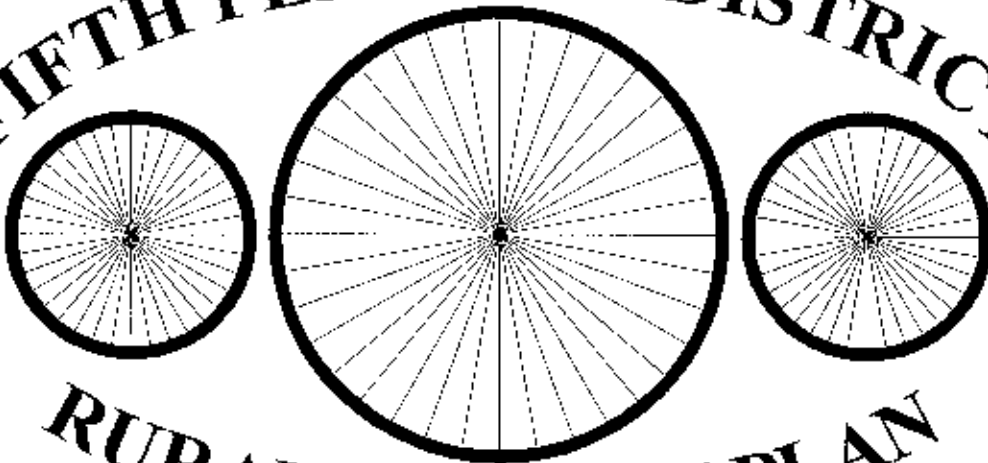


FIFTH PLANNING DISTRICT



RURAL BIKEWAY PLAN



Prepared by the Fifth Planning District Commission, September 1997

This report was prepared by the staff of the Fifth Planning District Commission, in cooperation with the United States Department of Transportation, Federal Highway Administration and the Virginia Department of Transportation, and funded with FY 1997 Rural Planning Assistance, State Highway Planning and Research funds, work element #810.3.

The contents of this report reflect the view of the author who is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or the policy of the Federal Highway Administration nor the Virginia Department of Transportation. This report does not constitute a standard, specification or regulation.

Federal Highway Administration and Virginia Department of Transportation acceptance of this report as evidence of fulfillment of the objectives of this planning study does not constitute endorsement/approval of the need for any recommended improvements, nor does it constitute approval of their location and design, nor commitment to fund any such improvements. Additional project level environmental assessments and/or studies of alternatives may be necessary.

Plan Approval/Adoption (as final):

- Approved by the Rural Transportation Planning Advisory Committee, July 17, 1997
- Approved by the Fifth Planning District Commission, September 25, 1997
- Adopted by the Craig County Board of Supervisors, October 6, 1997

ACKNOWLEDGEMENTS

The *Fifth Planning District Rural Bicycle Plan* has been prepared by the staff of the Fifth Planning District Commission as required by the *Fiscal Year 1997 Rural Transportation Planning Work Program*. The professional advice and assistance of several individuals was invaluable to the completion of this project.

I wish to acknowledge and thank members of the Rural Bicycle Advisory Group for their cooperation and provision of valuable information without which this study could not have been completed. I would also like to thank the Rural Transportation Planning Advisory Committee of the Fifth Planning District Commission, as well as the staff of the Fifth Planning District Commission, for their help in the preparation of this report.

While acknowledging the assistance and support of the aforementioned individuals and organizations, any errors or omissions in this report remain the responsibility of the author.

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INTRODUCTION & CURRENT SITUATION

The Fifth Planning District is located along the eastern edge of the Blue Ridge Mountains in Southwest Virginia. The district is comprised of the counties of Alleghany, Botetourt, Craig and Roanoke and the Cities of Clifton Forge, Covington, Roanoke and Salem. For the purposes of this plan only the rural portions of the district will be evaluated. See *MAP I* for an illustration of the Fifth Planning District and the study area.

The district offers utilitarian and recreational bicyclists an opportunity to explore an abundance of scenic roads on route to their chosen destination. The utilitarian bicyclist's objective is to reach a specific destination such as work or school, while the recreational bicyclist's objective is exercise and enjoyment of scenery. In the study area the largest percentage of bicycle travel is for recreational purposes, although utilitarian bicycling is becoming more popular. The 1987 recreational demand survey for the 1989 *Virginia Outdoors Plan* obtained a similar split for bicycling purposes. The survey "found that 33.5% of Virginia's residents over 12 years of age, bicycle for pleasure (recreational). An additional 9% bicycle to work or school (utilitarian) on a regular basis".

While the utilitarian bicyclist primarily utilizes existing on-road facilities for travel, the recreational bicyclist utilizes both on-road and off-road facilities. One of the primary on-road recreational routes in the area is the Interstate Bicycle Route 76. This route was established to encourage bicycle travel between states over existing routes, either for the exclusive use of bicycles or shared with motor vehicles. On its route through Virginia, Kentucky and Illinois the Interstate Bicycle Route 76 passes through two counties in the Fifth Planning District, and is often used by bike clubs for recreational rides. The route is identified on maps and roads by the signage shown in *FIGURE 1*.

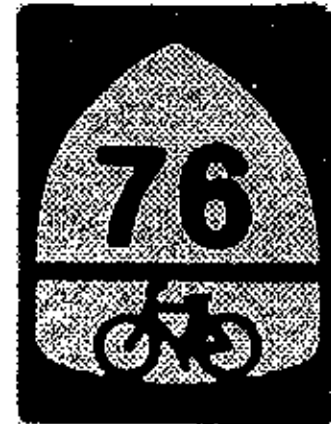
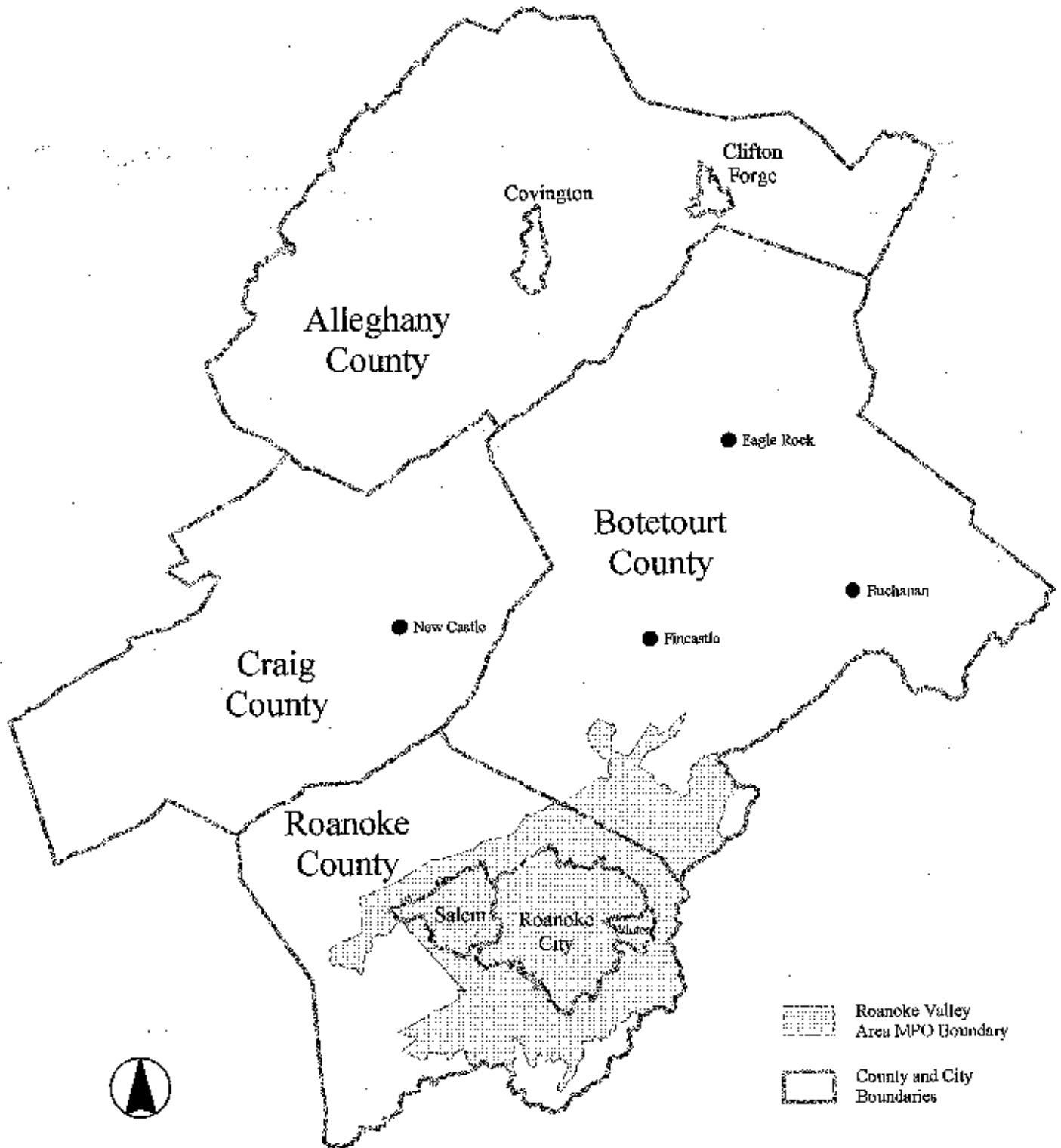


FIGURE 1: Interstate Bicycle Route 76 sign

The district is also known for its abundance of off-road facilities, primarily located on National Forest land. These off-road paths, trails and forest roads offer both novice and experienced riders a place to exercise and enjoy the natural beauty of the area. Forest roads, those roads maintained by the National Forest Service, are illustrated on *MAP II, III, IV & V*.

In 1994, the Federal Highway Administration (FHWA) published the *National Bicycling and Walking Study*. Two of the primary goals of this study were: 1) to double the percentage of trips made by bicycling and walking (from eight to sixteen percent), and 2) to reduce the number of automobile-related bicycle and pedestrian injuries by ten percent. The *Fifth Planning District Rural Bikeway Plan* will advocate similar goals by encouraging increased bicycle usage for utilitarian and recreational purposes, and the development of a region-wide "bicycle friendly" road network.

General Location Map of the Fifth Planning District



PURPOSE AND PLAN DEVELOPEMENT

The purpose of this plan is to provide information and guidance on the development of facilities to enhance and encourage safe bicycle travel in all riding environments within the rural portions of the Fifth Planning District. It is also the intention of this plan to coordinate with the Roanoke Valley Bike Plan, the New River Valley Bikeway/Walkway Plan and the Central Virginia Bikeway Plan, as well as other existing plans for the district.

To ensure that this plan accomplishes this purpose, input from local jurisdictions, bicycle clubs and advocates, and several state and federal agencies have been extensively used. In October 1996, the Rural Bicycle Advisory Group was formed to address the needs of bicyclists in the Fifth Planning District. This group consists of representatives from Alleghany, Botetourt, Craig and Roanoke Counties, as well as the City of Covington. The primary purpose of the group was to guide plan preparation and review, establish bicycle needs for the area, and to provide overall policy guidance.

This plan also serves another important purpose. Before any bicycle facility improvements can be considered as part of a roadway improvement that uses Federal or State funds, the roadway must be on an approved bikeway plan or part of an Interstate Bicycle Route System. The jurisdiction still has the option to request the inclusion of bicycle accommodation (extra width, striping, etc.) or not when the roadway project is initiated.

GOALS

- ◆ *All future roadway and bridge construction and/or improvements in the Fifth Planning District should consider bicycle accommodations when designed and implemented.*
- ◆ *Increase bicycle safety, awareness of the benefits of bicycling and the number of bicyclists through education, law enforcement and public information.*
- ◆ *Utilize bicycle facility design standards within each jurisdiction to ensure a comprehensive, compatible and safe road system for bicycle travel.*
- ◆ *Maintain and encourage the use of off-road paths, trails and forest roads for recreational purposes; and develop new off-road paths and trails (including Rails-to-Trails projects) when usage warrants.*

OBJECTIVES

1. To include bicycle facilities in all stages of the transportation and land use planning process, from initial concept through implementation

2. To use curb-slot storm drainage inlets, or install bicycle-safe grates over all roadway drains.
3. To install bicycle and pedestrian traffic crossing signal push buttons, bicycle sensitive signal detectors and special markings identifying traffic instructions and road hazards.
4. To encourage each jurisdiction to allocate dedicated bicycle "funds" annually to assure the construction and maintenance of bicycle facilities.
5. To encourage each jurisdiction to appoint an individual to coordinate local bicycle planning facility effort.
6. To encourage each jurisdiction to use AASHTO's "Guide for the Development of Bicycle Facilities" or VDOT's "A Guide for Bicycle Facility Planning" for bicycle facilities and MUTCD for proper signage and markings.
7. To provide educational programs and information to the general public about the advantages of bicycling, ways to improve bicycle safety, the important regulations and laws pertaining to bicycling, and the responsibility motorists and bicyclists have in relation to one another.
8. Establish priorities for bicycle facility development consistent with current and future funding priorities, while maintaining the flexibility to improve any segment of the roadway for bicycle travel as special opportunities permit.

DESIGN SELECTION AND SPECIFICATIONS

There is a wide range of facility improvements used to enhance travel by bicycle. Some roadways may require extensive improvements to enhance bicycle travel, while others need only minor improvements. This is dependent upon several factors, including location of barriers, high accident locations, access, truck and bus traffic, on-street vehicle parking, traffic volumes and speed, cost and funding sources, local laws, bridges, and intersection conditions.

"The Code of Virginia contains laws which apply to bicycles and the operation of bicycles in Virginia. The laws regulating bicycle use on Virginia's public highways define the rights and duties of bicyclists as well as the motorists with whom they share the roadway. Bicyclists and motorists basically have the same rights and duties, and the laws governing traffic regulation apply equally to both".¹ Also, it must be noted that Virginia does not permit bicycles on interstate highways or other selected controlled access highways.

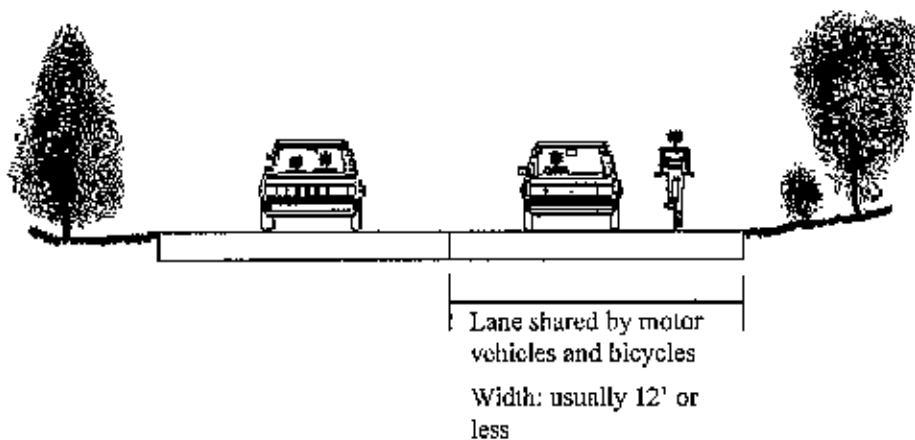
For the purpose of this plan, the facility types identified below provide a standard to base recommended bicycle facility improvements on. These facility types are based on 1991 AASHTO standards and the 1994 Virginia Department of Transportation's "A Guide for Bicycle Facility Planning".

ON-ROAD FACILITY TYPES

Shared Roadway. AASHTO's "Guide For The Development Of Bicycle Facilities" defines a shared roadway as "Any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway". Following is a list of shared roadway types.

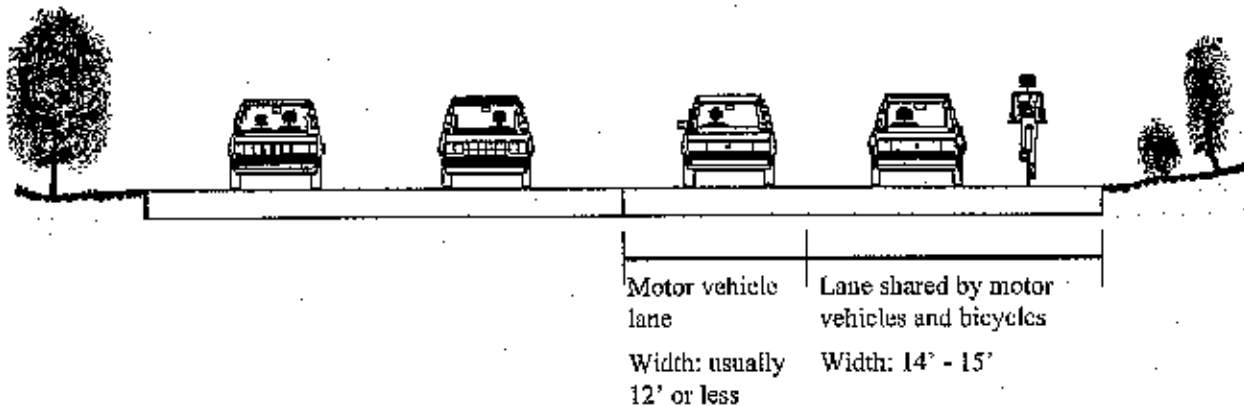
- **Shared lanes** are typically 12 feet or less in width with no shoulders and usually do not require any special signing for bicyclists. For safety purposes, automobile volumes and speeds along roadways designated with shared lanes is typically low. In most instances, when an automobile must pass a bicyclist on a shared lane it must legally cross the center line or move into another lane of traffic. Because of this situation shared lanes are usually best suited for experienced riders. Although intermediate riders may feel comfortable on roadways with low traffic volumes and speeds.

SHARED LANES



- **Wide lanes** are usually 14-15 feet wide. This extra lane width allows automobile traffic to pass bicyclists without having to leave their lane of travel, effectively increasing safety and reducing conflict. On a two-lane roadway facility both lanes should have extra width; whereas on a four-lane roadway facility only the outside lanes should have extra width. Roadway facilities with wide lanes can handle a higher volume and speed of automobile traffic while maintaining a safe environment for bicycle travel. It should be noted that wide lanes are usually more suitable for the experienced rider.

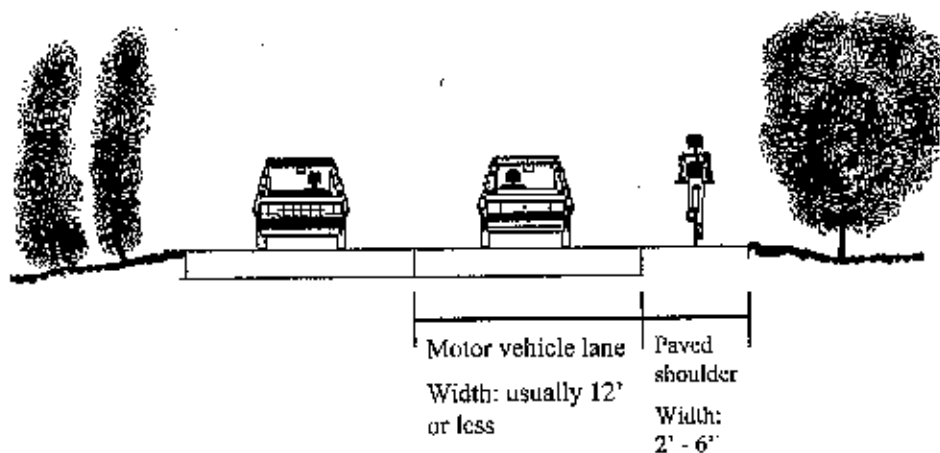
WIDE OUTSIDE LANES



- A *shoulder*, according to AASHTO's "Policy On The Geometric Design Of Highways And Streets", is defined as "...the portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of the subbase, base and surface courses". For the purpose of bicycle travel, a shoulder should be a 4-6 foot wide smooth surface without any obstructions. As traffic volumes and speeds increase added width is desirable. In rural areas, where traffic volumes are often low, a shoulder can be as little as 2 feet wide.

"Adding or improving shoulders can often be the best way to accommodate bicyclists in rural areas, and they are also a benefit to motor vehicle traffic. Where funding is limited, adding or improving shoulders on uphill sections first will give slow moving bicyclists needed maneuvering space and decrease conflicts with faster moving motor vehicle traffic".² It should be noted that bicycle travel along a roadway shoulder is usually more suitable for the intermediate to experienced rider.

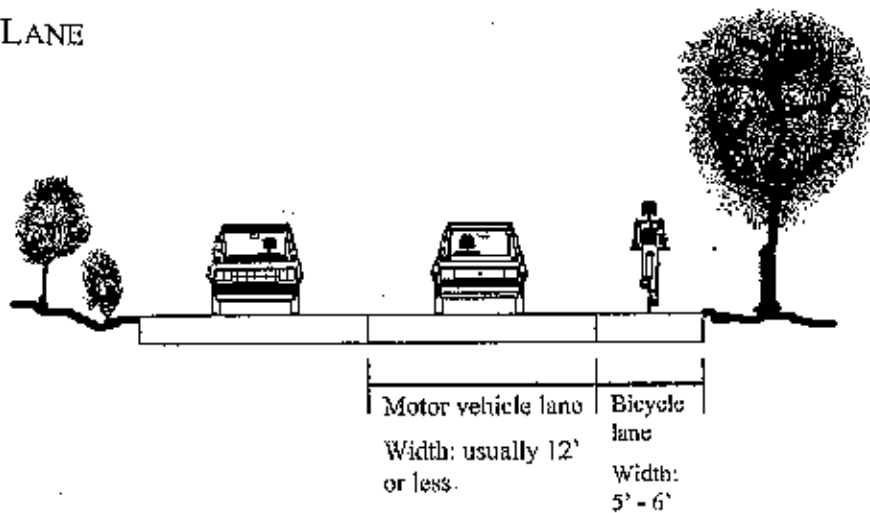
PAVED SHOULDER



Bike Lanes. AASHTO's "Guide For The Development Of Bicycle Facilities" defines a bicycle lane as "A portion of the roadway which has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. The need for bike lanes is usually the result of high traffic volumes and speeds. A bike lane effectively separates automobile and bicycle traffic, by providing bicyclists with a designated, visible "safe space" for travel.

A bike lane should be 5-6 feet wide, depending upon the volume and speed of vehicular traffic, and allow one-way travel in the same direction as adjacent vehicular traffic. For a bike lane to remain useful and safe for bicycle travel it must be kept free of debris and be clearly marked for separation from vehicular traffic. Depending upon the volume and speed of adjacent vehicular traffic a bike lane can be attractive to all type of bicyclist.

BIKE LANE

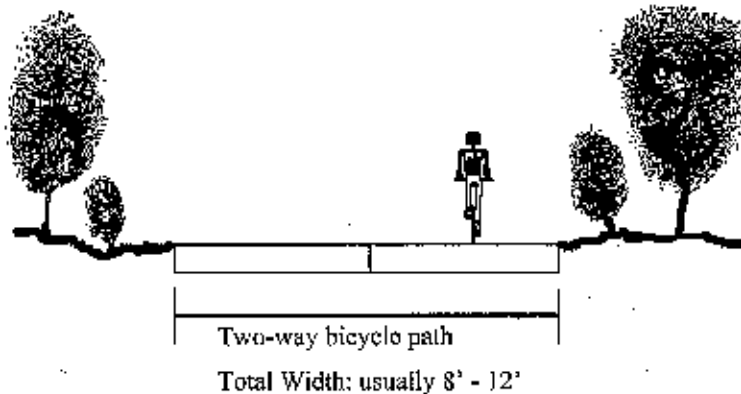


OFF-ROAD FACILITY TYPES

Separate Bike Path. AASHTO's "Guide For The Development Of Bicycle Facilities" defines a separate bike path as "A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way". Most separate bike paths are two-way facilities between 10-12 feet wide; in some instances a minimum width of 8 feet can be adequate.

"Where adequately wide and uninterrupted right-of-way is available, separate bicycle paths can be used to provide long, continuous routes for commuting or recreation trips. They also can provide access to destinations not otherwise available to bicyclists, and as cut through routes between buildings, cul-de-sacs, and other breaks in the street network".³

SEPARATE BIKE PATH



Trails, Paths and Forest Roads. This group makes up the largest number of off-road facilities. There are numerous trails, paths and forest roads within the Fifth Planning District; most of which are on National Forest lands. Most of these are multi-use trails which are utilized by hikers, bikers and horse back riders. It is important to note that not all trails are open to the bicyclist. Many trails are designated for hiking or horse back riding only. A good source for locating trails and forest roads are the District maps. To obtain these maps and other information on biking on National Forest land contact your local District office. The location and phone number of the District offices which cover the Fifth Planning District can be found in APPENDIX II.

RECOMMENDED BICYCLE FACILITIES IMPROVEMENTS

The following tables provide a descriptive list of recommended bicycle facility improvements for each local jurisdiction. Individual roads that are recommended to have bicycle facility improvements are shown on *MAP II, III, IV & V* included at the back of this document. The type of facility improvement being recommended will vary depending upon the physical conditions and traffic volumes along the route. General recommendations to follow when making roadway improvements are provided below.

- *All roads, when constructed, reconstructed or upgraded, should be evaluated for bicycle facility improvements.*
- *In special circumstances, such as uphill sections of a roadway, it may also be warranted to add extra pavement width or a bike lane so that conflict with passing motorists can be reduced.*
- *All railroad/roadway intersects and bridges, when constructed, reconstructed or upgraded, should be evaluated for bicycle facility improvements.*

TABLE I: ALLEGHANY COUNTY (LIST AND DESCRIPTION OF PROPOSED BICYCLE FACILITY IMPROVEMENTS)

Facility Name (Route Number)	Segment Name	Segment Length	Number of Shared Trails	Posted Signs	Volume Year Vehicle E/P/D	Projected Volume (Year 2035)	Recommendation
Route 1101	Route 1103	1.69	2	--	--	--	Wide Shoulder
Route 1103	Route 1104	0.06	2	--	--	--	Wide Shoulder
Route 1104	Route 60	3.46	2	--	--	--	Wide Shoulder
Route 159	Route 311	11.09	2	55	1987	3523	Wide Shoulder
Route 159	Route 600	0.44	2	55	1992	2012	Wide Shoulder
Route 18	Craig County Line	6.29	2	55	1992	290	Wide Shoulder
Route 18	Route 616	4.89	2	55	1992	1170	Wide Shoulder
Route 18	Route 614	1.78	2	55	1992	2586	Wide Shoulder
Route 18	Route 615	1.42	2	55	1992	2030	Wide Shoulder
Route 18	South Route 615	3.00	2	55	1992	3569	Wide Shoulder
Route 18	Route 657	0.55	2	55	1987	3373	Wide Shoulder
Route 18	3.0 miles North of Route 657	0.50	2	55	1987	3373	Wide Shoulder
Route 18	.5 miles South of South City Line Covington	0.50	2	55	1987	3373	Wide Shoulder
Route 220	South City Line Covington	1.30	2	35	1987	13745	Wide Shoulder
Route 220	Botetourt County Line	0.20	2	55	1987	13745	Wide Shoulder
Route 220	.5 miles North of the North Corporate Limits Iron Gate	0.40	2	35	1987	13745	Wide Shoulder
Route 220	Route 220 Business	0.80	2	45	1992	5500	Wide Shoulder
Route 220	Route 220 Business Limits Iron Gate	1.60	2	40	1992	12039	Wide Shoulder
Route 220	Route 60	0.40	2	35	1987	13745	Wide Shoulder
Route 220	South City Line Clifton Forge	0.80	2	45	1992	5500	Wide Shoulder
Route 220	North City Line Covington	1.60	2	40	1992	12039	Wide Shoulder

ALLEGHANY COUNTY (TABLE I continued from previous page)

Facility Name Route Number	Segment From	Segment To	Seaward Expend	Number of Lane Taper	Posted Speed (MPH)	Year Vehicle Banned	Project Value Year 2003	Location/Direction
Route 220	Route 687	0.36 miles North of Route 687	0.36	2	55	1992	2160	Wide Shoulder
Route 220	0.36 miles North of Route 687	Route 640	4.11	2	45	1992	2160	Wide Shoulder
Route 220	Route 640	Bath County Line	3.81	2	45	1992	2160	Wide Shoulder
Route 269	Interstate 64	Route 632	0.30	4	55	1987	2235	Wide Shoulder
Route 269	Route 632	Route 722	5.12	2	55	1987	2620	Wide Shoulder
Route 269	Route 722	.11 miles West of Interstate 64	1.27	2	55	1987	1285	Wide Shoulder
Route 269	.11 miles West of Interstate 64	Interstate 64	0.11	2	55	1987	1210	Wide Shoulder
Route 311	South Intersect of West Virginia	Route 159	6.62	2	55	1987	2241	Wide Shoulder
Route 311	Route 159	North Intersect of West Virginia	5.87	2	55	1992	1109	Wide Shoulder
Route 42	Interstate 64	.12 miles South of Route 774	0.37	4	55	1987	7205	Wide Shoulder
Route 42	.12 miles South of Route 774	Bath County Line	4.52	2	55	1992	1265	Wide Shoulder
Route 60	Interstate 64	.40 miles East of Westbound Interstate 64	0.40	2	55	1991	4700	Wide Shoulder
Route 60	.40 miles East of Westbound Interstate 64	.53 miles West of Route 651	1.00	2	55	1991	4700	Wide Shoulder
Route 60	.53 miles West of Route 651	Route 651	0.53	2	55	1991	4700	Wide Shoulder
Route 60	Route 651	0.78 miles East of Route 651	0.78	2	35	1991	4700	Wide Shoulder

ALLEGHANY COUNTY (TABLE I continued from previous page)

Facility Name Route Number	Segment From	Segment To	Segment Priority	Number of Lanes	Design Speed (mi/h)	Volume Year Vehicle Miles Travel (VMT)	Project Year (1985)	Resurfacing	
Route 60	0.78 miles East of Route 651	East Route 654	1.64	2	35	1991	3800	5885	Wide Shoulder
Route 60 (Midland Rd)	East Route 654	West City Line Covington	0.16	2	35	1991	3800	5885	Wide Shoulder
Route 60	East City Line Covington	Route 1104	0.62	4	35	1987	14425	21733	Wide Lane
Route 60	Route 1104	Interstate 64	0.10	4	35	1987	14425	21733	Wide Lane
Route 60 Business	Interstate 64	Route 696	0.18	4	35	1987	13473	26990	Wide Lane
Route 60 Business	Route 696	.18 miles East of Route 696	0.08	4	35	1987	13473	26990	Wide Lane
Route 60 Business	.18 miles East of Route 696	West City Line Clifton Forge	0.19	2	35	1987	13473	26990	Wide Shoulder
Route 60 Business	East City Line Clifton Forge	Route 220	0.25	3	40	1987	13473	26990	Wide Shoulder
Route 60/220	Route 220	Interstate 64	0.60	2	40	1992	6142	7795	Wide Shoulder
Route 600	Route 159	South Route 661	0.50	2	35	1993	3120	4540	Wide Shoulder
Route 600	South Route 661	Route 641	4.60	2	--	--	--	--	Shared Lane
Route 600	Route 641	Route 666	4.80	2	--	--	--	--	Shared Lane
Route 600	Route 666	Lake Moomaw	0.40	2	--	--	--	--	Shared Lane
Route 605	Route 666	Route 605 North of Gathright Dam	3.35	2	--	--	--	--	Shared Lane
Route 616	Route 18	Route 615	5.77	2	--	--	--	--	Shared Lane
Route 616	Route 615	South Route 619	4.10	2	--	--	--	--	Shared Lane
Route 616	South Route 619	Route 621	3.79	2	--	1993	331	565	Shared Lane
Route 616	Route 621	Route 622	1.00	2	35	1993	411	700	Shared Lane
Route 616	Route 622	Route 623	3.00	2	--	1993	497	700	Shared Lane
Route 616	Route 623	Route 696	1.42	2	--	1993	812	1700	Shared Lane
Route 617	Craig County Line	Route 616	2.40	2	--	--	--	--	Shared Lane
Route 619	Route 616	Route 657	3.30	2	--	1993	323	389	Shared Lane

ALLEGHANY COUNTY (TABLE I continued from previous page)

Project Name Route Number	Segment from	Segment to	Segment Length	Number of Inter- changes	Posted Speed Limit	Volume Year Vehicle Per Day	Expected Volume Year 2015	Recommendation
Route 621	Botetourt County Line	Route 616	1.30	2	--	1993	397	544
Route 629	Interstate 64	.25 miles North of Interstate 64	0.25	2	35	1993	1953	4363
Route 629	.25 miles North of Interstate 64	.51 miles North of Interstate 64	0.26	2	35	1993	1953	4363
Route 629	.51 miles North of Interstate 64	Bath County Line	3.84	2	35	1993	1503	2140
Route 632	Route 670	Route 269	1.31	2	--	--	--	Shared Lane
Route 633	Botetourt County Line	Route 269	2.30	2	--	1991	645	756
Route 641	Route 600	Route 666	1.35	2	--	--	--	Shared Lane
Route 641	Route 666	Route 687	0.55	2	35	1993	873	1382
Route 657	Route 18	Route 619	1.45	2	--	1993	105	274
Route 657	Route 619	South Corporate Limits Covington	1.54	2	--	1993	434	491
Route 661	South Route 600	Route 709	2.38	2	35	1993	1641	2775
Route 661	Route 709	Route 781	8.50	2	--	--	--	Shared Lane
Route 661	Route 781	North Route 600	8.30	2	--	--	--	Shared Lane
Route 666	Route 641	Route 638	3.25	2	35	1993	490	685
Route 666	Route 638	Route 600	0.95	2	--	--	--	Shared Lane
Route 670	Route 60	Route 632	0.50	2	--	--	--	Shared Lane
Route 687	Route 220	Jackson River	0.90	2	40	1993	2882	5218
Route 687	Jackson River	Route 642	0.81	2	40	1993	2882	5218
Route 687	Route 642	Route 641	1.51	2	40	1993	1976	2840
Route 696	Route 60	East Route 1002	0.24	2	--	1993	2242	4100
Route 696	East Route 1002	Mid Route 1002	0.12	2	45	1993	2340	3030
Route 696	Mid Route 1002	Route 1312	2.63	2	45	1993	1897	3517

ALLEGHANY COUNTY (TABLE I continued from previous page)

Facility Name Route Number	Segment From	Segment To	Segment Length	Number of Lanes	Posted Speed Limit	Volume of Vehicles per Day	Projected Volume Year 2015	Recommendation
Route 696	Route 1312	North Ramp Interstate 64	0.24	2	45	1993	8167	Wide Shoulder
Route 850	Interstate 64 Ramp	Rockbridge County Lane	5.15	2	--	1993	195	Shared Lane

TABLE II: ROTTEGOURT COUNTY (LIST AND DESCRIPTION OF PROPOSED BICYCLE FACILITY IMPROVEMENTS)

Facility Name Water Utility	Segment/Route	Segment/Route	Segment Length	Number of Shared Lanes	Proposed Speed Limit	Historical Year Vehicle Passes	Projected Volume (Avg. 2015)	Recommendation
F-054 (Service Rd)	Route 11	Route 614	0.88	2	--	--	--	Wide Shoulder
F-055 (Service Rd)	Route 614	Rockbridge County Line	5.68	2	--	--	--	Wide Shoulder
Route 11	Route 670	Route 606	5.43	4	55	1992	4300	Wide Shoulder
Route 11	Route 606	West Ramp Interstate 81	3.35	4	55	1992	4300	Wide Shoulder
Route 11	West Ramp Interstate 81	East Ramp Interstate 81	0.19	4	55	1987	3236	Wide Shoulder
Route 11	East Ramp Interstate 81	Route 715	0.80	4	55	1987	3236	Wide Shoulder
Route 11	Route 715	West Corporate Limits Buchanan	3.13	2	55	1987	3503	Wide Shoulder
Route 11	West Corporate Limits Buchanan	West Route 43	0.67	2	25	1987	2975	Wide Shoulder
Route 11	West Route 43	.38 miles West of North Corporate Limits Buchanan	0.36	3	35	1987	2975	Wide Shoulder
Route 11	.38 miles West of North Corporate Limits Buchanan	.25 miles West of Interstate 81	0.76	3	55	1987	2975	Wide Shoulder
Route 11	.25 miles West of Interstate 81	F-054 (Service Rd)	0.25	2	30	1987	2975	Wide Shoulder
Route 220	Route 720	.12 miles South of North Route 670	2.17	4	55	1987	8181	Wide Shoulder
Route 220	.12 miles South of North Route 670	.54 miles South of Route 676	0.22	4	55	1992	9070	Wide Shoulder
Route 220	.54 miles South of Route 676	.34 miles South of Route 676	0.20	4	55	1992	9070	Wide Shoulder

BOTETOURT COUNTY (TABLE II continued from previous page)

Facility Name (Route Number)	Segment From	Segment To	Required Length	Number of Trains Per Day	Weight of Train (Tons)	Volume of Freight Vehicles (Per Day)	Project Value (\$)	Estimated Benefit	Year Completed	Shoulder Type
Route 220	.34 miles South of Route 676	.09 miles South of Route 676	0.25	4	55	1992	14602	9070	1992	Wide Shoulder
Route 220	.09 miles South of Route 676	.15 miles South of Route 640	0.98	4	--	1992	14602	9070	1992	Wide Shoulder
Route 220	.15 miles South of Route 640	.04 miles South of Route 1211	0.53	4	55	1992	14602	9070	1992	Wide Shoulder
Route 220	.04 miles South of Route 1211	Route T630	0.42	4	45	1992	14602	9070	1992	Wide Shoulder
Route 220	Route T630	1.18 mile South of Route 655	0.33	4	45	1992	11144	5885	1992	Wide Shoulder
Route 220	1.18 mile South of Route 655	5 miles North of Fincastle	4.46	4	55	1992	11240	5885	1992	Wide Shoulder
Route 220	5 miles North of Fincastle	7.7 miles North of Fincastle	2.70	4	--	1987	11104	5026	1987	Wide Shoulder
Route 220	7.7 miles North of Fincastle	10.38 miles North of Fincastle	2.65	4	55	1987	11104	5026	1987	Wide Shoulder
Route 220	10.38 miles North of Fincastle	Route 662	0.39	2	55	1987	7069	5235	1987	Wide Shoulder
Route 220	Route 662	Route 43-Y	0.71	4	55	1987	7069	5235	1987	Wide Shoulder
Route 220	Route 43-Y	Route 43	2.15	2	55	1987	6685	4884	1987	Wide Shoulder
Route 220	Route 43	Route 694	1.69	2	55	1987	6685	4884	1987	Wide Shoulder
Route 220	Route 694	.6 miles South of Route 696	3.86	2	55	1987	6714	4101	1987	Wide Shoulder
Route 220	.6 miles South of Route 696	.30 miles North of Route 696	0.90	2	55	1987	7179	4509	1987	Wide Shoulder
Route 220	.30 miles North of Route 696	.22 miles South of CSX Railroad Tracts	1.55	2	55	1987	7179	4509	1987	Wide Shoulder
Route 220	.22 miles South of CSX Railroad Tracts	.43 miles North of CSX Railroad Tracts	0.65	2	55	1987	7372	4509	1987	Wide Shoulder

BOYD COUNTY (TABLE II continued from previous page)

Route Number	Segment Description	Segment Length (Miles)	Number of Lanes	Posted Speed (Mph)	Volume Year (Vehicles Per Day)	Volume Year (Vehicles Per Day) (Year 2015)	Recommendation	
Route 220	.43 miles North of CSX Railroad Tracts	Allegany County Line	2	55	1987	4509	7372	Wide Shoulder
Route 43	Bedford County Line	.26 miles East of South Corporate Limits Buchanan	2	35	1987	297	590	Wide Shoulder
Route 43	.26 miles East of South Corporate Limits Buchanan	South Route 11	2	35	1987	419	621	Wide Shoulder
Route 43	North Route 11	Route 630	2	55	1987	1243	1468	Wide Shoulder
Route 43	Route 630	Route 739	2	55	1987	866	1260	Wide Shoulder
Route 43	Route 739	.51 miles North of Route 739	2	55	1987	866	1260	Wide Shoulder
Route 43	.51 miles North of Route 739	1.2 miles North of Route 739	2	55	1987	866	1260	Wide Shoulder
Route 43	1.2 miles North of Route 739	1.48 miles North of Route 739	2	55	1987	866	1260	Wide Shoulder
Route 43	1.48 miles North of Route 739	North Route 693	2	55	1987	866	1260	Wide Shoulder
Route 43	North Route 693	North Route 688	2	--	1987	1537	2493	Wide Shoulder
Route 43	North Route 688	Route 43 Y	2	25	1987	1537	2493	Wide Shoulder
Route 43	Route 43 Y	Route 220	2	55	1987	485	620	Wide Shoulder
Route 43 Y	Route 43	Route 220	2	--	1987	1248	2431	Wide Lane
Route 640	South Route 11	North Route 11	2	--	--	--	--	Wide Shoulder
Route 651	Norfolk & Southern Railroad (MPO Boundary)	Route 11	2	--	--	--	--	Wide Shoulder
Route 779	Roanoke County Line	Route 664	2	--	--	--	--	Wide Shoulder
Route 779	Route 664	Route 666	2	--	1992	1789	2689	Wide Shoulder

BOYD COUNTY (TABLE II continued from previous page)

Facility Name Route Number	Segment From	Segment To	Segment Length	Number of Lanes	Number of Lanes	Speed Limit	Year Vehicles Per Day	Project No. Year	Comments
Route 779	Route 666	Route 630	0.33	2	2	35	1992	4355	Wide Shoulder
Route 779	Route 630	1.57 miles West of Route 672	0.96	2	2	45	1992	4858	Wide Shoulder
Route 779	1.57 miles West of Route 672	0.10 miles East of Route 672	1.67	2	2	45	1992	5891	Wide Shoulder

TABLE III: CITY OF COVINGTON (LIST AND DESCRIPTION OF PROPOSED BICYCLE FACILITY IMPROVEMENTS)

Traffic Name Route Number	Project Segment From	Project Segment To	Segment Length	Number of Lane	Posted Speed Limit	Volume Year Average Per Day	Project Volume (Year 2015)	Recommendation	
Route 154	Interstate 64	Liberty St	0.11	4	--	1993	4814	5375	Wide Lane
Route 154	Liberty St	Chestnut St	0.56	4	--	1993	4814	5375	Wide Lane
Route 154 (Craig Ave)	Chestnut St	Locust St	0.55	2	--	1993	4326	5730	Wide Lane
Route 154 (Craig Ave Extension)	Locust St	Lexington Ave	0.20	2	--	--	--	--	Wide Lane
Route 154 (East Riverside St)	Lexington Ave	Route 60 (South Monroe Ave)	0.30	2	--	1993	3161	4820	Wide Lane
Route 154 (East Riverside St)	Route 60 (South Monroe Ave)	Magazine Ave	0.24	4	--	1991	6740	9008	Wide Lane
Route 154 (East Hickory St)	Magazine Ave	Route 220 (North Alleghany Ave)	0.09	2	--	1991	2180	2700	Wide Lane
Route 18 (Indian Valley Dr)	South City Line Covington	South Pitzer Ridge Rd	0.36	2	--	1993	3087	4285	Wide Lane
Route 18 (South Carpenter Dr)	South Pitzer Ridge Rd	Jackson River	0.37	2	--	1993	5210	6672	Wide Lane
Route 18 (South Carpenter Dr)	Jackson River	Durant Rd Extension	0.23	2	--	1993	4814	5375	Wide Lane
Route 18 (South Carpenter Dr)	Durant Rd Extension	Route 60/220 (East Madison Ave)	1.23	2	--	1991	4335	5375	Wide Lane
Route 220 (South Alleghany Ave)	Route 60 (South Monroe Ave)	East Locust St	0.94	2	--	1993	11867	15438	Wide Lane
Route 220 (North Alleghany Ave)	East Locust St	North Magazine Ave	0.62	2	--	1993	12352	17730	Wide Lane
Route 220 (North Alleghany Ave)	North Magazine Ave	North City Line Covington	0.72	4	35	1993	7042	9758	Wide Lane
Route 60 (North Monroe Ave)	West City Line Covington	Jackson River	0.06	2	--	1993	4614	5885	Wide Lane

CITY OF COVINGTON (TABLE III continued from previous page)

Facility Name (Route Number)	Segment From	Segment To	Segment Length	Number of Traffic Lanes	Posted Speed Limit	Volume (Vehicles Per Day)	Volume (Vehicles Per Day) (1997-2015)	Recommendation	
Route 60 (North Monroe Ave)	Jackson River	Route 154 (West Riverside St)	0.03	3	--	1993	4614	5885	Wide Lane
Route 60 (North Monroe Ave)	Route 154 (West Riverside St)	West Locust St	0.13	2	--	1993	7372	8240	Wide Lane
Route 60 (South Monroe Ave)	West Locust St	Alley	0.13	2	--	1993	7372	8240	Wide Lane
Route 60 (South Monroe Ave)	Alley	Route 220 (South Alleghany Ave)	0.67	2	--	1993	8250	9410	Wide Lane
Route 60/220 (East Madison St)	Route 60 (South Monroe Ave)	South Highland Ave	0.11	2	--	1993	18024	25964	Wide Lane
Route 60/220 (East Madison St)	South Highland Ave	South Ashland Ave	0.20	2	--	1993	18024	25964	Wide Lane
Route 60/220 (East Madison St)	South Ashland Ave	Route 18 (South Carpenter Dr)	0.09	2	--	1993	18024	25964	Wide Lane
Route 60/220 (East Madison St)	Route 18 (South Carpenter Dr)	East City Line Covington	0.48	4	--	1993	15680	21385	Wide Lane
Durant Rd Extension	Route 18 (South Carpenter Dr)	South Willis Ave	0.39	--	--	--	--	--	Wide Lane
South Durant Rd	South Willis Ave	.2 miles South of Interstate 64	0.32	2	--	1993	5695	6940	Wide Lane
South Durant Rd	.2 miles South of Interstate 64	Interstate 64	0.20	4	35	1993	5695	6940	Wide Lane
South Rayon Dr	West Edgemont Dr	West Jackson St	0.22	2	25	1993	3401	4340	Wide Shoulder
West Edgemont Dr	South Rayon Dr	Route 18 (South Carpenter Dr)	0.63	2	--	1993	3548	4145	Wide Shoulder
West Jackson St	South Rayon Dr	South Willis Ave	0.44	2	25	1993	4863	5860	Wide Shoulder
South Pitzer Ridge Rd	South City Line Covington	Route 18 (South Carpenter Dr)	0.39	2	--	--	--	--	Wide Shoulder

TABLE IV: CRAIG COUNTY (LIST AND DESCRIPTION OF PROPOSED BICYCLE FACILITY IMPROVEMENTS)

Facility Name Route Number	Segment From	Segment To	Segment Length (mi)	Number of Lanes	Posted Speed Limit	Volume Year Vehicles Per Day	Volume Year 2013	Recommendation
Route 18	Route 311	1.92 miles South of Alleghany County Line	3.20	2	55	1992	346	Wide Shoulder
Route 18	1.92 miles South of Alleghany County Line	1.26 miles South of Alleghany County Line	0.66	2	55	1992	346	Wide Shoulder
Route 18	1.26 miles South of Alleghany County Line	Alleghany County Line	1.26	2	45	1992	346	Wide Shoulder
Route 311	Roanoke County Line	Route 619	3.70	2	55	1987	4641	Wide Shoulder
Route 311	Route 619	.87 miles North of Route 619	0.87	2	55	1987	3927	Wide Shoulder
Route 311	.87 miles North of Route 619	.80 miles South of Route 618	0.56	2	55	1987	3927	Wide Shoulder
Route 311	.80 miles South of Route 618	.08 miles North of Route 618	0.88	2	55	1987	3927	Wide Shoulder
Route 311	.08 miles North of Route 618	.70 miles North of Route 618	0.78	2	55	1987	3927	Wide Shoulder
Route 311	.70 miles North of Route 618	Route 640	2.60	2	55	1987	3927	Wide Shoulder
Route 311	Route 640	Route 678	0.07	2	35	1987	4514	Wide Shoulder
Route 311	Route 678	Route 42	0.26	2	35	1987	4514	Wide Shoulder
Route 311	Route 42	Route 658	5.21	2	55	1987	940	Wide Shoulder
Route 311	Route 658	Route 602	7.39	2	55	1992	525	Wide Shoulder
Route 311	Route 602	Route 18	3.66	2	55	1992	525	Wide Shoulder
Route 311	Route 18	West Virginia Line	3.39	2	35	1987	280	Wide Shoulder
Route 42	Giles County Line	Route 629	3.68	2	55	1987	1268	Wide Shoulder

CRAIG COUNTY (TABLE IV continued from previous page)

Facility Name Route Number	Segment From	Segment To	Square Feet	Number of Vehicular Lanes	Posted Speed Limit	Year of Vehicle P.D.	Width of P.D.	Volume	Shoulder
Route 42	Route 629	.38 miles West of Route 658	1.60	2	55	1987	745	1155	Wide Shoulder
Route 42	.38 miles West of Route 658	Route 667	4.33	2	55	1987	745	1155	Wide Shoulder
Route 42	Route 667	Route 625	4.84	2	55	1987	745	1155	Wide Shoulder
Route 42	Route 625	.30 miles West of Route 622	3.94	2	55	1987	621	795	Wide Shoulder
Route 42	.30 miles West of Route 622	West Route 645	2.20	2	55	1987	621	795	Wide Shoulder
Route 42	West Route 645	Route 624	1.72	2	55	1987	621	795	Wide Shoulder
Route 42	Route 624	Route 1001	2.90	2	55	1987	744	950	Wide Shoulder
Route 42	Route 1001	Route 311	0.12	2	25	1987	744	950	Wide Shoulder
Route 600	West Virginia Line	Route 311	3.40	2	--	--	--	--	Shared Lane
Route 606	Route 615	Route 614	1.64	2	--	1992	390	538	Shared Lane
Route 606	Route 614	Botetourt County Line	2.78	2	--	1992	277	323	Shared Lane
Route 611	Route 311	Route 617	5.00	2	--	--	--	--	Shared Lane
Route 611	Route 617	Route 615	4.28	2	--	--	--	--	Shared Lane
Route 615	Route 1004	East Corporate Limits New Castle	0.04	2	25	1992	3548	3871	Wide Lane
Route 615	East Corporate Limits New Castle	Route 638	0.12	2	35	1992	3548	4960	Wide Lane
Route 615	Route 638	Route 649	0.43	2	35	1992	2988	3712	Wide Shoulder
Route 615	Route 649	Route 609	2.17	2	55	1992	2724	4314	Wide Shoulder
Route 615	Route 609	Route 610	2.20	2	--	1992	926	3016	Wide Shoulder
Route 615	Route 610	Route 606	1.57	2	55	1992	613	901	Wide Shoulder
Route 615	Route 606	Botetourt County Line	2.65	2	--	--	--	--	Wide Shoulder

CRAIG COUNTY (TABLE IV continued from previous page)

Field Name Route Number	Segment from	Segment to	Segment Length	Number of Road Alleys	Posted Speed Limit	Annual Vehicle Miles Per Day	Proposed Volume Year 2015	Responsible Agency
Route 617	Route 611	Alleghany County Line	9.65	2	--	--	--	Shared Lane
Route 621	Montgomery County Line	Route 311	9.14	2	--	--	--	Shared Lane
Route 624	South Route 42	Route 625	5.05	2	--	--	--	Shared Lane
Route 624	Route 625	North Route 42	8.13	2	--	--	--	Shared Lane
Route 625	Route 42	Route 624	2.20	2	--	--	--	Shared Lane
Route 632	South Route 658	North Route 658	9.56	2	--	--	--	Shared Lane
Route 635	Route 632	Route 658	0.80	2	--	--	--	Shared Lane
Route 658	Route 42	Mid Route 632	4.50	2	--	--	--	Shared Lane
Route 658	Mid Route 632	Route 311	13.78	2	--	--	--	Shared Lane
Route T1004	Route 311	Route 615	0.14	2	--	--	--	Wide Lane

TABLE V: CITY OF CLIFTON FORGE (LIST AND DESCRIPTION OF PROPOSED BICYCLE FACILITY IMPROVEMENTS)

Facility Name Route Number	Component	Segment Description	Number of Bicycles	Post-Mile Speed Limit	Year Vehicles Per Day	Projected Volume (Year 2015)	Recommendation
Route 220 Business (Verge St)	South City Line Clifton Forge	South County Viaduct	2	--	1990	3051	3780 Wide Lane
Route 220 Business (A St)	South County Viaduct	North County Viaduct	2	--	1990	3051	3780 Wide Lane
Route 220 Business (A St)	North County Viaduct	Route 60 Business (Main St)	2	--	1990	3051	3780 Wide Lane
Route 60 Business (Main St)	Route 60 Business (Kesswick St)	Route 60 Business (Ridgeway St)	2	25	1990	5797	7190 Wide Lane
Route 60 Business (Main St)	Route 60 Business (Ridgeway St)	B St	2	--	1990	9767	12125 Wide Lane
Route 60 Business (Main St)	B St	Old East City Line Clifton Forge	2	--	1990	6988	10796 Wide Lane
Route 60 Business (Main St)	Old East City Line Clifton Forge	East City Line Clifton Forge	2	--	1990	6988	10796 Wide Lane
Route 60 Business (Kesswick St)	Route 60 Business (Roxbury St)	Route 60 Business (Main St)	2	--	1992	4550	5640 Wide Lane
Route 60 Business (Roxbury St)	Route 60 Business (Ridgeway St)	Route 60 Business (Kesswick St)	3	--	1992	6994	8670 Wide Lane
Route 60 Business (Ridgeway St)	West City Line Clifton Forge	5th St	2	--	1992	11185	13870 Wide Lane
Route 60 Business (Ridgeway St)	5th St	Route 60 Business (Roxbury St)	2	25	1992	11184	13870 Wide Lane
Route 60 Business (Ridgeway St)	Route 60 Business (Roxbury St)	Route 60 Business (Main St)	2	--	1990	6313	7830 Wide Lane

TABLE VI: ROANOKE COUNTY (LIST AND DESCRIPTION OF PROPOSED BICYCLE FACILITY IMPROVEMENTS)

Utility Name Route Number	Segment From	Segment To	Segment Length	Number of Bike Lanes	Posted Speed Limit	Year Vehicle Counts	Year Vehicle Counts	Projected Volume (Year 2015)	Recommendation
Route 11/460 (West Main St)	Montgomery County Line	.57 miles West of Route 647 (Dow Hollow Rd)	1.29	4	45	1987	7419	11115	Wide Shoulder
Route 221 (Bent Mtn Rd)	Floyd County Line	North Route 711 (Tinsley Ln)	3.86	2	55	1987	3445	4872	Wide Shoulder
Route 221 (Bent Mtn Rd)	North Route 711 (Tinsley Ln)	2.8 miles North of North Route 711 (Tinsley Ln)	2.80	3	45	1987	3292	4017	Wide Shoulder
Route 221 (Bent Mtn Rd)	2.8 miles North of North Route 711 (Tinsley Ln)	Route 696 (Martin Creek Rd)	1.48	2	45	1987	3292	5600	Wide Shoulder
Route 311 (Catawba Valley Dr)	.25 miles North of Route 419	North Route 864 (Old Catawba Rd)	5.43	2	55	1992	10127	9184	Wide Shoulder
Route 311 (Catawba Valley Dr)	North Route 864 (Old Catawba Rd)	.18 miles North of Route 779 (Catawba Creek Rd)	1.39	2	55	1992	10127	9184	Wide Shoulder
Route 311 (Catawba Valley Dr)	.18 miles North of Route 779 (Catawba Creek Rd)	Craig County Line	2.88	2	55	1987	3011	4641	Wide Shoulder
Route 622 (Bradshaw Rd)	Montgomery County Line	Route 873 (Green Acres Dr)	9.55	2	--	--	--	--	Wide Shoulder
Route 622 (Bradshaw Rd)	Route 873 (Green Acres Dr)	Route 699 (Bendemeer Rd)	1.60	2	40	1992	1796	2699	Wide Shoulder
Route 622 (Bradshaw Rd)	Route 699 (Bendemeer Rd)	Route 864 (Bradshaw Rd)	0.78	2	40	1992	2188	3385	Wide Shoulder
Route 624 (Newport Rd)	Montgomery County Line	Route 697 (Sandridge Rd)	3.30	2	--	--	--	--	Shared Lane

ROANOKE COUNTY (TABLE VI continued from previous page)

Facility Name (Route Number)	Segment Route	Segment Length	Number of Miles	Posted Speed Limit	Volume Year Vehicles Per Day	Expected Volume Year 2010	Recommendation
Route 624 (Newport Rd)	Route 697 (Sandyridge Rd)	2.20	2	--	1992	388	837 Shared Lane
Route 624 (Newport Rd)	Route 620 (Miller Cove Rd)	2.27	2	--	1992	702	1013 Shared Lane
Route 694 (Twelve O'Clock Knob Rd)	Route 670 (Canyon Rd)	4.14	2	25	1992	366	1400 Shared Lane
Route 694 (Twelve O'Clock Knob Rd)	4.14 miles North of Route 670 (Canyon Rd)	1.19	2	25	1992	715	1400 Shared Lane
Route 697 (Sandyridge Rd)	Route 785 (Blacksburg Rd)	1.52	2	25	1992	71	27 Shared Lane
Route 740 (Carvins Cove Rd)	Route 311 (Catawba Valley Dr)	3.67	2	--	--	--	Shared Lane
Route 779 (Catawba Creek Rd)	Route 311 (Catawba Valley Dr)	3.62	2	--	--	--	Wide Shoulder
Route 785 (Blacksburg Rd)	Montgomery County Line	2.18	2	--	1992	348	468 Wide Shoulder
Route 785 (Blacksburg Rd)	Route 697 (Sandyridge Road)	7.55	2	--	--	--	Wide Shoulder
Route 864 (Bradshaw Rd)	Route 311 (Catawba Valley Dr)	1.65	2	40	1992	3139	6110 Wide Shoulder
Route 912 (Absalom Smith Road)	Route 311 (Catawba Valley Dr)	0.90	2	--	--	--	Shared Lane

PLAN IMPLEMENTATION

Implementing and coordinating the recommendations of this plan are the most important steps in providing the bicycling public with the opportunity to utilize the Fifth Planning District's roadways, forest roads and trails for utilitarian and/or recreational purposes. It is important to note that before any bicycle facility improvements along roadways will be considered by the Virginia Department of Transportation, when constructing, reconstructing or upgrading a roadway, they must first be recommended in a plan that has been adopted by the locality. For this reason, it is imperative that a locality be involved in the planning stage of bicycle facility improvements and be willing to adopt its bicycle plan to insure that a plan's recommendations will be *considered* when a roadway is constructed, reconstructed or upgraded.

In addition to providing bicycle facilities, it is also important to encourage more people to bicycle and to offer programs that educate the public on bicycle issues. To encourage more people to take up bicycling, it is important to show the benefits of bicycling and to educate and inform the public on safety issues and laws that pertain to bicycling. Many programs are available that will assist in educating the public on these matters, but it is up to the locality (community) to provide such programs. Most educational programs provide literature aimed at bicyclist and/or motor vehicle drivers. The mere production and distribution of educational literature does not always lead to a successful program. Success comes when there is an increase in the number of people that use and learn from the materials and translate the learning into action -- an increase in the number of bicyclist that are aware of safety issues and the law.

Educational and Encouragement Programs can be offered through:

- Public and/or Private Schools
- Police Departments
- Medical Facilities
- 4-H Clubs
- Scout and Service Organizations
- Driver Education Programs

COST ESTIMATES

TABLE VII below provides estimated bikeway costs by facility type. Maintenance costs have been included where available. (Maintenance cost figures have not been nationally compiled to the extent that construction cost figures are available, but there is general consensus that these costs approximate construction/maintenance costs for paved shoulders).

TABLE VII: BICYCLE FACILITY COST ESTIMATES (BASED ON 1994 DOLLARS)

COST ITEM (UNIT)	UNIT COST
Bike Path	
• construction (per mile/per foot of width)	\$3,400
• maintenance (per mile/per foot of width)	\$3,400
Bike Lane with curb/gutter	
• construction (per mile/per foot of width)	\$7,700
• maintenance (per mile/per foot of width)	\$3,400
Bike Lane with curb only	
• construction (per mile/per foot of width)	\$4,500
• maintenance (per mile/per foot of width)	\$3,400
Paved Shoulder	
• construction (per mile/per foot of width)	\$3,400
• maintenance (per mile/per foot of width)	\$3,400
Bicycle/Pedestrian Bridge	
• construction (per square foot)	\$85
• maintenance (per mile/per foot of width)	\$3,400
Bike Trail (bare earth)	
• construction (per linear foot)	\$5
• maintenance (per mile/per foot of width)	not available
Bike Trail (asphalt)	
• construction (per linear foot)	\$25
• maintenance (per mile/per foot of width)	\$3,400
Pavement Marking (4 inch line)	
• striping only (per linear foot)	\$0.50

Note: "Unit Cost" does not include additional right-of-way costs

Source: Hampton Roads Planning District Commission, National Bicycle & Pedestrian Clearinghouse, 1994

FUNDING SOURCES

Federal funding sources/programs include:

- Intermodal Surface Transportation Efficiency Act (ISTEA, 1991), (non-dedicated bicycle funding sources) Note: ISTEA funds are subject to reauthorization.
 - ◊ National Highway System (NHS) Funds (Section 1006): may be used to construct bicycle transportation facilities on land adjacent to any highway on the National Highway System.
 - ◊ Surface Transportation Program (STP) Funds (Section 1007): may be used to construct bicycle transportation facilities related to safe bicycle use. (10% of STP funds are used for "Transportation Enhancements" which include the provision of facilities for bicyclists and pedestrians).
 - ◊ Congestion Mitigation and Air Quality Improvement (CMAQ) Funds (Section 1008): may be used for either construction of bicycle transportation facilities or non-construction projects related to safe bicycle use. (CMAQ funds available in non attainment areas only.)
 - ◊ Federal Lands Highway Funds (Section 1032): may be used to construct bicycle transportation facilities in conjunction with roads, highways and parkways at department discretion.
 - ◊ Scenic Byways Program Funds (Section 1047): may be used to construct bicycle facilities only along designated scenic highways.
 - ◊ National Recreational Trails Fund (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.
 - ◊ Section 402 Funds (Title II, Section 2002): may be used for bicycle safety projects within community highway safety grant program funds.
 - ◊ Federal Transit Funds (Title III, Section 25): allows transit funds to be used for bicycle access to transit facilities, to provide bicycle shelters and parking facilities in or around transit facilities, or to install racks or other equipment for transporting bicycles on transit vehicles.
 - ◊ National Park Service - Land and Water Conservation Fund
 - ◊ National Park Service - Urban Park and Recreational Recovery Program (UPARRP)

- ◊ National Park Service - Federal Lands Highway Program (FLHP)
- ◊ Historic Bridges Program

State funding sources include:

- Virginia Department of Transportation (roadway improvements/enhancement projects / recreational access program)
- Virginia Department of Conservation and Recreation (off-street recreation-focused facilities)
- Virginia Department of Rail and Public Transportation (rail/transit improvements)

Private funding sources include:

- Developer's contributions
- Neighborhood Associations
- Individual / corporate donations

Potential local funding sources:

- Bicycle licensing fees
- Receipts from fines for bicycling infractions
- Income from the auction of abandoned/found bicycles
- General Fund appropriations

(sources: A Virginia Guide for Bicycle Facility Planning, 1994, Virginia Department of Transportation and Roanoke Valley Area Long Range Transportation Plan 1995-2015, VDOT/Fifth Planning District Commission, 1996).

GLOSSARY

- **Bicycle:** A vehicle having two tandem wheels, either of which is more than 16" in diameter or having three wheels in contact with the ground any of which is more than 16" in diameter, propelled solely by human power, upon which any person or persons ride.
- **Bicycle Facilities:** A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking facilities, mapping all bikeways, and shared roadways not specifically designated for bicycle use.
- **Bike Lane:** A portion of the roadway which has been designated by striping, signing adequate pavement width and pavement markings for the preferential or exclusive use of bicyclists.
- **Bike Path:** A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the roadway right of way or within an independent right of way.
- **Bikeway:** Any road, path, or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.
- **Greenway:** A multi-use path or trail physically separated from motorized vehicular traffic by an open space or barrier.
- **Highway:** A general term denoting a public way for purposes of vehicular travel, including the entire area within the right of way.
- **Right of Way:** A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purpose.
- **Roadway:** The portion of the highway, including shoulders, for vehicle use.
- **Shared Roadway:** Any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway.

APPENDIX II

GEORGE WASHINGTON AND JEFFERSON NATIONAL FOREST

- **Glenwood Ranger District**
Highway 130
Post Office Box 10
Natural Bridge Station, Virginia 24579
Telephone: 540-291-2188
- **James River Ranger District**
810 A Madison Avenue
Covington, Virginia 24426
Telephone: 540-962-2214
- **New Castle Ranger District**
Box 246
New Castle, Virginia
Telephone: 540-864-5195
- **Blacksburg Ranger District**
110 South Park Drive
Blacksburg, Virginia 24060
Telephone: 540-552-4641

APPENDIX III (MAPS)

Includes:

- MAP II (Alleghany County, Covington and Clifton Forge)
- MAP III (Botetourt County)
- MAP VI (Craig County)
- MAP V (Roanoke County)