

VIRGINIA FOREST HIGHWAY

# Long Range Transportation Plan

*A DATA-DRIVEN TOOL FOR PRIORITIZING INVESTMENTS BASED ON NEED*



Federal Highway Administration  
Eastern Federal Lands Highway Division

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\*All Files provided on Disk

## Chapter 1: Introduction

This 20-year transportation plan describes the Virginia Forest Highway (FH) Program and identifies the long-range goals for the program. This plan also describes the process for coordinated planning and decision-making among the partner agencies involved in the Virginia FH Program.

This long-range plan is intended to help the Tri-Agency partners make better informed investment decisions for planning, safety management, preservation, and construction on FHs in Virginia. Because funds are limited, it is essential to assess needs, set priorities, and efficiently manage and leverage funds from a variety of sources to meet transportation needs. The other primary purpose of this document is to help transportation planners, transportation professionals, forest professionals, community representatives, and citizens who have an interest in improving FHs understand the FH Program, thereby helping them understand the types of projects eligible for program funding as well as how to participate in the planning and decision-making processes.

Accessing our National Forest System (NFS) lands is part of our heritage, our culture, and our economy. The FH Program addresses the needs for safe and adequate transportation access to and within NFS lands for tourism, recreation, resource use, and other uses. Other transportation programs do not specifically address those needs. FHs aid rural and community economic development and promote tourism and travel. Meanwhile, Virginia's population has steadily increased in recent decades, placing more people closer to NFS and other federal lands. In addition, urban and suburban development outside of federal lands is placing greater pressure on existing transportation infrastructure and resources.

Because FHs provide a multitude of economic, cultural, and environmental services to state residents and visitors, we need to understand the existing and long-term demands on the roadway system to meet current and future needs. The Virginia FH Program was developed to address those needs by providing funding for improvements to FHs.

The Virginia FH Program is allocated a limited amount of funding each year from the Highway Trust Fund through the Federal Highway Administration (FHWA) to make improvements to the roadway network. While an important part of maintaining the FH network, these funds represent only a portion of the identified funding need. A Long Range Transportation Plan (LRTP) serves as the initial step in developing a framework for maintaining and enhancing a FH network of transportation facilities and services.

In 2009, the Tri-Party members developed guidelines for a LRTP for the Virginia FH Network, which encompasses the George Washington and Jefferson National Forests. A primary aim of this undertaking was the creation of a more systematic means of prioritizing investments for transportation facilities and services within the FH network, in an effort to more efficiently allocate the limited resources available to the Forest Service. With the assistance of a consultant team the Tri-Party members initially developed an improved process for evaluating projects and prioritizing investments while recognizing Forest priorities, analysis of data and transportation needs in the Virginia FH network.



The Tri-Party members also identified a set of overarching goals to guide the LRTP process and specific criteria for identifying the areas of greatest need on the FH network. The mapping and analysis used in the creation of this plan are directly linked to the goals stated in the LRTP. These maps use the best and most recent available data to highlight those FH segments that might be considered candidates for improvement.

## Tri-Agency Roles

The plan is the product of the Tri-Agency partnership, which consists of representatives from the Virginia Department of Transportation (VDOT); the United States Department of Agriculture, Forest Service (USFS), Region 8; and the FHWA, Eastern Federal Lands Highway Division (EFLHD). Each agency has specific roles and responsibilities as part of the planning and implementation of FH projects as illustrated in the table below.

**Table 1.1: Agency Roles in Forest Highway Project Development**

Role/Responsibility	VDOT	USFS	EFLHD
Proposes routes for FH designation	X	X	
Approves proposed routes for FH designation			X
Coordinates with local government on proposed FH routes and projects	X	X	
Proposes projects for the FH program	X	X	
Selects/approves projects for FH program	X	X	X
Enters into project agreements	X	X	X
Concurs with project plans and estimates*	X	X	
Inspects and approves final construction	X	X	X
Contributes cooperative funding for projects	X	X	
Obtains right-of-way and assumes maintenance responsibility	X		
Administers FH program funds			X
Advertises, awards, and administers construction contracts			X

\*EFLHD develops project plans and estimates.

## What are Forest Highways?

In the Commonwealth of Virginia, the FH system is a subset of the overall state highway system. The USFS system in Virginia represents approximately 1,090 miles of roadway. Established by the passage of the Federal Highway Act of 1921, specific roadways in national forests across the U.S. are designated as FHs due to the benefits they provide to the national forests, states, and local communities. For more information on how FHs were designated, please see **Appendix A — Virginia Forest Highway Program Background** on the accompanying disk. Virginia's FHs are diverse, ranging from isolated dead-end roads in the most rural areas to secondary state routes that function as important elements of the county and regional highway systems.

FHs are intended to provide safe and adequate transportation access to and through the National Forest System (NFS) for visitors, recreationists, resource users, and others. FHs also assist rural and community economic development, and promote tourism and travel.

## Forest Highway Definition

The term "Forest Highway" refers to a forest road under the jurisdiction of, and maintained by, a public authority and open to public travel. A public authority other than FHWA, such as VDOT, USFS, or a local government, typically has jurisdiction of a FH. In the Commonwealth of Virginia, all public roads, with the exception of designated city and town owned and maintained streets, are owned and maintained by VDOT. As a result, all 1,090 miles of the Virginia FH network within the George Washington and Jefferson NFS lands in Virginia are under the jurisdiction of VDOT.

FH route designation may be requested by the VDOT or the USFS. Routes are designated by the FHWA, EFL Division Engineer with the concurrence of the USFS and VDOT. Routes do not have to be designated before an improvement project can be proposed, but a route must be designated to be eligible to receive FH funds. Route designation proposals must contain information on the criteria listed below and must be coordinated with the local USFS representatives who can provide information on USFS use of the proposed route. For Virginia FHs, Tri-Agency support for the proposed designation is important.

The Forest Service Manual Chapter 7700

*7741.1 - Route Designation: Forest Highways are a special classification of Forest roads. They are specifically designated State or local government roads that meet the criteria listed in 23 CFR 660.105. The designation of Forest Highways is not intended to form a "system" of roads. Instead, the purpose of the designation is to identify State and local government roads that qualify for construction and reconstruction funding under the Forest Highway program.*

To be formally designated as a FH, a route must:

1. Be wholly or partially within, or adjacent to, and serving the NFS (23 USC 101)
2. Be necessary for the protection, administration, and utilization of the NFS (23 USC 101)
3. Be necessary for the use and development of NFS resources (23 USC 101)
4. Be under the jurisdiction of a cooperator and open to public travel (23 CFR S660. 105)
5. Provide a connection between NFS resources and one of the following (23 CFR S660. 105):
  - a. A safe and adequate public road
  - b. Communities
  - c. Shipping points
  - d. Markets dependent on these resources

6. Serve one of the following (23 CFR S660.105):
  - a. Local needs such as schools, mail delivery, commercial supply
  - b. Access to private property within the NFS
  - c. A preponderance of NFS generated traffic
  - d. NFS generated traffic that has a significant impact on road design or construction

The Virginia FH network receives an annual allocation of approximately \$2,000,000. These funds may be used for planning; federal lands highway research; preliminary and construction engineering; and construction. Maintenance is not an eligible activity for FH program funding. The USFS, VDOT, and EFLHD jointly determine the priorities for the FH Program.

## Vision and Goals of the Virginia Forest Highway Program

The vision, goals, and objectives presented in this document are intended to guide the process for ranking and selecting projects for the Virginia FH Program. Through a cooperative effort, the Tri-Agency partners developed these foundational statements specifically for this LRTP, using the requirements set forth in 23 Code of Federal Regulations (CFR) §660, Subpart A — Forest Highways (see **Appendix B** on the accompanying disk). Once complete, they were distributed to the Virginia Planning District Commissions (PDCs) whose counties include portions of the George Washington and Thomas Jefferson National Forests and to the individual forest districts in an effort to solicit their comments. Based on input received during the comment period, the vision, goals, and objectives were revised and finalized. These guiding principles shaped the development, conclusions, and recommendations of this LRTP. Nevertheless, each state and federal partner has a specific vision, mission, and goals that are of unique interest to that particular agency. The individual statements of the three partnering agencies are provided in **Appendix C** on the accompanying disk.

### Vision Statement

*The Virginia Forest Highway program will promote transportation initiatives that are safe, sustainable and operationally effective, minimizes impacts to natural and cultural resources and enhances public access to treasures of National Forests.*

## Identification of Goals and Criteria for the Virginia FH LRTP Process

Through preliminary discussions and subsequent revisions at a one day workshop in Edinburg, Virginia, the Tri-Party team agreed to a set of goals to establish a solid foundation for the LRTP. The goals reflect the Tri-Party team’s priorities for the FH network. These goals will enable the team to prioritize transportation improvements within the National Forests based on a data driven needs assessment for each FH link.

The Tri-Party team identified three primary goals to guide the LRTP process:

**Goal 1: Access and Mobility** — *Enhance access and mobility for multiple purposes in the National Forests, including recreational visits, commercial uses, and through trips.*

**Goal 2: Safety** — *Improve the safety of the FH system*

**Goal 3: Resource Protection** — *Preserve natural resources*

After establishing the overall goals for the LRTP process, the Tri-Party team developed more specific objectives/criteria for each goal as a way to better evaluate the need for improvements on each FH link (i.e. distinct roadway segments). The criteria within each goal reflect both the team's priorities for the FH network and the available data. The team later assigned weights to each criterion based on perceived importance of each criterion to the overall planning process.

### **Goal 1: Access and Mobility**

- Criterion 1: Existing traffic volume
- Criterion 2: Proximity to high population counties in 2030C
- Criterion 3: Proximity to high priority recreation sites
- Criterion 4: Status as a major commercial route
- Criterion 5: Pavement condition

### **Goal 2: Safety**

- Criterion 1: Crashes per Vehicle Miles Traveled (2003 to 2007)
- Criterion 2: Number of fatal crashes (2003 to 2007)
- Criterion 3: For links including bridges, do the bridges qualify for rehabilitation?
- Criterion 4: For links including bridges, do the bridges qualify for replacement?

### **Goal 3: Resource Protection**

- Criterion 1: Whether the FH link is a gravel surface that is in a floodplain
- Criterion 2: Proximity of the road link to wilderness areas
- Criterion 3: Proximity of the road link to wild and scenic rivers

Each criterion (objective) is intended to capture some aspect of the system's needs to assist the members of the Tri-Party team in prioritizing FH improvements. To provide greater clarity to the evaluation process for each goal area, the way that each criterion articulates need is described below. It should be noted that, in the case of the Resource Protection goal, the criteria are limited by the relative scarcity of available data. Other Resource Protection criteria are included in the second tier screening, which entails more qualitative evaluation. Should new and different data become available in the future, the Tri-Party team should revisit the primary Resource Protection criteria to determine whether they accurately reflect the best available data.

### **Goal 1: Access and Mobility**

- Criterion 1: Existing Traffic Volume — One component of improving access and mobility is to target projects that improve travel for the greatest number of people. Traffic volumes provide an indication of which FH links receive the greatest use based on existing travel patterns. Therefore, road links with higher traffic volumes indicate a greater existing travel demand and should receive priority over road links with lower traffic volumes.

- Criterion 2: Proximity to High Population Counties in 2030 — Similar to Criterion 1, one component of improving access and mobility is to target projects that improve travel for the greatest number of people. Therefore, road links that are within 25 miles of future high population centers generally indicate the potential for greater future travel demand and should receive priority over road links that are further from high population centers.
- Criterion 3: Proximity to High Priority Recreation Sites — Another component of improving access and mobility is to target improvements on the FH links that lead to the destinations of greatest interest to people in the National Forest. As recreation is a major priority for the George Washington and Jefferson National Forests, enhancing access and mobility to those sites with the highest levels of usage is a major concern. Road links that are within five miles of high priority recreation sites indicate the potential for greater travel demand and should receive higher priority than road links that are further from these sites.
- Criterion 4: Status as a Major Commercial Route — Economic development is also a key component of access and mobility. Those FH links that are identified as major commercial routes will be prioritized over links that are not major commercial routes.
- Criterion 5: Pavement Condition — The quality of the pavement condition is also a major factor in providing high quality access and mobility on FH links. Therefore, FH links with lower pavement condition ratings will receive higher priority than links with higher ratings.

## Goal 2: Safety

- Criterion 1: Crashes per Vehicle Miles Traveled (2003 to 2007) — Safety is often evaluated by looking at the history of crashes to indicate where safety issues may exist. FH links that have the greatest number of crashes per vehicle mile traveled may indicate that a condition exists that is affecting the safety of the roadway. Links with the highest number of crashes per vehicle mile traveled will be prioritized for improvements.
- Criterion 2: Number of Fatal Crashes (2003 to 2007) — FH links that have the highest number of fatal crashes may also indicate that a condition exists that is affecting the safety of the roadway. Links with the highest number of fatal crashes will be prioritized for improvements.
- Criterion 3: Bridges qualifying for rehabilitation — Links containing one or more bridges that qualifies for rehabilitation, based on their sufficiency rating as determined by VDOT, will be prioritized over segments with bridges that are in good condition.
- Criterion 4: Bridges qualifying for replacement — Links containing one or more bridges that qualifies for replacement, based on their sufficiency rating as determined by VDOT, will be prioritized over segments with bridges that are in good condition.



### Goal 3: Resource Protection

- Criterion 1: Gravel roads in a flood plain — FH links that have a gravel surface can affect the quality of water resources when flooding carries the gravel into water bodies. Therefore, to protect water quality, those gravel links located in flood plains will be prioritized for improvements.
- Criterion 2: Proximity of the road link to wilderness areas — FH links in or near wilderness areas may negatively impact natural resources in a variety of ways, such as noise pollution, air pollution, and potential collisions with wildlife. Therefore, those road links located within one mile of wilderness areas will be deemphasized as travel routes and will receive a lower priority for improvements.
- Criterion 3: Proximity of the road link to Wild and Scenic Rivers — Wild and Scenic Rivers have been designated as such in an effort to preserve scenic, recreational, habitat, cultural or historic value. FH links in or near Wild and Scenic Rivers may negatively impact natural resources in a variety of ways, such as noise, air pollution and runoff. Therefore, those road links located within one mile of wilderness areas will be deemphasized as travel routes and will receive a lower priority for improvements.

### Contents of the Plan

This LRTP is presented in six chapters, including this *Introduction*. A brief summary of the contents of each chapter follows.

*Chapter 2, Agency and Planning Coordination*, describes the long-range plans that are particularly related to Virginia’s FHs, including USFS National Forest Plans and VDOT’s Statewide Transportation Plan (STP). Chapter 2 also describes other factors and regulations that influence FH planning, and describes the public involvement process for this FH LRTP.

*Chapter 3, Existing Conditions and Trends*, summarizes the current state of FH transportation infrastructure in terms of type, condition, use, and jurisdiction. Chapter 3 also presents recent trends in population change, forest visitation, and recreational trips to Virginia’s national forests.

*Chapter 4, Funding and Investment Strategies*, summarizes the recent investment history for Virginia FH projects, identifies reasonably expected funding through 2030, and discusses the funding gap between available funds and the anticipated needed improvements to the FH network. Chapter 4 also identifies additional opportunities for funding through partnerships with other agencies.

*Chapter 5, Project Selection Process*, describes the proposed process for selecting projects that will receive FH Program funds. It provides a step-by-step account of the Tri-Agency partners’ call for projects and the rationale for why this process is necessary for the FH Program.

*Chapter 6, Plan Implementation*, summarizes how this LRTP will be implemented by the Tri-Agency partners and includes recommended actions for the Tri-Agency. Recommendations include ongoing system monitoring and the development of a process to identify routes for designation and/or de-designation on the current FH network in Virginia.

## Chapter 2: Agency and Planning Coordination

This Long Range Transportation Plan (LRTP) is intended to better coordinate the partner agencies' long-range planning efforts related to Forest Highways (FHs). Each agency prepares its own long-range plans for managing the resources under its jurisdiction. The long-range plans that are the most relevant to Virginia's FHs include US Forest Service (USFS) National Forest Plans and Virginia Department of Transportation's (VDOT's) Statewide Transportation Plan (STP). This chapter discusses those plans, describes other factors and regulations that influence FH planning, and describes the public involvement process for this FH LRTP.

### USFS Forest Plans

The USFS has prepared a Land and Resource Management Plan (commonly referred to as a "Forest Plan") for every national forest in the country. The Forest Plans are updated periodically. In general, each Forest Plan evaluates the existing conditions of the forest lands and resources within a specific national forest, defines desired future conditions, evaluates and sets standards for visual quality (e.g., along roads and rivers), and provides direction for managing the forest resources. Forest Plans also provide direction for maintaining and preserving visual quality along scenic byways, wild and scenic rivers, and wilderness areas.

Forest plans provide the framework in which project decisions can be made on a case-by-case and site-specific basis. In relation to transportation planning, forest plans identify the types of travel that are suitable to particular parcels of land based on desired future conditions and other plan designations. Transportation decisions are directly related to the stated management objective for specific areas. If the management objective for a certain area changes site-specific plans for road and trail management must be made separately from the forest plan to bring travel into compliance. Decisions about specific roads and trails are made through project-level analysis and decision documents in accordance with the National Environmental Policy Act (NEPA) of 1969. **Appendix D** on the accompanying disk contains a summary description of the functions and limitations of a forest plan. The following forest plans have been completed in Virginia to date:

- George Washington National Forest Final Revised Land and Resource Management Plan (January 1993)
- Jefferson National Forest Revised Land and Resource Management Plan (January 2004)

It must also be noted that efforts are presently underway to prepare a major revision to the currently approved Land and Resource Management Plan for the George Washington National Forest. As described on the George Washington and Jefferson National Forests home page (<http://www.fs.usda.gov/wps/portal/fsinternet/>) this process was initiated in March 2010 with the issuance of a Notice of Intent, followed by project scoping activities in the March 2010 – May 2010 time period. Completion and distribution of the Draft Environmental Impact Statement (EIS) associated with this action is anticipated in December 2010. Following a 90-day comment period from December 2010 — February 2011, the preparation of the Final EIS and Plan is anticipated to be completed by approximately September 2011.

The USFS also develops Travel Management Plans (TMP). These are transportation-specific plans and related maps developed to help ensure that specific transportation corridors meet forest plan guidelines. TMP planning provides opportunities for the public and other key stakeholders to engage the USFS in discussions about transportation issues such as location and time of year uses of snowmobiles, ATVs and other vehicle types in specific areas of national forests. TMPs address only roads under USFS jurisdiction, not roads under state or county jurisdiction. At the present time, no TMPs are being considered for development in either the George Washington or Jefferson National Forests.

## Virginia Statewide Transportation Plan

VTrans2035 is the Commonwealth of Virginia's long-range multi-modal transportation plan. Developed by the Office of Intermodal Planning and Investment in the Office of the Secretary of Transportation, VTrans2035 describes the future needs of Virginia's airports, railroads, bicycle and pedestrian facilities, state highways, and transit. It is a 25-year (2010 to 2035) transportation plan that promotes safety, customer service, asset management, mobility/accessibility, freight movement, and environmental stewardship. Required by Virginia and federal statutes, VTrans2035 guides development and investment in Virginia's transportation system. It includes guiding principles that balance local, regional, and statewide transportation needs and becomes the basis for an integrated transportation vision for the Commonwealth of Virginia. VTrans2035 also includes implementation strategies that discuss the difficult choices facing Virginia associated with maintaining the existing transportation system under the demands placed on the current system, given current and anticipated future funding shortfalls. (For additional information please visit <http://www.vtrans.org> )

Using the VTrans2035 plan as a base, VDOT and the Virginia Department of Rail and Public Transportation (DRPT) have also developed the 2035 Virginia Surface Transportation Plan, which provides long-term multimodal transportation suggestions for the commonwealth. This represents the first time that VDOT and DRPT have organized multimodal proposals in a single plan. The plan provides information for potential long-term project development and investment based on the goals identified in VTrans2035. The draft plan includes possible improvements to transit, rail, freight, highway and intelligent transportation systems. The transportation needs identified in the plan are used to help determine highway projects for the Six-Year Improvement Plan, which is Virginia's statewide transportation improvement program (STIP).

Of particular interest and relevance to the Virginia FH program is an ongoing activity on the part of VDOT and 20 planning district commissions (PDCs) throughout the commonwealth to evaluate the state's rural transportation system and to recommend a range of transportation improvements that best satisfy existing and future needs.

This VDOT/PDC partnership will result in a series of regional plans that identify needs based upon goals and objectives established by each of the regions. Local benefits include: identification of transportation deficiencies and recommendations of remedies, assistance with town, city, and county comprehensive plan updates, traffic impact studies Chapter.527, programming of transportation improvements, and assessing the effects of land use and development. Providing for the effective, safe and efficient movement of people and goods is a basic goal of all transportation programs in the Commonwealth of Virginia.

Once completed, these regional transportation plans will be incorporated into Virginia's 2035 State Highway Plan and VTrans2035. These more rurally oriented plans will complement the multimodal transportation plans that currently exist for the metropolitan areas of Virginia.

Eleven of the 20 PDCs in Virginia contain one or more counties which include some portion of either the George Washington or Jefferson National Forests. These regional scale long-range rural transportation plans are currently being developed, with completion of this effort anticipated in late 2010 or early 2011. Staff from the national forests in Virginia should continue to monitor the progress of these studies to ensure that any potential FH projects are included.

### **Consistency with Other Plans**

This FH LRTP is intended to integrate with and inform future state, county, and forest plans. Consistency between plans helps identify projects with multiple agency benefits and potential for partnerships. Furthermore, documenting FH long-range vision, mission, and goals as well as individual projects will continue to assist local and regional planning in areas near FH systems. In addition, this FH LRTP provides a means to enhance the consideration of environmental issues and impacts with the long range transportation planning process. As part of project selection, applicants are asked to provide information regarding the need for proposed projects and potential environmental impacts. Applicants are also asked to document any pre-project coordination with resource agencies or the public. This analysis conducted during the planning stage will impart great benefits to the project, if selected, when it moves forward into the NEPA project planning process.

## Other Factors that Influence Forest Highway Planning

A number of factors have been influencing the federal FH Program over the last 10 years. Some of those factors are changing areas of emphasis for the program. These include inflation of construction costs and multi-modal considerations as well as the reauthorization of the federal surface transportation program.

### Inflation of Construction Costs

Road and highway construction costs have shown volatility in recent years, but, overall, costs have continued to rise. From 2006 to 2008, the cost of rehabilitating some roadways increased at a rate greater than the U.S. core inflation rate. Due in large part to the recently observed economic downturn, construction costs have actually decreased in the past two years (2009-2010). Yet at the same time, the amount of road rehabilitation that is deferred each year has been growing as a result of funding limitations and deteriorating infrastructure conditions. The Virginia FH Program is affected by rising costs of construction and is simply unable to deliver as many miles of road construction today as was possible 10 years ago.

Estimated future construction cost is a factor that must be considered when deciding how Virginia FH funds will be invested. Specifically, planners and decision makers should consider how the amount of available funds can provide more miles of improved road as opposed to whether more identified road deficiencies/conditions should be addressed. Potential for combining or matching funds from various sources should also be evaluated.

### Multi-Modal Considerations

States, metropolitan planning organizations (MPO), and federal land management agencies regularly consider alternative transportation solutions in their transportation plans. Likewise, the Virginia FH Program must consider alternative transportation modes when evaluating and developing proposed projects. Alternative transportation modes can be solutions for managing demand, providing access, and enhancing environmental quality, among other issues. Alternative transportation solutions may also provide additional funding opportunities. These options can include, but are not limited to: internal forest shuttle buses or trams, improved bicycle and pedestrian facilities, trailheads, and waterborne passenger transportation systems.

The examination of such contextually appropriate potentials should be considered as part of the next round of updates to this initial Virginia FH LRTP.

### Reauthorization of Federal Surface Transportation Programs

Another important factor that will influence the future of the Virginia FH system is the ultimate form and content of the reauthorization for the existing Federal surface transportation enabling legislation SAFETEA-LU. In preparation for the reauthorization action, the USFS staff developed a series of potential recommendations. These staff developed suggestions reflected potential modifications to existing programs as well as the creation of a possible new transportation program applicable to USFS properties. Each of these suggested actions is described briefly as follows.



Although no specific recommendations for changes in the currently authorized program funding levels were presented, it was estimated by USFS staff that the fuel tax revenues generated to the highway trust fund by users of the national forest service road system (NFSR) were approximately \$22.8 million annually. The staff recommendations presented for potential modifications to the existing programs and the possible new transportation program were as follows:

#### USFS Recommendations for Modifications to Existing Programs:

- Add 25,000 miles of NFSR to the “FH” system and increase funding for the “FH” program (23 USC 202 [b] [2] [A]).
- Increase funding levels for the ATPPL (49 USC 5338(b) (2) (J)), the National Scenic Byways (23 USC 162), the Planning Set-Aside (23 USC 204[b]), and the ERFO (23 USC 125) programs.
- Authorize direct funding for NFSR from the highway trust fund through existing law (Forest Development Roads and Trails, 23 USC 205) by inclusion of a line item in Section 1101 of the reauthorization bill. (This action would only be proposed if adding a new program category for “recreation roads” within the Federal Land Highway Program (FLHP) is not pursued).

#### USFS Recommendations for New Programs:

- Create a new “Recreation (Rec.) Roads” category within FLHP or authorize direct funding for NFSR from the highway trust fund through existing law (Forest Development Roads and Trails, 23 USC 205) by inclusion of a line item in Section 1101 of the reauthorization bill.
- Create a new “Rec. Roads” program within FLHP.

The cited justification for the establishment of the new “Rec. Roads” program was to maintain recreation access and promote community connections, either through the creation of a new “Rec. Roads” category in the FLHP, or by authorizing direct funding for the NFSR from the highway trust fund by inclusion of a line item to this effect in Section 1101 of the reauthorization bill. USFS staff expressed the view that the establishment of a “Rec. Roads” category would guarantee funding for essential public roads that provide critical access, helping meet the changing needs of recreational visitors to forest service controlled lands. The staff further commented that the most important NFSR accessible to passenger cars would be managed under this new category and that this new category would guarantee funding for those public roads on national forest lands that provide access to high-priority recreation opportunities. This category would be similar to the National Park Service’s FLHP Park Roads and Parkways Program. A portion of the existing 68,000 miles of NFSR would be designated as Rec. Roads and managed under this new category, providing a seamless transportation system within each state. Direct funding from the highway trust fund would also be authorized for expenditure on the NFSR. Rec. Road or highway trust fund monies could be used for Safety, or the Safety Program described below could be designated as a separate funding category.

The creation of a new “Safety” program category within FLHP was also suggested. This would establish a new dedicated funding stream that would provide funding to all Federal Lands Management Agencies (FLMAs) to facilitate the implementation of transportation safety improvement projects, the collection of safety information, transportation planning, bridge inspections, sign installation, development and operation of safety management systems, highway safety education programs, and other eligible activities.

The suggestion for an increase in FH funding and mileage was reflective of the role of FHs as the critical link from the National Highway System to NFSR, often passing through gateway communities. The provision of improved connectivity by an expansion of the FH mileage would help to achieve a more “seamless” transportation network, promote safety, and provide the infrastructure needed to help implement successful alternative transportation programs for the accommodation of the increasing number of visitors to national forests. Most of the USFS road system maintained for passenger cars fits the definition of FH. Adding 25,000 miles of NFSR to FH would bring the USFS’s share of the total to 50 percent. In addition, any earmarks providing funding for passage of aquatic organisms, or hunting and fishing access signing, should be allowed for NFSR and FH. This will allow for further improvement of the most critical stream habitats and more safely direct the public to designated hunting and fishing sites.

The suggestion for an increase in the ATPPL, National Scenic Byways, Planning Set-Aside, and Emergency Relief for Federally Owned Roads (ERFO) funding programs was in response to the fact that forest visitors have benefited directly from the funds allocated through each of these programs. Dedicated planning funds were seen as providing the means for the USFS to be more proactive and visionary about the future of its transportation system, ensuring that user safety, resource protection, and recreation access are upheld to the highest possible standards. The ATPPL, National Scenic Byways and ERFO programs were noted as having provided critical funding to reduce traffic congestion, provide opportunities for enhanced recreational driving, and to repair infrastructure failures resulting from natural disasters.

## Chapter 3: Existing Conditions and Trends

The George Washington and Jefferson National Forests (NFs) contain a total of nearly 1.8 million acres of public land, representing one of the largest blocks of public land in the eastern United States. Of that acreage, nearly 1.65 million acres are located in Virginia: 956,222 acres in George Washington NF and 690,000 acres in Jefferson NF. The two forests were administratively combined in 1995.

In Virginia, these NFs are located approximately parallel to Interstate 81, and extend from Front Royal in northwestern Virginia to the Kentucky and North Carolina borders in the southwestern part of the state. The two NFs are spread across 32 counties in Virginia (Table 3.1).

**Table 3.1: Virginia Counties Containing the George Washington and Jefferson National Forests**

National Forest	Virginia Counties
George Washington NF	Alleghany, Amherst, Bath, Botetourt, Frederick, Highland, Nelson, Page, Rockbridge, Rockingham, Shenandoah, Warren
Jefferson, NF	Bedford, Bland, Botetourt, Carroll, Craig, Dickenson, Giles, Grayson, Lee, Montgomery, Pulaski, Roanoke, Rockbridge, Russell, Scott, Smyth, Tazewell, Washington, Wise, Wythe

It should also be noted that approximately 105,000 acres of the George Washington NF extend into four adjacent counties of West Virginia (Hampshire, Hardy, Pendleton, and Monroe). In total, George Washington NF contains a total of approximately 1,061,000 acres in two states. Similarly, approximately 19,000 acres of the Jefferson NF are located in Monroe County, West Virginia with an additional 1,000 acres in Letcher and Pike Counties, Kentucky. In total, Jefferson NF contains a total of approximately 723,300 acres in three states. The long range transportation plan (LRTP) elements associated with those portions of the George Washington and Jefferson NFs in the states of Kentucky and West Virginia are discussed in the state level FH LRTPs for those two states.

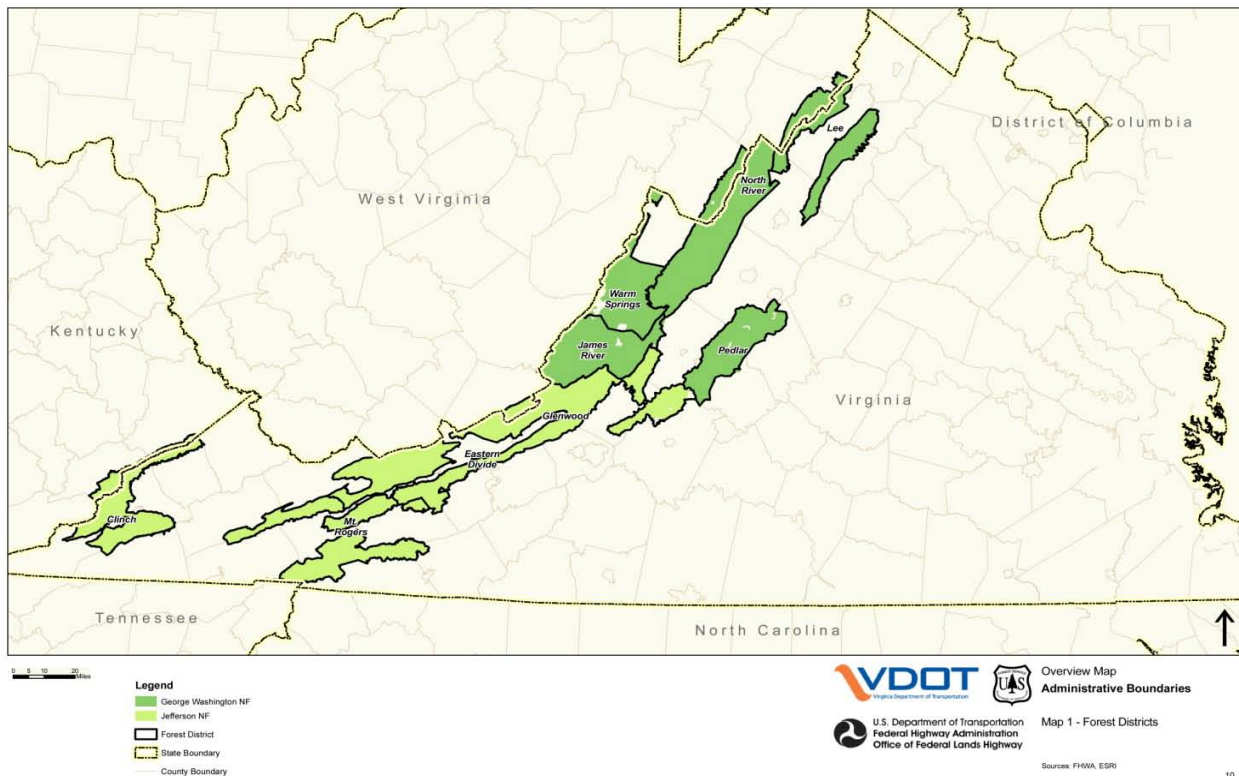
In Virginia, the George Washington and Jefferson NFs are traversed by more than 1,107 miles of FHs, including the Blue Ridge Parkway. The latter facility is owned and maintained by the National Park Service (NPS) of the U.S. Department of the Interior (DOI). The Virginia FH network provides access to sites within the forests and connections to several major transportation routes, including multiple interstates and numerous U.S. highways. The forests are situated adjacent to a major north-south transportation corridor, Interstate 81, which crosses the forests in multiple places. Two other interstate routes (I-64 and I-77) also run through the forests. Portions of the forests are located within 30 miles of the Washington, D.C. metropolitan area and within 75 miles of the Richmond metropolitan area.

## Existing Conditions Data Analysis

The Existing Conditions analysis included review of some of the key metrics of the Virginia FH transportation network including Average Daily Traffic (ADT) on the roadways, numbers of crashes, bridge and roadway conditions, recreational usage, and proximity to various environmentally sensitive areas. Trend data regarding population and economic growth as well as visitor use were also considered as part of this analysis. GIS-based maps were created to summarize the data. The complete set of maps representing all data inventory and analysis activities are provided in **Appendix E** on the accompanying disk.

The first map, **Figure 3.1: Map 1 Forest Districts**, is a location map of the two NFs within the Commonwealth of Virginia. Reflective of the size of the two NFs (the George Washington NF extending for approximately 140 miles and the Jefferson NF extending for over 200 miles), a series of six maps were created for each subject area (e.g., existing traffic volumes, crash locations, bridges, pavement condition, etc.). Each of the map groups begins at the northern boundary of the Lee District of the George Washington NF near the Town of Front Royal and then continues to the south and west until reaching the southern boundary of the Clinch District of the Jefferson NF along the Virginia/Kentucky state line. Providing multiple maps for each of the factors also enables the information to be more easily read and assimilated.

**Figure 3.1: Map 1 Forest Districts**



The complete set of maps representing all data inventory and analysis activities are provided in **Appendix E** on the accompanying disk.

## Traffic Volumes

As defined in the 2000 Highway Capacity Manual<sup>1</sup>, annual average daily traffic (AADT) volumes are defined as the total volume of traffic passing a point or segment of a highway facility in both directions for one year divided by the number of days in the year. ADT volumes are generally low across the entire Virginia FH system. The vast majority of FH road segments carry an ADT volume of less than 400 vehicles per day. A small percentage of the routes carry 800 – 1,600 vehicles per day and only a few road segments carry more than 1,600 vehicles per day. The volumes on the FHs (which are also primarily Virginia Department of Transportation (VDOT) rural secondary routes) tend to be substantially lower than those observed on many of the other primary state routes in the area.

For example, while the ADT volumes on I-64 passing through the forest are on the order of 12,000 vehicles per day and those on portions of I-77 through the forest reach as high as 30,000 vehicles per day, the typical volumes on older U.S. highway routes that pass through the forests such as US 33, US 220 and US 250 range between 300 and 3,400 vehicles per day. Even on many of the state primary highways which run north-south or east-west through the NFs, the ADT volumes are typically in the range of 300 to 2,000 vehicles per day.

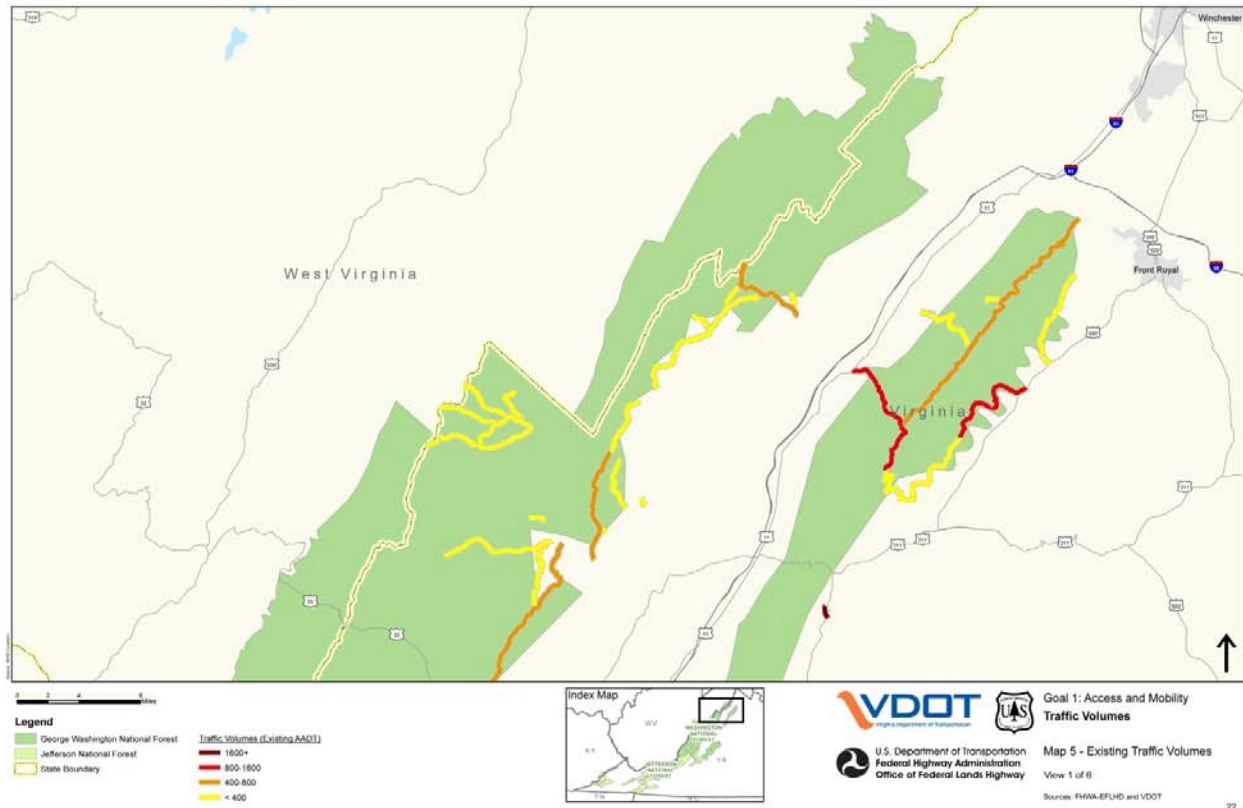
A typical undivided, two-lane, paved highway in a rural area can operate at an acceptable Level of Service (LOS) D with an AADT of approximately 14,000 vehicles per day. It is unlikely that any of the existing Virginia FHs experience extremely congested or over capacity conditions on a regular basis. In addition to being used to measure the relationship between travel demand and roadway capacity, AADT has direct correlation to other operational metrics such as numbers of crashes and pavement condition. The higher the exposure a road has to traffic volume, the higher the potential for crashes as well as increased levels of wear and tear imposed on the pavement. Both crashes and pavement condition are addressed in subsequent sections of the report.

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<sup>1</sup> Highway Capacity Manual (HCM 2000), Transportation Research Board, National Research Council, Washington, DC, 2000.



**Figure 3.2 - Map 5 Existing Traffic Volumes** illustrates the existing traffic volumes on the FH segments located in the Lee and North River Districts of the George Washington NF. The general boundaries of this portion of the forest are US Route 340 on the east, the Virginia/West Virginia state line on the west, Interstate Route 66 on the north and US Route 33 on the south. As previously noted, this is only one of the six maps created to display existing traffic volumes across all of the FH routes in Virginia. The complete set of maps representing all data inventory and analysis activities are provided in **Appendix E** on the accompanying disk.



## Existing Conditions

The set of maps illustrating existing conditions and trends on the Virginia FH Network, according to each of the aforementioned criteria, are provided in **Appendix E** on the accompanying disk. The maps are arranged by goal area, and include several overview maps of the study area and demographic data. For ease of use, the maps have been divided into two sectors:

***The North Sector includes all of George Washington NF and the northernmost portions of Jefferson NF (map views 1-3).***

***The South Sector includes the remainder of Jefferson NF (map views 4-6).***

The set of maps titled Road Segment Evaluation, displays the composite scores and is presented both as a state-wide summary and as a series of six individual sub area graphics, (see **Appendix E** on the accompanying disk) to illustrate the evaluation results for all of the Virginia FH segments. A composite score was developed for each road segment, based on the set of criteria used in the maps and detailed below. The composite score map reflects an effort to aggregate all of the criteria into a single score, and prioritizes road segments according to need.

## Goal 1: Access and Mobility

U.S. Census generated demographic data were examined for the counties in the vicinity of the forests, and are reflected in the accompanying maps. The data revealed that a number of counties around the forests are projected to have relatively high populations by 2030. This is due in large part to the anticipated continuing growth in the regional population centers in Roanoke, Lynchburg, and Northern Virginia. A considerable number of FH segments are located within 25 miles of multiple high population counties.

## Pavement Conditions

FH vary widely by surface type and pavement condition. These conditions are summarized in the series of Maps titled Goal 1 Access and Mobility: Map 6 Traffic Volumes and Pavement Conditions (see **Appendix E** on the accompanying disk). Of the 1,090 miles of Virginia FHs, there are approximately 785 miles of paved roads, surfaced with bituminous concrete or chip seal, and approximately 305 miles of gravel or earthen roads. No data is available on the condition of the unpaved (gravel or earthen) roads shown in gray on the maps, but the paved roads have pavement condition ratings (PCR) ranging from 10 to 100. A road with a PCR of 40 or below is considered to be in need of reconstruction (shown in red on the map), and a PCR of 41-70 suggests a need for repair or resurfacing in the near future (shown in orange on the map). The remaining roadways with a PCR greater than 70 are shown in purple on the map and are judged to be adequate in the near term (i.e., over the next 5-10 years).

The two tables shown below present, respectively: information on the mileage and percentage of the FH system of each pavement type; and information on the existing condition of the paved (bituminous concrete or chip seal) portion of the FH system.

**Table 3.2: Virginia Forest Highway Pavement Types:**

Pavement Type	Miles*	Percent of Total
Bituminous Concrete	402	37%
Chip Seal	384	35%
Gravel	303	28%
Earth	1	< 1%
Total	1,090	100%

\*Note: Mileage shown is rounded to the nearest 1.0 miles

As illustrated on **Table 3.2**, approximately 37 percent of the total FH network in Virginia is paved with bituminous concrete, with an additional 35 percent paved with a chip seal treatment. The remaining 28 percent of the FH network is gravel roadway, with less than one mile (<1 percent of the total) having an earthen surface.

Available data on road surface quality were analyzed for approximately 739 miles of FH. Applying the pavement condition ratings process described previously, all of the paved roadway segments for which conditions information was available were assessed. The resulting pavement conditions ratings are illustrated on **Table 3.3**.

**Table 3.3: Pavement Conditions:**

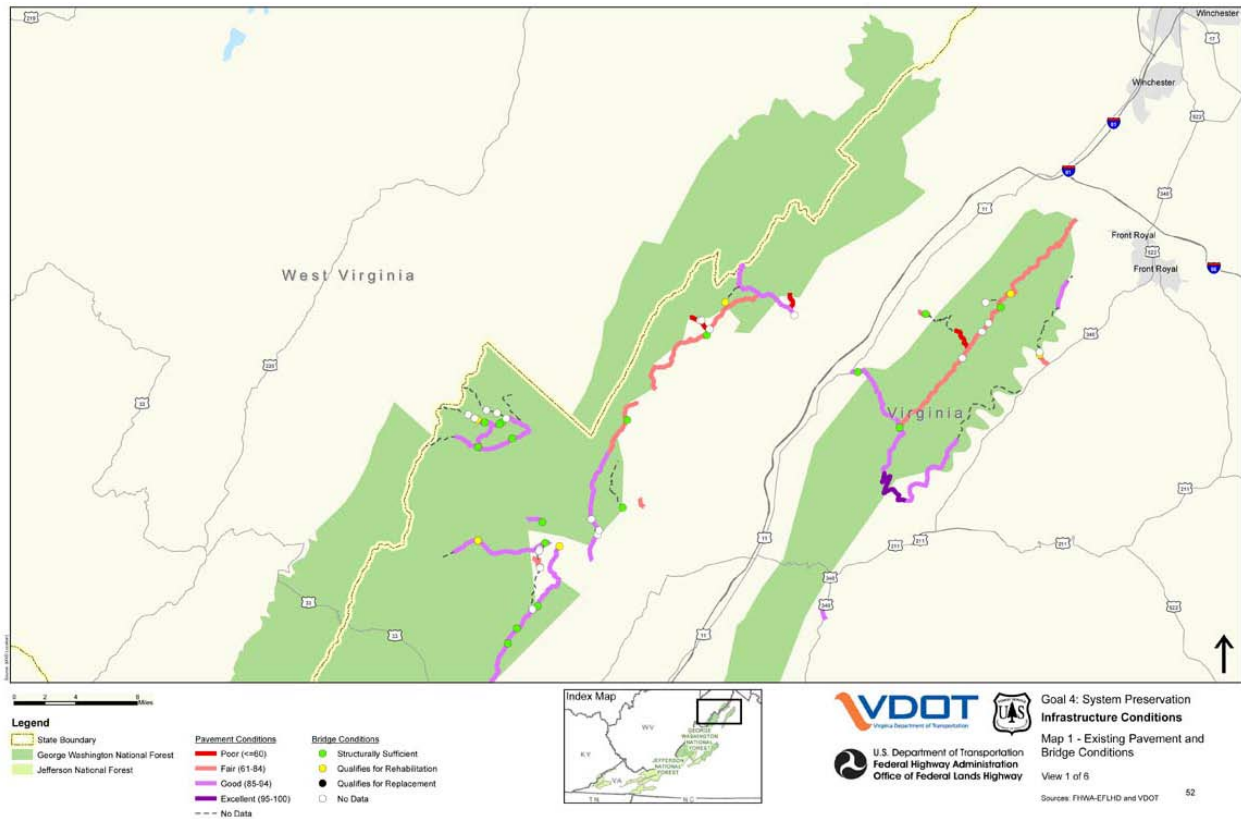
Category	Miles*	Percent of Paved Mileage	Percent of Total Mileage
Excellent	11	1.5%	1.1%
Good	153	20.7%	14.8%
Fair	394	53.3%	38.2%
Poor	181	24.5%	17.5%
Subtotal	739	100%	71.6%
No Data	293	-	28.4%
Total	1,032	-	100%

\*Note: Mileage shown is rounded to the nearest 1.0 miles

Of the 739 miles of paved road in the Virginia FH system for which condition data is available, approximately 181 miles (25 percent of the paved mileage) have a PCR value of 40 or below and are rated “Poor”, suggesting the need for reconstruction. Approximately 394 miles (42 percent) have a PCR value in the range of 41-70 and are rated as “Fair”, which suggests a need for repair or resurfacing. The locations that are in poor condition (PCR of 40 or below) are scattered throughout the five districts that define the George Washington NF and the four districts that define the Jefferson NF.

The existing roadway conditions for routes in the Lee District and a portion of the North River District of the George Washington NF are illustrated on **Figure 3.3**, with the roadway conditions for all examined segments of all roadways in all nine districts presented on Map 1 for Goal Area 4: System Preservation. (See **Appendix E** on the accompanying disk).

**Figure 3.3 Map 1 — Existing Pavement and Bridge Conditions**

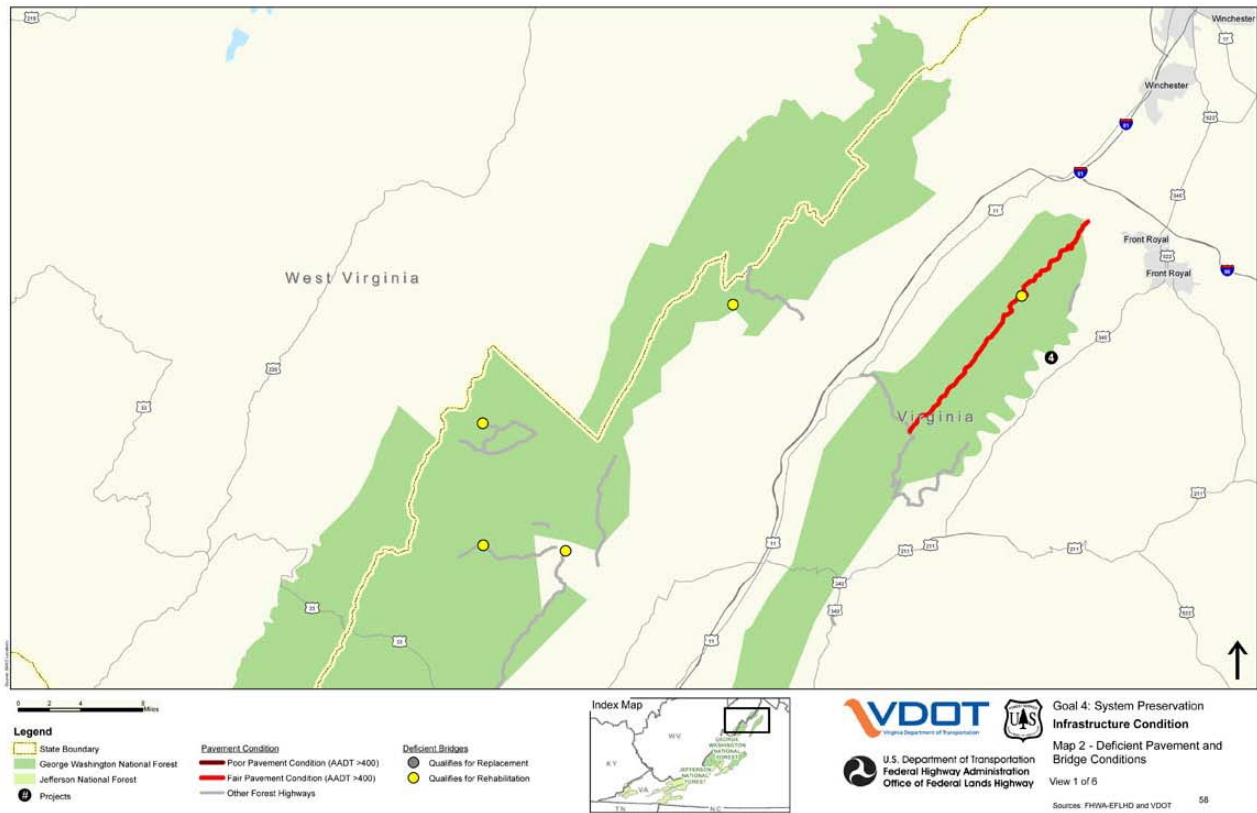


For a typical FH route in Virginia, the U.S. Forest Service (USFS) estimates that between 20 percent and 65 percent of the ADT volume is associated with some type of forest service use, generally timber cultivation related activities. The remaining 35-80 percent of the traffic using these routes is associated with either forest oriented recreational uses or, for those routes which provide a higher degree of connectivity to other public thoroughfares, use by the general public for personal or commercial oriented travel.

### 3.3: Bridge Conditions

A total of 393 bridges are a part of the FH system in Virginia. Of these, 224 bridges (about 57 percent of the total) have no information available to allow for their review and therefore, are represented by a gray dot on Goal 4: System Preservation Map 2 — Deficient Pavement and Bridge Conditions (see **Appendix E** on the accompanying disk). Information is available for the remaining 169 bridges (about 43 percent of the total inventory) regarding the preferred metric for bridge analysis, the bridge sufficiency rating, which indicates the overall stability and safety of the bridge.

**Figure 3.4 Map 2 — Deficient Pavement and Bridge Conditions**



Since these FHs are also VDOT secondary highways, bridge sufficiency is a more comprehensive metric that should be studied as it relates directly to the stability and safety of the bridge structure. Bridge stability is of importance as it relates to safety as well as to connectivity. Bridges along FHs may be critical links along the roadway network, which should be considered in the prioritization of upgrades.

The results of the bridge conditions assessment is presented in **Table 3.4** below. As shown on **Table 3.4**, 83 of the 169 rated bridges were determined to be “Structurally Sufficient.” Of the remaining 86 bridges, 66 (39% of those rated) were determined to qualify for rehabilitation, with the other 20 bridges (12% of those rated) determined to qualify for replacement. Had similar data been available for the remaining 224 bridges on the Virginia FH system, it is likely that similar results would have been defined for these other structures as well.



**Table 3.4: Bridge Condition Assessment:**

Category	Number of Bridges	Percent of Rated Bridges	Percent of Total Bridges
Structurally Sufficient	83	49%	21%
Qualifies for Rehabilitation	66	39%	17%
Qualifies for Replacement	20	12%	5%
Subtotal	169	100%	43%
No Data	224	-	57%
Total	393	-	100%

**Goal 2: Safety**

Crash data over a recent five-year period (2003-2007) was obtained from the USFS and the Virginia State Police. This information showed that there were 70 fatal crashes on FHs in Virginia during that period. The data also show that nearly half of the 643 FH road segments examined had less than one crash per million vehicle miles traveled (VMT). **Table 3.5** summarizes the findings relative to this criterion.

**Table 3.5: Crash Density on Virginia Forest Highway Network**

Crashes Per Million VMT	Number of Road Segments	Percent of Total Segments
More than 10.0	55	8.5%
5.0 – 10.0	69	10.7%
1.0 - 5.0	210	32.7%
Less than 1.0	309	48.1%
Totals	643	100.0%

Review of the structural conditions data also reveals that, of the 361 FH bridges for which data were available, 76 bridges (21 percent) were rated as “deficient”, with 18 bridges (5 percent) qualifying for replacement and 58 bridges (16 percent) qualifying for rehabilitation. Road segments with deficient bridges should receive a higher priority for funding than those segments with no deficient bridges. The greatest priority should be given to those road segments containing bridges that qualify for replacement.

### Goal 3: Resource Protection

An examination of road surface type and flood plain data reveals that nearly six percent of the Virginia FH network mileage with a gravel surface was located within a flood plain. Higher priority for maintenance and rehabilitation should be assigned to gravel road segments in which some portion of the segment is located in a flood plain. See **Table 3.6** for the findings relative to this criterion.

**Table 3.6: Surface Type and Flood Plain Status on Virginia Forest Highway Network**

Road Surface and Status	Miles	Percent of FH Network
Gravel, Located in Flood Plain	61	5.9%
Paved, Located in Flood Plain	265	25.7%
Paved, Not in Flood Plain	705	68.4%
Totals	1,031	100.0%

Data for the other Resource Protection criteria show that 15.2 percent of FH road segments are located within one mile of a wilderness area, and 20.9 percent are located within one mile of a river designated as wild or scenic. Road segments within one mile of these protected resources are assigned a lower priority for improvement. (See **Appendix E** – Goal 3: Map 2 – Proximity of Forest Highways to Wilderness Areas, and Goal 3: Map 3 – Proximity to Wild and Scenic Rivers, for more detailed illustrations of these geographic relationships.)

### 3.5: Recreation, Trails, and Public Land

The George Washington and Jefferson NFs are popular for many different recreational uses including hiking, driving, cycling, fishing, hunting, and camping, and the FH system is well-suited to support this wide variety of uses. Field observations of the studied roadways observed regular use of the FH system by motorcyclists and cyclists. Within the two NFs, there are a number of scenic drives, state parks, major trail systems, lakes and rivers, camping locations, hunting areas, and scenic viewpoints.

The primary recreational facilities within the two NFs are documented in the *Final Revised Land and Resource Management Plan for the George Washington National Forest* (January 1993) and the *Revised Land and Resource Management Plan for the Jefferson National Forest* (January 2004). As noted previously, a major update of the current George Washington NF plan is presently underway.

Goal 1: Map 7 – Proximity to High Priority Recreation Sites (see **Appendix E** on the accompanying disk) illustrates the relationship of the FHs to the recreational facilities in both forests. These maps show connectivity between the FHs, scenic byways, and trails. In some instances, the scenic byways actually include portions of the FH system. The preservation of these roadways is particularly important as a result of this overlap.

A number of non-motorized trails also intersect the Virginia FHs within both the George Washington and Jefferson NFs. Perhaps the most important of these is the Appalachian National Scenic Trail, a 2,175 mile hiking trail stretching from Mount Katahdin in Maine to Springer Mountain in Georgia. Approximately 60 miles of the Appalachian Trail are within the boundaries of the George Washington NF, with approximately 320 miles of the trail within the boundaries of the Jefferson NF.

The majority of the public recreational sites within the two NFs can be accessed via the network of FHs, scenic byways, and trails. The above-mentioned forest plans have prioritized the protection of environmentally-sensitive areas with respect to the construction and rehabilitation of trail systems throughout the Forests. Rehabilitation priority is given to trails that support off-highway vehicle (OHV) use, followed by those used by horses, mountain bikes, and finally, foot traffic.

### 3.6: Wilderness

Within the George Washington NF, there are four existing wilderness areas (Ramseys Draft, Rich Hole, Rough Mountain, and St. Mary’s) and three roadless areas recommended for wilderness study (St. Mary’s Addition, The Priest, and Three Ridges) which combine to total an area of approximately 44,000 acres. Small portions of Barbours Creek (20 acres) and Shawyers Run (95 acres) wilderness areas that lie within the boundaries of George Washington NF are administered by the Jefferson NF.

The Jefferson NF contains 11 wilderness areas, which combine to total approximately 57,645 acres. The names and sizes of these Congressionally designated wilderness areas are listed below in **Table 3.7**.

**Table 3.7: Congressionally Designated Wilderness Areas in Jefferson National Forest**

Wilderness Area	Acres	Wilderness Area	Acres
James River Face	8,886	Kimberling Creek	5,542
Thunder Ridge	2,344	Beartown	5,609
Barbour Creek*	5,382	Little Dry Run	2,858
Shawyers Run*	3,467	Lewis Fork	5,618
Mountain Lake	11,113	Little Wilson	3,613
Peters Mountain	3,328		

\*Includes 20 acres of Barbours Creek and 95 acres of Shawyers Run on the George Washington National Forest.

Wilderness areas are designated for the preservation of the area’s natural state and have minimal human impacts. Wilderness or “roadless” areas must be at least 5,000 acres in size and have less than one-half mile of improved road per 1,000 acres. Restrictions may be placed on any road located less than one mile from the defined edge of any of these designated wilderness areas to limit its reconstruction or rehabilitation due to its proximity to the wilderness areas. This proximity to wilderness areas should be taken into consideration in the project evaluation phase of the LRTP. (See **Appendix E** Goal 3: Map 2 – Proximity of Forest Highways to Wilderness Areas, on the accompanying disk for additional details.)

### 3.7: Visitor Use Trends

The National Visitor Use Monitoring (NVUM) program was developed to provide a standardized, science-based data collection process for estimating the volume and type of recreational visits to the NFs. Data is gathered on 5-year rotations for 200 to 275 days per Forest. Samples of data are gathered based on the time (time of day, day, week, etc.) and by location (day use sites, overnight sites, wilderness, etc.). Visitor use surveys are also conducted to gather detailed information about visitors' trip-making behaviors.

The George Washington and Jefferson NFs were one of the four forests in USFS Region 8 that were sampled in the first year of this project in 2000. The George Washington and Jefferson NFs participated in the NVUM project from January 1, 2000, through December 31, 2000. The NVUM report was published in August 2001. Visitor use estimates are available at the Forest level in the referenced report. Recreation use on the Forest during calendar year 2000 at the 80 percent confidence level was estimated to be approximately 2.97 million NF visits +/- 14.7 percent. There were an estimated 3.44 million site visits, resulting in an average of 1.16 site visits per NF visit. Included in the site visit estimate were an estimated 69,406 annual wilderness visits.

A total of 1,619 visitors to the Forest were contacted during the sample year. Of these, about 12 percent declined to be interviewed. Of the 1,427 people who agreed to be interviewed, about 17 percent indicated that they were not recreating during their visit. These included 1 percent who just stopped to use the restroom facilities, 3 percent who were working, 10 percent who were just passing through, and 5 percent citing some other reason. About 84 percent of those interviewed stated that their primary purpose in the Forest was recreation.

A description of visitor activity during their NF visit included participation in various recreation activities, length of stay on the NF and at recreation sites, visitor satisfaction with NF facilities and services, and economic expenditures. The average recreation visitor went to 1.16 sites during their visit. The average length of stay for all visitors to the George Washington and Jefferson NFs was 19.3 hours. Almost 16 percent of visitors stayed overnight in the Forest. There was an average of 1.82 people per vehicle with an average of 2.01 axles per vehicle.

A subsequent NVUM sampling has not been scheduled to supplement the information originally collected in 2000. The next update of the LRTP should utilize any existing NVUM data that is available at the time.

### 3.8: Population and Economic Growth Trends

The U.S. Bureau of the Census has estimated that the population of Virginia increased from approximately 7.1 million persons in 2000 to approximately 7.9 million persons in 2009. This represents an increase of about 11.4 percent over slightly less than a decade. Projections prepared by the U.S. Census and the Virginia Transportation Research Council (VTRC), as part of the VTrans2035 statewide transportation planning process, anticipate that the state's population will continue to increase. Between 2010 and 2035, Virginia's population is expected to grow by about one third, from slightly more than 8 million to between 10.3 and 10.9 million, depending on the projections used. Today, approximately six of 10 Virginians live in the Northern Virginia, Fredericksburg, Richmond, or Hampton Roads metropolitan areas. These areas are expected to account for about 76 percent of the total statewide population growth between 2010 and 2035.

As summarized in the VTrans2035 final report:

“Virginia’s current major urban areas will continue to grow and expand outwards. Communities along the I-95 corridor between Northern Virginia and Richmond are expected to continue to capitalize on the economic growth in our nation’s and Commonwealth’s capitals. Both jobs and population will increase in the range of 50-85 percent from 2010 to 2035 in the Fredericksburg area, while residential growth is expected to outpace job growth southwest of Washington, DC in Fauquier County.”

“Other areas will continue to emerge, but at not quite such a fast pace as the growth north of Richmond...This growth can be generally described as in the I-64, US Route 29, and I-81 corridors.” (VTrans2035 Final Report, Page 15)

These significant concentrations of residential and commercial growth will be mirrored, but on a smaller scale, by the anticipated development along the US Route 460 and US Route 58 corridors across the state and along the southern portion of the I-81 corridor. The implications of these growth patterns is that all of the cities, counties, and Planning District Commissions (PDCs) which are adjacent to, or which encompass the areas containing the George Washington and Jefferson NFs, will continue to generate demands for increased visitation and use of the forests, and will increase use of the Virginia FH system. Additional information on the general location and amount of population change anticipated across the state between 2010 and 2030 is presented specifically on Maps 1, 2, and 3 for Goal Area 1 in **Appendix E** on the accompanying disk.

## Chapter 4: Funding and Investment Strategies

Based on a review of experience over the past decade, funding for the Virginia Forest Highway (FH) Program is anticipated to remain at current levels or, at best, experience only minor increases in the next 20 years. The currently enacted national forest highway funding allocation formula is anticipated to remain unchanged as part of the new transportation reauthorization legislation. However, reflective of the emerging initiatives, challenges, and changes in local funding and inflation factors, a funding and investment strategy is critical to the FH Program's success.

This Long Range Transportation Plan (LRTP) establishes a project selection process that is designed to be objective, transparent, and capable of ranking projects that serve the program goals. As part of the proposed project selection process, projects would compete equally based on individual merit in meeting FH Program goals, regardless of project scope. Project applications that articulate how they would address several of the investment guidelines would generally compete better for funds. With limited funding available for potential projects, the Virginia FH Program is committed to selecting projects that offer the greatest possible value to access and mobility, system performance, funding and economic development, and natural resource protection.

The ideal project for the Virginia FH Program is defined as the project that:

- Provides sustainable access to Virginia's national forests for use and enjoyment of the National Forest System (NFS) lands and resources.
- Ensures a safe and reliable transportation network to and within Virginia's national forests.
- Uses innovative partnerships to fund FH projects and to support economic development opportunities at the local, regional, and national level.
- Maintains leadership in protecting and enhancing the natural environment.

This chapter summarizes the recent investment history for Virginia FH projects, identifies reasonably expected funding through the planning horizon, and illustrates the funding gap between projected funding levels and anticipated need for FH improvements, based on current road and bridge inventory data analysis.

### 4.1: Recent Forest Highway Investments

In recent years, the Virginia FH Program has funded 12 construction projects totaling approximately \$17.5 million. These projects include a combination of 4R (repair, resurfacing, rehabilitation, and reconstruction), pavement improvements, and bridge rehabilitation for the system. **Table 4.1** summarizes these projects by project category.



**Table 4.1: Virginia Forest Highway Program Projects FY 2007 – FY 2010**

<b>EFLHD Project No. / State No.</b>	<b>Project Description</b>	<b>Funding Amount</b>
VA FH-0536 (105) SR 622, Smyth Co. UPC #15018	Reconstruction of bridge and roadway approaches	\$2,451,601
VA FH-162 (110) SR 827, Amherst/Nelson Co. UPC #15230	Roadway improvements	\$179,750
VA FH-0536 (106) SR 622, Smyth Co. UPC #12587	Bridge replacement and roadway approaches	\$3,159,792
VA FH-161 (102) SR 666, Amherst Co. UPC #15229	Reconstruct roadway	\$361,389
VA FH-306 (101) SR 613, Warren Co. UPC #56362	PE, ROW and construction for bridge replacement over Shenandoah River (two bridges) and road approaches	\$6,097,153
VA FH-0601 (101) SR 614, Botetourt Co. UPC #15286	PE, ROW and construction for bridge replacement and roadway approaches	\$443,125
VA FH-0601 (102) SR 614, Botetourt Co. UPC #15287	ROW and construction for bridge replacement and roadway approaches	\$364,313
VA FH-0601 (103) SR 614, Botetourt Co. UPC #15288	ROW and construction for bridge replacement and roadway approaches	\$356,192
VA FH-0601 (104) SR 614, Botetourt Co. UPC #15289	ROW and construction for bridge replacement and roadway approaches	\$375,963
VA FH-516 (001) SR 657, Scott Co. UPC #59077	Bridge replacement and roadway approaches on Stony Creek	\$865,351
VA FH-0583 (001) SR 613, Giles Co. UPC #91363	PE to relocate, grade and drain existing roadway	\$40,000
VA FH-509 (002) SR 653, Scott Co. UPC #59076	PE and ROW for bridge replacement and approaches over Staunton Creek	\$83,800
VA FH-509 (001) SR 653, Scott Co. UPC #59075	PE and ROW for bridge replacement and approaches over Stock Creek	\$113,524
VA FH-74 (001) SR 617, Alleghany Co. UPC #56152	Reconstruct roadway from Rte. 618 to Route 616	\$2,608,735
	<b>Totals</b>	<b>\$17,503,688</b>

Source: Eastern Federal Lands Highway Division, FHWA; Sterling, VA; Revised 4/13/2010.

In addition to these traditionally funded FH program projects, the Virginia FH Program also received funding for three other projects under the American Recovery and Reinvestment Act of 2009 (ARRA). A description of these supplemental projects, which amounted to approximately \$759,000, is presented below on **Table 4.2**.

**Table 4.2: ARRA Funded Forest Highway Projects**

EFLHD Project No./ State No.	Project Description	Funding Amount
VA ARRA-FS09(163) UPC #93846	Pavement Rehabilitation on Routes 615 and 616 in Alleghany and Bath Counties in George Washington NF	\$321,659
VA ARRA-FS09(075) UPC #93215	Rte 653 – 0.77 mi. East Rte 718, Bridge Replacement	\$277,256
VA ARRA-FS09(078) UPC #93217	Rte 653 – 3.9 mi. East Rte 619, Bridge Replacement	\$159,598
	<b>Totals</b>	<b>\$758,513</b>

Source: Eastern Federal Lands Highway Division, FHWA; Sterling, VA; Revised 4/13/2010.

The Tri-Agency recognizes the need to provide a balance between the types of projects funded through the FH Program. Program balancing refers to an equal distribution of projects including large reconstruction projects and bridge replacements, as well as smaller safety improvements and pavement preservation projects. Program balancing will enable the Tri-Agency to improve a wider range of needs throughout the state, while remaining consistent with the intent of the stated mission and goals of the FH Program. The project selection process, described in **Chapter 5, Project Selection Process**, describes the manner in which similar type projects will be compared against each other to ensure better program balancing.

## 4.2: Funding

### Funding Assumptions

As previously noted, funding for the Virginia FH Program is anticipated to remain at current levels for the next 20 years. The combined cost of the nominated projects will likely continue to exceed the amount of program funds totaling approximately \$2.0 million available each year.

In fiscal year 2009, the Virginia FH program was allocated approximately \$2,000,000 through the Federal Lands Highway Program (FLHP); the maximum authorized allocation under SAFETEA-LU. To estimate the likely total future available funding for the Virginia FH, two financial estimates were developed, as shown in **Table 4-3** below:

- A conservative funding scenario, using the current fiscal year 2009 allocation of \$2,000,000 continued over the next 20 years (FY2010-FY2030) without any adjustment to reflect inflation.
- An aggressive funding scenario, assuming a 20 percent increase in the current annual funding level over the 20-year period, beginning in FY 2011.

**Table 4-3: Anticipated Funding Scenarios through the Horizon Year (2030)**

<b>Forecast Scenario</b>	<b>Annual Allocation</b>	<b>20-Year Estimate</b>
FY 2009 Allocation	\$2,000,000	\$40,000,000
20 Percent Increase	\$2,400,000	\$48,000,000

Selecting the best projects for the Virginia FH program includes selecting projects that address a documented condition requiring relief, that are consistent with transportation planning for that corridor, that truly balance the missions of transportation and land management, and that provide an opportunity for the Virginia FH funds to be used most effectively where other funding either is less available, or other funding has not yet addressed the condition.

In light of the pending federal transportation program reauthorization, it will also be important to understand new allocation amounts that will be dedicated to the FHs system. Changes to the allocated funds will have a significant effect on the budgets of the FH program.

### **4.3: Funding Needs for Achievement of Stated Goals**

Meeting the stated goals and objectives of the Virginia FH Program will require wise decisions regarding the program’s investment strategy. In order to achieve the goal of maintaining access to and within the national forests by maintaining and improving the condition of the transportation facilities, funding level expectations must be established. For illustration purposes, one possible strategy used to achieve this goal would be to base project programming and prioritization decisions on those improvements focused on the “worst” condition rated roads and bridges. This strategy estimated the amount of funding that would be needed to improve portions of the Virginia FH network that are in less than “good” condition.

Based on current road condition data, 575 out of a total of 739 rated miles of the roads in the Virginia FH system are rated in “fair” or “poor” condition. It should be noted that the Virginia FH system contains a total of approximately 1,032 miles of FH, leaving approximately 293 miles of road which are currently unrated, but are also likely to require some level of improvement to bring them up to acceptable conditions. These “unrated” highways represent about 28 percent of the total system mileage. Therefore, this analysis examined what level of financial obligation would be required to make some level of improvement to no more than about 72 percent of the road miles in the system.

It is estimated that, by itself, addressing only the needs of the 181 miles of FH roads rated as being in “Poor” condition would require the expenditure of approximately \$181 million. By contrast, the total estimated funding for the entire FH program in Virginia over the next 20 years is anticipated to be no more than approximately \$40 million. The resulting projected “gap” between the estimated need and the anticipated funding amount would thus be approximately \$181 million - \$40 million = \$141 million. Assuming the receipt of approximately \$40 million every 20 years, it would take an additional 70 years to obtain funding sufficient to close this projected gap.

A similar analysis was conducted for improving the FH system bridges in Virginia. The estimated cost for the improvement of those 20 bridges throughout the system that are currently rated as being “Eligible for Replacement” is approximately \$40 million. By comparison, this is the approximate total value of the FH program funding anticipated to be received in Virginia over the next 20 years.

If the focus of improvement was on those 66 bridges currently rated as “Eligible for Rehabilitation”, a total of approximately \$66 million would be required. This represents about a 33-year cycle of funding at the current Virginia FH program funding allocation rate of \$2 million per year.

#### 4.4: Additional Funding/Partnering Opportunities

In addition to the funding provided through the FLHP, other sources have been used for transportation improvements on FH projects in recent years through partnering with state and local agencies. Much of the federal funding that may be applied to FHs is available at the state and local level, which is why partnering is critical to addressing the recognized funding gap. The following funding categories address specific conditions or factors relevant to a particular project:

- Federal sources
- State sources
- Local sources

#### Federal Funding

SAFETEA-LU provides \$193.2 billion for highway transportation improvements. This funding is administered to states based on a formula, and is administered through the state Departments of Transportation. This funding focuses on transportation issues of national significance, while giving state and local transportation decision makers more flexibility in solving transportation problems. A large portion of the past federal funding has been through the Surface Transportation Program (STP). Additional federal funding opportunities have included the Transportation Enhancements Program, High Priority Project Program, the Public Lands Highway — Discretionary Program, the Sarbanes Transit in Parks Program, and the National Scenic Byways Program. The following discussions provide additional information on these programs.

**Transportation Enhancements.** Transportation enhancement activities offer funding opportunities to help expand transportation choices and enhance the transportation experience through 12 eligible transportation enhancement activities related to surface transportation, including pedestrian and bicycle infrastructure and safety programs, scenic and historic highway programs, landscaping and scenic beautification, historic preservation, and environmental mitigation. Transportation enhancement projects must relate to surface transportation and must qualify under one or more of the 12 eligible categories, including bicycle and pedestrian facilities, landscaping and scenic beautification, and environmental mitigation.

**High Priority Project Program.** The High Priority Projects Program provides designated funding for specific projects identified in SAFETEA-LU. A total of 5,091 projects are identified, each with a specified amount of funding over the five years of the transportation legislation. This program can provide up to 80 percent of total project cost. The 20-percent match must come from non-federal sources. Federal land management agencies (FLMA) may provide the non-high priority projects' cost for projects on federal or Indian lands using FLHP and/or FLMA appropriated funds.

**Public Lands Highway — Discretionary Program.** Public Lands Highway — Discretionary Program funds are available for transportation planning, research, engineering, and construction of highways, roads, parkways, and transit facilities within federal public lands. These funds are also available for the operation and maintenance of transit facilities located on federal public lands. Funding is provided for projects designated by Congress. Certain projects not designated by Congress may also be eligible. Only state departments of transportation can submit candidate projects for this program. Eligible projects may include, but are not limited to, any of the following:

- Transportation planning for tourism and recreational travel, including National Forest Scenic Byways, Bureau of Land Management Back Country Byways, National Trail System, and similar federal programs
- Adjacent vehicle parking areas
- Interpretive signs
- Acquisition of scenic easements and scenic or historic sites
- Provision for pedestrians and bicycles

**Sarbanes Transit in Parks Program.** The Sarbanes Transit in Parks Program is administered by the Federal Transit Administration (FTA) in conjunction with the Department of the Interior and U.S. Forest Service (USFS). It is a competitive grant program open to the National Wildlife Refuge System, the National Park Service, Bureau of Land Management, Bureau of Reclamation, and USFS. The program funds capital and planning expenses for alternative transportation systems such as shuttle buses and bicycle trails. The goals of the program are to conserve natural, historical, and cultural resources; reduce congestion and pollution; improve visitor mobility and accessibility; enhance visitor experience; and ensure access to all, including persons with disabilities. In addition, 10 percent of the annual allocation is available for technical assistance in alternative transportation planning where project proposals are not already well-developed. The total allocation for the Alternative Transportation for Parks and Public Lands program (the former name of the Sarbanes Transit in Parks Program) has been \$20 to \$27 million each year.

**National Scenic Byways Program.** The National Scenic Byways Program is funded through Federal Highway Administration (FHWA) to help recognize, preserve, and enhance designated roads throughout the United States. Designation is awarded to certain roads based on one or more archeological, cultural, historic, natural, recreational, and scenic qualities. SAFETEA-LU allocated \$175 million in funding over six years for byways-related projects. FHWA awards funds competitively each year covering 80 percent of project cost, with the requirement that the remaining 20 percent be matched by local, state, and other federal or in-kind means.

## State Funding

The Virginia Department of Transportation's (VDOT) Six-Year Improvement Program (SYIP) is a multi-year capital improvement program of transportation projects both on and off the State Highway System, funded with revenues from the State Transportation Trust Fund Account and other funding sources. The SYIP programming generally occurs annually. The programming cycle begins with the release by VDOT of an estimate of anticipated funding availability by program type and the solicitation of proposed project descriptions from county governments (in the case of state secondary highway projects) and metropolitan planning organizations (MPOs) for projects in the state's larger urbanized areas. Each VDOT district office also prepares a list of suggested projects on the state primary and secondary systems based on internal studies and analysis.

With virtually the entire Virginia FH network being comprised of VDOT owned and maintained secondary highways, partnering with this agency by USFS should be regularly considered. Following a period of public review and comment, the final version of the VDOT SYIP is adopted by the Commonwealth Transportation Board.

## Local Funding

As previously noted, virtually the entire Virginia FH network is comprised of VDOT owned and maintained secondary highways. With that said, it should still be remembered that Virginia's independent cities and towns maintain control over much of the local road systems within their jurisdictions and some counties work with VDOT and other agencies in connection with the planning, design, construction, and operations and maintenance of portions of the secondary road system. FH projects, such as a comprehensive wayfinding system or an expansive bicycle and pedestrian network, could potentially be coordinated with similar activities being undertaken by a local government. Other local funding sources in support of FH projects might include in-kind donations such as right-of-way donation, utility relocation, and/or traffic control as part of the project implementation.



## Chapter 5: Project Selection Process

Traditionally, the Virginia Forest Highway (FH) Program project selection has been a subjective process, conducted by the Tri-Agency partners during their annual programming meetings. This initial version of the Virginia FH Long Range Transportation Plan (LRTP) establishes a more formalized project selection process, which would be achieved through issuing a call for projects using a standardized project application. The Tri-Agency will evaluate completed applications based on how well each proposed project meets agreed upon goals, objectives, and selection criteria. The result of this suggested project selection process would be an improved list of prioritized projects that can be brought before the Tri-Agency partners for informed discussion and funding approval for inclusion in the FH Program and advancement into project development. This process is intended to be used as a guide for programming future projects. The Tri-Agency may alter the process as needed to be responsive to emergency needs, changes in the funding allocations, and other urgent programming needs.

### 5.1: Forest Highway Call Process

On an annual basis, the Tri-Agency will determine if a call is needed to generate projects for the FH Program. In some instances, there may be some variance from this schedule if, for example, larger corridors have been previously programmed for construction over a number of years. The process consists of the following steps:

- Call for Projects — U.S. Forest Service (USFS), Virginia Department of Transportation (VDOT), and/or counties, Planning District Commissions (PDCs) or Metropolitan Planning Organizations (MPOs) submit applications to the Tri-Agency.
- Project Selection — Tri-Agency ranks project proposals and selects projects for programming.
- Programming — Tri-Agency includes projects in the 4-Year FH Program, assigns a program year and program amount, and then projects are added to the Virginia Six-Year Improvement Program (SYIP.)

The following sections describe each of these steps in more detail.

#### Call for Projects

The purpose of the call process is to solicit potential projects in a transparent and unbiased fashion. The following steps discuss the call process and project applications in more detail.

#### Step 1: EFLHD issues call for projects

Each local USFS office, VDOT District, and PDC/MPO or county with a FH route within its boundary of responsibility will receive a copy of the call packet. These packets could be issued by the USFS, VDOT, or the Eastern Federal Lands Highway Division (EFLHD) of the Federal Highway Administration (FHWA). The call packets will be made available electronically and will have instructions on how to complete the application. The call packet will also include the details on the goals of the Virginia FH program that are used to score/rank each project.

A complete call packet example, as created for use with the Illinois FH system, is presented in **Appendix F** on the accompanying disk.

### **Step 2: USFS, VDOT and counties/PDCs/MPOs prepare project applications and submit to Tri-Agency Representatives**

Once the USFS, VDOT, and the counties, PDCs and MPOs receive their call packets, it is their responsibility to complete the project applications to the best of their ability. It is the responsibility of the entity proposing a project to supply the necessary information to complete the project application. It is understood that data may not be available for all of the project application questions, but the agency may use anecdotal information as a substitute. Any projects initiated by a county, PDC or MPO must have the project application submitted through either VDOT or USFS to certify that the application is complete.

### **Step 3: USFS and VDOT sign project application and forward to Tri-Agency**

After the USFS and VDOT complete their project applications and review applications initiated by counties, PDCs or MPOs for completeness, they submit all project applications to EFLHD. EFLHD compiles all project applications and distributes to members of the Tri-Agency for their review.

## **Project Selection**

Once project applications are received, EFLHD distributes the information to the Tri-Agency partners for review of all materials and independent ranking of projects based upon established selection criteria.

23 CFR §660 established a list of seven criteria (see **Appendix B** on the accompanying disk) for the Tri-Agency to jointly select the projects that will be included in the FH Program. As discussed in *Chapter 2, Agency and Planning Coordination*, these criteria relate directly to the goals and objectives used in this LRTP. While these criteria are presented in the national regulations, the Tri-Agency has latitude to apply more weight to one or more criteria, and to develop additional guidance for the types of projects that will rank higher. Once the Tri-Agency drafted the initial selection criteria and weightings, a second newsletter was sent to local USFS offices for their input. These comments were incorporated into the scoring criteria.

As this is a 20-year long-range planning document, the needs of the system can be expected to change during this period of time. To address any changes in needs, the Tri-Agency may establish, through cooperation with the USFS office, a varied weighting scheme or perhaps a set aside for some portion of the annual program funding allocation to address these issues.

Consistent with the objectives developed in *Chapter 1, Introduction*, specific criteria were identified that will provide a measure of how well a particular project meets the Virginia FH Program's goals. Total points assigned to each goal category are a function of the relative importance that the Tri-Agency places on achieving a particular goal category relative to the mission of the FH Program. The Virginia FH transportation goals and selection criteria are summarized in **Table 5.1**.

After establishing the goals and criteria, the Tri-Party team members determined that, based on the missions and priorities of their respective agencies, the three goals did not deserve equal consideration in guiding the LRTP process. The team therefore assigned different weights to each of the different goals and criteria, giving greater weight to those deemed of highest priority to the FH network. Improving the safety of the FH network was considered the highest priority goal, followed closely by access and mobility. The Tri-Party team considered resource protection to be of lesser priority. The team agreed to weight each goal as follows:

- Goal 1: Access and Mobility — 40 percent
- Goal 2: Safety — 45 percent
- Goal 3: Resource Protection — 15 percent

Within each of these three principal goals, the more detailed criteria were ranked and assigned a weight. **Table 5.1** lists the overall weighting for each goal and criterion.

**Table 5.1: Weighting of Goals and Criteria for Virginia Forest Highway Network**

Goal / Criterion	Weight	Interpretation
<b>Goal 1: Access and Mobility</b>	<b>40%</b>	
Criterion 1: Existing Traffic Volume	8%	Higher volume road segments receive <b>higher priority</b>
Criterion 2: Proximity to High Population Counties in 2030	8%	Road segments near multiple population centers receive <b>higher priority</b>
Criterion 3: Proximity to Priority Recreation Sites	9%	Road segments near priority recreation sites receive <b>higher priority</b>
Criterion 4: Status as a major commercial route	8%	Road segments designated as major commercial routes receive <b>higher priority</b>
Criterion 5: Pavement Condition	7%	Road segments with poorer pavement conditions receive <b>higher priority</b>
<b>Goal 2: Safety</b>	<b>45%</b>	
Criterion 1: Crashes per Million VMT (2003 to 2007)	8%	Road segments with higher crashes per million VMT receive <b>higher priority</b>
Criterion 2: Number of fatal crashes (2003 to 2007)	17%	Road segments with fatal crashes receive <b>higher priority</b>
Criterion 3: Bridges qualifying for rehabilitation	8%	Road segments with one or more deficient bridges receive <b>higher priority</b>
Criterion 4: Bridges qualifying for replacement	17%	Road segments with one or more deficient bridges receive <b>higher priority</b>
<b>Goal 3: Resource Protection</b>	<b>15%</b>	
Criterion 1: Gravel roads in a flood plain	5%	Gravel surface road segments located in a flood plain receive <b>higher priority</b>
Criterion 2: Proximity of road link to wilderness areas	5%	Road segments located near wilderness areas receive <b>lower priority</b>
Criterion 3: Proximity of road link to wild and scenic rivers	5%	Road segments located near wild and scenic rivers receive <b>lower priority</b>

## Step 4: Tri-Agency Annual Meeting (Project Ranking and Programming)

A planning work session is then scheduled for the Tri-Agency to discuss the merits of each project proposal based on the established weighted criteria. Depending on the outcome of discussion, a project may proceed in one of three ways:

- **Advance** — Project is programmed for advancement into planning, design, and construction
- **Need more information** — Additional information is collected before a program decision is made
- **Drop** — Project receives no further consideration.

Low-ranked projects or those with insufficient information may be removed from the project list at this time. Projects of greater complexity and high ranking may require additional information before a programming decision can be made. Top ranked projects are programmed. In extreme cases, situations may arise that require action be taken to address urgent and immediate needs within the FH system. When such unanticipated acts of nature occur, the Tri-Agency retains the authority to re-prioritize and re-allocate funds to projects that must be completed to address safety concerns or immediate risks of catastrophic failure.

Each member of the Tri-Agency scores the proposed projects based on the selection criteria in **Table 5.1**. Once each of the projects is scored, each member of the Tri-Agency must rank the projects depending on the scope. For example, small safety projects will be ranked among other small safety projects, and large reconstruction projects will be ranked among other large reconstruction projects, and so forth. This is done because the overall statewide program currently has total available funding of only about \$2.0 million per year and programming will have to be flexible through a mix of a few large reconstruction projects, with bridge replacements, or spot improvements.

Any projects that need additional information prior to being programmed will have it collected during this step. This time will also be used for site visits to recommended projects that have major rehabilitation, reconstruction, or new construction. The site visit will typically include a road safety audit.

### 5.1.3: Programming

The efforts of this process culminate in a recommended list of projects to advance to the Tri-Agency program meeting for inclusion in the 4-Year Virginia FH Program. Once the Tri-Agency has approved the project list and prioritization, each project will advance to Step 5.

## Step 5: Projects Assigned Funding and Program Year On EFLHD TIP

Each approved project is assigned a program year and program amount, based on funding availability and other programming considerations. As mentioned previously, there are currently only about \$2.0 million available per year and programming will need to be flexible by having a mix of projects with different scales of scope.

## Step 6: EFLHD TIP Submitted To VDOT

After funding and program years are assigned, the list of projects is sent by EFLHD to VDOT for inclusion in the Virginia SYIP.

## Step 7: Project Delivery

The final step for each project is project delivery. EFLHD is available to assist the USFS with any required project development phase. Typically, these include planning and environmental documentation studies; the preparation of engineering plans, specifications, and estimates; construction management services including the solicitation of contractors responsible for the actual construction of the project; and turning over the finished and accepted project to the agency with jurisdiction for continuing maintenance and operations.

## Unconstrained Program of Projects

Upon finalization of this LRTP, the first call for projects under this new plan will go out to the two national forests, counties, PDCs and MPOs, and VDOT. All applications will then go through the project selection process outlined in this chapter. Following the annual program meeting, the projects identified for programming will be added to the unconstrained list of projects and updated following each call. This list will be included in future updates to the LRTP once the first call is issued and projects are selected. (See **Appendix G** — Virginia FHProg FY10-15 on the accompanying disk)

## Forest Highway Segment Composite Scores

In order to develop units that would allow for meaningful analysis, the team responsible for the development of the technical analysis for this initial LRTP divided the approximately 1,100 miles of Virginia FHs into 643 individual road segments. Each segment was evaluated based on the weighted criteria described above. Each road segment then received a composite score, which reflected the priority of each FH segment relative to the other segments. The Tri-Party team thus was able to use a data-driven process to identify and prioritize FH segments as candidates for improvement. Perhaps most importantly, this process is consistent with the goals of the three agencies involved in administering the Virginia FHs Program. The composite scores for each of the defined Virginia FH Route Segments are presented in **Appendix E** on the accompanying disk.

## Evaluation of Results

Using the results of the data analysis discussed above, each FH link has been prioritized based on its need. This evaluation is intended as a guide for assisting the Tri-Agency team in determining which FH projects should be funded.

This evaluation reflects an initial screening based on a subset of available data that are relevant to the goal areas. It is important to recognize that this initial screening cannot include every conceivable variable in determining need. The LRTP process includes a second-tier screening, which entails a more qualitative analysis. Additional variables that may be evaluated in the second-tier screening include project cost, right-of-way availability, proximity to sensitive species habitat and other environmental considerations, VDOT district priorities, political priorities, and system needs. The second-tier screening also will entail coordination with other agencies to ensure that this evaluation is compatible with those agencies' plans and priorities. The results of this preliminary project evaluation process are presented in **Appendix E** on the accompanying disk.

## Project Level Considerations

The Tri-Agency team recognized that two separate processes are necessary to evaluate and fund FH projects. The first process is to prioritize FH links based on need. This is the process that was developed during the one-day meeting. The final set of goals and objectives were defined and are described in this report.

A second process includes project-specific design criteria. This process is conducted after projects are selected, during the design phase. Project-specific design criteria could include visual impacts, roadway geometrics to improve safety, and location within environmentally sensitive areas. More site-specific data is needed to program certain projects, including road, bridge, multimodal, trail, and aquatic passage projects.

## 5.3: Public Involvement Plan

Public involvement occurs throughout the transportation planning process, and while FH public involvement and planning are unique, they are linked to existing long-range and short-term planning efforts of VDOT, the various PDCs and MPOs whose boundaries contain portions of the forests, and the national forests in Virginia. The FH planning process builds upon, and is integrated with other planning efforts for consistency among the partner agencies' planning and public involvement activities, thereby providing multiple opportunities for public involvement.

Public involvement during transportation planning is perhaps best explained by distinguishing “policy level,” “plan level,” and “project level” public involvement opportunities. “Policy level” public involvement occurs during the development of a LRTP, such as the Virginia statewide transportation plan (VTrans2035), regional transportation plans (RTP) at the MPO or PDC levels, forest plans, and this initial FH LRTP. Such long-range policy plans provide guidance and direction for a transportation program. In short, they address “the big picture.” “Plan level” public involvement occurs during development of shorter-term plans like the VDOT SYIP, MPO level transportation improvement programs (TIP), and the Federal Lands Highway TIP, that list specific desired improvements and often include prioritized lists of projects to be implemented over the plan's timeframe. “Project level” public involvement occurs when specific projects are being developed through the process used to evaluate and assess projects under the National Environmental Policy Act (NEPA).



Public involvement continues to be an integral part of the planning process for this LRTP. As such, the Tri-Agency has conducted several initial outreach activities including the development of a FH website that provides current information, by state, for each FH LRTP (<http://www.efl.fhwa.gov/programs/lrtp.aspx>). In addition to accessing this existing web site for information, a series of newsletters could be developed and distributed to forest supervisors, state department of transportation representatives, and PDC and MPO executive directors to solicit input on the mission, goals, and objectives, the project selection process, and the draft of this pilot Virginia FH LRTP.

The result of the project selection process outlined in this LRTP (a list of approved projects for the Virginia FH program) will be included in Virginia's SYIP, which is subject to VDOT's public involvement process associated with VTrans2035. Because these plans include statewide lists of projects proposed for implementation, public input is used to inform the process of project selection. Therefore, there is some project-specific input at the plan level of public involvement.

The public will have further opportunities to provide input on specific proposed projects through the process used to evaluate and assess projects under NEPA. All projects that include federal funding, such as FH projects, must comply with the NEPA process. The NEPA process requires public outreach at several stages: project scoping (to present the proposed project and identify potential issues), public review of the draft environmental document (environmental assessment or environmental impact statement), and public review of the final environmental impact statement. Additional public involvement opportunities are often provided, such as public meetings at various stages of project development.

This stakeholder and public involvement plan implementation is integral to the continued success of the Virginia FH LRTP. A successful outreach component is particularly critical in a program such as this one to bring communities and stakeholders together, to create recognition of the FH assets and program, and to obtain input from a wide range of stakeholders regarding needs and priorities. Outreach efforts will educate, inform, and involve the public about the purpose and progress of the project by highlighting local issues, technical considerations, and potential impacts. Outreach techniques are designed to encourage participation in the public process and to generate meaningful feedback. The Public Involvement Plan (PIP) provides tools for both disseminating project-related information and gathering public input that reflects community concerns and interests. The purpose of the PIP is as follows:

- To consult with community stakeholders and facility users and to gather their ideas for solutions to improve and prioritize the current transportation system
- To inform and involve the public throughout the process
- This plan intends to: 1) educate, 2) listen to, and 3) learn from the public at key points throughout the project. The success of this planning process depends on the cooperation and support of the public.

As a starting point in this process, the following paragraphs describe some possible elements of an effective PIP. It should be noted that these are only suggested actions reflective of those which have proven to be successful during the conduct of prior transportation planning studies similar in nature and scale to the Virginia FH LRTP. The specific elements of the PIP for the Virginia FH LRTP will evolve over time to reflect the experiences of the Tri-Agency partners with stakeholder and public outreach activities. With this in mind, the suggested list of public involvement techniques includes the following:

- Public involvement techniques include a variety of venues and communication methods to effectively reach a broad audience. Additionally, the Core Team members will share the draft LRTP document with relevant constituencies and special interest groups in order to gather comments from them on the plan. The key techniques will include the following: public meetings, community events, an email survey, website information, and newspaper advertising.
- The Core Team members should look for opportunities to participate in VDOT-sponsored outreach efforts that are already planned. Benefits of participating in these planned meetings include the following:
  - Allows the FH LRTP to be included in large scale public outreach efforts that will draw large groups of the public
  - Requires less coordination time than required to conduct a single Forest-only event, which reduces the labor effort for the FH Core Team

Examples of such activities would include forest staff participation on a regular basis in the PDC and/or MPO monthly policy committee or transportation technical committee meetings. These are good opportunities to introduce the plan to a number of counties simultaneously. Forest staff would not have to attend every monthly meeting or even every other meeting, but attendance at least once or twice a year would allow for the key participants in these related planning processes to interact with one another and obtain a better understanding of differing issues and concerns.

## Chapter 6: Recommendations for Future Plan Activities

### 6.1: The Need for Long-Range Transportation Planning

State level Forest Highway (FH) long-range transportation planning is necessary to define the vision and goals for the FH network that will serve the public into the future. Long-range planning also provides a mechanism to objectively set priorities for implementing projects while working toward the ultimate vision for the FH network that the Tri-Agency partners are trying to achieve. To accomplish these tasks, planners and decision makers must consider a complex balance among transportation effectiveness, human safety, and environmental care, and they must do so collaboratively to effectively manage and implement the Virginia FH Program.

The FH Program requires long-range transportation planning; that is, a planning process that is consistent, that involves the partner agencies, that is compatible with other federal, state and local area transportation planning processes, and that clearly defines and offers opportunities for public input. The key objective of such a planning process is to develop and maintain a coordinated, “seamless” transportation system for public use, even though various segments of the system may be under different jurisdictions. Coordinated planning will also help ensure that the most critical projects receive funding and are implemented, so that the infrastructure remains in place to access Virginia’s forest resources and communities.

Some general requirements for coordinated FH planning are set forth in 23 CFR §660, Subpart A – Forest Highways, which is provided in **Appendix B** on the accompanying disk.

This initial Virginia FH Long Range Transportation Plan (LRTP) establishes a formalized project selection process, which will be achieved through issuing a call for projects, establishing project application materials, and using agreed upon goals, objectives, and selection criteria to evaluate and rank projects. The result of project selection is a list of prioritized projects that can be brought before the Tri-Agency partners for informed discussion and funding approval for inclusion in the FH Program and advancement into project development. Several potential action items have been identified during the development of the Virginia FH LRTP. These items are summarized in **Table 6.1**.

**Table 6.1: Virginia Forest Highway LRTP Potential Action Items**

No.	Potential Action Item	Description
1	Integrate FH LRTP into statewide planning process	The Tri-Party Program will need to determine an efficient means of incorporating the Virginia FH Program LRTP, including the application of the data-driven needs analysis outlined in this report, into the statewide planning effort. It is recommended that this process be initiated as soon as possible, as it may be a time-consuming effort involving multiple stakeholders and agencies.
2	Implement public outreach process	As part of the LRTP process, the Tri-Party team should conduct a series of public outreach activities to generate input into the development of the LRTP. The first phase of the public outreach strategy should focus on internal stakeholders, such as Planning District Commissions (PDCs) and Forest Rangers. The feedback obtained in the first phase can inform a broader outreach campaign to be undertaken in a later phase.
3	Improve data collection and monitoring	<p>In addition to regularly updated RIP information, additional data, such as average daily traffic (ADT) volume and crash data should be collected to monitor all FHs, specifically on those Virginia Department of Transportation (VDOT) and U.S. Forest Service (USFS) routes where current data is not available.</p> <p>Data for resource extraction should also be collected to the degree that they are judged to be necessary and appropriate. Typically, vehicles used for resource extraction (timber or coal removal) are larger and heavier vehicles that cause more damage to the roadway. ADT and crash data are also important to determine the amount of traffic using a FH and the associated crash rates with that FH. The data gathered during these monitoring efforts may then be used in future LRTP updates to change how projects are ranked, or how project selection is determined based on the needs and performance of the FH network.</p>
4	Set performance objectives for FH program	The Tri-Agency should create performance measures and quantifiable targets to assist in ranking and selecting projects. Targets for each goal area should be established in 3-5 year strategic plans. The partner agencies will use those targets to evaluate how well the Virginia FH Program is achieving the adopted goals and objectives.

5	Complete system-wide FH route designation/de-designation exercise	<p>The USFS and VDOT will take the lead on completing the designation exercise. USFS will draft a letter and survey to send to the forest supervisors and VDOT representatives will determine if a highway, or portion of a highway, falls into one of three categories:</p> <ul style="list-style-type: none"> <li>• definitely a FH,</li> <li>• maybe not a FH, and</li> <li>• potential new FH.</li> </ul> <p>USFS and VDOT will take the lead on compiling the list and prepare it for the program meeting to discuss with Tri-Agency partners. The Tri-Agency partners can then discuss the list to determine what actions should be taken for each category. These are initial steps that will be implemented in the short term to ensure that the current FH network continues to meet the intent of the FH program.</p>
6	Update LRTP every five years	<p>This LRTP is intended to be regularly updated in order to reflect changes in project selections, goals and objectives, or any other items that may affect the project selection process. It is anticipated that the update cycle will be every five years. The LRTP updates will take into account the current FH network, existing conditions based on road inventory data, and the list of programmed projects.</p>
7	After first project call, reevaluate project selection process	<p>Once the initial call for projects is complete, the Tri-Agency should evaluate the project selection process. Some things to consider would be the number of project applications received, the types of projects, agencies submitting projects, location of projects, etc. These factors will help determine if there needs to be additional outreach to agencies, more description on the types of projects that are eligible, etc.</p>
8	Consider a safety set-aside in project programming	<p>Consider a safety set aside equal to approximately 10 percent of the annual allocated program funding amount for safety improvements. Projects would typically cost less than \$50,000 and could consist of low cost high return projects such as signing and delineation at crash prone locations. Part of this process could also include completing road safety audits or assessments on an on-going basis as issues arise.</p>





U.S. Department of Transportation  
Federal Highway Administration  
Eastern Federal Lands Highway Division

