for trails in new developments.

Subdivision code might state that cul-de-sac lots be connected by trails, or that a trail system be established in any development with more than a set number of lots (which may vary per locality).

The developer might be asked to construct feeder trails to the master planned facilities from developments generating pedestrian or bicycle traffic as determined by the locality.

Bicycle trails and equestrian trails should be separate unless extreme environmental impacts would result from an alternate design.

Trail provisions can be included within the Conditions, Covenants & Restrictions for the subdivision:

- for maintenance of all bicycle/pedestrian feeder trails by the homeowners' association.
- giving the locality the right for assumption of maintenance of the bicycle/pedestrian feeder trails if the locality determines that the homeowners' association has not maintained the minimum standards per the adopted standards. Furthermore, if the locality assumes maintenance of the trail system, all costs, including administration, can become a lien on each property or residential lot within the subdivision.
- The developer of any subdivision having no homeowners' association may be responsible for construction and maintenance of the feeder trails until the individual property is transferred to the individual owners. The developer should record deed restrictions on each lot such that the individual property owner shall be responsible for maintenance of that portion of the trail easement traversing the lot.

*Greenspace trail easement.* A perpetual interest in land as described and dedicated by subdivision plat, generally granting a locality, non-profit trail group, or other entity the right to construct and maintain a trail through private property, as well as the right of the public to travel along the trail.

The easement may grant some of the following rights to the group that is responsible for the trail.

The right to construct or maintain a permanent hiking or bicycle trail or path with accessory facilities or accommodation.

The right of entry of the group to maintain and develop hiking or bicycle trails or paths.

The right of entry of the public for pedestrian or bicycle use of the trails or paths which have been constructed within the easement. No right of entry for motor vehicles including All-Terrain Vehicles (ATV's) is granted to the public except for authorized emergency vehicles.

The right of the group/locality to construct public street, bridge and utility crossings as needed.

Multiple easements may be provided on property used for trails, such as water and sewer line easements with trails above them.

**Sample zoning and subdivision text sources:**

Stafford County, Virginia – Subdivision Ordinance  
[http://www.co.stafford.va.us/planning/biketext.htm#sub\\_ord](http://www.co.stafford.va.us/planning/biketext.htm#sub_ord)

Madison, Wisconsin  
<http://www.bikeplan.com/ma-ord.htm>

San Juan – Subdivision code  
[http://ordlink.com/cgi-bin/hilite.pl/codes/sanjuancap/\\_DATA/TITLE09/CHAPTER\\_4\\_\\_SUBDIVISIONS/](http://ordlink.com/cgi-bin/hilite.pl/codes/sanjuancap/_DATA/TITLE09/CHAPTER_4__SUBDIVISIONS/)

Durham, North Carolina – Zoning Ordinance  
<http://www.ci.durham.nc.us/departments/planning/zoneord/section9/93.html>

San Benito County Subdivision Ordinance  
[http://www.sbcpw.com/17-52\\_to\\_17-57.htm#17-54](http://www.sbcpw.com/17-52_to_17-57.htm#17-54)

Cranberry Township, Pennsylvania - Subdivision code  
<http://www.twp.cranberry.pa.us/codes/frames/sdv5.html>

Mesa, Arizona - Subdivision code  
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## Appendix H - Resources Used

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