

**REPORT OF THE  
VIRGINIA DEPARTMENT OF RAIL  
AND PUBLIC TRANSPORTATION**

# **Status of the TransDominion Express Passenger Rail Service**

**TO THE GOVERNOR AND  
THE GENERAL ASSEMBLY OF VIRGINIA**



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## **Preface**

Item 483.B of the Budget Bill for the 2004-2006 Biennium directs the Virginia Department of Rail and Public Transportation (DRPT) to “report to the Secretary of Transportation and to the Chairmen of the Senate Committees on Finance and Transportation and the House Committees on Appropriations and Transportation by January 10, 2005 on the status of the TransDominion Express. The report shall include updated operating and capital costs to establish the line and potential funding sources. In addition, the report shall identify non-financial issues requiring resolution before the line can be started.”

This report has been prepared by the Rail Division of the Virginia Department of Rail and Public Transportation. The report was prepared by Alan Tobias, Manager of Passenger Rail Programs, with direction and guidance from Karen Rae, Director, and George Conner, Rail Director. Additional information contained in this report was provided by the National Railroad Passenger Corporation (Amtrak) and Norfolk Southern Corporation. Special recognition is given to Drew Galloway of Amtrak and Steve Eisenach and Bill Schafer of Norfolk Southern, whose cooperation and assistance in developing plans to implement the proposed TransDominion Express passenger rail service has been critical to the completion of this report.

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# **Report to the General Assembly Status of the TransDominion Express Passenger Rail Service**

## **Executive Summary**

The study of potential rail service to Bristol was initiated in 1996 with funding provided by the General Assembly. As a result of several studies by the Virginia Department of Rail and Public Transportation (DRPT), the National Railroad Passenger Corporation (Amtrak) and Norfolk Southern Corporation (NS), a general concept for passenger rail service to Central and Southwestern Virginia has been developed. This service, which has come to be known as the TransDominion Express (TDX), includes two round trip trains per day serving 19 stations along a route from Bristol to Washington, D.C. with connecting service from Richmond to Lynchburg. Norfolk Southern has studied the proposed service and stands by its capital investment estimate of \$120 million to implement the full TDX service. Additional capital funding will also be needed for station improvements and grade crossing upgrades. Analysis of operating costs indicates that the annual operating subsidy required for the full TDX service is approximately \$14 million.

Other plans are currently under consideration to expand the capacity of NS's routes through Central and Southwestern Virginia. Strategic improvements to NS's rail network are needed to provide additional capacity to support the diversion of freight traffic from I-81 to the railroad. In addition, there are capacity issues on NS lines in Northern Virginia that restrict expansion of the commuter rail service provided by the Virginia Railway Express (VRE). Many of the capital improvements proposed on Norfolk Southern lines have a potential to provide for the expansion of freight service, intercity passenger service and commuter passenger service throughout Virginia. By addressing all of these improvements as part of a package, DRPT can ensure that public funds are directed to those projects that will have the maximum positive impact.

The Department of Rail and Public Transportation, advocates for the TDX service, and Norfolk Southern are looking for a responsible way to move this proposed service forward to implementation. The parties have agreed on four steps that will bring this service closer to reality:

1. The parties have agreed to develop an implementation plan for demonstration rail service in the proposed corridor.
2. DRPT is exercising an option to purchase five passenger cars from the Virginia Railway Express (VRE) for demonstration service use.
3. The parties are committed to developing a financial plan that reduces the gap between the projected capital and annual operating expenses and the anticipated service revenues.
4. The parties are working together to identify options and make recommendations as to the most appropriate governance structure required to manage and operate the service.

Table 1 below shows current estimates of total operating and capital expenses as well as a projection of the funding available from the Virginia Transportation Act of 2000. The estimated revenue shortfalls beyond the state funding shown would be met by private, local, regional and/or federal partners.

The demonstration service outlined in this table includes two separate components. The first is new intercity service that would operate between Bristol and Richmond. In addition, the second component involves a possible extension of one round trip VRE train per day from Manassas to Charlottesville. The VRE component has been proposed as a means of providing service to Charlottesville and Culpeper, which are not on the route of the demonstration service. This VRE service has not been approved by the VRE Board and would require discussion and further action.

**Table 1**  
**Projected Travel Times and Capital and Operating Expenses**  
**Full TransDominion Express Service (in millions)**

	<b>Estimated Travel Time</b>	<b>Total Capital Costs</b>	<b>Annual Operating Costs</b>
<b>Total System Costs</b>			
Bristol-Washington	8:18	\$120.0	\$14.5
Bristol-Richmond	7:45		
Purchase & Refurbishment of 5 Rail Cars		\$2.5 <sup>1</sup>	\$0.0
<b>Total Costs</b>		<b>\$122.5</b>	<b>\$14.5</b>
State Funds Available		\$6.0 <sup>1</sup>	\$0.0
<b>Balance</b>		<b>\$116.5</b>	<b>\$14.5</b>

**Table 2**  
**Projected Travel Times and Capital and Operating Expenses**  
**TransDominion Express Demonstration Service (in millions)**

	<b>Estimated Travel Time</b>	<b>Total Capital Costs</b>	<b>Annual Operating Costs</b>
<b>Demonstration Service</b>			
Bristol-Richmond	10:00	\$20.0	\$8.0
DC-Charlottesville (VRE Extension)	2:30	\$2.0	\$1.1
Purchase & Refurbishment of 5 Rail Cars		\$2.5 <sup>1</sup>	\$0.0
<b>Total Costs</b>		<b>\$24.5</b>	<b>\$9.1</b>
State Funds Available		\$6.0 <sup>1</sup>	\$0.2 <sup>2</sup>
<b>Balance</b>		<b>\$18.5</b>	<b>\$8.9</b>

<sup>1</sup> Funding from the Virginia Transportation Act of 2000.

<sup>2</sup> Service to Charlottesville by extension of VRE may be eligible for funding under the current State Mass Transit Trust Fund Formula Program. However, unless new funding is made available, this will have a negative impact on transit systems that are already funded through this program.

Even the proposed TransDominion Express demonstration service, with reduced service levels and significantly reduced capital and operating costs, still faces significant gaps in funding. Although the Governor's Rail Partnership Fund could provide some of the capital funding necessary, additional federal, state, local and private dollars must be pursued in order to develop a fully funded financial plan for the demonstration service.

There is a great deal of support for this proposed service throughout Central and Southwestern Virginia. TDX would provide a critical travel alternative to an area that has been traditionally underserved by the transportation network. Rail service would also play a critical role in the future economic development of Southwest Virginia. In the northern portion of the corridor between Washington, DC and Charlottesville, rail service will be an important factor in discussions about quality growth and land use.

One of the major issues that must be resolved prior to service implementation is governance. An organization with the authority and capability to operate the proposed passenger rail service must be established. Consistent with the Department's current practice with VRE and other public transportation providers, DRPT intends to continue its facilitation and technical support roles but does not anticipate taking on the role of service operator.

Two significant events have helped to bring the implementation of TDX demonstration service much closer to reality over the past year. The first is the securing of available VRE rail cars. These cars are a valuable resource essential to service operation. The second event is Norfolk Southern's cooperation in developing this service and, in particular, their offer to consider operating trains. These two items go a long way toward eliminating major obstacles that could potentially halt or delay service implementation.

DRPT and Norfolk Southern have developed a list of the minimal amount of improvements needed to implement a one year demonstration service. However, this level of investment will not allow for the fastest and most reliable service possible. There is a clear relationship between the level of investment that is made in the rail infrastructure and the travel times of the rail service provided, as shown in Figure 1.

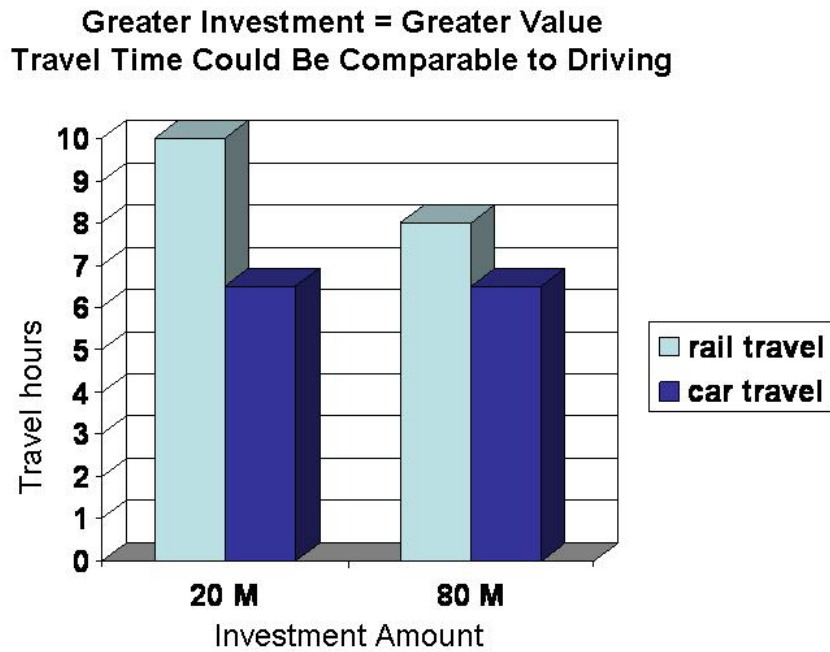
The Department believes that, if the full funding package can be developed for the proposed demonstration service, trains could be in operation within two years.

The Department's position is that it would not be prudent to make investments unless there is sufficient confidence that adequate funding will be available to actually begin operation of service. DRPT therefore proposes an incremental approach that includes the minimal investment necessary to implement a limited level of service. As more funding becomes available, additional improvements can be made to provide faster, more reliable and more frequent service.



A concise set of performance measures and trend expectations must be established and agreed upon by all parties in order to accurately track the success of TDX service over time. Although a demonstration service should not be expected to meet the same standards as a mature service, a record of positive performance will be critical to the justification of further investments. The management of all parties' expectations is a key factor to consider in establishing these performance measures and will require further public discussion.

**Figure 1**  
**Relationship Between Capital Investment and Travel Time**



Rail travel time and investment amounts based on the 2002 Norfolk Southern study for the route from Bristol to Richmond. Assumes 6.5 hour driving time.

## **Recommendations/Next Steps**

- Evaluate options and recommend an appropriate governance structure for management and operation of the TransDominion Express service.
- Complete the purchase of the VRE railcars and provide a facility to store them. Develop plans and cost projections for the renovation of these cars to make them more comfortable for long distance trips.
- Work with Norfolk Southern to identify the infrastructure needed for permanent, full passenger service to Bristol that takes into consideration all other new infrastructure needed for the various public/private NS rail projects in the corridor.
- Finalize a financial plan for the TransDominion Express that identifies all short and long-term capital and operating funding requirements. The plan should identify sources of funding and include a schedule for implementation. The Governor's Rail Partnership Fund would provide part of this funding, but additional federal, local and private funds would be needed.
- Enter into discussions with economic development interests along the proposed service route. Also initiate discussions with regional planners, particularly in the Washington, DC to Charlottesville segment, on the relationship between rail service and land use.
- Conduct a marketing study to define optimal times, fares and strategies for promoting service use.

# **Report to the General Assembly Status of the TransDominion Express Passenger Rail Service**

## **Background Information**

### **The Status of Passenger Rail in America**

Passenger rail service has historically played a critical role in providing intercity transportation in the United States. Rail service began to decline after the 1940's as major investments were made to improve the highway and airport infrastructure. By the 1960's the private railroad companies were losing money on passenger service, and were actively reducing the frequency and quality of service. Amtrak was formed in 1971, allowing the private railroads to abandon the passenger rail business. The United States now lags far behind countries in Europe and Asia in the development of passenger rail service.

In recent years, an increased recognition of the value of rail transportation has developed throughout the United States. While traffic congestion threatens the quality of life in our most populous areas, highway systems in many metropolitan areas, especially along the East Coast, are approaching the limit of planned construction. New highway infrastructure is constrained by lack of funding as well as environmental issues, anti-growth perspectives, and less space in which to retrofit new highway lanes. Research and experience have shown that modern, frequent, and reliable high speed rail service can be an attractive and competitive mode of transportation, particularly for trips between 100 miles and 500 miles in length.

The nation's rail network is primarily privately owned by major railroads whose main focus is on the movement of freight. Many states have successfully partnered with freight railroads in order to provide for commuter and intercity passenger rail alternatives. Attempts to accommodate ridership growth and address on-time performance are often difficult, as freight railroads struggle with their own challenges. When local and state governments have made significant investments to add capacity and increase speeds on the freight rail lines, such as the Cascades Corridor in Washington and Oregon and the Capital Corridor in California, rail service has experienced substantial increases in ridership.

Rail is the only mode of surface transportation which does not have a dedicated source of federal funds. Over the 25 years prior to 2001, more than \$782 billion in federal funds was spent on transportation projects. Of this amount only 4%, or \$31.5 billion, was spent on rail. Most of this amount was in the form of annual operating subsidies to Amtrak. During that same period, the federal government made substantial investments in airports, highways, transit and waterways. Table 3 illustrates the breakdown of federal expenditures by transportation mode.

**Table 3**  
**Federal Transportation Expenditures by Mode, 1977 - 2001**  
**In Billions of Dollars**

Mode	Federal Expenditures	Percent of Total
<b>Total</b>	<b>\$782.3</b>	<b>100.0%</b>
Air	175.3	22.4%
Highway	378.7	48.4%
Rail	31.5	4.0%
Transit	94.8	12.1%
Water	96.1	12.3%
Pipeline	.3	0.0%
General Support	5.8	0.7%

*Source: Bureau of Transportation Statistics, USDOT*

### **The Status of Rail Service in Virginia**

From 1930 to 1990, highway miles in Virginia increased almost tenfold. Still, severe traffic congestion affects the quality of life of many communities, and threatens to thwart economic development. In Virginia, alternatives to highway travel include bus service, Metrorail (in Northern Virginia) and the Virginia Railway Express (VRE) commuter rail system, which operates on Norfolk Southern and CSX tracks. Amtrak operates intercity passenger rail service in several corridors, with the primary concentration of service in the Washington, D.C. to Richmond corridor. While the partnership was rocky at first, VRE has become a success story and has benefited from public/private investments in its host railroad's infrastructure. Norfolk Southern has become a leader among the Class I railroads in developing public/private initiatives to invest in its rail corridors that are shared with passenger rail services.

Transportation planners have long sought highway solutions to divert truck traffic from congested highway corridors. Until recently, the potential for rail alternatives has not been considered as part of the equation. It is important to note that rail should be included as part of a truly balanced transportation system. The Commonwealth's transportation needs cannot be met solely through the construction of more highways.

Rail has the potential to increase capacity, but challenges such as choke points and clogged main lines must be addressed. The Virginia State Rail Plan (VSRP) has developed an unconstrained estimate of rail needs in the Commonwealth that totals \$2.7 billion through 2010 and up to \$8.1 billion through 2025. Passenger-only and joint passenger-freight needs account for 81% of this total, while freight-only needs represent 19%.

Currently, rail in Virginia receives only \$5-6 million each year for industrial access and the rail preservation fund. These funds are for freight rail only; there is no specific funding for passenger rail. Also, there is no trust fund allocation for rail. Increased funding could provide substantial benefits to the public. For instance, in the Richmond to Washington, D.C. corridor an

investment of \$400 million could reduce train travel time along that corridor by a half hour, allowing travelers to go from Richmond to Washington, D.C. in one hour and thirty minutes, and would, at a minimum, double the ridership from approximately 700,000 to 1.5 million annually.

### **Previous Studies**

A number of studies have been conducted to determine the feasibility of providing passenger rail service to Central and Southwestern Virginia. The initial feasibility studies were conducted by DRPT with no direct involvement from Norfolk Southern (the owner of nearly all of the track on which the service was proposed to operate) or Amtrak. Subsequent studies were conducted in much closer coordination with both NS and Amtrak. The initial studies prepared by DRPT established the proposed corridors, station locations and frequency of service. However, because there was little direct consultation with NS and Amtrak in the development of these studies, the revenue, ridership and capital investment estimates were unrealistic. The Department has since developed a close working partnership with NS and, as a result of this collaboration, the current study outcomes are considered to be credible, conservative and achievable by both parties. This collaborative approach more closely follows national trends.

**1998 Bristol Rail Passenger Study.** In 1998 the Virginia Department of Rail and Public Transportation completed a series of studies designed to determine the feasibility of implementing passenger rail service to Southwest Virginia. This service has come to be known as the TransDominion Express (TDX). The study analyzed rail service alternatives and focused on a proposal to connect Bristol with both Richmond and Washington, D.C. while serving a total of 19 stations including Roanoke, Lynchburg, Charlottesville, Alexandria and points in between. Figure 2 shows the proposed system map with all station locations. Two round trips per day were recommended. Trains would operate at conventional speeds (maximum 79 mph), however modern tilting trainsets could be used to allow trains to travel faster through curves. The study estimated that with rail improvements the total travel time from Bristol to Washington, D.C. would be about 7 hours and 30 minutes and the travel time from Bristol to Richmond would be about 6 hours and 50 minutes.

The study recommended that certain capital improvements be made to the railroad network to accommodate the proposed new service. The operations modeling indicated that the addition of these passenger trains, coupled with the proposed limited improvements, would result in a small increase in freight delays (5% - 10%). A total of \$9.337 million worth of improvements were identified, including the construction of four passing sidings, storage facilities in Richmond, Lynchburg and Bristol, station improvements and a connection between Norfolk Southern and CSX rail lines in Richmond.

Projections of ridership, operating expenses and revenues were also conducted. The ridership analysis projections were extremely optimistic, with an estimate of 372,000 passengers during the first year of operation that would grow to 780,000 passengers over 20 years. This level of ridership would require a subsidy of \$10.8 million during the first full year of operation. Ridership and revenue was projected to grow over 20 years, resulting in a steady decline in annual subsidy requirements.

**Figure 2**  
**TransDominion Express - Proposed Route and Stations**



Based on the recommendations of this study, the General Assembly included \$9.337 million in funding for TransDominion Express capital projects as part of the Virginia Transportation Act of 2000 (VTA 2000). Funding for operating expenses was not provided since it is not permissible under VTA 2000.

**2001 Norfolk Southern Study.** Norfolk Southern objected to the findings of the DRPT study, stating that any delays created for their freight operations were unacceptable. They argued that major capital investments (over \$200 million) were needed to ensure that passenger trains did not inflict any delay on freight operations.

DRPT and Norfolk Southern subsequently agreed to conduct a detailed study of the impact of the proposed TDX trains on the operation of both NS freight trains and other passenger trains, to identify specific railroad track capacity needs required to mitigate those impacts, and to estimate the costs of construction for the required improvements. This study, which was completed in January 2002, was conducted in two phases. Phase I examined the impacts of a single pair of trains operating from Washington to Bristol and a single pair of trains operating between Richmond to Lynchburg, connecting to the Bristol train. Phase II examined the impact of two pairs of trains on each route.

This study identified 22 construction projects, at an estimated \$120 million, that would be required to provide additional track capacity to minimize train delays for both freight and passenger trains operating on the lines. An additional \$12.6 million in highway grade crossing improvements was also recommended. These order of magnitude estimates are still valid, but the numbers are currently under review for further refinement and prioritization by DRPT and NS.

**2001 Amtrak Study.** At the request of DRPT, Amtrak conducted a study of operating expenses, ridership and revenues for the proposed service. Amtrak reviewed the proposed schedules and made modifications to travel times in order to accommodate the use of available passenger equipment. Current Amtrak operating expenses were applied to the proposed schedules to estimate total costs and a computer model known as a Train Performance Calculator (TPC) was used to estimate travel times. The resulting Amtrak schedule projections were approximately one hour longer from end to end, with a Bristol to Washington, D.C. time of 8 hours, 18 minutes and a Bristol to Richmond time of 7 hours, 45 minutes. The operating costs were comparable to those projected in DRPT's earlier study, but Amtrak's ridership projections were considerably lower, only 26,000 riders per year, due in part to the longer schedule times. As a result, revenues were projected to total less than \$1 million per year, and the annual subsidies required for operations, equipment leasing and equipment maintenance were estimated to be more than \$15 million per year. This is similar to the cost structure for VRE.

Amtrak also analyzed an alternative operation plan that aimed to improve equipment utilization as compared to the original plan, allowing more efficient equipment use and the introduction of high speed equipment in the Washington, D.C. to Richmond corridor as part of a coordinated statewide program. This proposal called for two round trip trains between Washington and Lynchburg, but only one round trip per day between Richmond and Bristol via Lynchburg. Based on this service scenario, costs were projected to be much lower, and revenues higher, based on an annual ridership of 40,750. The total annual operating deficit was projected to be approximately \$9.5 million.

### **Committee to Advance the TransDominion Express**

In 2000, the Committee to Advance the TransDominion Express was formed to promote the implementation of passenger rail service for Central and Southwest Virginia. This is a voluntary advocacy group supported by jurisdictions along the entire route of the proposed passenger rail service. The committee has worked with DRPT to review the previously discussed studies, and to develop strategies to advance the service.

### **The Governor's Commission on Rail Enhancement for the 21st Century**

The Governor's Commission on Rail Enhancement for the 21<sup>st</sup> Century was established through Executive Order 71 (2004) by Governor Warner on May 18, 2004 and is in full force and effect until May 17, 2005. The Commission was directed to examine the future of rail transportation in the Commonwealth, including the consideration of a rail authority. The Commission was also charged with providing leadership on freight and passenger rail issues, policies and needs, and to examine options for leveraging private and public funding for rail service and infrastructure across the Commonwealth. The Commission was further directed to review the Virginia State Rail Plan, to factor the results of the Plan into its recommendations for enhancing rail service and infrastructure in the Commonwealth, to review Senate Bill 413 (2004), to make recommendations regarding the structure, authority and funding of a rail transportation development authority, including innovative financing options, and to make such other recommendations to the Governor as may be appropriate. The final recommendations of

this Commission would have an impact on the type of governance structure that might be developed for the TransDominion Express.

On December 1, 2004 the Commission submitted its recommendations to the Governor. One of the key rail goals identified by the Commission was to “initiate the TransDominion Express passenger rail service (TDX), which would link Southwestern Virginia to Richmond via Lynchburg, and Southwestern Virginia to Washington, D.C. via Lynchburg and Charlottesville.”

### **Farmville Line Abandonment**

Norfolk Southern filed with the Surface Transportation Board (STB) on September 29, 2004 to abandon 33 miles of rail line from Burkeville via Farmville to Pamplin City. This lightly used freight line is part of the proposed route for TransDominion Express service and would provide direct rail service to downtown Farmville. There is strong local interest in converting this corridor to a hiking trail under the Rails to Trails Act or through donation. Although an alternate route for passenger and freight trains does exist through Pamplin and Burkeville, the loss of service to Farmville is a concern to supporters of the TransDominion Express. DRPT has held discussions with TDX supporters, local officials and Norfolk Southern to ensure that passenger trains can operate on the remaining rail line and that a station can be established in Burkeville to serve the region.

### **Equipment**

DRPT is purchasing five of the 38 Mafersa railcars that are being disposed of by Virginia Railway Express (VRE). These cars will be available to initiate the TDX demonstration service. They need some minor refurbishment, primarily to install seating that is more suitable for long distance trips. These cars are approximately 12 years old, are in excellent condition and all five can be purchased and refurbished for the price of one new passenger rail car.

### **Rail Service Operator**

The issue of which entity would actually operate trains for the proposed TDX service has not been resolved. Amtrak would be the most obvious choice to serve as operator. Amtrak is the National Passenger Railroad Corporation and it has special rights under federal law to operate passenger trains on private freight railroads. Amtrak already operates passenger trains nationwide, and they have the expertise, manpower, equipment and facilities to provide service in Virginia.

However, Amtrak has been having financial difficulties recently, and it is not clear that Amtrak would have the capacity to take on additional service. They depend on annual appropriations from Congress to pay operating and capital costs, and there has been considerable pressure to cut funding or restructure Amtrak. Years of limited funding and unmet Amtrak expectations have created a difficult environment. Although Amtrak has reduced its operating costs and is finally beginning to undertake a capital program, the long term future of the nation's passenger rail operator is unclear.



Virginia Railway Express has been mentioned as a possible operator for some parts of the TDX network. VRE has had great success in operating their current system; ridership has grown dramatically and they have done an excellent job of controlling expenses. VRE is a creation of local and regional governments in the Northern Virginia region, however it is unlikely that those jurisdictions would be willing to pick up the burden of operating trains statewide. It should also be noted that VRE does not operate trains with their own personnel. Rather, VRE contracts out all operations to Amtrak. DRPT is currently discussing with VRE the possibility of serving some segments of the TDX corridor, such as Charlottesville to Washington, D.C., through extensions of existing VRE service. However, for the demonstration service this option must be explored with the VRE Board before any commitment can be made.

Norfolk Southern has recently indicated that they would be willing to consider the possibility of operating passenger trains on their rail lines. NS has the knowledge and capability to provide operating crews for passenger trains. Their participation in the provision of service would significantly simplify potential issues such as facilities use and access to the railroad. DRPT has requested NS to provide an estimate of its operating costs for inclusion in an operating plan. However, the TDX trains must enter Amtrak property at Union Station in Washington, D.C. and travel along CSX tracks to access Main Street Station in Richmond. It is not clear how cooperative these organizations would be if Norfolk Southern is the operator.

Further negotiations with Norfolk Southern, Amtrak and CSX will be needed to determine how trains will be operated. The Commonwealth's objective in these negotiations will be to ensure that quality service is provided in a safe, cost-effective and reliable manner.

## **Moving Toward Service Implementation**

Norfolk Southern is committed to its estimate of \$120 million to implement the full TransDominion Express service. Recently DRPT has been analyzing several alternatives for phased implementation of service. It is very unlikely that funding can be obtained to implement the full service all at once. DRPT is working to develop strategies to implement the service in stages with much smaller capital funding requirements. One option involves a starter service consisting of one round trip train per day between Washington, D.C. and Roanoke. While the capital investments needed to implement this limited service are relatively small, many people expressed concerns about the proposal. This option would not serve two of the three termini (Bristol and Richmond) and most of the area served (Lynchburg to Washington, D.C.) already receives some Amtrak passenger service.

### **Norfolk Southern Demonstration Service Proposal: Bristol to Richmond**

As a result of this discussion, a second proposal has since been analyzed by DRPT. The Department is working with Norfolk Southern to develop a preliminary order of magnitude cost estimate of the minimum NS infrastructure required to operate one daily TDX passenger train round trip between Bristol and Richmond. Norfolk Southern has agreed to provide a minimum investment only if the TDX passenger train operation is implemented on a demonstration project basis for a duration of no longer than one year.

Norfolk Southern estimates that the minimum infrastructure costs needed to operate the demonstration service TDX trains will range from \$17.7 to \$20.0 million in 2007 dollars. Many of the identified improvements are projects that NS would not otherwise fund, because they would be of no value to NS for its freight train operations. Examples include the new connection to CSX at Richmond and the TDX train layover tracks at both Richmond and Bristol. These cost estimates were done without the benefit of an engineering review and are subject to revision based on further field review.

As part of their analysis, NS developed train schedules for the proposed TDX demonstration service. NS worked with Amtrak to set arrival and departure times for the TDX trains at Richmond so that morning and afternoon connections could be made with existing northbound and southbound Amtrak trains. Norfolk Southern has estimated a schedule time of 10 hours between Bristol and Richmond. This schedule was calculated based on travel times for NS intermodal trains, which are the fastest freight schedules on this line. The NS end to end travel time is significantly slower than those calculated in the earlier DRPT study (6:50) and the Amtrak study (7:45), since the DRPT and Amtrak studies based calculations on passenger train operation modeling rather than on actual freight schedules. The NS schedule is very conservative but it is achievable for the demonstration project with minimum improvements, and several levels of incremental improvements would significantly improve the speed and reliability of the passenger service.

## **VRE Discussions: Charlottesville Service**

DRPT has also initiated discussions with VRE management about the possible cost of providing service to Charlottesville through the extension of one of their existing Manassas trains. It is estimated that approximately \$2 million in capital investments would be needed, primarily for stations, platforms and a storage facility in Charlottesville. An annual operating subsidy of approximately \$1 million would also be required. Discussions are still in the preliminary stages and proposals have not been advanced to the VRE Board for consideration.

## **Positive and Negative Aspects of Demonstration Service**

The Norfolk Southern-sponsored demonstration service may offer the Commonwealth an opportunity to implement service incrementally at a relatively low cost. With the introduction of the Governor's Rail Partnership Fund, it is expected that there will be funding available for rail projects. However, even with the commitment to rail improvement that would result from the establishment of such a fund, it will take many years before rail needs across Virginia can be met. The proposed TDX service will have to compete with other passenger and freight rail projects from across the state for this limited funding. It is anticipated that funding from this source will require a match from federal, state, local and/or private sources.

There are some risks in proceeding with this limited demonstration service. NS's proposed passenger service will require an annual operating subsidy, and the funding source has not been identified. If the NS-sponsored demonstration service is successful, a long term commitment to support the operating subsidy will be needed in order to continue the service.

Norfolk Southern has made it clear that their estimates of the costs for improvements are based on one year of service only. If the service is to be continued beyond that first year, additional review of the impact of the passenger service on NS operations would need to be conducted, and it is likely that additional capital improvements would be necessary to maintain the service. Such improvements would address the need to improve service reliability, to reduce the overall travel time, and to allow for the operation of a second train daily.

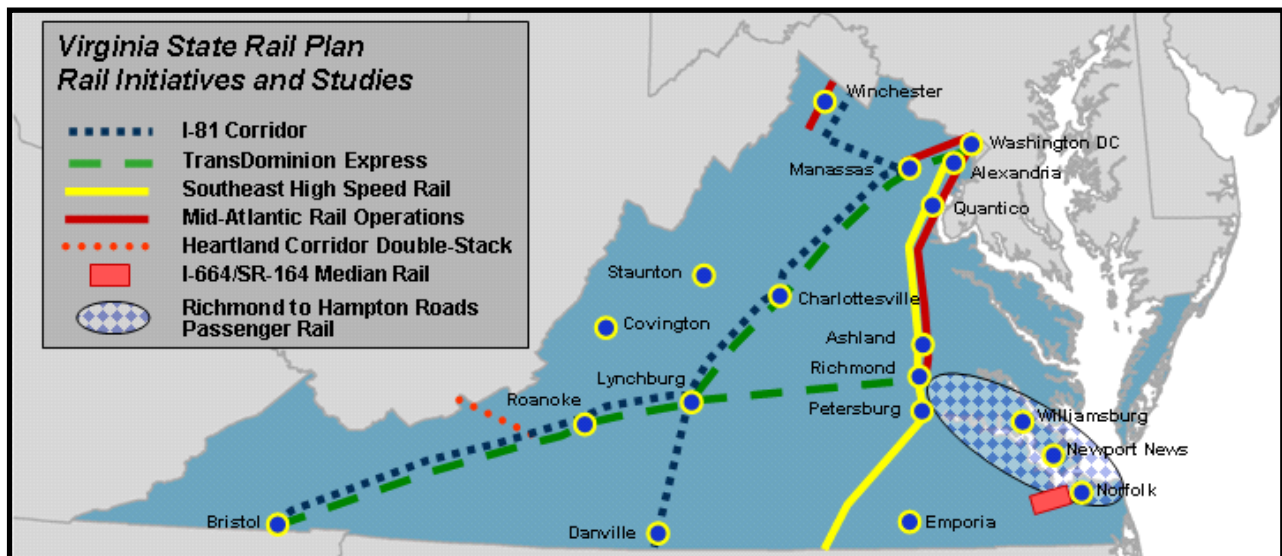
Some of the proposed improvements, such as the construction of new sidings, would have long-term benefits to the movement of freight in the Commonwealth and thus would continue to add value, by providing capacity to divert more trucks from the highways, if passenger service were to be ended after the one-year demonstration service. Other passenger specific investments, such as station access and platform upgrades, would not have any utility if the passenger service were to be discontinued or if service implementation was postponed. In this case, the Commonwealth would maintain a contingent interest in these improvements, and would receive reimbursement for any residual value of the equipment and materials purchased.

## **Other Passenger Rail Corridor Priorities in Virginia**

Several passenger rail corridors are being studied in Virginia. The Washington, D.C. to Richmond corridor is the key corridor for rail development, and several projects are currently under construction using \$65 million in funding provided through the Virginia Transportation

Act of 2000. DRPT is currently conducting environmental impact studies on proposed passenger rail service between Richmond and Hampton Roads, and on the Southeast High Speed Rail corridor between Washington, D.C. and Charlotte, NC. When funding for rail projects becomes available, a careful examination of the priorities for all corridors must be undertaken. Figure 3 shows the various corridors that are currently under consideration for improvements. The Governor's proposed Rail Advisory Commission will provide input into this process and will serve as a strong advocate for rail. The benefits of the TDX service vary by region. From Charlottesville to the south and west, and between Richmond and Bristol, the TDX will be a valuable economic development tool. Between Charlottesville and Washington, D.C. the proposed service has the potential to be an important transportation alternative and to provide some congestion relief. All of these factors must be taken into consideration when determining the allocation of scarce transportation dollars among these passenger rail projects.

**Figure 3**  
**Virginia State Rail Plan**  
**Rail Initiatives and Studies**



## **Non-Financial Issues Requiring Further Analysis**

### **Governance**

The Committee for the Advancement of the TransDominion Express has taken an active role in promoting the implementation of passenger rail service. However, this committee is a non-profit advocacy organization that has no authority to take responsibility for implementing and operating the proposed passenger service. Additional study is needed to determine the type of organizational structure that will be required to manage and operate the service. Several options have been discussed by DRPT and the TDX Committee. Possible alternatives include the following:

1. The creation of a regional organization consisting of members from jurisdictions to be served by TDX. This organization could be modeled after the Virginia Railway Express Board or after the Transportation District Commissions that are currently in place in Northern Virginia and Hampton Roads.
2. Expansion of the role of DRPT or another state agency to take on the responsibility of managing and operating the TDX service.
3. Creation of a new statewide organization with powers to operate the TDX rail service.

The Governor's Commission on Rail Enhancement for the 21<sup>st</sup> Century has recommended that a statewide rail authority should not be created at this time. It may be possible, however, to establish an organization that is focused on the operation of the TransDominion Express. Additional discussion and review of the options will be needed to determine the best approach to governance. It is anticipated that legislative action would be required to formally establish the governance organization that is selected.

### **Statewide Rail Transportation Priorities**

As part of his Transportation Initiative for the 2005 General Assembly, Governor Warner has proposed to provide \$23 million per year for rail transportation projects. This will provide the first ever source of dedicated funding for freight and passenger rail projects. There are, however, still many more potential rail projects than funds available. The Virginia State Rail Plan identifies rail funding needs in excess of \$2.9 billion. The Rail Advisory Commission proposed by the Governor's Commission on Rail Enhancement for the 21<sup>st</sup> Century will be responsible for making recommendations to the Director of DRPT as to the distribution of funds for rail projects for CTB deliberation. The Commonwealth Transportation Board will retain responsibility for distributing these funds. The Rail Advisory Commission will also be charged with making recommendations on the prioritization of rail projects through the Virginia State Rail Plan.

There are numerous rail corridors under development in the Commonwealth. Projects are underway to improve the rail infrastructure between Washington and Richmond, a corridor that is often considered the spine for all rail service in Virginia, which will benefit both intercity service and VRE commuter service. Studies are progressing to expand service to Hampton Roads, and the Commonwealth is working with the North Carolina Department of

Transportation to prepare an environmental impact study on the Southeast High Speed Rail Corridor between Washington and Charlotte, NC. The Rail Advisory Commission, in coordination with DRPT, will need to review all of these proposed passenger rail projects as well as critical freight rail projects to make recommendations on priorities and funding levels for each corridor. An incremental, realistic and achievable implementation plan must be developed.

### **Station Locations**

Although station locations were recommended in the initial study by DRPT, more work is needed to ensure that localities would be willing to support stations and that adequate facilities are in place. With the abandonment of the rail line through Farmville, a new station on the Farmville Belt Line will need to be established to serve the area, most likely in Burkeville. There has been some discussion about the need to establish a bus shuttle service to provide access to this new station, which would be about 12 miles from downtown Farmville. Most of the other locations have an existing historic station structure, but in most cases these buildings have been adapted for other uses, such as visitor centers. While these current uses are generally compatible with the restoration of passenger train service, some additional improvements will be needed at most locations. DRPT will continue to work with the local jurisdictions to ensure that adequate station facilities can be put in place for the TDX service.

Demonstration service also creates challenges for station locations in Lynchburg and Richmond. The proposed demonstration service between Bristol and Richmond would not directly serve the existing Kemper Street Station in Lynchburg. Norfolk Southern has proposed the creation of a separate station in Lynchburg to serve the Bristol to Richmond train. This would create a situation where there would be two stations in Lynchburg and three stations in Richmond. This would be very confusing for passengers and should be avoided if at all possible. DRPT will continue to investigate options to utilize existing stations in both cities.

### **Maintenance, Storage and Turning Facilities**

Norfolk Southern has recommended the rehabilitation of both the Loop track at Richmond, to permit turning locomotives, and the Wye track at Bristol, to permit turning the entire train when necessary. In addition, facilities would be needed on both ends of the line (Bristol and Richmond) to store trains and to perform light maintenance and cleaning. Norfolk Southern has included \$4.5 million in their demonstration service estimates for the construction of a CSX connection, a storage track and rehabilitation of a loop track and yard tracks to accommodate the terminal activities on this end of the line. NS is proposing \$1.1 million in improvements for a storage track and the rehabilitation of the Wye tracks in Bristol to allow trains to be turned.

### **Insurance/Liability Issues**

Providing adequate protection against potential liabilities that could result from accidents and injuries is a major concern in the operation of passenger rail service. Norfolk Southern is adamant that it will not allow passenger service on its rail lines unless protections are in place to completely indemnify the railroad against any liability arising from the operation of those trains.

One of the advantages of having Amtrak operate this service is that under federal law there are statutory liability limits in place and Amtrak has a national insurance program in force to cover their liability. If another operator is used, then liability coverage limits must be negotiated and insurance coverage must be purchased to meet those required limits.

Liability has been a major issue in the creation and ongoing operations of VRE. The Virginia Department of the Treasury's Division of Risk Management has been responsible for establishing and managing VRE's insurance program. VRE currently has General Liability coverage in place with a limit of \$250 million per incident. The Class I Railroads (Norfolk Southern and CSX) have recently indicated that they would like these limits to be increased to \$500 million. It is unclear whether this increase in limits is necessary, or if insurance can be purchased to provide this level of coverage.

DRPT has had preliminary discussions with the Division of Risk Management to determine whether VRE's insurance program could be expanded to cover other passenger rail operations in the Commonwealth. This appears to be the best mechanism for providing the necessary liability coverage. The cost of this coverage has been included in the operating expense estimates that have been developed for the TransDominion Express service.

### **Environmental Issues**

Any new transportation project has the potential to have both positive and negative impacts on the natural and built environment. The impact of the TransDominion Express service is expected to be minimal because it involves operating additional trains on existing freight rail lines. There will be some new facilities built for this service such as stations, platforms and passing tracks, and it will be necessary to conduct studies to determine what the environmental impacts of these facilities will be and to make recommendations for actions to minimize and mitigate those impacts.

## **Recommendations/Next Steps**

- Evaluate options and recommend an appropriate governance structure for management and operation of the TransDominion Express service.
- Complete the purchase of the VRE railcars and provide a facility to store them. Develop plans and cost projections for the renovation of these cars to make them more comfortable for long distance trips.
- Work with Norfolk Southern to identify the infrastructure needed for permanent, full passenger service to Bristol that takes into consideration all other new infrastructure needed for the various public/private NS rail projects in the corridor.
- Finalize a financial plan for the TransDominion Express that identifies all short and long-term capital and operating funding requirements. The plan should identify sources of funding and include a schedule for implementation. The Governor's Rail Partnership Fund would provide part of this funding, but additional federal, local and private funds would be needed.
- Enter into discussions with economic development interests along the proposed service route. Also initiate discussions with regional planners, particularly in the Washington, DC to Charlottesville segment, on the relationship between rail service and land use.
- Conduct a marketing study to define optimal times, fares and strategies for promoting service use.