

## 2011 Regional Vision

### Introduction

The New River Valley Bikeway-Walkway-Blueway Plan is a document that proposes an integrated system of bicycle facilities, river access points, and pedestrian corridors into the existing highway and public transportation system. As the region expands infrastructure to accommodate highway, rail, and transit improvements the opportunity for including non-motorized options will become more difficult. Connecting urban and rural areas will promote a richer and denser mix of residential and business land uses. The concept of providing transportation choices within the existing communities of the region will facilitate sustainable planning for the future.

In April of 1970, Virginia Highway Commissioner Douglas Fugate wrote an article for the Eno Foundation's Traffic Quarterly and made this observation: "We should not be particularly surprised that transportation planning requirements differ from those of even a decade ago. For many reasons the nation's people differ – there are far more of them, they tend in growing numbers to congregate in and



Photo by: J. Blackburn

around cities, they tend to be more affluent; and they have a new concern for all aspects of the environment in which they live. Attention must be focused more extensively on utilizing the highway as an artery for mass transportation, and on *fresh concepts* concerned more with *moving people* than with moving vehicles."

Local communities throughout the United States are challenged to develop innovative planning solutions that preserve their unique characteristics while providing transportation choices. Innovations in technology, communication and research have streamlined, making it easier than ever before to evaluate and share different ideas and alternatives. Several trends indicate alternative transportation options are critical in our society:

1. *Capacity and Performance:* In the United States, the post World War II era was transformed by the automobile; making traditional transportation options such as walking, cycling or riding the bus a thing of the past. In the last 60 years passenger vehicle infrastructure has expanded throughout the United States and many corridors are reaching capacity thresholds. In order to maximize investments, many experts are looking for solutions that incorporate these fundamental modes back into the transportation system.
2. *Considering Livability in Modern Communities:* According to the Virginia Safe Routes to School Program, data shows that in 1969 42% of students walked to school – compared to only 16% in 2001. In 1969, schools were smaller in size and located near residential areas. Today schools are centralized within broad geographic areas and designed to accommodate more students. Often this pushes schools away from residential neighborhoods and limits transportation choices. The Safe

Routes to School program provides opportunities for communities to connect K-8 schools within a two mile radius by providing funding for walking and bicycling facilities.

3. *Investing in Public Health:* Active transportation options such as cycling and walking provide a direct health benefit. A 2008 study performed by the Center for Disease Control and Prevention (CDC) showed that the average obesity rates in Virginia surpassed 25% of its total population. Specifically, in the New River Valley this study showed the following percentages by jurisdiction: 24.1% Giles, 25.2% Montgomery, 28.3% Pulaski, 26.0% of Floyd, and 25.5% of the City of Radford. Communities that provide transportation choices retain property values, support public health and improve the quality of life for residents and visitors alike.
4. *Funding Challenges:* A recent study performed by the Rails-to-Trails Conservancy shows that over ½ of the trips in America can be completed within a 20 minute bike ride and ¼ can be completed within a 20 minute walk. In Virginia 31 % of total man-made green-house gas emissions are attributed to transportation. Nationally automobiles account for approximately 20% of the total carbon emissions; if mode shares of non-motorized traffic increased slightly to nearly 13% of all trips (10% currently) the total mileage of automobiles would be reduced by 69 billion, or \$10.4 billion in associated costs.



## History

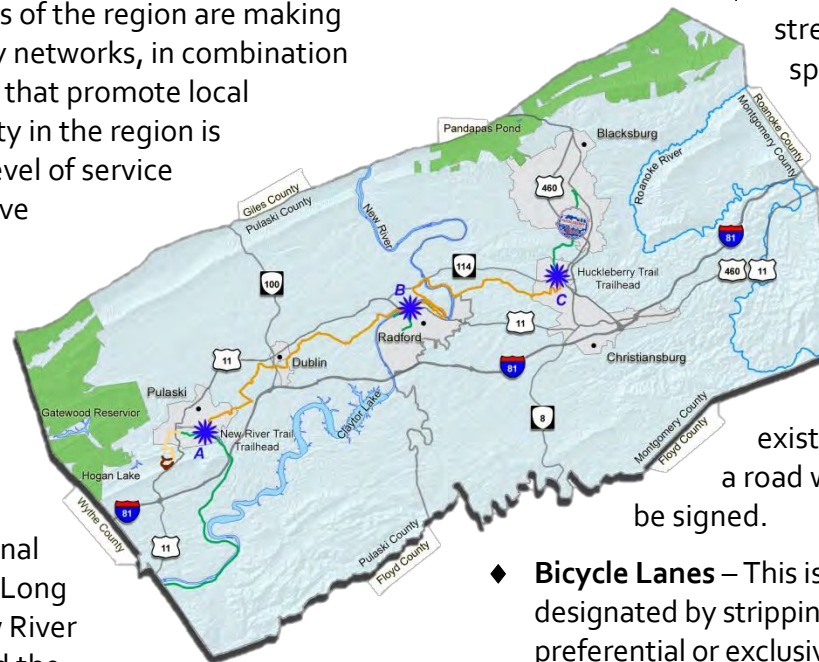
Bikeways and walkways are not new to the New River Valley. Since 1975 three comprehensive bikeway plans have been created: 1975, 1994, and 2000 respectively. The initial plan paralleled a series of bicycle studies completed at the same time in Blacksburg, which originally responded to the increasing population of student cyclists attending Virginia Tech.

In 1976, the Bicentennial Bike Route (also known as Bike Route 76) was established and the New River Valley had the good fortune of being located along its route. The trail enters the Town of Christiansburg, the City of Radford and passes through rural areas of Montgomery and Pulaski Counties. It is identified on maps and roads by signage depicting a bicycle logo below the number 76 (shown on previous sheet). The Bicentennial Bike Route crosses the entire United States from Astoria, Oregon to Yorktown, Virginia.

A network of designated routes known as the US Bike Route System (snapshot of Virginia above) has incorporated the Bicentennial Bike Route into its proposed 16,000 mile system. The Bike Route System is promoted by the Adventure Cycling Association. Currently there are only two official routes that have been designated (76 and 1) and both pass through the Commonwealth. There are a series of additional routes that have been planned across the United States. For the purpose of this plan, this existing route will be referred to as the Bike Route 76.

Since the early 90's bicycle and pedestrian planning has become more prevalent in the towns of Blacksburg, Christiansburg and the City of Radford. The demand for such facilities is greater in these areas of the New River Valley in order to provide inexpensive travel for students attending Virginia Tech and Radford University. The corridors developed for alternative uses in this part of the region serve dual roles of providing transportation and recreation for the surrounding community. The rural areas of the region are making strides to integrate safe shared roadway networks, in combination with natural surface and paved facilities that promote local recreation and tourism. Each community in the region is committed to providing a satisfactory level of service that meets the demand in their respective jurisdictions.

The New River Valley has an assortment of multi-purpose trails, shared roadways, hiking, and mountain biking trail networks. The region is highly motivated to make improvements within the local communities and forecasts strong regional connection opportunities in the future. Long range goals involve connecting the New River Trail (A) to the Radford Riverway (B) and the Huckleberry Trail (C). The image shown (above) illustrates the connection that will interconnect the Towns of Pulaski, Dublin, Christiansburg, and Blacksburg and the City of Radford. Once complete, it would effectively create a bikeway/walkway trail from Blacksburg, Virginia all the way to Abingdon, Virginia.



## Elements of a Bikeway-Walkway-Blueway System

The Bikeway-Walkway-Blueway Plan incorporates a variety of different modes that play major roles in a comprehensive transportation system. This System, for the New River Valley, includes these types of facilities:

- ◆ **Bikeways** – A general term for any road, street, path or way which in some manner is specifically designated for bicycle travel. Regardless of whether such facilities are designated for the exclusive use of bicycles, or are to be shared with other modes of transportation.
- ◆ **Shared Roadways** – Also known as a SHARROW (Shared Right-Of-Way), is a roadway which is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or a road with paved shoulders that may or may not be signed.
- ◆ **Bicycle Lanes** – This is a portion of a roadway which has been designated by stripping, signing and pavement markings for the preferential or exclusive use of bicyclists.
- ◆ **Multi-purpose Trails** – A corridor physically separated from motorized traffic by an open space or barrier and either within the right-of-way or within an independent right-of-way. Typically, these corridors may also be used by pedestrians, bicycles, skaters, wheelchairs, joggers and other non-motorized transportation.



Photo by: E. Sharp

- ◆ **Mountain Biking Trails** – A recreational corridor designed for preferential or exclusive use of mountain bicyclist. The alignments are designed for a range of difficulty to safely accommodate and challenge multiple cyclists with varying abilities.
- ◆ **Hiking Trails** – A lightly constructed, narrow (less than five feet) pathway that traverses through natural undeveloped lands. These recreational corridors are specifically designed for foot travel only and often incorporate State or National Parks and historic sites.
- ◆ **Sidewalks** – The portion of a street or highway right-of-way designed for preferential or exclusive use by pedestrians.
- ◆ **Dedicated Bicycle Routes** – These are separate routes that are intended to be used for long distance bicycle travel. Virginia Bicycle Routes 1 and 76 pass through parts of the New River Valley.
- ◆ **Blueways (Water Trails)** – These are recreational waterways on a river or a lake that are accessed exclusively by water. A trail may include both public and private lands.
- ◆ **Support Facilities** – Availability of public access and rest stop points. Included in this are boat ramps, parking areas, bike storage and security racks, canoe rentals, portages, restroom facilities, picnic areas, multi-modal connection points, etc.

## Planning Process

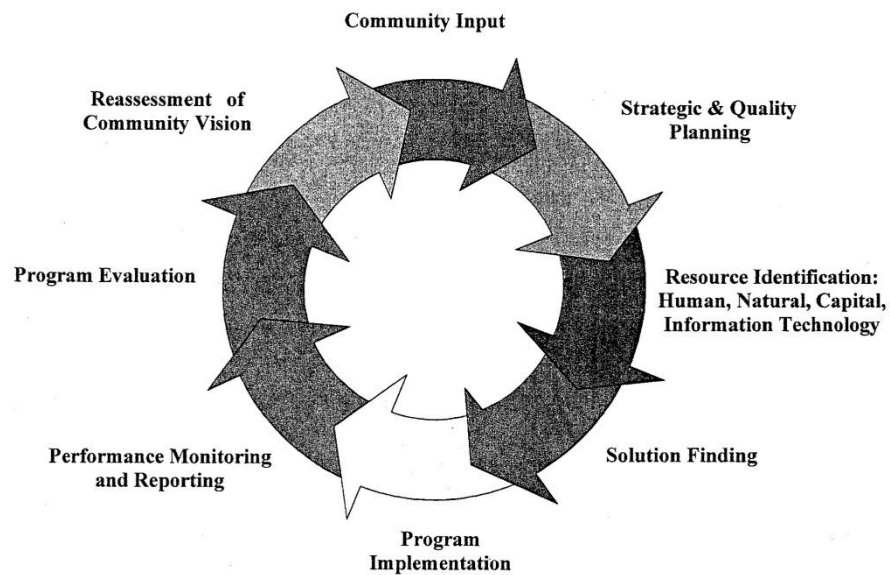
To prepare this plan the Planning District Commission met with each of the local governments and planning departments in the region. A major goal was to update the existing database, to accurately reflect existing facilities and identify future projects. Another goal was to establish hierarchical goals within the five core areas (Giles, Floyd, Montgomery, Pulaski and Radford). By setting regional goals, localities can focus limited resources to have the most impact possible.

This plan utilizes regional data to determine routes identified by user preference. By identifying locations cyclists and pedestrians currently used on a regular basis, specific safety and capacity locations can be identified. In order to collect this information local user groups were invited to participate in discussions. The input provided was carefully considered when determining future recommendations.



Photo by: A. Moody

Coordination with the Department of Transportation is essential to ensure that the New River Valley Bikeway-Walkway-Blueway Plan fulfills statewide transportation objectives, and is consistent with federal requirements. Cooperation is also sought from state and federal agencies within the region; specifically, the National Forest Service, the National Park Service, and the Virginia Department of Conservation and Recreation. Bicycle, canoe, and pedestrian access to national parks, recreation and scenic areas, monuments, and historic sites are a common goal.



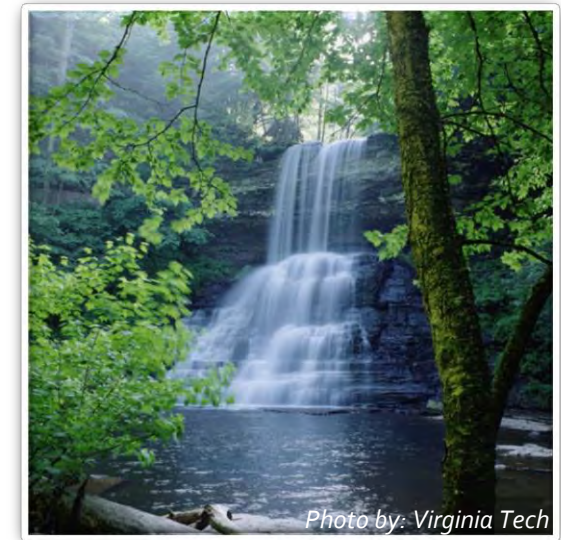
*This graphic is designed to illustrate the interrelationship between key planning and implementation components. In practice, it is frequently non-sequential and it is almost always ongoing.*

**Purpose**

The purpose of this plan is to provide information, guidelines and cohesion in the creation, expansion and coordination of a safe and effective Bikeway, Walkway and Blueway system for the New River Valley region.

The plan seeks to build on, supplement, and coordinate with existing plans. The plan recognizes and acknowledges the work and foresight of the local governments, community groups, and individuals who have created the excellent and growing network of bikeways, walkways and blueways in this region.

Ultimately, this Bikeway-Walkway-Blueway Plan is a resource to be used as an overview of existing and proposed bikeway, walkway, and blueway facilities.



*Photo by: Virginia Tech*

**Vision Statement**

*The New River Valley is committed to the promotion of non-motorized transportation as a safe, reliable, healthy, environmentally friendly alternative to motorized transportation. Opportunities must exist for residents of the region to choose walking or biking as a means of getting to a destination.*

## Policy Statements

- This plan encourages the Virginia Department of Transportation to work closely with localities to select, design, and implement bicycle and pedestrian accommodations; taking into consideration community needs, safety, and unique environmental and aesthetical characteristics.
- Facilities for bicyclists and pedestrians should be planned to provide continuity and consistency for all users of the system.
- All roadway projects in the region should be evaluated for the integration of bicycle and pedestrian accommodations to provide non-motorized uses. Every roadway project should be evaluated against the Commonwealth Transportation Board's Policy for Integrating Bicycle and Pedestrian Accommodations, Section 3 – Project Development.
- New land development in the New River Valley should integrate non-motorized transportation facilities that supplement the regional Bikeway-Walkway-Blueway system. Focusing on the development of Bikeway-Walkway-Blueway connections between residential, commercial, industrial, educational, historical and recreational areas to promote non-motorized transportation opportunities.
- The New River Valley Bikeway-Walkway-Blueway Committee, a sub-committee of the Transportation Technical Advisory Committee, was created in 2006 to revise and support the implementation of this regional Plan.
- The New River Valley Bikeway-Walkway-Blueway Committee should be responsible for prioritizing projects, coordinating interconnections and cooperation among neighboring districts and regions.
- All agencies and organizations in the region should promote the New River Valley as a place that is safe and enjoyable for cyclists, canoeists and pedestrians.
- All Counties, Cities, and Towns within the New River Valley are encouraged to endorse the New River Valley Bikeway-Walkway-Blueway Plan.
- All Counties, Cities, and Towns of the New River Valley are encouraged to adopt a local Bikeway-Walkway-Blueway plan into their respective comprehensive plans.



*Photo by: Radford University*

## Defining the Objectives

1. To identify a system to accommodate the variety of Bikeway-Walkway-Blueway users.
2. To coordinate a system of bikeways, walkways, blueways, locally and regionally; and to maintain the continuity of the Bikeway-Walkway-Blueway system to encourage non-motorized transportation.
3. To identify and determine the appropriate type of facility, and coordinate Bikeway-Walkway-Blueway development with future and imminent Virginia Department of Transportation projects.
4. To showcase and focus on the natural and cultural amenities of the New River Valley when proposing bike routes and walking trails, in order to maximize trail effectiveness and increase tourism within the region.
5. To promote the health, safety, welfare and improve the quality of life within the region.
6. To facilitate the use of recycled materials in the construction of bikeways, walkways, and blueways.
7. To increase the mobility of New River Valley residents by adding multimodal options to existing transportation networks with more connections to public transit that ultimately link communities where people live, work, attend school and recreate.



**OBJECTIVE 1 – To identify a system to accommodate the variety of Bikeway-Walkway-Blueway users.**

Inherent in the title of this document is the suggestion that three different activities will be considered at the same time. Developing facilities for transportation versus recreation and minimizing the conflicts between them, is vital to the creation of a successful multiuse system. It is also necessary to be cognizant of, and provide for, the different levels of users within each of these categories. A good rule of thumb is to design new alternative transportation facilities for the least experienced user; recreational facilities should accommodate a range of users with varying degrees of ability. Lastly, it is important to plan for opportunities that will enable individuals to move from one mode of travel to another (i.e., bicycling to canoeing). Below is a list of specific uses and considerations for planning new facilities:



Pedestrian Use

There are different kinds of pedestrian activities including: jogging, walking and running. For a jogger or a runner to readily utilize a trail



Photo by: J. Wilsie

system it must be clear of obstacles, close to home, and provide adequate site distances and clearances around curves. Some runners prefer asphalt or non-paved surfaces and others prefer off-road trails that avoid

intersecting with major vehicular roadways.

A trail might appear to function in relatively the same way for people who walk for health reasons and for people walking for relaxation and enjoyment. However, it is important to program these activities differently. A fitness trail component might cater to the health minded user, while attractive plantings and pleasant views can be enjoyed by all.

Hiking is another form of pedestrian use of a trail system and the New River Valley has many excellent opportunities for this activity. Many hiking trails differ from multi-purpose trails in that they are usually not surfaced and are found in remote locations away from population centers. The purpose of hiking, in most cases, is to experience the natural environment and it is not unusual for the activity to extend over night and for many miles. It is important that day hikers are provided with convenient access to trails.



Bicycle Use

According to the Commonwealth Transportation Board Policy for Integrating Bicycle and Pedestrian Facilities there are classifications for riding levels of cyclists. Each level has different expectations of the biking experience and requires different kinds of facilities for their enjoyment and fulfillment. A sport cyclist may require long distance routes and prefer the ability to travel at high speeds. The more passive bicycle rider may enjoy slower speeds, scenic quality, and points of interest.

A variation on the recreational biking theme is mountain biking. This form of cycling involves off road travel on durable bicycles. Regular



maintenance is needed for these facilities because trail wear can be accelerated and erosion and sedimentation problems can develop.

The national forest offers mountain biking on its multipurpose trails in the region. The Forest Service stresses the importance of staying on the marked trails to minimize the environmental impact on the forest and also encourages bikers to be conscience of their potential conflict with other users, especially horseback riders. Horses may become alarmed by bicycles.

Bicycle Commuting typically involves riders in close proximity (10 miles) to the employment/population centers. Providing adequate facilities that provide safe travel for different classifications of riders can be challenging. There is a growing interest in the region to interconnect the bicycle and pedestrian system to the public transportation network in order to promote a multimodal system. With the development of more accessible facilities and the encouragement of alternative transportation, opportunities for commuting by foot or bicycle can be expanded.



Canoe Use

Canoe trails offer users a series of access sites as well as adequate support facilities between the access sites. The New River is currently the only existing designated blueway in the region, but other waterways are being considered. Support facilities along the New River Canoe Trail include campsites, rest stops, sanitation facilities, potable water and sources of information to aid in trip planning. An element of this multimodal Bikeway-Walkway-Blueway Plan is to provide secure long and short term parking for vehicles, bicyclists and trail users switching to canoeing. Such facilities will be jointly used by both New River Trail State Park and New River Canoe Trail users.



People with Disabilities

Physically challenged individuals should be of primary consideration in planning any public recreation project. It is essential not only to provide access, but make accommodations by considering design standards, minimum slopes, and proper furnishings. Providing access has been mandated by the federal government in the 1990 Americans with Disabilities Act.



### Other Potential Uses

Additional uses such as roller skating, skateboarding and in-line skating, may occur on some trails. It is necessary to plan for and structure trails that can accommodate these activities in an effective manner. Where these activities are incompatible, signs should be posted to restrict activities. Another solution to discourage incompatible trail uses could involve selecting appropriate surface materials. For example; a compacted granular surface accommodates walking and cycling but causes difficulty for those with smaller wheels. Unfortunately, this strategy can hinder walking with a baby stroller or add difficulty to someone in a wheelchair. Baby strollers and bicycle trailers are additional concerns and jurisdictions should decide how to accommodate these uses. Providing adequate space and enforcing proper facility etiquette will enable a variety of uses such as roller skating, skate boarding and in-line skating, while at the same time maintaining the enjoyment and safety of others.

**OBJECTIVE 2 – To coordinate a system of bikeways, walkways, blueways locally and regionally; and to maintain the continuity of the Bikeway-Walkway-Blueway system to encourage non-motorized transportation.**

An assortment of facilities already exists in the region and additional planning for new facilities has been ongoing for the last 20 years. The Bikeway-Walkway-Blueway Plan for the New River Valley recommends connectivity between different localities and encourages alternative transportation development in jurisdictions that do not presently have formal plans.



Photo by: Virginia Tech

One of the most formidable challenges in the region is developing long-term maintenance plans for facilities. Transportation maintenance funds continue to deplete and traditional volunteer organizations age without dedicated successors. Seasonal alternative uses could be integrated into the design of facilities to regulate activities for each season. By changing the use for each season, the labor intensive maintenance could be reduced along recreational corridors to once or twice a year. For example, when a trail becomes snow covered; one jurisdiction may want the snow cleared from the facility to allow cyclists and pedestrian's access; while another may want to permit cross-country skiing.

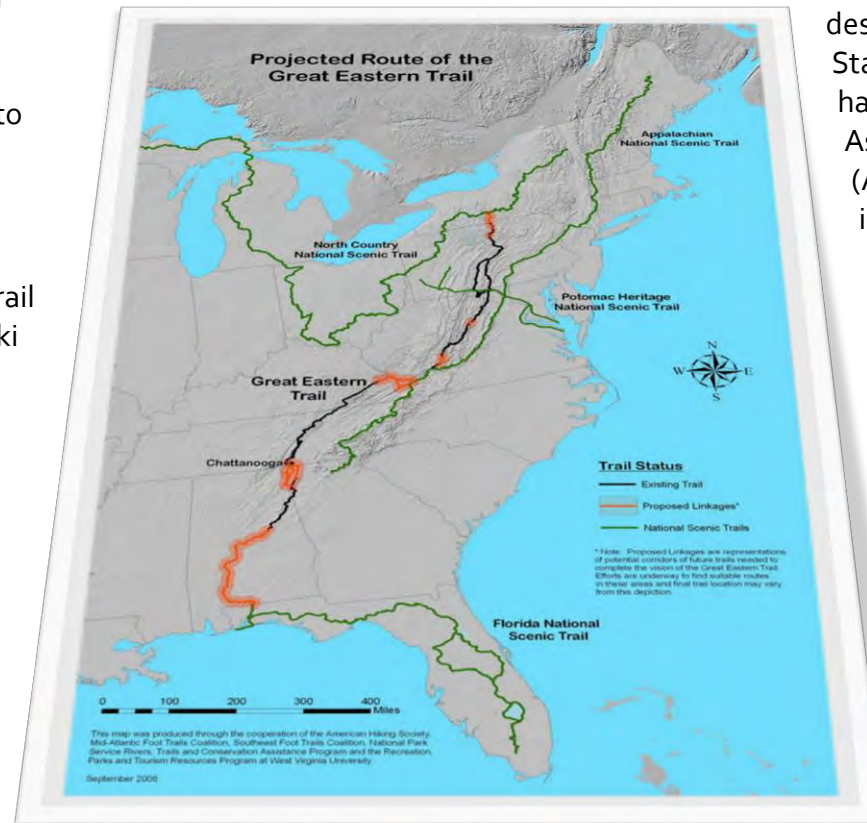
The towns of Blacksburg and Christiansburg, counties of Montgomery and Pulaski and the City of Radford have current plans for bikeway and walkway development. Other towns and counties within the region that have not articulated alternative transportation in their comprehensive plans, share the aspirations of those jurisdictions with existing facilities. For example the Trails in Floyd program collaborated with the Virginia Tech Community Design Assistance Center to create a trails corridor plan, for Floyd County and the Town of Floyd.

This plan also supports connections to neighboring regions. The New River Trail State Park begins in the Town of Pulaski and extends to Galax, Virginia. In May 2000, the Department of Conservation and Recreation and the U.S. Forest Service agreed to connect the New River Trail to the Virginia Highlands Horse Trail and the Virginia Creeper Trails. Once complete, this will result in a 160-mile, multi-use trail from Abingdon to Pulaski.

The Great Eastern Trail (GET) is an 1800 mile, volunteer constructed, long-distance trail from Alabama to New York. Currently, the GET extends into Giles County with 28 miles of completed trails, and over 250 total miles of additional trail planned through Virginia. This part of the project would most likely connect the New River Valley sections of the Appalachian Trail

with a spur from Bluestone Park, West Virginia. The Community Design Assistance Center at Virginia Tech is assisting the GET Association to map potential routes between gaps of existing trails.

As mentioned previously, the New River Valley is fortunate to have Bike Route 76 – one of only two officially designated bicycle routes in the United States. The Adventure Cycling Association has partnered with the American Association of State Highway Officials (AASHTO) to develop a broader plan that is intended to connect America through a network of numbered bicycle routes. The vision for the plan is to connect people, communities and the Nation with a designated bicycle route system. 50-mile wide corridors have been identified across the United States for the purpose of expanding the system.



The New River Trail, Bike Route 76 and Great Eastern Trail are examples of facilities spanning two or more regions, intended to enable users to travel great distances and promote the continuity of alternative use systems. Other inter-regional connections are possible with major points of interest in

southwest Virginia. Potential links include Smith Mountain Lake, the Roanoke River Greenway, and the Blue Ridge Parkway.

**OBJECTIVE 3 – To identify and determine the appropriate type of facility, and coordinate Bikeway-Walkway-Blueway development with future and imminent Virginia Department of Transportation projects.**

Improving communication between local and state agencies is the first step towards eliminating project redundancies. Costs are significantly lower when linear construction of a roadway, bike lane or trail can occur simultaneously within the same right-of-way. Savings occur due to efficiency in the mobilization of a construction crew, accessibility for machinery and materials, and bulk purchases of construction materials. Costs are also reduced when acquisition of land can be minimized. Furthermore, as studies for transportation improvements are conducted, each mode should be analyzed for inclusion within the project area.

The Virginia Department of Transportation (VDOT) Policy for Integration of Bicycle and Pedestrian Accommodations identifies bicycling and walking as fundamental travel modes that are an integral part of an efficient transportation network. The strategic approach for this Policy is to consistently incorporate the consideration and provision of bicycling and walking accommodations into the decision-making process for Virginia’s transportation network.

Virginia highway construction funds can be used to build bicycle and pedestrian accommodations either concurrently with highway construction projects or as independent transportation projects. VDOT is to initiate all highway construction projects with the presumption that the projects shall accommodate bicycling and walking. Factors that support the need to provide such accommodations include, but are not limited to the following:

1. Project is identified in an adopted transportation or related plan.
2. Project accommodates existing and future bicycle and pedestrian use.
3. Project improves or maintains safety for all users.
4. Project provides a connection to public transportation services and facilities.
5. Project serves areas or population groups with limited transportation options.
6. Project provides a connection to bicycling and walking trip generators such as employment, education, retail, recreation, and residential centers and public facilities.
7. Project is identified in a Safe Routes to School program or provides a connection to a school.
8. Project provides a regional connection or is of regional or state significance.



Photo by: J. Blackburn

9. Project provides a link to other bicycle and pedestrian accommodations.
10. Project provides a connection to traverse natural or man-made barriers.
11. Project provides a tourism or economic development opportunity.

General exceptions to provide accommodations include one or more of the following conditions:

1. Scarcity of population, travel, and attractors, both existing and future, indicate an absence of need for such accommodations.
2. Environmental or social impacts outweigh the need for these accommodations.
3. Safety would be compromised.
4. Total cost of bicycle and pedestrian accommodations to the appropriate system (i.e. interstate, primary, secondary, or urban system) would be excessively disproportionate to the need for the facility.
5. Purpose and scope of the specific project do not facilitate the provision of such accommodations (e.g. projects for the Rural Rustic Road Program).
6. Bicycle and pedestrian travel is prohibited by state or federal laws.

The Policy directs those involved in the planning, funding, design, construction, operation, and maintenance of the state's highways as the responsible parties for applying the guidance set forth. VDOT

will work with localities to select and design accommodations based on local needs. VDOT will also maintain bicycle and pedestrian accommodations as necessary to keep them usable and accessible in accordance with state and federal laws and VDOT's asset management policy. VDOT will also maintain sidewalks or shared use paths built within department right-of-way, built to department standards, and accepted for maintenance with the exception of snow and ice removal.



Alternatively, VDOT provides funding for pedestrian and bicycle facilities under Federal Surface Transportation legislation. This legislation currently allocates federal money (no less than 10% of total) that can be used for transportation enhancements. The Virginia Department of Transportation is annually receptive to proposals that include one or more of the following core transportation functions (Transportation Enhancement Program):

1. Pedestrian and Bicycle Facilities
2. Pedestrian and Bicycle Safety and Education
3. Landscaping and Scenic Beautification along Transportation Corridors (including streetscape improvements)

4. Preservation of Abandoned Railway Corridors and Conversion to Trails (traditional rails-to-trails and rails-with-trails projects)
5. Rehabilitation of Historic Transportation Buildings, Structures of Facilities
6. Acquisition of Scenic or Historic Easements and Sites

The criteria above were established in 2009 and the list of eligible activities varies depending on each state. Other funds for bicycle and pedestrian improvements are also available, such as: FTA 5307 funds, Safe Routes to School funds and the National Recreational Trails Fund. For a complete list of all FHWA and FTA programs visit: <http://www.fhwa.dot.gov/hep/bkepedtble.htm>. Grants are also available through many state agencies, private organizations and industries.

VDOT provides planning, engineering, construction, and funding guidance intended to provide communities with resources to determine appropriate bicycle and pedestrian facilities.

**OBJECTIVE 4 – To showcase and focus on the natural and cultural amenities of the New River Valley when proposing bike routes and walking trails, in order to maximize trail effectiveness and increase tourism within the region.**

Cultural and natural amenities are abundant in the New River Valley and can serve to advance bikeway, walkway and blueway development. Cultural and historical points of interest have the ability to complement alternative transportation systems. Local communities are encouraged to prioritize projects that showcase natural and cultural amenities of the region. Furthermore, selecting

a “theme project” to concentrate funding and planning resources could accelerate the process.

This plan can assist community leaders in the ongoing efforts to promote tourism in the Valley by establishing the region as a destination for nature enthusiasts. Encouraging people to experience the Appalachian culture and the natural and historic features can be successfully accomplished by enticing visitors to see the region on foot or bicycle, or in a canoe. Serious cyclists and hikers that come to the New River Valley, via existing cross country routes and inter-regional trails, should find our system to be a welcoming and inviting alternate route or side trip.

Communities in the New River Valley, such as the towns of Pearisburg and Floyd, have inventories of historic resources. Self-guided walking tour maps highlighting historic buildings, locations of significant events and local craftsmanship are distributed to visitors by local businesses.

Downtown walking tours can also be adapted for bicycle riders, and the historic elements within each small town should be easily identified. Directional information should be provided when convenient connections do not exist.



Photo by: E. Sharp

Many natural and scenic sites exist throughout the New River Valley, spanning from the Jefferson National Forest to the Blue Ridge Parkway. Running north through the center of the region, the New River, one of the oldest rivers in the world, provides the setting for many excellent opportunities in the natural environment.

**OBJECTIVE 5 – To promote the health, safety, welfare and improve the quality of life within the region.**

This Plan encourages the development of educational programs for the variety of multi-use transportation system users including: bicyclists, pedestrians and vehicle operators. This objective could be complemented by providing facilities for alternative modes of transportation (also known as active modes) and increasing the connectivity of existing facilities.

According to a study performed by CDC in 2008 roughly 25% of the population in the region is currently obese. This plan encourages the development of facilities that connect residential communities to local trail networks, public transportation systems, schools, and commercial centers. Providing a safe, accessible, and attractive network will invite local residents and visitors to utilize the system for the benefit of health and welfare.



Photo by: Radford University

Minimizing the risk of injury is the first step to maintaining a quality active transportation network. Rules and regulations to guide

etiquette for users should be posted in highly visible areas at trailheads. Graphic symbols and/or universal pictographs could be valuable to maintain consistency with other facilities.



Educational programs should be sponsored in part by schools, local recreation departments, citizen advocacy groups, and in coordination with the Virginia Department of Motor Vehicles. Information seminars could further the cause of safety when using the trails and roadways that make up the system. Public awareness can help extend driving courtesies to multimodal users that share the roads with cars and trucks.

The Bikeway-Walkway-Blueway Advisory Committee could respond to health, safety, and welfare issues through the appointment of a safety coordinator. A safety coordinator could develop a maintenance and inspection program and solicit feedback from user response forms to evaluate existing facilities.

Security along secluded, off-road trails may be an issue of concern. Patrolling the trails could be a necessary part of operation to deter inappropriate uses along the facility. He/She would be knowledgeable in first aid administration, perform trail maintenance review, and provide users with information. A trail patrol could be a volunteer who rides a bicycle or an employee of the jurisdiction in which the trail is located in. This patrol would carry a two-way radio

to communicate with local law enforcement and emergency personnel. Utilizing local law enforcement bike patrol officers is recommended if available.

Emergency plans should be set up in advance, identifying access points to trails and enabling emergency personnel to respond as quickly and effectively as possible to any incidents. Barriers should be removable at specific locations and corridors should adequately accommodate emergency vehicles.

Many of the inherent risks of bicycle or pedestrian uses along trails and roads can be avoided if upkeep and maintenance are a part of the corridor plan. This would include cleaning and clearing after storms, pickup of trash, removal of graffiti and vandalism, and repair/replace furnishings when necessary. Pavement markings should be repainted when they fade. Cracks in the pavement or severe erosion of trails and roads should be attended to immediately. Vegetation should be trimmed, allowing for adequate clearances and site distances. Paying special attention to these components will keep facilities safe and accessible for all users.



Photo by: J. Wilsie

**OBJECTIVE 6 – To facilitate the use of recycled materials in the construction of bikeways, walkways, and blueways.**

There are many innovative applications for various recycled materials highlighted in this plan that can be used in the design and construction of trails. Many types of aggregates can be used in the place of traditional materials such as: scrap rubber, glass, plastics, and recycled metals can be mixed in with traditional asphalt or concrete.

Among the aggregates listed, scrap rubber is available as a building material for constructing pavements. Techniques include mixing scrap tire chips (3/8" nominal) with the normal aggregate, or mixing powdered rubber with the asphalt cement to produce a durable long wearing surface, or laying an insulating base of tire chips (3" nominal) beneath a gravel surfaced roadbed.

The use of scrap rubber's suitable construction materials would help reduce the more than 300-million discarded tires that are generated across the country each year. Several localities in the New River Valley currently have a contract with a commercial tire shredding operation that reduces scrap tires to a usable tire chip. The resulting material is suitable for use in some engineered applications, such as subgrade fill.



Furthermore, the addition of rubber to a surface pavement mix allows the asphalt to be more porous without requiring the use of more expensive synthetic materials. The city of Chicago, Illinois has used this method extensively in its "Green Alley" program, utilizing the material in alleyways. The application allows water to seep

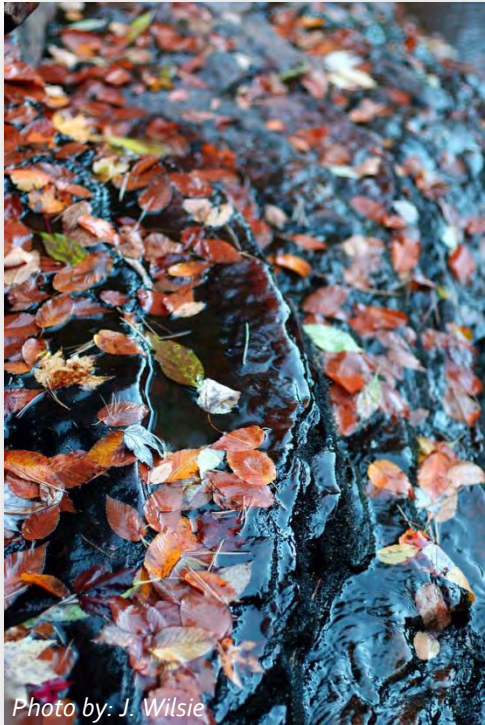


Photo by: J. Wilsie

through the pavement surface into the ground beneath. This approach could be applied to new roads and trails in the New River Valley to help reduce the impact of traditional construction.

Several European countries, including Sweden, Germany, Denmark, and the Netherlands, have also developed methods for incorporating recyclable materials into new pavement construction. These materials include: industrial waste from blast furnaces, steel slag and coal ash, as well as reclaiming old concrete and asphalt

pavement for reuse. These countries have achieved very high percentages of recyclable materials used in new road construction. Many of the materials listed are simply by-products of everyday industrial operations.

In addition, several states (Minnesota, Pennsylvania and Maryland) have mixed crushed glass with asphalt. Up to 10% by volume of crushed recycled glass, or "cullet" up to about 3/8" in size may be mixed with asphalt. Many have found that this "glassphalt" is more durable than standard asphalt, largely outlasting similarly-traveled traditionally paved roadways.

Recycled plastic lumber would be effective in wetland, marshy or boggy areas to create long term, durable raised trails. This application would be impervious to water and environmentally and structurally superior to treated lumber. Submerged plastic lumber has been estimated to last at least 60 years in a coastal environment.

Other recycled materials such as plastic, rubber, and aluminum – may be used in signage, fencing, railing, trash collectors, benches and bollards. Each of the materials discussed in this section are intended to encourage project planners, engineers, and contractors to think outside of the box for new facility development.



Photo by: Virginia Tech

**OBJECTIVE 7 – To increase the mobility of New River Valley residents by adding multimodal options to existing transportation networks with more connections to public transit that ultimately link communities where people live, work, attend school and recreate.**

To increase the mobility for the variety of potential user groups in the region, improvements to each mode should be considered concurrently with all other modes. Creating stronger links between non-motorized transportation, commuter programs and public transportation systems could be a starting point to reduce automobile dependency and transportation costs for families in the New River Valley.

The integration of systems could be achieved by creating Multimodal Transportation Hubs that provide adequate vehicle parking, bicycle storage and transit transfer locations. Furthermore, providing connections to the local bicycle and pedestrian system of trails, sidewalks, and shared road facilities could promote the use of public transportation. Potential locations for the development of these Hubs could be existing park and ride lots. Park and ride lots are located throughout the region and most have been integrated into carpooling programs such as Ride Solutions (for more information visit: <http://www.ridesolutions.org/register/index.asp>). By utilizing existing locations familiar with residents in the region, improvements will directly impact interested user groups and programs.



Photo by: E. Sharp

In 2010, the New River Valley was awarded a Sustainable Communities Grant to develop local and regional plans that will identify locations for potential Community Hubs. Community Hubs will be designed around existing communities and centralize transportation, utilities, local markets, employment centers, and housing options.

An integral component for expanding transportation options is the development of public transportation. Current service providers include Blacksburg Transit, Pulaski Area Transit, Community Transit, and the SmartWay.

Currently, transit services are provided in the towns of Blacksburg, Christiansburg, Pulaski and Dublin. Recently, the Department of Rail and Public Transportation completed a study to determine the need for transit in Radford. 88% of survey respondents indicated there was a need for service. In addition, the 2035 Virginia

Surface Transportation Plan identifies Giles and Floyd Counties as communities that have characteristics to sustain public transportation. As the interest for developing alternative solutions continues to increase, opportunities will become available to expand transit, commuter programs and bicycle and pedestrian systems.

The 2011 Bikeway-Walkway-Blueway Plan encourages the development of alternative transportation facilities that are tailored to the demand of each community. Providing transportation options in the New River Valley is a regional vision.

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