

10 February 2010

Public Information Office
Virginia Department of Rail and Public Transportation
600 East Main Street, Suite 2102
Richmond, Virginia 23219

Via email: drptpr@drpt.virginia.gov

Subject: *Feasibility Plan for Maximum Truck to Rail Diversion in Virginia's I-81 Corridor Draft Final Report* dated 12 December 2009

To Whom It May Concern:

I am writing on behalf of the Shenandoah Valley Battlefields Foundation to express its concerns regarding the *Feasibility Plan for Maximum Truck to Rail Diversion in Virginia's I-81 Corridor Draft Final Report* dated 12 December 2009 (the Feasibility Plan).

The Battlefields Foundation is concerned that the Feasibility Plan fails to adequately document the potential for the diversion of truck freight from Interstate 81 (I-81) to the parallel rail lines. By failing to satisfactorily measure the potential for freight diversion to rail, the Feasibility Plan fosters the continuation of poor transportation planning for the I-81 / Crescent Corridor. In conjunction with the faulty *Tier 1 Record of Decision (ROD) on the I-81 Corridor Improvement Study* and the *I-81 Corridor Improvement Study Final Environmental Impact Study (FEIS)*, completed in 2007 by the Virginia Department of Transportation and the Federal Highway Administration, the Feasibility Plan is likely to contribute to a need for further widening of I-81 and thus will increase the negative impacts of that road on the Shenandoah Valley Battlefields National Historic District and on the Valley's Civil War battlefields.

I. Interests of the Shenandoah Valley Battlefields Foundation

The Battlefields Foundation was established in 2000, pursuant to the Shenandoah Valley Battlefields National Historic District and Commission Act of 1996 (P.L. 104-333, Sec. 606 (c)(4)). The Act established the eight-county Shenandoah Valley Battlefields National Historic District as one of 49 national heritage areas nationwide. Through the District's management plan, approved in 2000 by the Secretary of the Interior, Congress designated the Battlefields Foundation as the management entity for the national heritage area.

In the Act, Congress found, "there are situated in the Shenandoah Valley in the Commonwealth of Virginia the sites of several key Civil War battles," that "are collectively of national significance in the history of the Civil War" and that "the preservation and interpretation of these sites will make a vital contribution to the understanding of the heritage of the United States."



The mission of Shenandoah Valley Battlefields Foundation is to preserve, interpret, and promote Civil War battlefields and related historic sites in the Shenandoah Valley Battlefields National Historic District. The Act authorizes two annual federal appropriations to SVBF for management of the National Historic District: one from the Land and Water Conservation Fund for land acquisition and the other through the federal Heritage Parks and Partnerships Program for management of the national heritage area.

As the designated management entity for the National Historic District, per the District's federal legislation, the Battlefields Foundation is responsible for:

...creat[ing] partnerships among federal, state, and local governments, the regional entities of such governments, and the private sector to preserve, conserve, enhance, and interpret the nationally significant battlefields and related sites associated with the Civil War in the Shenandoah Valley.

II. Historic Resources in the Shenandoah Valley Battlefields NHD

Seven of the historic battlefields that fall within the Shenandoah Valley Battlefields National Historic District are traversed by I-81. Shown below, they are listed on the National Register of Historic Places and the Virginia Landmarks Register or have been determined to be eligible for listing by the Virginia Department of Historic Resources and the National Park Service American Battlefield Protection Program. Additionally, the Cedar Creek battlefield is a National Historic Landmark and the primary resource of the Cedar Creek and Belle Grove National Historical Park.

- First Winchester (Winchester and Frederick County)
- Third Winchester (Frederick County)
- Second Kernstown (Winchester and Frederick County)
- Cedar Creek (Frederick, Shenandoah, and Warren counties)
- Fisher's Hill (Shenandoah County)
- Tom's Brook (Shenandoah County)
- New Market (Shenandoah County)

Consequently they are protected resources under Section 4(f) of the Department of Transportation Act which prohibits federal transportation projects from using publicly owned land of a public park of national significance or land of a historic site of national significance unless a determination is made that there is no prudent and feasible alternative to using that land and that the project includes all possible planning to minimize harm to the park or historic site resulting from the use.

Consideration of these protected Section 4(f) resources must be included in transportation planning documents including the Feasibility Plan if they are funded in whole or part by federal monies. The *Feasibility Plan for Maximum Truck to Rail Diversion in Virginia's I-81 Corridor* benefitted from such federal funds, as stated in 2007 Appropriations Act Item 442.A.2.a, shown below, which appropriated funds to the Virginia Department of Transportation to conduct the Feasibility Plan.

In the first year, \$1,000,000 for the study of freight and the movement of goods throughout the Commonwealth. The study, as outlined in the April 2005 VTrans 2025 Action Plan, shall review and assess the Commonwealth's freight infrastructure and needs. **The study will be federally funded to the maximum extent possible.** Such study shall include development of a

feasibility plan to define the conditions that would be necessary to divert the maximum amount feasible of the long-haul, through-truck freight traffic to intermodal rail in the Interstate Route 81 Corridor (emphasis added).

III. Failure to Meet the Mandates of House Bill 1581

The Feasibility Plan fails to meet the requirement of Section 4(f) of the Department of Transportation Act that "all possible planning" be conducted to "minimize harm" to parks and historic sites in large part for the same reasons that it also fails to meet the mandate of House Bill 1581 (Acts of Assembly Chapter 934: An Act to determine conditions necessary to divert truck freight from Interstate Route 81).

The vision of the General Assembly in HB 1581 was to assemble comprehensive information on the economic and environmental costs of adding new rail capacity in the I-81 Corridor so that a valid comparison can be made with proposed highway expansion and other congestion relief measures.

Passed unanimously by the 2006 General Assembly, HB 1581 contained a detailed scope of work intended to bring about a multi-state, intermodal rail feasibility study in the I-81 Corridor that would give elected officials and transportation planners a useful basis for making investments in new capacity in the I-81 / Crescent Corridor.

A. Diversion of "Long-haul Through Trucks"

HB 1581 directs the Secretary of Transportation and the Rail Advisory Board to conduct a study that defines, among other criteria, the conditions that would be required to divert 60 percent of the long-haul through truck traffic from I-81 onto rail. Long-haul through trucks are defined in the Feasibility Plan as those trucks using I-81 that neither begin nor end in Virginia and travel at least 500 miles.

The Feasibility Plan does not describe such conditions. It does hypothesize that a double track rail line capable of speeds up to 120 miles per hour would divert 54 percent (3,097 daily) of the long-haul through trucks that use I-81 (5,711 daily). However the Feasibility Plan concludes that the writers "would require substantially more analysis to conclusively determine feasibility" of this concept (page 3-39) and that "the feasibility of this program is unknown -- further research, engineering, and environmental work is needed" (page 3-41).

B. Truck-competitive Transit Times and Reliability

HB 1581 also mandated that the plan include evaluation of the "operating characteristics" that would be required to "achieve truck-competitive transit times and reliability between terminals." The Feasibility Plan does not do this.

Strategy 1

Strategy 1 would divert long-haul intermodal trucks using I-81 that neither begin nor end in Virginia and travel at least 500 miles. It envisions that the Piedmont and Shenandoah lines would be improved to handle more, longer intermodal trains in Virginia and throughout the eastern and southeastern US. Outside Virginia, a number of rail terminals would also be built or upgraded to handle additional traffic. The Feasibility Plan "does not assume significant changes in transit time or other performance characteristics" (page 3-10).

Strategy 2

In Strategy 2 each Crescent Corridor intermodal hub would be upgraded to accommodate "open technology" that allows trucks to be driven on to rail cars for transport. "Open technology would operate at the same service speeds as other freight on the Piedmont and Shenandoah lines (around 30 mile-per-hour)" (page 3-22).

Strategy 3

Strategy 3 would add intermodal and open technology loading capacity to the Virginia Inland Port at Front Royal and the planned Norfolk Southern facility at Elliston in Montgomery County. Because it involves no line improvements, it would not increase transit times.

Strategy 4

Strategy 4 would upgrade the Shenandoah line and connecting lines in Tennessee and Pennsylvania to accommodate 60 to 70 mile-per-hour open technology service intermodal and non-intermodal trains (page 3-29). According to the Feasibility Plan, higher-speed open technology between Knoxville and Hagerstown could service short-haul trucks and might improve the capture rate for both intermodal and non-intermodal trucks (page 3-31). While this service would achieve truck-competitive transit times, as directed in HB 1581, the Feasibility Plan fails to describe the operating conditions that would make truck-competitive transit times and reliability possible.

The authors place numerous caveats on this strategy. These include the following statements.

"Nothing like this service exists today, so **accurately estimating its capture rate would require an extensive survey research program**" (page 3-31).

"This requires the fulfillment of several conditions, none of which can be proven at this point: that such a service would be competitively priced; that such a service would be conveniently scheduled and available to truckers when they arrive at the hubs; and that such a service might someday be legal. This represents a very aggressive capture rate assumption for a service that is currently unproven" (page 3-32).

Strategy 5

Strategy 5 would establish 120 mile-per-hour open technology service between Knoxville and Harrisburg to attract intermodal and non-intermodal trucks that are passing through Virginia using I-81 only. It would involve a new high-speed double-track rail line within or paralleling the Shenandoah line (page 3-32).

As is true of Strategy 4, Strategy 5 fails to describe the "operating conditions" that would "make truck-competitive transit times and reliability possible," as required by HB 1581. The Feasibility Plan again states, "Considerable further work would be needed to establish the price point and other important service parameters" as well as other conditions needed in order for Strategy 5 to be truck competitive (page 3-37). The concept "would require substantially more analysis to conclusively determine feasibility, so its feasibility is unknown at this time" (page 3-39). Once again, the authors of the Feasibility Plan state clearly that they have not adequately studied the feasibility of the strategies they discuss for the plan to be a useful planning document.

IV. Reliance on Unsubstantiated Assumptions

The Feasibility Plan's diversion estimates assume that an "operating railroad would price, provide, and market its services to compete successfully for" less than half (60 percent) of the "potentially divertible" long-haul trucks on I-81 (page 3-14). The assumptions used to derive these estimates are not substantiated in the plan.

A. Capture Rates

These estimates are based on the "capture rates" that depend on trucks and rail achieving "an optimum balance between market size, demand, price, and cost to provide service" reflecting "achievement of an equal balance of trucking and rail utilities" on the corridors where rail is most competitive (page 3-14). Corridors that are in Norfolk Southern's Crescent Corridor are considered most competitive. Those where Norfolk Southern has a mix of ownership and existing operating agreements with other Class 1 railroads are considered slightly less competitive. These corridors are the source of about two thirds of all long-haul trucks on I-81 in Virginia. Only 17 percent of this group is considered "feasibly divertible" (page 3-14).

Trucks moving between Virginia and New York/New England (east of the Hudson River) and southern Florida of the panhandle comprise a third of all long-haul trucks on I-81 in Virginia. The Feasibility Plan assumes they have less potential for truck to rail diversion because they require "partnership arrangements with smaller regional and short line railroad operators and networks." Only 17 percent of this group is considered "feasibly divertible" (page 3-14).

Strategy 1

The combined effect of these assumptions is to lower the number of divertible intermodal trucks 61 percent from a "potential" 3,209 to a "feasible" 1,255 for Strategy 1.

Strategy 2

Strategy 2 adds "roll on roll off" or "open" technology to serve non-intermodal trucks. Because it is viewed by the authors as "a logical extension of the Crescent Corridor program" it uses the same diversion targets used for non-intermodal trucks in Strategy 1. Consequently Strategy 2 results in an identical 61 percent decrease from 1,604 "potentially" divertible trucks to 628 "feasibly" divertible (page 3-23).

Strategy 3

Strategy 3 adds intermodal and open technology loading capacity in Virginia to accommodate long-haul truck trips that begin or end in Virginia. Because "Virginia origin destination trips tend to be more focused on travel within highly competitive and competitive corridors," a "capture rate" of 50 percent is applied (page 3-27). The effect is to lower the number of trucks divertible from a "potential" of 455 to a "feasible" 233 for Strategy 3.

Overall, these capture rate calculations result in a combined reduction in the number of divertible trucks by 60 percent from a "potential" of 5,278 to a "feasible" 2,116 for Strategies 1, 2, and 3 combined.

Strategy 4

The basis for determining overall capture rates in Strategy 4 is even more hypothetical. It is based on separate capture rates for three different categories of "potentially" divertible trucks. The authors all but admit that they have not conducted a proper estimate for portion of Strategy 4 that involves short-haul trucks, writing:

To do a proper market estimate of the short-haul diversion opportunity, one would want to know the specific city-to-city routings of short-haul traffic, **the specific trucking costs associated with that traffic, and the specific costs of an alternative high-speed open technology rail service. Unfortunately, none of this information currently is available.** For present purposes, we assume that perhaps 10 percent of I-81 short-haul trucks are of the hub-to-hub type and may be feasible to divert. This is a provisional estimate only and **should be confirmed or modified by further analysis**" (page 3-30).

The only justification given for the estimate of long-haul trucks per day moving between Knoxville and Harrisburg that would be diverted in Strategy 4 is "higher-speed open technology service might add 25 percent to the market capture rate" (page 3-31).

For the third component of Strategy 4, "The capture rate is estimated at 25 percent (50 percent arriving at the right times, times 50 percent choosing to use the service) of eligible trucks" (page 3-32).

With no further basis, the Feasibility Plan reduces an estimated 4,910 trucks "eligible" for diversion under Strategy 4 by 87 percent to 647 "potentially" divertible trucks (page 3-35).

Strategy 5

Strategies 5A and 5B focus on long-haul truck trips entering and exiting Virginia on I-81 (as opposed to those that begin or end in Virginia and those that use I-81 and another interstate), a total of 3,190 trucks per day (page 3-35).

Strategy 5A would establish 120 mile-per-hour open technology service between Knoxville and Harrisburg for intermodal and non-intermodal trucks in conjunction with Strategies 1 through 4.

Strategy 5B would establish the same 120 mile-per-hour service on a stand-alone basis. Both use capture rates of 50 percent. Again, the Feasibility Plan states Strategy 5 "would require substantially more analysis to conclusively determine feasibility" (page 3-39).

They appear to introduce an unacceptable level of guess work into the Feasibility Plan that should be resolved before it is relied upon for planning purposes. Indeed, the authors as much as agree in several statements, including the following.

"This analysis is based on average rates, but in practice, trucking and rail costs vary widely depending on the commodity, travel lane and distance, competitive market conditions, and other factors. **Further analysis would be needed to accurately reflect these important differences**" (page 3-12) (emphasis added).

"[W]e have relied on a general estimate of price elasticity. The best diversion models are based on corridor and commodity-specific elasticities not only for price, but also for changes in speed, reliability, and other factors. Because this information currently is not available, **the diversion estimates** presented in Table 13 **should be used as a general guideline only**" (page 3-12) (emphasis added).

The general unreliability of these assumptions is underscored by the fact that, as noted by the authors, "Earlier drafts of this report used 33 percent for competitive corridors. Further work suggested that 50 percent would be a more appropriate business target" (page 3-14). In other words, for reasons that are not explained, diversion estimates were increased by half. With no justification for this change, how does the reader know that these estimates should not have been doubled or tripled?

B. Inconsistent Truck Counts

All of the diversion estimates in the Feasibility Plan are based on origin and destination data that divides all trucks into eight groups according to trip length (greater than or less than 500 miles) and type. The four types are:

- I-81 only through Virginia;
- I-81 and other routes through Virginia;
- I-81 to or from Virginia; and
- I-81 entirely within Virginia.

The data upon which these groupings are based was gathered exclusively during a 24-hour truck driver survey conducted for the Commonwealth at four truck weigh stations (north and south bound at Stephens City and Troutville). This data is presented in Table 1 on page 2-11 and repeated in Table 6 on page 3-2. The survey and grouping percentages are based on an average daily bi-directional truck count of 15,688.

All of the diversion estimates in the Feasibility Plan are also based on an average annual daily traffic (AADT) of 9,284 drawn from the statewide vehicle count program Virginia maintains on its major highways for year 2008 (page 2-3).

These two data sets appear to be inconsistent if not irreconcilable, and to call into question the entire statistical basis for the Feasibility Plan. The data are especially incongruous given that the Feasibility Plan points out wide variations between AADT counts including:

- a 17 percent day of week range between peak hours volumes - from about a 3,000 average hourly rate to a 3,500 average hourly rate (page 2-4);
- a month of year range that varies from 65 percent to 110 percent of the monthly average volume between mile post 82 and mile post 181 (page 2-5); and
- a range in AADT between segments from a low of about 6,000 to a high of about 15,000.

The 24-hour truck driver survey was conducted on a day of week (19 July 2007), month of year, and segments that all fall on the high end of these ranges (page 2-10).

V. Inaccurate Truck Growth Projections

Table 3. Comparison of Annual Traffic Estimates for I-81

	Total Traffic	Truck Traffic
2003 Annual Average (from I-81 Corridor EIS)	46,400	~ 12,000
2005 Annual Average (from Commonwealth Traffic Count analysis in the Virginia Statewide Freight Plan Phase I)	44,185	11,805
2008 Annual Average (from analysis of most current available Commonwealth Traffic Counts) ⁷	39,730	9,284

Even though truck traffic declined between 2003 and 2008, the projection of growth in future truck traffic on I-81 is based exclusively on data collected before 2003. An average annual growth rate of 2.8 percent was used in the Feasibility Plan that was derived from out of date information provided in the I-81 Corridor

Improvement Study Tier I EIS (Feasibility Plan page 2-18). This growth rate is based on data collected between 1978 and 2003 (EIS page 2-4). As shown in Table 3 above from the Feasibility Plan, truck traffic actually declined by 29 percent or 5.9 percent annually between 2003 and 2008 (page 2-20).

The Feasibility Plan states, "Based on available data, it appears that the combined effects of fuel price spikes and recession have led to reduced travel on I-81." They also predict that fuel prices will rise to between \$6 and \$9 a gallon during the study period, writing, "it is only a matter of time before prices reach these higher levels, whether through slow and gradual growth or sudden jumps" (page 2-20).

According to the Feasibility Plan, current rail fuel costs average about \$0.12 per mile while truck fuel costs average about \$0.39 per mile (page 2-19). Consequently the authors predict:

"The fact that fuel cost increases are likely to hit trucking proportionally harder than rail could mean that some truck freight shifts to rail, or that trucks are utilized more efficiently (heavier loadings, fewer empty moves), or that truck commodities are moved shorter distances, or that truck commodities increasingly utilize alternative modes such as rail or barge. With increasing fuel costs, rail also is likely to shed tonnage and/or ton-mileage (as some customers reduce shipping volumes and/or shipping distances) – but its losses should be more than offset by the traffic it picks up from trucking" (page 2-20).

Despite increasing fuel costs and the relative fuel efficiency of rail, the Feasibility Study makes no allowances for increasing fuel cost in its projections of future growth in truck traffic or in its estimates of truck diversions to rail.

VI. Failure to Meet the Mandates of House Bill 1581

In summary, the Feasibility Plan in general and for the reasons stated above fails to provide an accurate and complete assessment of the potential for the diversion of truck freight from I-81 to the parallel rail lines. Consequently it will foster the continuation of poor transportation planning for the I-81 / Crescent Corridor if not improved. The Feasibility Plan is likely to contribute to a need for further widening of I-81 and thus to increase the negative impacts of that road on the Shenandoah Valley Battlefields National Historic District and on the Valley's Civil War battlefields unless major revisions are undertaken before it is accepted by the General Assembly or used for transportation planning purposes.

Sincerely,

John D. Hutchinson V, AICP
Director of Preservation and Planning

CC: Governor Bob McDonnell
Virginia Senators Jill Vogel, Mark Obenshain, Emmett Hanger
Virginia Delegates Beverly Sherwood, Joe May, Clay Athey, Todd Gilbert, Matt Lohr, Steve Landes.
Richard Bell, Ben Cline