

**MEMORANDUM: ANALYSIS OF THE SUBSTITUTE VISION  
PROVIDED BY SELC ET AL. AS AN ALTERNATIVE TO THE  
TRI-COUNTY PARKWAY**

**for**

**Tri-County Parkway Location Study  
Reevaluation and Final Environmental Impact Statement**

State Project No.: R000-95A-102, PE-101  
Federal Project No.: STP-5401 (385)  
Prince William, Fairfax, and Loudoun Counties



Virginia Department of Transportation  
Environmental Division  
1401 East Broad Street  
Richmond, Virginia 23219

**May 8, 2013**

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## **1.0 PURPOSE OF MEMORANDUM**

This memorandum was prepared to document the assessment of alternative transportation improvements that have been suggested in comments on the Draft Environmental Impact Statement (DEIS) and in subsequent correspondence during the Section 106 consultation process for the Tri-County Parkway Location Study. The Tri-County Parkway (TCP) is a proposed four-lane limited access highway located in Prince William, Fairfax, and Loudoun Counties in Virginia. The comments and correspondence were submitted by or on behalf of the Southern Environmental Law Center (SELC), the Coalition for Smarter Growth (CSG), the Piedmont Environmental Council (PEC), the National Parks Conservation Association (NPCA), the National Trust for Historic Preservation (NTHP), the Chesapeake Bay Foundation (CBF), and the Virginia Chapter of the Sierra Club, collectively referred to herein as SELC et al. The comments and correspondence refer to the alternative transportation improvements by various names, including “Combination of Other Alternatives,” “Alternative Package of Transportation Measures,” “Low-Build Alternative,” and, most recently, “Composite Alternative.” The suggested transportation improvements are wide-ranging both in terms of geographic location and in terms of improvement type (i.e., improvements across multiple modes; safety improvements; modified assumptions with respect to land use, growth, and travel patterns; etc.). Based on their wide-ranging nature, the suggested improvements represent not a simple alternative to the TCP project, but more of a substitute transportation vision (such as might be found in a regional or sub-regional transportation plan) rather than a transportation improvement alternative that could be implemented as a single project or single project package in lieu of the proposed TCP. Furthermore, the language describing the improvements is generalized and typically does not provide necessary project-specific details, such as defined start and end locations or typical section (i.e., how exactly to “improve” a connection or roadway). For this reason, this memorandum uses the term “Substitute Vision” and its “components” to represent the listing of transportation improvements proposed by SELC et al.

Details on the components comprising the Substitute Vision are presented later in this memorandum; however, they can be summarized as follows:

- Make improvements to east-west routes, such as I-66 and US 50, instead of north-south routes, because expanding east-west capacity is the key to improving traffic, obviating the need for north-south improvements in the study area.
- Any consideration of north-south routes should focus on improvements to Route 28 and non-capacity-increasing enhancements to local secondary roads.
- Assume closure of Route 29 and Route 234 within the boundaries of Manassas National Battlefield Park, but do NOT assume that the TCP or the Manassas National Battlefield Park Bypass would be built.
- Place greater emphasis on transit (heavy rail, light rail, and bus).
- Ignore cooperative population, employment, and land use forecasts incorporated in the Metropolitan Planning Organization’s regional travel demand model and, instead, make other assumptions regarding these factors.

## **2.0 BACKGROUND**

*Origin of Project.* The need for a new north-south transportation link connecting the City of Manassas with I-66 and the Dulles corridor was first identified during the development of the transportation elements of the comprehensive plans for Prince William, Fairfax, and Loudoun Counties. A potential connection has been the subject of local studies and plans over a number of years. In Prince William County, a version of this connection has been referred to as the “Route 28 Bypass” and in Loudoun County, a version of this connection has been known as the “Loudoun County Parkway.” Several conceptual alignments through Fairfax County were considered even before it was first proposed in their comprehensive plan. The Metropolitan Washington Council of Governments (MWCOC) also included versions of a north-south connector in its Constrained Long-Range Plan (CLRP) and Transportation Improvement Program (TIP).

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Draft Environmental Impact Statement, including Purpose and Need and Alternatives. The Federal Highway Administration (FHWA), in accordance with provisions of the National Environmental Policy Act (NEPA) and 23 CFR 771, approved the DEIS for the subject project on March 16, 2005. As identified in the DEIS, the study area lacks adequate north-south transportation linkage between Manassas and the Dulles corridor and the project purpose and need involves the following four key elements related to north-south transportation linkage:

1. Improve transportation mobility and capacity and by doing so, improve access and reduce congestion.
2. Enhance the linkage of communities and the transportation system that serves those communities.
3. Accommodate social demands, environmental goals, and economic development needs.
4. Improve safety and by doing so, reduce the average crash and injury rates on the roadway network.

The DEIS discussed the alternatives development process, which included extensive scoping activities and consideration of input from the public, government agencies, and local officials. Logical termini were established and a range of reasonable alternatives was identified. This process culminated in identification of the No-Build Alternative and three Candidate Build Alternatives (West Two, West Four, and Comprehensive Plan) as shown on **Figure 1** (Figure 2.4-1 from DEIS) to be carried forward for detailed study in the DEIS.

Public Involvement. Open forum public meetings were held in Fairfax, Loudoun, and Prince William Counties in March and December 2002 to solicit public comment on TCP alternatives. A set of three public hearings was held by the Virginia Department of Transportation (VDOT) on May 9, 10, 11, 2005 in Prince William County, Fairfax County, and Loudoun County, respectively. The associated public comment period extended from April 1 to May 21, 2005. During this time, the public was able to provide input through several modes including: e-mail, mailed letter, comment form, or submittal of a written or oral comment at the public hearings. To encourage public input and information, a comment form was developed and included in the spring 2005 newsletter for the study. A total of 5,000 newsletters and comment forms were printed and distributed to the study mailing list, area faith organizations, regional libraries, and public hearing attendees. A total of 871 public responses were collected from April 1 to May 21, 2005, including at the public hearings.

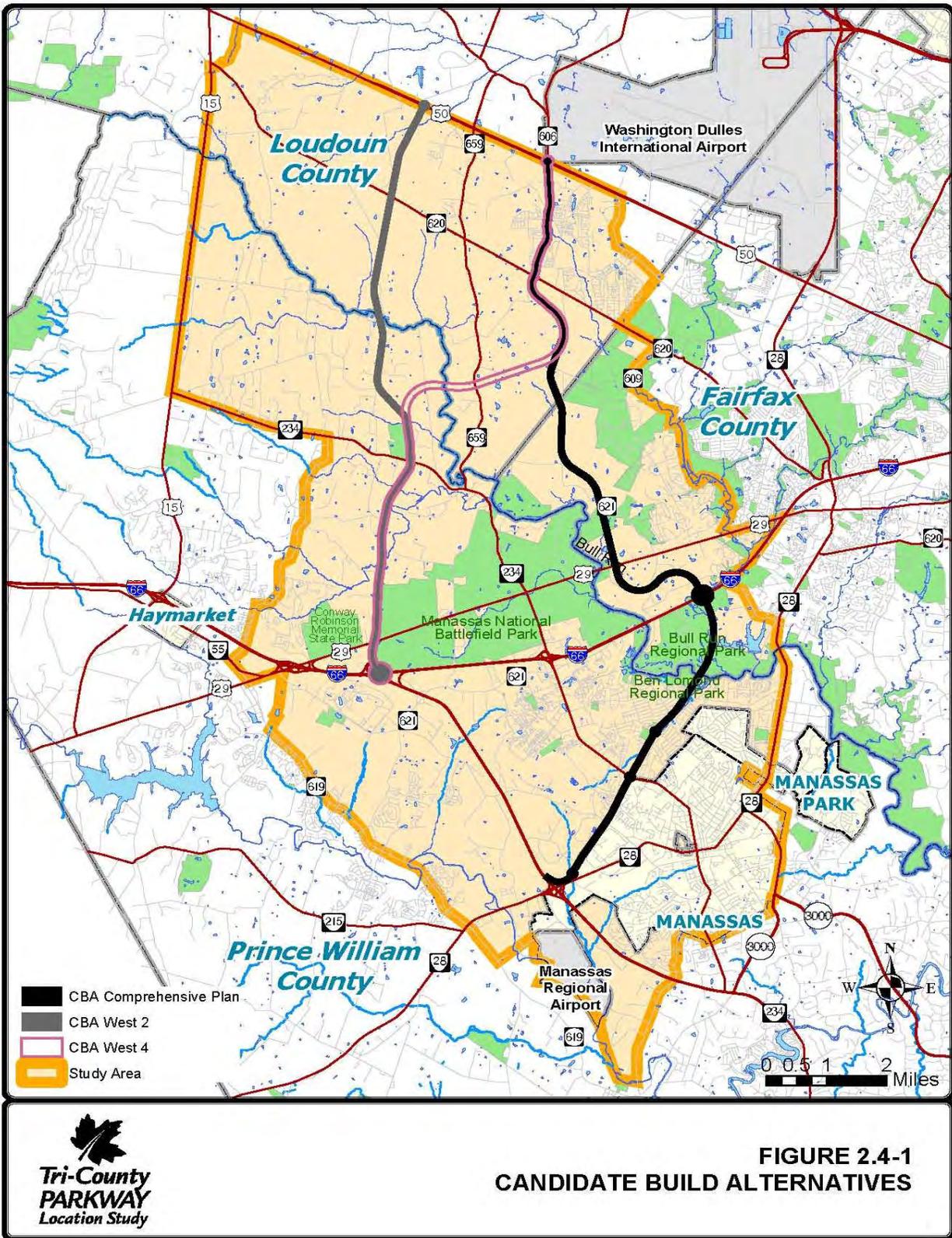
Commonwealth Transportation Board (CTB) Action. The West Two Alternative was approved by the CTB on November 17, 2005 as the preferred alternative for the project. On February 20, 2013 the CTB approved a modification to the West Two Alternative in order to avoid encroachment on the Putnam-Patton House historic property. The CTB further resolved to take whatever action is required for the abandonment of portions of Route 234 transecting the Manassas National Battlefield Park as part of the TCP project and that such abandonment will occur upon the completion and opening to traffic that portion of the TCP between I-66 and the proposed intersection with existing Route 234 near Catharpin. (The abandonment of Route 234 and transfer of ownership of its right of way to the National Park Service is part of an extensive package of measures developed through coordination with Section 106 consulting parties to mitigate adverse effects of the TCP on the Manassas Battlefield Historic District.)

On-going Section 106 Coordination. At this time, a final draft of the Section 106 Programmatic Agreement, developed in accordance with regulations implementing the National Historic Preservation Act, is being circulated to consulting parties for final review. Once finalized, the Agreement will be executed and the stipulations contained therein to address adverse effects on historic properties from the project will become binding commitments.

Reevaluation. In accordance with 23 CFR 771.129(a), a reevaluation is being conducted to assess the environmental consequences resulting from changes to the proposed project, changes in the affected environment, and changes in regulatory requirements and guidance since the DEIS was issued and to determine if those environmental consequences result in significant environmental impacts not already considered in the DEIS.

Final Environmental Impact Statement. A FEIS will be prepared if the reevaluation identifies no new significant environmental impacts warranting preparation of a Supplemental Draft EIS.

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**Figure 1. DEIS Study Area and Candidate Build Alternatives**

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### **3.0 SUBSTITUTE VISION**

#### **3.1 Sources**

Communication with SELC et al. regarding suggested alternative improvements has been on-going since the 2005 DEIS. Letters dated as follows have been received over the last eight years; see **Attachment A** for copies of the correspondence.

- June 13, 2005 – Comments on DEIS submitted by the Southern Environmental Law Center (SELC) on behalf of the Piedmont Environmental Council (PEC), the Coalition for Smarter Growth (CSG), the Chesapeake Bay Foundation (CBF), the National Trust for Historic Preservation (NTHP), and the Virginia Chapter of the Sierra Club (SC).
- November 20, 2007 – Comments submitted by NTHP on behalf of NTHP, SELC, CSG, and PEC as a follow-up to the Section 106 consulting parties meeting held on October 31, 2007.
- January 12, 2009 – Comments submitted by SELC on behalf of SELC, PEC, CSG, NTHP, and SC reiterating comments on DEIS and objections to the project.
- December 6, 2010 – Comments submitted jointly by SELC, NTHP, PEC, CSG, and the National Parks Conservation Association (NPCA) as a follow-up to November 5, 2010 Section 106 consultation parties meeting.
- March 16, 2011 – Comments submitted jointly by CSG, PEC, and SELC regarding the Commonwealth Transportation Board’s designation of a North-South Corridor of Statewide Significance.
- February 1, 2012 – Comments submitted by SELC on behalf of SELC, CSG, NPCA, NTHP, and PEC referencing and reiterating previous letters.
- August 24, 2012 – Comments submitted jointly by SELC, PEC, CSG, NTHP, and NPCA on draft of Section 106 Programmatic Agreement.
- January 7, 2013 – Expanded list of components of the alternative transportation improvements submitted by CSG, PEC, SELC, NPCA, and NTHP (transmitted via e-mail January 8, 2013).

The alternative transportation improvements, or Substitute Vision, discussed in this memorandum reflect the contents of the List dated January 7, 2013 and named “Updated Composite Alternative.” As indicated in CSG’s transmittal, the List encompasses all of the past recommendations of the groups, as well as additional elements not previously suggested.

#### **3.2 Components of the Substitute Vision**

**Table 1** presents components of the Substitute Vision as well as additional detail for each component that was necessary for assessment, as described further below:

- The left-most column of the table lists the exact components of the Substitute Vision, per the documents provided by SELC et al. SELC et al. described these components in general terms, using words like “upgrade” or “improve”. **It is important to note that for purposes of assessing the Substitute Vision, it was necessary to assign projects, with specific improvements and start and end points identified, that correspond to implementing the generalized components of the Substitute Vision.** Therefore, the next two columns of Table 1 include background information on each component and define a specific project or multiple projects) that would be required to implement each component of the Substitute Vision. For purposes of defining projects, the components were compared to local, regional, and state planning studies and other documents to identify specific projects and details, as indicated in the background information column. **Figure 2** after the table depicts the locations of the forty specific projects that were identified to represent the “composite alternative” set forth by SELC et al.

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- Table 1 also identifies whether the individual projects are included in the current CLRP. It is important to note that projects in the CLRP are assumed to be implemented by the design year under both the No-Build and Build Alternatives in the Tri-County Parkway Reevaluation. As such, these projects are not unique to the Substitute Vision but have been included in updated travel demand modeling and analysis for the preferred West Two Candidate Build Alternative (CBA).
- The final four columns in Table 1 identify the type of improvement for each project: Capacity; Operations / Safety; Transit; and Demand. This identification is important as it relates to how each component/project is analyzed, as described below.

Capacity and Operations / Safety

A key distinction to be made is between projects that add measurable capacity at a regional level and those that enhance operations and safety and add limited amounts of capacity that is localized to areas around the project:

- Projects in the first category (Capacity) include widening a roadway to provide additional lanes, constructing new roadways other than local neighborhood streets, or providing transit service at the regional or sub-regional level. Note that transit improvements that provide for additional travel capacity are identified in the Transit column (discussion provided below) in Table 1.
- Projects in the second category (Operations / Safety) include intersection improvements such as signalizing, adding turn lanes, or converting to a roundabout; as well as shoulder or spot safety improvements.

While projects in both categories can provide transportation operations and safety value, only those in the first category provide measureable increases in capacity at the regional or sub-regional level of the travel demand model. The physical reality that projects in the second category would have limited effects at the regional level is mirrored in terms of quantifying and analyzing their limited effects using the regional travel demand model. This is primarily due to the fact that regional models operate across a broad geographic area and at a correspondingly coarse level of detail. Small changes, whether related to a spot improvement such as at an intersection of existing roads or to adding shoulders to an existing road, cannot be accurately reflected at the coarse regional level.

Project types in the Substitute Vision that fall under the Operations / Safety improvement type include:

- *Roundabouts.* While intersection control such as a roundabout improves operations and flow in certain conditions, they typically do not add measurable capacity to the regional network. As noted above, regional travel demand models are typically not sensitive to differences in intersection control types (i.e., conversion of a stop-controlled intersection to a roundabout does not affect the model output). It should also be noted that roundabouts are typically best utilized at locations where the intersecting roadways carry similar volumes of traffic; the Substitute Vision locations do not necessarily meet this condition or other VDOT roundabout guidance.
- *Safety.* These types of improvements are included in numerous VDOT efforts for planning and implementation (including the Strategically Targeted Affordable Roadway Solutions (STARS) program and the high-risk rural road program). Improvements are made whenever funding is available and VDOT seeks to address these to the maximum extent possible through efforts to increase funding. While important in enhancing safety and alleviating localized choke points, these types of improvements would have little effect on overall travel patterns on a daily basis over a 20+ year horizon, and regional travel demand models are not sensitive to differences in safety control measures.
- *Transportation Systems Management (TSM).* TSM is an important component of a comprehensive toolbox of measures to improved traffic operations, travel efficiency, and safety. TSM measures proposed in the CLRP are assumed to be in place by the design year in both the No-Build and Build Alternatives. TSM measures do not, however, provide for the increases in travel capacity needed to serve projected growth.

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Transit

Transit improvements were coded into the regional travel demand model in terms of adjustments to the mode splits for affected transportation analysis zones. Additional detail on the mode split adjustment process is included in Section 4.

Travel Demand

The study team held meetings with planning staff from both Prince William and Loudoun Counties and performed analysis to discuss the amount of growth projected in the MWCOG Round 8.1 Cooperative Land Use Forecasts (which forms the basis for the estimated travel demands in the regional travel demand model used for this study) that is currently in the pipeline or currently zoned. Staff indicated that, in general, most of the growth (90 to 95 percent) is currently in the pipeline and zoned, and that assumptions relative to reducing the growth further are not realistic because this additional reduction in growth would require down-zoning. While legally permissible<sup>1</sup>, experience in Virginia has indicated that implementing down-zoning is a complex and time-consuming process that requires substantial and ongoing commitment from local government. This is primarily due to the fact that landowners have financially-based expectations with regard to the current zonings and become involved in the process by arguing that particular down-zonings reflect an arbitrary taking of their land values. The courts become involved with ensuing legal fights. Past attempts to down-zone areas within Northern Virginia have proven to be lengthy multi-year fights that are not settled quickly. Growth in affected TAZs was, therefore, reduced by a conservatively high percentage of 15 percent (indicating that only 85 percent of the projected growth is assumed to occur). The affected TAZ's are within Prince William's Rural Area (also known as Rural Crescent) and Loudoun County's Transition Zone. Additional details on this process are included in Section 4.

Travel Patterns and Growth

Other considerations cited by SELC et al. reflect unsubstantiated assertions about travel patterns and growth (more east-west and less north-south, job attractors will remain east rather than west of Route 28, changes in regional growth trends, as well as adjustments to shopping locations that would reduce north-south travel between areas north and south of the Manassas Battlefield). The MWCOG travel demand model and cooperative land use forecasting reflect the best available tool as well as the collective knowledge and expertise of planners across the region for projecting travel patterns and growth. They reflect long-term trends (rather than 5 to 7 year trends that reflect recent economic slowdowns) as well as predictive algorithms that provide an approved and industry-standard tool for predicting travel patterns. While no one can fully predict the future, particularly almost 30 years out, applying anecdotal observations from existing conditions does not adequately reflect the complexities of anticipated changes that planners in each locality are best able to provide as input to the travel demand forecasting process.

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<sup>1</sup> Local governments have the legal authority to control land use. The Code of Virginia authorizes the local governing body to amend district boundaries by ordinance whenever required by "the public necessity, convenience, general welfare, or good zoning practice." As such, the revision of a Comprehensive Plan and zoning ordinance for a specific area of a county can include down-zoning; and, with the proper showing, an individual parcel may be down-zoned as well. However, neither VDOT nor FHWA have any role in controlling or changing land uses in localities and have no authority to compel a locality to change zoning in order to effect changes in development densities.

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**Table 1. Substitute Vision Components and Projects Necessary to Implement**

SELC Description of Improvement (Generalized)	Background Information	Project(s) Required to Implement Components of SELC Substitute Vision	In Current CLRP?	Improvement Type*			
				Capacity	Op / Safety	Transit	Demand
Co-location of US 29 onto I-66	The co-location of Route 29 onto I-66 was considered as an alternative in the Manassas National Battlefield Park Bypass (MNBPB) DEIS and was assumed to require one additional lane on I-66 in each direction. This alternative was dropped due to “concerns about an inconsistent cross-section on I-66 that would be created by this relocation of Route 29 from Centreville to Gainesville and the resulting congestion projected to occur at the merge points.” Instead, another alternative (Alternative G) involving a separate parallel roadway along the north side of I-66 was developed and analyzed in the DEIS. It was not identified by the CTB as the preferred alternative. The CTB identified instead Alternative D (now D-Modified) as the preferred alternative, which would involve construction of a new road around the north side of the MNBP. The MNBPB is included in the 2012 CLRP, and would be a new 4-lane facility that connects US 29 beyond the eastern and western boundaries of the Park.	1 As proposed by SELC et al., this would not entail construction of additional lanes on I-66. Rather, I-66 would simply be re-signed to also serve as US 29. Additionally, it is assumed that US 29 within the MNBP would be closed to through traffic and that no MNBPB would be constructed. Accordingly, this project involves installation of signage to divert all US 29 through traffic onto I-66 between Exit 43 and Exit 52. Local traffic would continue to use US 29 between these two points, except for the section within MNBP, which would be limited to Park traffic and residents of Park inholdings.	No		X		

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					Capacity	Op / Safety	Transit	Demand
Focus on I-66 corridor upgrades including extension of VRE to Gainesville and Haymarket; Metrorail to Centreville; and express bus/HOV-3 between Fauquier and Arlington.	Similar improvements are recommended in the Super NoVA Transit/TDM Vision Plan, as well as other regional planning documents including (but not limited to): VRE Strategic Plan, VRE Gainesville-Haymarket Alternatives Analysis Report, WMATA Transit Service Expansion Plan, and the Prince William County Transportation Plan.	2	Extend VRE commuter rail from existing Manassas station to Haymarket via the existing Norfolk Southern B spur.	No			X	
		3	Extend Orange line Metrorail service from existing terminus (Vienna) to Centreville along the I-66 median.	No			X	
		4	Convert existing HOV operations on I-66 to HOV-3+.	Yes**			X	
		5	Establish express bus service for referenced limits.	No			X	
Complete the Gainesville Interchange to allow traffic to flow more smoothly to and from I-66.	The construction of this interchange is complete (i.e. already included in the Build and No-Build Alternatives).	6	None.	Yes	-	-	-	-
Upgrade the existing east-west road at the southern boundary of the Battlefield between the Park Headquarters and Groveton Road if necessary for local movement.	This "east-west road" cited is Pageland Lane, which is less than 2 miles long between the referenced limits. Pageland Lane is unstriped and is an unclassified local road per VDOT. It runs directly along the Battlefield Park boundary, generally parallel to I-66, and intersects Groveton Road at an intersection with a skewed configuration.	7	Upgrade the referenced roadway and terminal intersections to current VDOT rural two-lane standards.	No		X		
For the Route 50 corridor, install dedicated bus lane and complete proposed parallel roads (maintain the undivided two lane rural arterial west of the proposed Lenah Loop Road).	The Loudoun County Adopted 2010 Revised Countywide Transportation Plan includes widening US 50 with future study of alternate lane operations, which may include dedication of express busway use. The Plan also defines the "Route 50 Parallel Roads (Quarry Road/ Glascock Boulevard and Tall Cedars Parkway (VA Route 2200))", which are proposed as 4 lanes.	8	Construct parallel local service roads from Lenah Road to the Fairfax County Line on both the northern and southern sides of US 50.	No	X			
		9	Construct a bus lane and run bus service for the referenced limits.	No			X	

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					Capacity	Op / Safety	Transit	Demand
Use the Route 50 northern parallel connector as a truck connector from Route 28 to Route 606, providing access to future Dulles Airport facilities.	This is included in the Loudoun County Comprehensive Plan. The "Northern Parallel Route" is shown as two disconnected roadways: Glascock and Quarry Roads.	10	Install signage for referenced truck route.	No		X		
Utilize the east-west local connector known as Cedar Ridge Boulevard to connect to an upgraded Bull Run Post Office Road.	Cedar Ridge Boulevard is less than 2 miles long, running between Gum Spring Road and Bull Run Post Office Road. It is an unclassified local street per VDOT. It is an unstriped, low-speed neighborhood street with repeated driveway access and meandering curvature. Bull Run Post Office Road is approximately 7 miles long between Braddock Road and its terminus just south of I-66. It is generally an unclassified local street per VDOT, and is an unstriped, 2-lane roadway with several 45+-degree bends and multiple driveway access points. For approximately 1 mile where it intersects Route 29, it is an Urban Collector and is two-lanes, striped.	11	Upgrade Cedar Ridge Boulevard (existing two lanes) and associated terminal intersections to current VDOT rural two-lane standards, and add signage.	No		X		
		12	Upgrade Bull Run Post Office Road (existing two lanes) and associated terminal intersections to current VDOT rural two-lane standards.	No		X		
Finish the Route 28 interchanges between I-66 and Route 7 and improve the connection from eastbound I-66 to northbound Route 28 to improve access from the I-66 corridor to the major job concentrations east of Dulles Airport.	All programmed interchange improvements along VA 28 have been completed.	13	Reconstruct the existing interchange of VA 28 at I-66.	No		X		
		14	Convert the remaining at-grade intersection along VA 28 (at Walney Road / Braddock Road within Ellanor C. Lawrence Park) to a grade-separated interchange.	No		X		

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<i>While not specifically mentioned in the January 7, 2012 letter, "upgrade of Route 28" was mentioned in June 13, 2005; November 20, 2007; and December 6, 2010 SELC correspondence.</i>	The widening of VA 28 from 6 to 8 lanes from I-66 to VA 7, along with associated improvements, is included in the CLRP.	15	Widen VA 28 to 8 lanes between I-66 and VA 7.	Yes	X			
Provide a bus rapid transit or light rail connection from the Cities of Manassas and Manassas Park up to the Dulles Corridor along Route 28.	The Super NoVa Plan recommends bus rapid transit/light rail along this corridor as part of their "circumferential travelshed" recommendations.	16	Construct and operate light rail for the referenced limits.	No			X	
Recognize the existing upgrade of Route 15 in Prince William and install roundabouts at Route 15 and Route 234 (Sudley Road).	Route 15 is two lanes in each direction from I-66 to the intersection with Sudley Road, north of which it becomes a single lane in each direction. As part of the upgrading of Route 15, the intersection with Sudley Road was improved and includes multiple turn lanes. Sudley Road is one lane in each direction approaching the intersection, which is signal-controlled. Business driveway access as well as intersecting roadways along Sudley Road are in proximity to the intersection.	17	Construct a roundabout at the referenced location.	No		X		

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SELC Description of Improvement (Generalized)	Background Information	Project(s) Required to Implement Components of SELC Substitute Vision	In Current CLRP?	Improvement Type*			
				Capacity	Op / Safety	Transit	Demand
Utilize roundabouts to ease the flow of N-S traffic in the Gum Spring Road/Pageland Lane N-S corridors, with roundabouts located at: 1. Route 659 (Gum Spring Road) and Route 234 (Sudley Road); 2. Sudley Road and Pageland Lane; and 3. Pageland Lane and Route 29.	1. Gum Spring Road and Sudley Road are both classified as Rural Major Collectors by VDOT. It is a three-legged intersection, with two through lanes and one left-turn lane on Sudley Road, and left- and right-turn lanes from Gum Spring Road. It is signal-controlled. A church and two residential street access points are located within proximity to the intersection.	18	Construct roundabouts at the referenced locations.	No	X		
	2. Pageland Lane is a local unclassified road per VDOT, and it is one lane in each direction at this intersection. Within 500 feet on either side of the intersection are Sanders Lane (SR 705) and driveway retail access, in addition to numerous houses and businesses. Sudley Road is free-flowing through this intersection as the major movement.	19		No	X		
	3. Pageland Lane is a local unclassified road per VDOT, and it is striped as two lanes north of the intersection and unstriped south of the intersection. Route 29 is a divided, 4-lane highway with turn lanes and a grass median at this intersection. It is classified as a Rural Minor Arterial and is the major roadway at this intersection. The intersection is signal-controlled.	20		No	X		

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SELC Description of Improvement (Generalized)	Background Information	Project(s) Required to Implement Components of SELC Substitute Vision	In Current CLRP?	Improvement Type*				
				Capacity	Op / Safety	Transit	Demand	
Do targeted upgrades for safety and install roundabouts where necessary for Catharpin Road, Bull Run Post Office Road, and Pleasant Valley Road. Roundabout locations include: 1. Catharpin and Sudley Rd; 2. Bull Run Post Office Road and Route 29; 3. Bull Run Post Office Road and Braddock Road; and 4. Pleasant Valley Road and Braddock Road.	1. Sudley Road is classified as a Rural Major Collector and is free-flowing through this intersection. Catharpin Road is a local unclassified road and is stop-controlled. Both are striped as one lane in each direction. Residences as well as driveway accesses exist along both roadways at this intersection.	21	No		X			
	2. Route 29 is classified as an Urban Minor Arterial and is the major roadway at this intersection (two lanes in each direction with turn lanes, grass median), which is signal-controlled. Bull Run Post Office Road is a local unclassified road to the north and an Urban Collector to the south. It is generally one lane in each direction with turn lanes.	22	Construct roundabouts at the referenced locations.	No		X		
	3. Braddock Road is a Rural Major Collector and is the major, free-flowing roadway with one lane in each direction and turn lanes. Bull Run Post Office Road is a local, unclassified, unstriped roadway south of this intersection. North of the intersection, it is known as Donovan Drive and is the entrance into a residential community, with numerous residences in proximity.	23		No		X		
	4. Both roadways are classified as Urban Minor Arterials at this intersection, with a single lane in each direction. The intersection is stop-controlled in all directions. A farm and a pathway are located at this intersection.	24		No		X		

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					Capacity	Op / Safety	Transit	Demand
In Loudoun, between Braddock Road and Route 50, implement N-S connections for local traffic.	The Loudoun County Comprehensive Plan includes the following north-south connections: 2-lane US 15 (existing); 2- and 4-lane Lenah Loop Road (2-lane existing); 6-lane divided North Star Blvd (aka, TCP); 4-lane, divided Gum Spring Road (existing); and 6-lane, divided Loudoun County Parkway.	25	Widen Loudoun County Parkway to 6 lanes, divided, between the referenced limits.	No	X			
		26	Widen Lenah Loop Road to 4 lanes between Tall Cedars Parkway and US 50.	No	X			
In Loudoun, between Route 50 and Route 7, complete upgrade of Route 606 and Route 659 to four-lane divided roadways.	The CLRP does not include widening of Route 606 and Route 659 for those entire extents. It does include Route 606 between Route 621 and Route 634, and Route 659 between the Dulles Greenway and Route 7.	27	Widen VA 659 to 4 lanes, divided, between the referenced limits.	Partial	X			
		28	Widen VA 606 to 4 lanes, divided, between the referenced limits.	Partial	X			

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SELC Description of Improvement (Generalized)	Background Information	Project(s) Required to Implement Components of SELC Substitute Vision		In Current CLRP?	Improvement Type*				
					Capacity	Op / Safety	Transit	Demand	
Evaluate additional road connection improvements south of I-66 including Wellington Road, Balls Ford Road, Sudley Manor Drive and Godwin Drive. <i>(Godwin Drive would also meet north-south movement needs and was part of one of the TCP alternatives -- use Mr. Robert Moler's connection recommendation for connecting to Route 28 and I-66).</i>	The Prince William County Transportation Plan of the Comprehensive Plan includes improvements, such as widening and interchanges, of Wellington Road, Balls Ford Road, and Sudley Manor Drive to improve accessibility and connectivity. Mr. Moler's connection recommendation included use of Segment E alignment from the DEIS, modified to include a new roadway extension from existing Godwin Drive to new interchange, with construction of a raised open causeway bridge across Cub Run, to northwest corner of Upper Occoquan Sewage Authority, and making broad counterclockwise sweep to I-66 just west of Compton Road	29	Widen Wellington Road to a 6 lane minor arterial between Linton Hall Road and Prince William Parkway.	Partial	X				
		30	Widen Wellington Road to a 4 lane minor arterial between Prince William Parkway and Godwin Drive.	Partial	X				
		31	Construct bridge of Prince William Parkway and grade-separated interchange at Sudley Manor Drive / Prince William Parkway.	No		X			
		32	Widen Balls Ford Road to a 4 lane minor arterial between Wellington Road and Sudley Road.	Partial	X				
		33	Widen Balls Ford Road to a 4 lane major collector between Sudley Road and Coppermine Drive.	No	X				
		34	Construct a grade-separated interchange at Balls Ford Road and Prince William Parkway.	No		X			
		35	Construct new roadway extension of Godwin Drive from existing Godwin Drive to new interchange (excluding new causeway/bridge).	No	X				
		36	Construct raised open causeway bridge from Godwin Drive (extended) to new causeway/bridge.	No	X				
		37	Construct new interchange of Godwin Drive (extended) with I-66, consisting of two loops and two flyovers on north side of I-66.	No	X				

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					Capacity	Op / Safety	Transit	Demand
Install Route 234 to Route 28 interconnection improvements and Route 28 upgrades on the east side of the Cities of Manassas and Manassas Park up to I-66.	No change to VA 28 is included in Prince William County Plan. Widening to 8 lanes, with potential HOV and interchange with Braddock Road, included in the Fairfax County Transportation Plan.	38	Widen VA 28 to 8 lanes from Manassas City Line to I-66.	No	X			
		39	Convert VA 28 lane(s) to HOV operations from Manassas City Line to I-66.	No			X	
		40	Construct interchange at VA 28 and Braddock Road.	No		X		
Recognize and address the significantly greater east-west travel demand as compared to north-south movement in the area west of Route 28 in the I-66 and Route 50 corridors.	Refer to <i>Travel Patterns and Growth</i> discussion (located in Section 3.2, prior to Table 1).							
Incorporate the more likely scenario that the vast majority of job attractors will remain east of Route 28.	Refer to <i>Travel Patterns and Growth</i> discussion (located in Section 3.2, prior to Table 1).							
Assume that the Rural Crescent north of I-66 in Prince William County and Transition Policy Area south of Braddock Road and west of Route 659 in Loudoun County are maintained at their current lower densities and that land conservation measures are utilized to preserve significant tracts of land in each area, ensuring that these areas do not add more traffic.	Data provided by both Prince William and Loudoun Counties to MWCOG as part of the cooperative land use forecasting process reflect the Comprehensive Plans and zoning of each jurisdiction, including the maintaining of the Rural Crescent and Transition Policy areas at low densities. That does not mean, however, that these areas would not experience any additional growth, as building to existing zoning, as well as development already in the pipeline, will result in new development.	-	Following meetings with planning staff from both Prince William and Loudoun Counties, an assessment was made of development that is allowed by existing zoning and the extent to which the socioeconomic data included in the Round 8.1 forecasts goes beyond that which is reflected by existing zoning. For purposes of this analysis, the socioeconomic data for the TAZ's in question will be adjusted to reflect only growth allowed by existing zoning and pipeline development.	No				X

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				Capacity	Op / Safety	Transit	Demand
<p>In developing an alternative growth projection, discard the Round 8.0 regional forecasts:</p> <ul style="list-style-type: none"> <li>- The regional forecasts allocate growth to each jurisdiction based on underlying comprehensive plans and zoning and also tend to be based on past trends, and not on the significant shifts the region and the nation are seeing in demographics, the real estate market, and energy prices.</li> <li>- Federal government downsizing, the aging population, the preference of "millennials" for urban living, the shift from ownership to rental, increase in transit-oriented centers in the region, and higher energy prices should all be factored in, and are likely to show slower growth rates and a smaller increment of growth than the Round 8.0 regional forecasts for Loudoun and Prince William.</li> </ul>	<p>Refer to <i>Travel Patterns and Growth</i> discussion (located in Section 3.2, prior to Table 1).</p>						
<p>Base projections on a true no-build scenario for the Manassas Battlefield Bypass and Tri-County/Bi-County/234 Bypass Extended/N-S Corridor:</p> <ul style="list-style-type: none"> <li>- Do not base the growth and traffic projections on the assumption that the Tri-County/Bi-County Parkway and Manassas Battlefield Bypass are in place.</li> </ul>	<p>Refer to <i>Travel Patterns and Growth</i> discussion (located in Section 3.2, prior to Table 1).</p>						

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					Capacity	Op/Safety	Transit	Demand	
- Recognize that by not including the proposed highway, which would attract new long-distance vehicle trips including more truck travel to Dulles Airport, new travel demand in the area would be less under the composite scenario than with the proposed new highway.	Refer to <i>Travel Patterns and Growth</i> discussion (located in Section 3.2, prior to Table 1).								
Recognize that local residents north of the Battlefield will have access to alternate shopping outlets, not requiring driving south through the Battlefield to Manassas. Those future locations include Loudoun's Route 50 Corridor, Gainesville, and Haymarket.	Refer to <i>Travel Patterns and Growth</i> discussion (located in Section 3.2, prior to Table 1).								
Target local road and safety improvements to cost-effectively reduce incidents in the high accident sections.	Funding for these types of projects is ongoing.	-	None.	Yes***		X			
Include Transportation Systems Management (TSM).	Funding for these types of projects is ongoing.	-	None.	Yes***		X			

\* Improvement Types:

**Capacity:** Improvement that add capacity at the regional level; tested in MWCOG model.

**Op/Safety:** Improvement that affects roadway operations and safety, and provides localized capacity but does not provide for regionally quantifiable capacity increases.

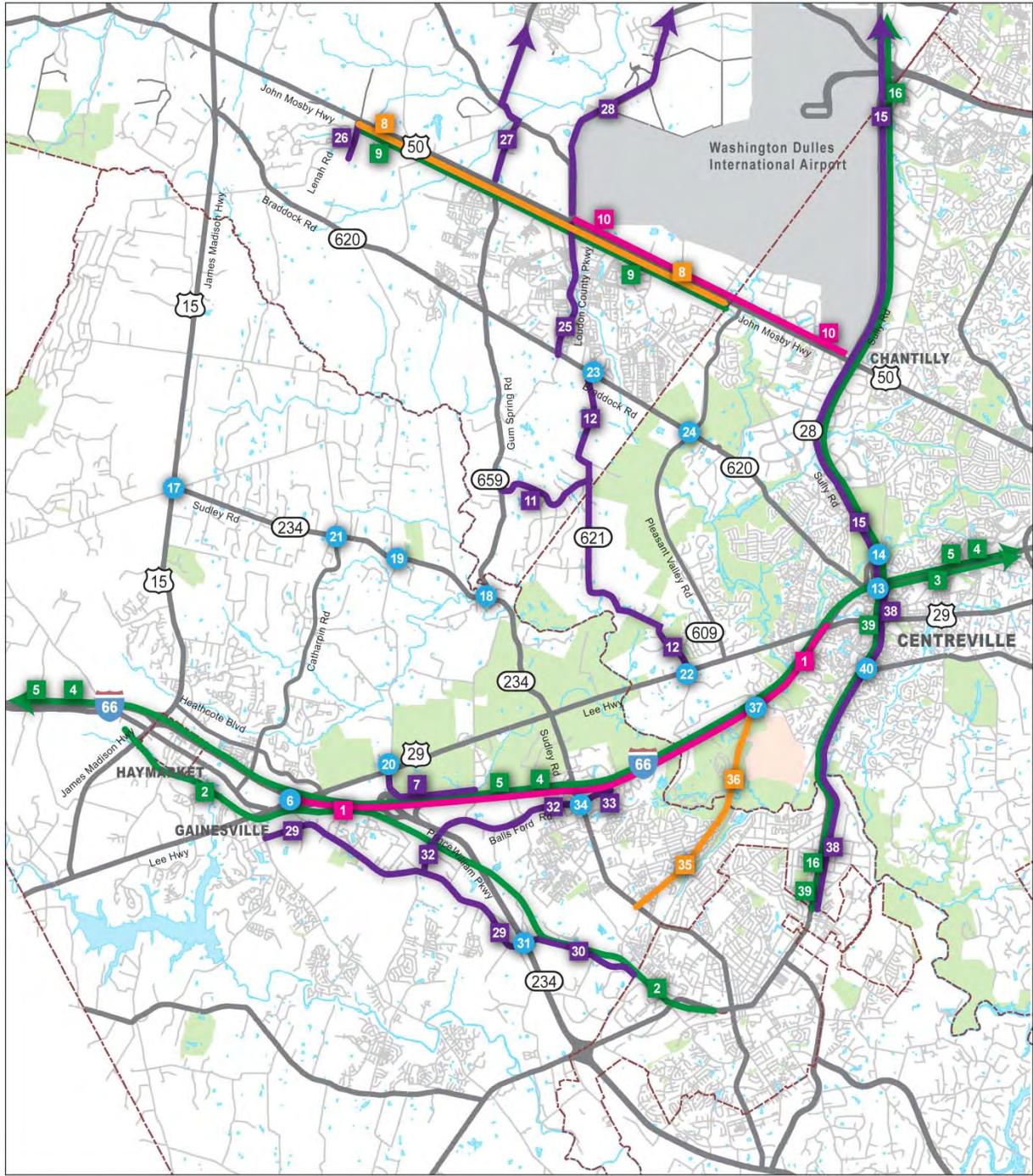
**Transit:** Improvement that provides for increased transit capacity, convenience, and enhances the potential for travel mode shifts to transit.

**Demand:** Actions that address travel demand through lowered assumptions for growth and shifts in travel patterns.

\*\* The conversion of existing operations on I-66 to HOV 3+ is a planned improvement and is also included in the MWCOG 2040 model; it is not, however, explicitly listed as a CLRP project.

\*\*\* Specific projects not listed, but assumed to be part of the greater CLRP.

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- 1 — Roadway Construction
- 1 — Transit/HOV Improvements
- 1 — Roadway Widening/Upgrade
- 1 — Other Improvements
- ① Intersection/Interchange Improvements



**Figure 2. Locations of Projects Necessary to Implement the Substitute Vision**

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#### **4.0 PROCESS FOR ASSESSING SUBSTITUTE VISION**

This section describes the analysis process used to assess the Substitute Vision (SV). The process consisted of five basic steps, as follows:

1. **Run the MWCOG model for year 2040:** The MWCOG model (Version 2.3 Build 39) was run, including all four traditional model steps (trip generation, trip distribution, mode split, and trip assignment), for the year 2040. Three model runs were performed: 1) TCP No-Build (with all current CLRP projects except the TCP); 2) TCP Build (with TCP and all other projects in current CLRP); and, 3) TCP Build (with all other current CLRP projects except MNBPB). The raw model output was then adjusted using NCHRP 255 post-processing procedures to accommodate differences in model forecasts and existing traffic counts. TAZs in two planning areas within Prince William and Loudoun counties (the Rural Area and the Transition Area, respectively) were modified to reflect an alternate land use plan, as suggested by SELC et al. The magnitude of the population and employment growth forecasted by the Round 8.1 Cooperative Land Use Forecasts was reduced by 15% to represent a more modest development assumption for the area.
2. **Adjust mode-split:** Transit projects mentioned in the SV were accommodated by modifying scripts in the MWCOG model. The modifications assume a potential travelshed for the transit projects, and then reduce single-occupant vehicle (SOV) trips within that travelshed by an assumed percentage of 4%. This 4% reduction represents an optimistic surrogate for the shift of trips from the SOV mode to transit modes<sup>2</sup>.
3. **Create the SV network:** The SV network was created by adjusting the No-Build network to incorporate the projects indicated in Table 1 either as new links, updated links, or adjusted mode split factors, depending on the nature of the project. The SV network includes all Table 1 projects and all CLRP projects, other than the TCP or the MNBPB. The SV year 2040 forecasts were then developed using the revised network as well as the adjusted Round 8.1 land use data as inputs to the model process and the new transit adjustments. For comparability with the previous forecasts, standard NCHRP 255 post-processing adjustments were made.
4. **Perform SV model runs:** The SV network described in Step 3 was further modified to include the proposed Tri-County Parkway and the MNBPB, and the model was run as described above. This was performed to allow for comparisons of the two baseline sets of assumptions: CLRP-based, and SV-based. As with all other model runs, standard NCHRP 255 post-processing adjustments were made.
5. **Compare the results:** An assessment and summary of the SV was performed by comparing traffic forecasts. Planning level estimates of costs for the projects in the SV were also developed using standard VDOT unit costs. This analysis and discussion is included in Section 5.

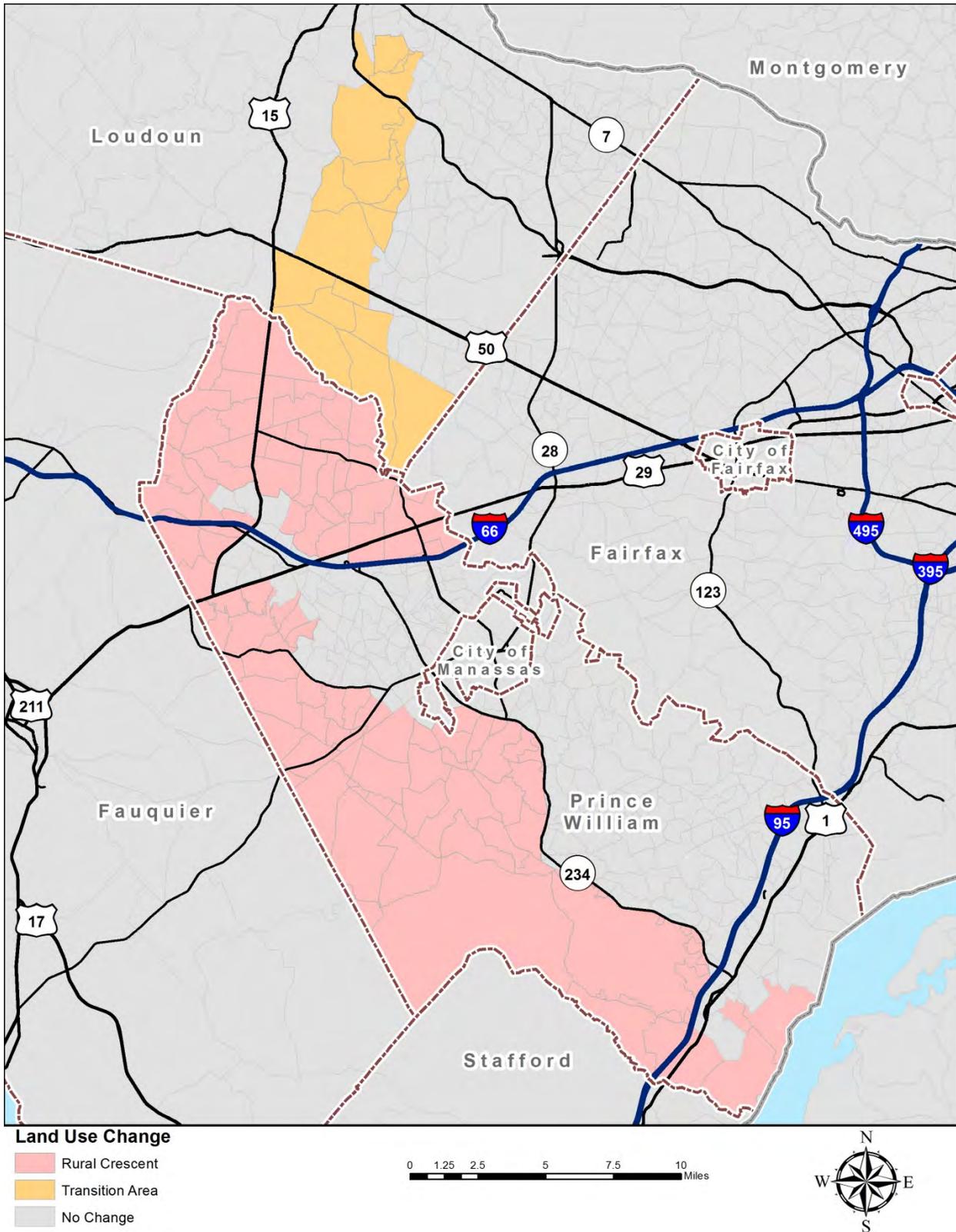
#### **4.1 Land Use Changes**

To account for an alternate regional growth forecast, land use inputs were changed for forecasting for the Substitute Vision. Two planning areas, the Rural Area in Prince William County and the Transition Area in Loudoun County, were considered for modification for land use. **Figure 3** illustrates the extent of transportation analysis zones (TAZs) that were considered in these planning areas. In a travel demand model, the TAZs are associated with land use characteristics such as population and employment, and form the origin and destination locations for trips.

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<sup>2</sup> Rural area transit mode shares are usually less than 1 percent; they are shown as 0.4 percent in Table 3.12 in “Travel Behavior and Mobility of Transportation-Disadvantaged Populations: Evidence from the National Household Travel Survey”, Jeremy Mattson, Small Urban & Rural Transit Center (North Dakota State University), December 2012.

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**Figure 3. Areas of Reduced Future Land Use Growth**

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In the TAZs within each of these planning areas, an assumed reduction in growth of 15% was applied to the 2040 population and employment forecasts. That is, the magnitude of additional population and employment figures per the MWCOG Round 8.1 Cooperative Forecasts between the base year of 2010 and 2040 was reduced. **Table 2** shows the original 2040 population and employment estimates per the Cooperative Forecasts. As an example of the changes assumed for the SV, there was an increase of 40,700 people in Prince William’s Rural Area between 2010 and 2040 in the original forecasts. For the revised forecasts, only 85% of that growth was assumed, resulting in an increase in population of 34,600 people in the Rural Area compared to the 2010 population.

**Table 2. Original and Revised Population and Employment Forecasts**

Land Use per MWCOG Round 8.1 Cooperative Forecasts						Adjusted Land Use per the Substitute Vision			
2010		2040		Growth (vs 2010)		2040		Growth (vs 2010)	
Pop.	Emp.	Pop.	Emp.	Pop.	Emp.	Pop.	Emp.	Pop.	Emp.
<i>Prince William County Rural Area</i>									
56,200	26,900	96,900	51,500	+ 40,700	+ 24,600	90,800	47,800	+ 34,600	+ 20,900
				72%	91%			62%	78%
<i>Loudoun County Transition Area</i>									
12,900	2,900	49,900	10,000	+ 37,000	+ 7,100	44,300	8,900	+ 31,400	+ 6,000
				287%	245%			243%	207%

## 4.2 Network Changes

Numerous network coding changes were made to reflect the Substitute Vision. As noted previously, not all of the projects assumed for the Substitute Vision would have measurable effects at the regional level, and are also not able to be coded within the regional modeling environment. Consequently, only some of the roadway projects were coded for developing alternate forecasts. In addition, a number of roadways that were not included in the MWCOG model for the No Build or Build alternatives because they are local roadways were added to the Substitute Vision (SV) network as they were specifically called out by SELC et al. as roadways that could be improved to carry more traffic (and, thereby, take on a more regional or sub-regional function). In addition, some of the SV improvements were partially or fully included in the original models used for the forecasts; coding changes to the network for these improvements were, therefore, either limited or not necessary.

The changes made for the SV network are outlined in **Table 3**. As previously mentioned, the forecasts for the SV assume that the MNBPB is not constructed, but include the closure of US 29 and Route 234 (Sudley Road) through the MNBPB. Note that the projects that cannot be reflected at the scale of the regional travel demand model or that are already included in the model, as discussed in Section 3.2, are shaded in gray in the table to easily identify which projects did not require changes to the travel demand model to assess the Substitute Vision.

**Table 3. Changes to Travel Demand Model Network for Substitute Vision Projects (Non-Policy)**

Key	Location	Limits (From – To)	Improvement Description	Change	Basis
1*	I-66	US 29E to US 29W (Exits 43-52)	Signage change only.	None	Cannot be reflected in regional model
2	VRE	Manassas to Haymarket	New track construction (spur); also includes operations and maintenance costs.	Transit	<i>Model transit adjustment (see Section 5.1.3).</i>
3	Metrorail	Vienna to Centreville	New track construction (extension); also includes operations and maintenance costs.	Transit	<i>Model transit adjustment (see Section 5.1.3).</i>
4	I-66	DC WCL to	Convert I-66 HOV to 3+	None	Original models already

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Key	Location	Limits (From – To)	Improvement Description	Change	Basis
		Fauquier County WCL	(signage only).		include HOV3+ operations on I-66 (to west of US 29 [Gainesville]).
5	I-66	DC WCL to Fauquier County WCL	Institute express bus service; includes operations and maintenance costs.	Transit	<i>Model transit adjustment (see Section 5.1.3).</i>
6	Gainesville Interchange (US 29W)	at I-66	Interchange reconstruction (already complete).	None	Interchange improvements cannot be reflected in regional model.
7	Pageland Lane	US 29 to Groveton Road	Upgrade to R2 (24) (no added capacity).	Open	Original models assume closure of US 29, without access to Pageland Lane south of US 29. SV model runs allow for access to Pageland Lane via US 29.
8a	Tall Cedars Parkway	Lenah Loop Road to North Star Blvd	Construct parallel local service roads as a rural 2-lane roadway.	Add	Add facility to the model.
8b	Tall Cedars Parkway	North Star Blvd to Pleasant Valley Road	Construct parallel local service road as an urban, divided 4-lane roadway.	Upgrade	Upgrade existing portions of facility to minor arterial, extend to Pleasant Valley.
8c	Glascocock Blvd	Lenah Loop Road to North Star Blvd	Construct parallel local service roads as a rural 2-lane roadway.	Add	Add facility to the model.
8d	Glascocock Blvd	North Star Blvd to Loudoun County Parkway/Old Ox Rd	Construct parallel local service road as an urban, divided 6-lane roadway.	Add	Add facility to the model.
8e	Quarry Road	South Riding Blvd to Pleasant Valley Road	Construct parallel local service road as an urban 4-lane roadway.	Add	Add facility to the model.
9	US 50	Lenah Road to Fairfax County WCL	Construct dedicated bus lane and run bus service; also includes operations and maintenance costs.	Transit	<i>Model transit adjustment (see Section 5.1.3).</i>
10	US 50	VA 606 to VA 28	Add signage for trucks.	None	Cannot be reflected in regional model.
11	Cedar Ridge Boulevard	VA 659 to VA 621	Upgrade to R2 (24) add signage (no added capacity).	Add	Facility not in original model, add for Substitute Vision.
12	Bull Run Post Office Road (VA 621)	US 29 to VA 620	Upgrade (remains two lanes) to R2(24).	None	Cannot be reflected in regional model.
13	VA 28	at I-66	Interchange reconstruction.	None	Interchange improvements cannot be reflected in regional model.
14	VA 28	at Walney Rd / VA 620	Convert to grade-separated interchange.	None	Interchange improvements cannot be reflected in regional model.
15	VA 28	I-66 to VA 7	Widen VA 28 to 8 lanes.	None	No Build and Build models already include widening.
16	VA 28	City of Manassas NCL to Dulles Toll	Construct and operate light rail system;	Transit	<i>Model transit adjustment (see Section 5.1.3).</i>

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**Table 3. Changes to Travel Demand Model Network for Substitute Vision Projects (Non-Policy)**

Key	Location	Limits (From – To)	Improvement Description	Change	Basis
		Road	includes operations and maintenance costs.		
17	US 15	at VA 234	Construct roundabout.	None	Intersection improvements cannot be reflected in regional model.
18	VA 659	at VA 234	Construct roundabout.		
19	VA 234 (Sudley Road)	at Pageland Lane	Construct roundabout.		
20	Pageland Lane	at US 29	Construct roundabout.		
21	Catharpin Road	at VA 234	Construct roundabout.		
22	Bull Run Post Office Road (VA 621)	at US 29	Construct roundabout.		
23	Bull Run Post Office Road (VA 621)	at VA 620	Construct roundabout.		
24	Pleasant Valley Road	at VA 620	Construct roundabout.		
25	Loudoun County Parkway	VA 620 and US 50	Widening to 6 lanes, divided.	Modify	Upgrade facility.
26	Lenah Loop Road	Tall Cedars Parkway to US 50	Widen to 4 lanes.	Modify	Upgrade facility.
27	VA 659	US 50 to VA 7	Widen to 4 lanes, divided.	Modify	Upgrade portion of facility south of Dulles Greenway; remainder is already improved.
28	VA 606	US 50 to VA 7	Widen to 4 lanes, divided.	Modify	Upgrade portion of facility between Elden St and Van Buren St; remainder is already improved.
29	Wellington Road	VA 619 to Prince William Parkway	Widen to 6 lane minor arterial.	Modify	Widen facility; already coded as minor arterial.
30	Wellington Road	Prince William Pkwy to Godwin Dr	Widen to 4 lane minor arterial.	None	Original model includes this upgrade.
31	Wellington Road	at Prince William Parkway / Sudley Manor Drive	Construct bridge of Prince William Parkway and grade-separated interchange at Sudley Manor Drive / Prince William Parkway.	None	Interchange improvements cannot be reflected in regional model.
32	Balls Ford Road	Wellington Road to Sudley Road	Widen to 4 lane minor arterial.	Modify	Widen and upgrade portion of facility between Wellington Rd and Prince William Pkwy; remainder is already improved.
33	Balls Ford Road	Sudley Road to Coppermine Drive	Widen to 4 lane major collector.	Modify	Widen and upgrade facility.
34	Balls Ford Road	at Prince William Parkway	Construct interchange.	None	Interchange improvements cannot be reflected in regional model.
35	Godwin Drive	Godwin Drive (existing) to new interchange	Construct new roadway, 4-lane divided, controlled access to	Add	Add facility to the model.

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**Table 3. Changes to Travel Demand Model Network for Substitute Vision Projects (Non-Policy)**

Key	Location	Limits (From – To)	Improvement Description	Change	Basis
			match existing.		
36	Godwin Drive	Godwin Drive (extended) to new interchange	Construct raised open causeway/bridge.	None	Cannot be reflected in regional model.
37	Godwin Drive	at I-66	Construct new interchange with I-66.	Add	Add interchange connection between new Godwin Drive and I-66.
38	VA 28	Manassas CL to I-66	Widen to 8 lanes.	Add	Widen to eight lanes during off-peak periods, allow for 3 general-purpose and one HOV3+ lane during AM and PM peak periods.
39	VA 28	Manassas CL to I-66	Convert to HOV operations (signage and striping only).		
40	VA 28	at New Braddock Road	Construct interchange.	None	Interchange improvements cannot be reflected in regional model.

\* The Substitute Vision assumes that the MNBPB is not constructed, but includes the closure of US 29 and VA 234 (Sudley Road) through the MNBP.

### 4.3 Transit Changes

The Substitute Vision put forth by SELC et al. includes a host of transit improvements aimed at providing alternatives to auto travel in and near the proposed Tri-County Parkway. The transit improvements range from express bus to fixed-guideway services and are listed here:

- Extension of VRE commuter rail service from Manassas to Haymarket (*Project 2*)
- Extension of Metrorail Orange Line service from Vienna to Centreville (*Project 3*)
- Establishment of express bus service along Interstate 66 corridor between Fauquier and Arlington (*Project 5*)
- Provision of dedicated bus lane and service along Route 50 corridor (*Project 9*)
- Provision of light-rail along the Route 28 corridor between Manassas and the Dulles corridor (*Project 16*)

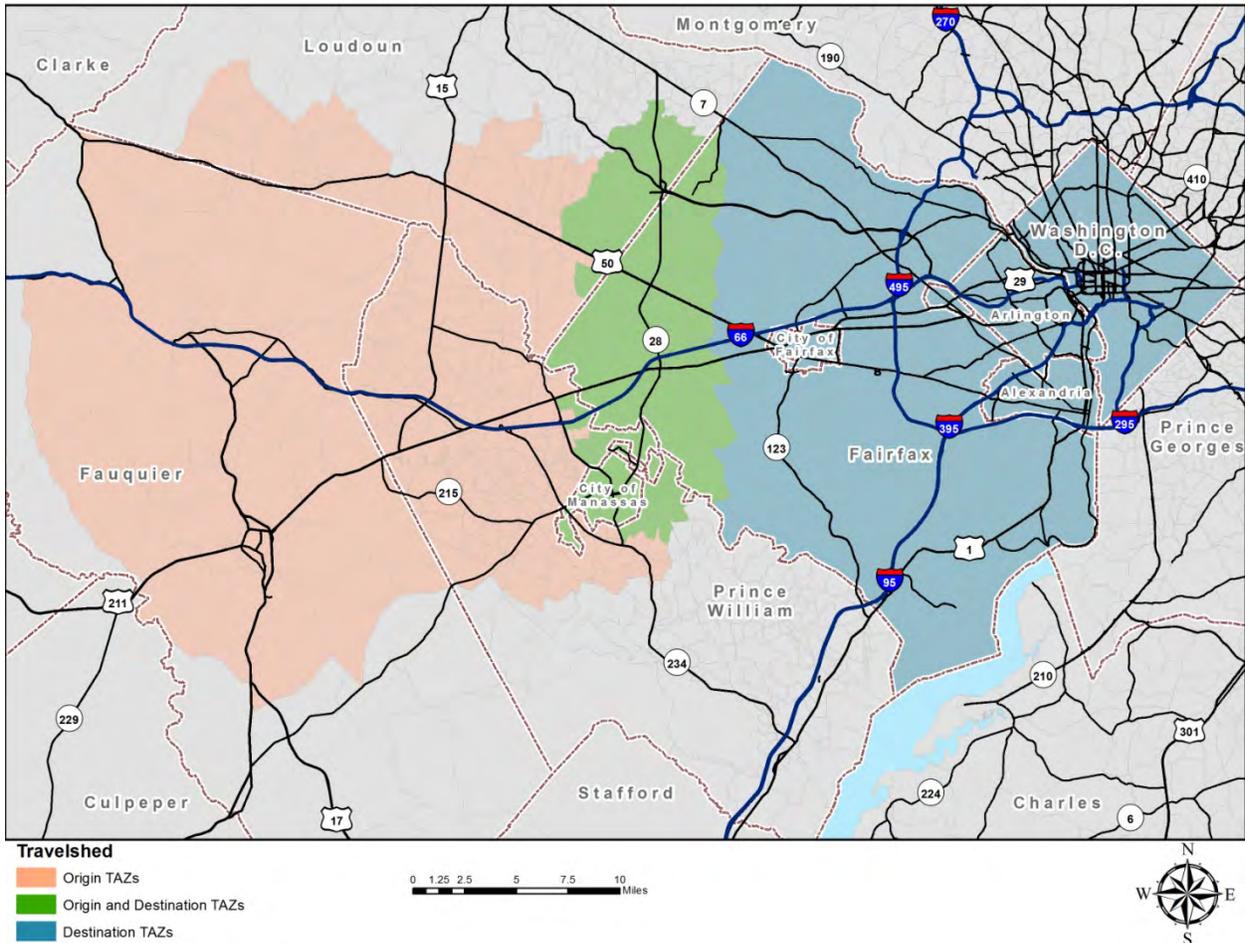
The effects of these transit improvements were modeled by estimating conservatively high mode shares that these transit modes would accommodate. Where available from other studies such as the *Super NoVa Transit/TDM Vision Plan* (Virginia Department of Rail and Public Transportation, November 2012), ridership estimates were used to assist in developing appropriate mode split estimates. In all cases, however, the study team sought to replicate the effects of implementing an aggressive transit program by using mode share estimates that are conservatively high.

Transit shares were estimated for the travel market in and near the proposed Tri-County Parkway (as described below, the travelsheds for this travel market extend well beyond the Tri-County Parkway study area) and the trips represented by these transit mode shares were then subtracted from the auto trips forecasted for the market, thereby reducing the forecasted auto travel. Note that these shares are in addition to those included in the current model (the mode share increase is above and beyond that currently included to represent current and planned transit service). While this process does not explicitly code transit routes, it does provide an excellent high-level way to estimate the effects of increased transit service within the generalized project area.

The analytic approach used for the transit analysis involved the selection of a single set of traffic analysis zones to represent the region over which trips may be reasonably expected to shift from auto to transit as a result of the transit services being introduced. A uniform transit share was then applied to each zone in the region. This assumption reflects the fact that many of transit improvements proposed by SELC et al.

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are generalized concepts without defined details such as specific endpoints of service, service times and frequencies, types of service, feeder routes, etc. The zones that were assumed to be affected by increased transit service for purposes of this analysis are highlighted in **Figure 4**; this area was assumed to represent the origins and destinations (or both) of the trips diverted from auto to transit. The reader should note that most of the improvements cited by SELC et al. were oriented in an east-west direction; both **Figure 4** and the results of the analysis reflect this fact. For this analysis, a 4 percent share is used to represent auto trips diverted to transit as a result of each of the transit improvements noted above. This conforms to the goal of developing conservatively high estimates, as multiple transit services are likely to compete for a relatively limited number of passengers.



**Figure 4. TAZs Assumed Part of the Travelshed for Transit Projects in the Substitute Vision**

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**5.0 FINDINGS AND CONCLUSIONS**

The analysis described in Section 4 allows for an assessment of the Substitute Vision in terms of its effects on total travel, travel by mode, travel by route, and a generalized assessment of traffic operations. It also allows for an assessment of potential costs of the various projects that comprise the Substitute Vision as well as a generalized consideration of other aspects related to implementing any type of transportation improvement.

**5.1 Traffic Volumes**

While specifics of the assumptions for the various analysis scenarios were included previously in Section 4, the following list, in conjunction with **Table 4**, describes the five analysis scenarios. The main differences between the TCP No-Build configuration and the SV are: 1) the TCP No-Build includes the MNBPB and the SV does not; 2) the SV assumes closure of US 29 and Route 234 without providing any alternate routes to replace them; and, 3) the SV provides for several major transit projects not assumed for the TCP No-Build. The purpose of the TCP Build versus TCP Interim Build configuration is to provide comparison with and without the MNBPB; both include the TCP.

**1. TCP No-Build:** This includes all projects in the CLRP with the exception of the proposed Tri-County Parkway. The MNBPB is included, and US 29 and VA 234 are assumed to be closed to through traffic within the Manassas National Battlefield Park.

**2. SV:** Reflects the SELC et al. Substitute Vision (as described in Section 5.1), which does not include either the proposed Tri-County Parkway or the MNBPB. In addition, Routes 29 and 234 are assumed to be closed to through traffic within the MNBPB.

**3. TCP Build:** Same as the *TCP No-Build* with the exception of including the proposed Tri-County Parkway.

**4. TCP Interim Build:** Same as the TCP Build Alternative, but without the MNBPB and with US 29 and VA 234 open to through traffic within the MNBPB (same as the existing situation). This represents a potential interim situation where the proposed Tri-County Parkway is open to traffic before the MNBPB is constructed. Note that trips assigned to this network are for 2040, as with each of the other model runs.

**5. SV (with TCP):** The Build Alternative along with all of the Substitute Vision changes (as described in Section 5.1). With the exception of the stretch of proposed roadway that is an overlap between the MNBPB and the Tri-County Parkway, none of the other segments of the MNBPB are assumed in this scenario. In addition, Routes 29 and 234 are assumed to be closed to through traffic within the MNBPB. The purpose of this scenario is to illustrate the level of travel demand on a TCP facility with all the SV improvements in place.

**Table 4. Modeling Analysis Scenarios**

	<b>SV Projects</b>	<b>MNBPB</b>	<b>US 29/ VA 234 Intersection Open?</b>	<b>TCP</b>
<b>1. TCP No Build</b>	No	Yes	No	No
<b>2. SV</b>	Yes	No	No	No
<b>3. TCP Build</b>	No	Yes	No	Yes
<b>4. TCP Interim Build</b>	No	No	Yes	Yes
<b>5. SV (with TCP)</b>	Yes	No	No	Yes

Note: All Analysis Scenarios include all CLRP projects, with the exception of the MNBPB and/or TCP, as indicated in the table.

Daily traffic forecasts for 2040 are shown in **Table 5**. This table is organized to allow for comparisons between the No Build Alternative and the Substitute Vision, between the Build Alternative and the Substitute Vision (with TCP), and between the TCP Interim Build and the Substitute Vision (with TCP).

It is important to note that all of the forecast volumes summarized in Table 5 reflect the application of the same methodology for post-processing across all modeling analysis scenarios. This post-processing follows NCHRP 255 procedures: base year traffic data and a base year travel demand model are utilized

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to determine percentage and absolute error in the model's assignment process, and then these factors are used to adjust the future year travel demand model output. This is done on a link-by-link basis. Because existing data is obviously not available for the Tri-County Parkway, the same types of adjustments that were made for the links were performed across a screenline, treating a combination of roadways as a single group, and then proportioning the resulting forecasts.

From the forecast volumes in Table 5, the most notable conclusion is that, even with the changes assumed for the Substitute Vision, travel demand on the Tri-County Parkway remains relatively unchanged, as seen by comparing build scenario volumes with and without the Substitute Vision. Other north-south facilities such as US 15 and Route 28 also would not experience much difference in daily volumes under No Build conditions with and without the Substitute Vision. The inclusion of Godwin Drive in the SV without building TCP creates a spike in traffic to the east of where that facility would connect to I-66, likely caused by traffic using the portion of I-66 between Godwin Drive and Route 28 as part of a north-south trip. This is in contrast to forecasts on I-66 being mostly lower with the Substitute Vision than without.

Due to the extent of changes included with the Substitute Vision, there may be counteracting effects on travel patterns. Some changes, such as reducing population and employment or adding new transit services, would reduce overall automobile trip volumes. However, because traffic on a road may come from locations well outside of the immediate area, localized reductions in traffic can often free capacity that is in turn utilized by traffic diverting from other facilities. Adding facilities such as Godwin Drive and its connection to I-66 can shift travel patterns, serving demand that can now be served more efficiently with shorter-time routes through the study area. Additionally, because many of the network and transit improvements do not directly address north-south travel patterns, the results show much more limited changes in traffic on facilities that serve these movements. A notable exception is the widening of Route 28, but since this is already considered in previous forecasts due to its inclusion in the CLRP, there is little additional north-south capacity added by the SV.

The following provides observations and conclusions from the traffic forecasts included in Table 5:

- The *TCP No-Build* includes volumes on the section of Tri-County Parkway between VA 234 and US 29 because this section of road would be in place with the MNBPB, which is included in the CLRP and therefore the No-Build Alternative. These volumes would almost double if the TCP were constructed (*TCP Build*) while the remainder of TCP would carry between 45,000 and 55,000 vehicles per day (vpd). If the TCP were constructed without the MNBPB, volumes over the entirety of TCP would be between 45,000 and 55,000 vpd. Implementation of the SV would increase or decrease volumes on TCP by less than 10 percent; north of VA 234, demand on TCP would actually increase due to a number of changes in connections in the roadway network including the fact that improved connections between VA 28 and I-66 (including a new interchange on I-66 immediately east of VA 234 Business) would provide an improved connection to TCP for north-south traffic.
- Changes to traffic volumes on US 15 are less than 10 percent higher or lower with and without the implementation of the SV improvements. As with volumes on the TCP, changes to projected volumes may seem counterintuitive; changes in network connections result in unexpected shifts in traffic based on new shortest-time paths between origins and destinations.
- In general, the SV improvements are projected to decrease traffic on Gum Spring Road, but volumes on this road would still be higher with the SV than they would with the construction of TCP. The same general conclusion can be drawn with respect to volumes on the Loudoun County Parkway.
- The SV appears to provide benefit in terms of reducing traffic on US 50 and VA 620, reflecting the fact that many of the improvements in the SV address east-west travel.
- Projected traffic volumes on VA 234 are affected by the assumptions in the SV of both closing US 29 and VA 234 through the MNBP and not constructing the MNBPB. As could be expected, constructing TCP without the MNBPB, which provides the closest comparison with the SV in terms of other area roads, results in the least change in traffic volumes on VA 234 (comparison between TCP Interim Build and SV (with TCP)).

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**Table 5. Daily Year 2040 Traffic Volume Forecasts on Area Roadways**

Roadway and Location		Daily Volumes		Differences		Daily Volumes		Differences		Daily Volumes		Differences	
		TCP No-Build	SV <sup>[2]</sup>	Volume	%	TCP Build <sup>[3]</sup>	SV (with TCP) <sup>[4]</sup>	Volume	%	TCP Interim Build <sup>[5]</sup>	SV (with TCP) <sup>[6]</sup>	Volume	%
Tri-County Parkway	Between US 50 and VA 620 (Braddock Rd)	-	-	-	-	44,600	48,400	3,800	8.5%	44,800	48,400	3,600	8.0%
	Between VA 620 (Braddock Rd) and VA 234 (Sudley Rd)	-	-	-	-	48,800	52,600	3,800	7.8%	48,200	52,600	4,400	9.1%
	Between VA 234 (Sudley Rd) and US 29	32,600	-	-	-	61,000	59,000	-2,000	-3.3%	47,400	59,000	11,600	24.5%
	Between US 29 and I-66	-	-	-	-	55,600	56,800	1,200	2.2%	47,400	56,800	9,400	19.8%
VA 234 Bypass (PW Pkwy)	South of Balls Ford Rd	55,000	46,800	-8,200	-14.9%	63,800	59,000	-4,800	-7.5%	63,400	59,000	-4,400	-6.9%
US 15	North of US 50	16,600	15,800	-800	-4.8%	16,800	16,200	-600	-3.6%	17,000	16,200	-800	-4.7%
	South of US 50	23,000	21,800	-1,200	-5.2%	20,600	20,200	-400	-1.9%	21,200	20,200	-1,000	-4.7%
	South of Braddock	16,000	15,400	-600	-3.8%	13,600	12,600	-1,000	-7.4%	12,800	12,600	-200	-1.6%
	North of VA 234	22,000	23,000	1,000	4.5%	18,400	17,600	-800	-4.3%	17,800	17,600	-200	-1.1%
	North of Heathcote Blvd	51,200	55,800	4,600	9.0%	46,000	45,400	-600	-1.3%	47,000	45,400	-1,600	-3.4%
VA 659 (Gum Spring)	South of US 50	30,200	26,400	-3,800	-12.6%	17,800	18,000	200	1.1%	19,600	18,000	-1,600	-8.2%
	North of Braddock	22,400	13,600	-8,800	-39.3%	7,400	5,600	-1,800	-24.3%	10,600	5,600	-5,000	-47.2%
	South of Braddock	25,000	14,000	-11,000	-44.0%	12,000	5,000	-7,000	-58.3%	13,200	5,000	-8,200	-62.1%
	North of VA 234	25,200	16,000	-9,200	-36.5%	12,400	8,800	-3,600	-29.0%	13,800	8,800	-5,000	-36.2%
Loudoun County Pkwy	North of US 50	55,800	53,400	-2,400	-4.3%	53,200	51,000	-2,200	-4.1%	53,600	51,000	-2,600	-4.9%
	South of US 50	25,000	20,800	-4,200	-16.8%	21,400	18,200	-3,200	-15.0%	21,400	18,200	-3,200	-15.0%
	North of Braddock	14,400	11,400	-3,000	-20.8%	10,800	9,200	-1,600	-14.8%	11,000	9,200	-1,800	-16.4%
VA 28	North of US 50	172,800	173,000	200	0.1%	171,000	171,400	400	0.2%	171,600	171,400	-200	-0.1%
	North of I-66	185,400	190,200	4,800	2.6%	181,000	185,400	4,400	2.4%	181,600	185,400	3,800	2.1%
US 50	East of US 15	27,400	28,000	600	2.2%	27,600	27,600	0	0.0%	27,800	27,600	-200	-0.7%

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	West of VA 659 (Gum Spring Rd)	45,600	37,200	-8,400	-18.4%	41,800	38,800	-3,000	-7.2%	42,000	38,800	-3,200	-7.6%
	Between VA 659 (Gum Spring Rd) and Loudoun County Pkwy	51,800	45,600	-6,200	-12.0%	49,200	44,800	-4,400	-8.9%	50,600	44,800	-5,800	-11.5%
	East of Loudoun County Pkwy	66,200	59,800	-6,400	-9.7%	65,400	58,600	-6,800	-10.4%	66,000	58,600	-7,400	-11.2%
VA 620 (Braddock Rd)	East of US 15	7,800	7,200	-600	-7.7%	9,200	9,800	600	6.5%	10,600	9,800	-800	-7.5%
	West of VA 659 (Gum Spring Rd)	12,600	10,800	-1,800	-14.3%	8,000	8,600	600	7.5%	9,200	8,600	-600	-6.5%
	East of VA 659 (Gum Spring Rd)	14,000	11,200	-2,800	-20.0%	12,800	9,600	-3,200	-25.0%	13,000	9,600	-3,400	-26.2%
VA 234 (Sudley Rd)	East of US 15	17,800	16,000	-1,800	-10.1%	17,400	13,400	-4,000	-23.0%	13,400	13,400	0	0.0%
	West of VA 705 (Sanders Ln)	18,200	15,200	-3,000	-16.5%	20,400	15,600	-4,800	-23.5%	17,600	15,600	-2,000	-11.4%
	Between Pageland Ln and VA 659 (Gum Spring Rd)	21,800	14,600	-7,200	-33.0%	22,800	18,600	-4,200	-18.4%	21,200	18,600	-2,600	-12.3%
	Between VA 659 (Gum Spring Rd) and US 29	17,600	200	-17,400	-98.9%	16,200	200	-16,000	-98.8%	13,000	200	-12,800	-98.5%
	Between US 29 and I-66	33,200	31,200	-2,000	-6.0%	33,200	31,200	-2,000	-6.0%	40,000	31,200	-8,800	-22.0%
	South of Balls Ford Rd	60,200	59,400	-800	-1.3%	63,200	61,000	-2,200	-3.5%	64,400	61,000	-3,400	-5.3%
US 29	West of I-66	68,400	64,200	-4,200	-6.1%	73,600	71,200	-2,400	-3.3%	70,400	71,200	800	1.1%
	Between I-66 and Pageland Ln	34,800	21,800	-13,000	-37.4%	37,800	37,000	-800	-2.1%	27,400	37,000	9,600	35.0%
	Between VA 234 (Sudley Rd) and VA 609 (Pleasant Valley Rd)	19,200	5,400	-13,800	-71.9%	18,400	5,200	-13,200	-71.7%	21,800	5,200	-16,600	-76.1%

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		TCP No-Build	SV <sup>[2]</sup>	Volume	%	TCP Build <sup>[3]</sup>	SV (with TCP) <sup>[4]</sup>	Volume	%	TCP Interim Build <sup>[5]</sup>	SV (with TCP) <sup>[6]</sup>	Volume	%
US 29 con't	Between VA 609 (Pleasant Valley Rd) and I-66	26,200	24,200	-2,000	-7.6%	25,000	22,600	-2,400	-9.6%	19,200	22,600	3,400	17.7%
	Between US 15 and US 29 (Gainesville)	118,600	115,000	-3,600	-3.0%	114,200	112,800	-1,400	-1.2%	116,400	112,800	-3,600	-3.1%
I-66	Between US 29 (Gainesville) and VA 234 Byp/TCP	157,800	155,200	-2,600	-1.6%	142,400	140,000	-2,400	-1.7%	153,800	140,000	-13,800	-9.0%
	Between VA 234 Byp/TCP and VA 234 Bus (Sudley Rd)	165,000	157,600	-7,400	-4.5%	162,600	158,200	-4,400	-2.7%	158,400	158,200	-200	-0.1%
	Between VA 234 Bus (Sudley Rd) and Godwin Drive (new interchange)	192,800	171,000	-21,800	-11.3%	189,600	168,600	-21,000	-11.1%	184,800	168,600	-16,200	-8.8%
	Between Godwin Drive (new interchange) and US 29 (Centreville)	192,800	209,800	17,000	8.8%	189,600	206,600	17,000	9.0%	184,800	206,600	21,800	11.8%
	Between US 29 (Centreville) and VA 28	183,800	189,000	5,200	2.8%	182,000	187,600	5,600	3.1%	179,800	187,600	7,800	4.3%

[1] -- The TCP No-Build includes the MNBPB and closure to through traffic of US 29 and VA 234 within the MNBP. [2] -- The Substitute Vision, which does not include either the MNBPB or TCP, assumes US 29 and VA 234 to be closed to through traffic within the MNBP. [3] -- The TCP Build includes the TCP, the MNBPB, and the closure to through traffic of US 29 and VA 234 within the MNBP. [4] -- The SV (with TCP) does not include the MNBPB and assumes the closure to through traffic of US 29 and VA 234 within the MNBP. [5] -- The TCP Interim Build includes the TCP but not the MNBPB; US 29 and VA 234 remain open to through traffic within the MNBP. [6] -- SV (with TCP) traffic volumes are repeated here for ease in comparing the forecasted traffic volumes with those of the TCP Interim Build.

= over 10% decrease in volume  
 = over 10% increase in volume

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**5.2 Costs**

Planning-level costs for the improvements included in the SV were developed using unit cost values developed by VDOT for planning studies (these unit costs are included in **Attachment B**). Total estimated costs, including rights-of-way and 30-year operating costs, are shown in **Table 6**. As indicated in this table, the total 30-year estimated cost for the SV is \$6.4 billion.

**Table 6. Estimated Costs of Substitute Vision Projects (Non-Policy)**

<b>Key</b>	<b>Location</b>	<b>Limits (From – To)</b>	<b>Improvement Description</b>	<b>Quantity</b>	<b>Basis</b>	<b>Estimated Cost</b>
1	I-66	US 29E to US 29W (Exits 43-52)	Signage change only.	9	Miles	\$250,000
2	VRE	Manassas to Haymarket	New track construction (spur); also includes operations and maintenance costs.	11	Miles	\$265,518,000
3	Metrorail	Vienna to Centreville	New track construction (extension); also includes operations and maintenance costs.	10	Miles	\$2,087,860,000
4	I-66	DC WCL to Fauquier County WCL	Convert I-66 HOV to 3+ (signage only).	40	Miles	\$200,000
5	I-66	DC WCL to Fauquier County WCL	Institute express bus service; includes operations and maintenance costs.	1	Each	\$1,158,000
6	Gainesville Interchange (US 29W)	at I-66	Interchange reconstruction (already complete).	0	-	\$0
7	Pageland Lane	US 29 to Groveton Road	Upgrade to R2 (24) (no added capacity).	2	Miles	\$23,460,000
8a	Tall Cedars Parkway	Lenah Loop Road to North Star Blvd	Construct parallel local service roads as a rural 2- lane roadway.	2	Miles	\$23,460,000
8b	Tall Cedars Parkway	North Star Blvd to Pleasant Valley Road	Construct parallel local service road as an urban, divided 4-lane roadway.	5	Miles	\$140,632,500
8c	Glascocock Blvd	Lenah Loop Road to North Star Blvd	Construct parallel local service roads as a rural 2- lane roadway.	2	Miles	\$23,460,000
8d	Glascocock Blvd	North Star Blvd to Loudoun County Parkway/Old Ox Road	Construct parallel local service road as an urban, divided 6-lane roadway.	2	Miles	\$70,074,000
8e	Quarry Road	South Riding Blvd to Pleasant Valley Road	Construct parallel local service road as an urban 4- lane roadway.	2	Miles	\$54,111,000
9	US 50	Lenah Road to Fairfax County WCL	Construct dedicated bus lane and run bus service; also includes operations and maintenance costs.	6.5	Miles	\$123,110,000
10	US 50	VA 606 to VA 28	Add signage for trucks.	5	Miles	\$250,000
11	Cedar Ridge Boulevard	VA 659 to VA 621	Upgrade to R2 (24) and add signage (no added capacity).	2	Miles	\$528,000

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**Table 6. Estimated Costs of Substitute Vision Projects (Non-Policy)**

Key	Location	Limits (From – To)	Improvement Description	Quantity	Basis	Estimated Cost
12	Bull Run Post Office Road (VA 621)	US 29 to VA 620	Upgrade (remains two lanes) to R2(24).	7	Miles	\$82,110,000
13	VA 28	at I-66	Interchange reconstruction.	1	Each	\$85,855,000
14	VA 28	at Walney Rd / VA 620	Convert to grade-separated interchange.	1	Each	\$114,455,000
15	VA 28	I-66 to VA 7	Widen VA 28 to 8 lanes.	14	Miles	
16	VA 28	City of Manassas NCL to Dulles Toll Road	Construct and operate light rail system; includes operations and maintenance costs.	15	Miles	\$1,440,360,000
17	US 15	at VA 234	Construct roundabout.	1	Each	\$5,304,000
18	VA 659	at VA 234	Construct roundabout.	1	Each	\$5,304,000
19	VA 234 (Sudley Road)	at Pageland Lane	Construct roundabout.	1	Each	\$2,652,000
20	Pageland Lane	at US 29	Construct roundabout.	1	Each	\$5,304,000
21	Catharpin Road	at VA 234	Construct roundabout.	1	Each	\$5,304,000
22	Bull Run Post Office Road (VA 621)	at US 29	Construct roundabout.	1	Each	\$5,304,000
23	Bull Run Post Office Road (VA 621)	at VA 620	Construct roundabout.	1	Each	\$2,652,000
24	Pleasant Valley Road	at VA 620	Construct roundabout.	1	Each	\$2,652,000
25	Loudoun County Parkway	VA 620 and US 50	Widening to 6 lanes, divided.	2	Miles	\$75,570,000
26	Lenah Loop Road	Tall Cedars Parkway to US 50	Widen to 4 lanes.	0.5	Miles	\$13,527,750
27	VA 659	US 50 to VA 7	Widen to 4 lanes, divided.	7.5	Miles	\$210,948,750
28	VA 606	US 50 to VA 7	Widen to 4 lanes, divided.	9	Miles	\$253,138,500
29	Wellington Road	VA 619 (Linton Hall Road) to Prince William Parkway	Widen to 6 lane minor arterial.	5	Miles	\$188,925,000
30	Wellington Road	Prince William Parkway to Godwin Drive	Widen to 4 lane minor arterial.	2	Miles	\$60,665,000
31	Wellington Road	at Prince William Parkway / Sudley Manor Drive	Construct bridge of Prince William Parkway and grade-separated interchange at Sudley Manor Drive / Prince William Parkway.	1	Each	\$214,637,500
32	Balls Ford Road	Wellington Road to Sudley Road	Widen to 4 lane minor arterial.	3	Miles	\$92,335,500
33	Balls Ford Road	Sudley Road to Coppermine Drive	Widen to 4 lane major collector.	0.5	Miles	\$14,063,250
34	Balls Ford Road	at Prince William Parkway	Construct interchange.	1	Each	\$114,455,000

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**Table 6. Estimated Costs of Substitute Vision Projects (Non-Policy)**

<b>Key</b>	<b>Location</b>	<b>Limits (From – To)</b>	<b>Improvement Description</b>	<b>Quantity</b>	<b>Basis</b>	<b>Estimated Cost</b>
35	Godwin Drive	Godwin Drive (existing) to new interchange	Construct new roadway, 4-lane divided, controlled access to match existing.	3.5	Miles	\$96,525,034
36	Godwin Drive	Godwin Drive (extended) to new interchange	Construct raised open causeway/bridge.	270000	Square Feet	\$179,010,000
37	Godwin Drive	at I-66	Construct new interchange with I-66.	1	Each	\$199,027,500
38	VA 28	Manassas CL to I-66	Widen to 8 lanes.	5.5	Miles	\$0
39	VA 28	Manassas CL to I-66	Convert lane(s) to HOV operations (signage and striping only).	5.5	Miles	\$1,552,000
40	VA 28	at New Braddock Road	Construct interchange.	1	Each	\$106,131,000
					<b>Total</b>	<b>\$6,391,839,284</b>

Note: Projects already contained in the CLRP or already complete are assumed to require no additional cost.

### 5.3 Other Considerations

Many of the Substitute Vision components are incorporated in a wide range of planning documents developed by localities, MWCOC, VDOT, and the Department of Rail and Public Transportation (DRPT) and, as such, seek to address particular safety, operational, or capacity needs within these localities. (It is important to note that the proposed Tri-County Parkway project also is included in most of these same planning documents based on the need to provide additional capacity within the areas that it would serve.) The planning documents generally recognize that all of the improvements contained therein are important elements of providing a safe and effective transportation system that serves current and projected travel needs. While planning documents sometimes prioritize projects and recognize that there are funding limitations, the plans consist of a full package of recommended improvements that meet various regional or sub-regional needs across all modes and are generally intended to work in concert as a complete transportation solution that will be implemented in parts. Recognizing that recommendations in a transportation plan or vision complement and support each other, efforts to combine a package of disparate components of a Substitute Vision into an alternative to a single proposed action (such as the proposed Tri-County Parkway) do not reflect the realities of the transportation planning process and, other than serving as a sensitivity analysis and planning/thought exercise, are largely impractical, as described further in the bullets below.

- The Substitute Vision is not a single-project alternative – it essentially is an alternative No-Build scenario. The components of the Substitute Vision are wide-ranging in scope and location, as shown in Table 1 and Figure 2 in Section 2. The components as provided by SELC et al. are also generally not well defined. In order to analyze the Vision on any level, it was necessary to assume project details, such as termini and length, which were not provided by SELC et al.
- The Substitute Vision is not a reasonable alternative to the Tri-County Parkway project. As described in Section 2, the elements of the purpose and need of the Tri-County Parkway are mainly related to north-south transportation linkage; however, the components of the Substitute Vision assume that the key to expanding regional capacity is to improve east-west travel, obviating the need for north-south improvements. Furthermore, as shown in the transportation analysis in Section 5.1, even with the implementation of all components of the Substitute Vision, the need for the Tri-County Parkway is not changed. As such, the Substitute Vision does not meet the purpose and need of the Tri-County Parkway and therefore is not a reasonable alternative to it.

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- One of the main points of the Substitute Vision is to assume the closure of Route 29 and Route 234 within the boundaries of the Manassas National Battlefield Park, while also assuming that neither the Tri-County Parkway nor the Manassas National Battlefield Park Bypass would be built (i.e., no replacement routes would be provided to absorb the traffic displaced by the road closures. This not only goes against the CLRP, but the direction of Congress. The Manassas National Battlefield Park Amendments of 1988 mandated study of alternative routes to allow for the closure of portions of these two roadways due to negative effects of traffic congestion within the Battlefield from non-park related traffic on historic preservation, park interpretation, visitor experience, and park management. Furthermore, Route 29 and Route 234 through the Battlefield could not feasibly be closed until viable alternate routes are in place, which the Substitute Vision does not provide. Diverting traffic from Route 29 onto I-66 between Exit 43 and Exit 52 without capacity improvements, as proposed by SELC et al., would create congestion and delay at the two merge/diverge points along the Interstate (as documented in the MNBPB DEIS).
- The estimated planning-level cost to implement the projects necessary to achieve the Substitute Vision totals over \$6 billion.
  - The comparable estimated planning-level cost to construct the Tri-County Parkway is approximately \$440 million, which is less than 10% the cost of the Substitute Vision total. *(Note: the Tri-County Parkway capital cost was estimated to be approximately \$201 million in the original 2005 study; the estimate using the same 2013 planning-level assumptions was provided for comparison purposes in this report only.)*
  - By comparison, the VDOT statewide budget for construction for FY 2013 is \$1.6 billion.
- The Substitute Vision is not based upon the current CLRP, which is required to be constrained by available funding. As such, to implement the Substitute Vision, not only would more funding need to be identified, but the CLRP would need to be amended.
- Land use in Northern Virginia is determined at the local level; changes to existing land uses/zonings would require changes to existing approved local Comprehensive Plans and zoning ordinances. Land use changes are a major component of the Substitute Vision, but are outside the control of VDOT and FHWA and, as such, are not a realistic component to any alternatives analysis for a roadway project. Past attempts to downzone areas in Northern Virginia have resulted in multi-year battles that are not quickly resolved. Any assumption that suggests that changes to current land use/zonings as a simple and unchallenged process is not supportable.
- The components of the Substitute Vision do not take into account any elements of actual project development, which are factors that are critical to the realistic recommendation of any alternative/set of alternatives. Such factors include, but are not limited to: funding; assessment of potential environmental impacts or constraints; and public/agency involvement and comment. In contrast, the Tri-County Parkway has been undergoing the NEPA process since 2001, as detailed in Section 2 and has been subjected to intensive study and extensive public and agency involvement. While no effort has been made to quantify or evaluate environmental impacts of the Substitute Vision, many of its components clearly could involve substantial impacts, some of which would involve the same resources as are impacted by the TCP. The Substitute Vision clearly is not a “low-build” alternative that could be implemented easily in a timely fashion, as is suggested in some of the SELC et al. correspondence. Indeed, the project development process could identify issues that might restrict elements of it from proceeding.

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**ATTACHMENT A  
SELC ET AL. CORRESPONDENCE**

June 13, 2005

Mr. Earl T. Robb  
Virginia Department of Transportation  
1401 East Broad Street  
Richmond, Virginia 23219

**Re: Comments on Draft Environmental Impact Statement and Draft Section 4(f)  
Evaluation for the Tri-County Parkway Location Study**

Dear Mr. Robb:

These comments are being submitted on the Draft Environmental Impact Statement (DEIS) and Draft Section 4(f) Evaluation prepared for the Tri-County Parkway (TCP) Location Study. We appreciate your consideration of these comments, which we are submitting on behalf of the Piedmont Environmental Council, the Coalition for Smarter Growth, the Chesapeake Bay Foundation, the National Trust for Historic Preservation, and the Virginia Chapter of the Sierra Club. In addition, we are attaching and hereby incorporate by reference a report prepared by Norman L. Marshall and Brian R. Grady of Smart Mobility, Inc., entitled *Review of Tri-County Parkway Location Study Draft Environmental Impact Statement and Draft Section 4(f) Evaluation* (hereafter, "Smart Mobility Study").

The primary purpose of this project has been identified as the evaluation of a new north-south link that would connect the City of Manassas with I-66 and the Dulles corridor. DEIS at p. 1. We do not believe, however, that either the need for this project or the project's ability to satisfy that need has been demonstrated. We question the extent to which assumptions underlying the evaluation of alternatives in this document (such as assumptions regarding development planned in Loudoun County) are valid. In addition, we do not believe that adequate consideration has been given to more effective and less damaging alternatives, including mass transit, improvements to existing roads such as VA 28, and access management. Finally, we feel that impacts of the project on environmental and historical resources – both when viewed in isolation and in conjunction with other foreseeable impacts on the study area – have not been sufficiently presented in the DEIS.

We feel that these deficiencies and others discussed below need to be remedied either in a supplemental DEIS or in the final EIS in order for this study to fully satisfy the requirements of the National Environmental Policy Act (NEPA) and serve as an effective tool for the assessment of the proposed project's impacts. Left inadequate, the DEIS will promote the unnecessary

construction of a major highway through rural areas of Prince William, Loudoun, and Fairfax Counties that will destroy open space, impact the Manassas National Battlefield Park and the associated Historic District, and increase sprawling development. This will only worsen traffic congestion and generate more air and water pollution in a region that already fails to meet federal health standards for ozone pollution and has a number of streams that fall short of federal water quality standards. NEPA requires a more complete presentation and consideration of environmental consequences before a project such as this one may go forward.

**Neither the Need for this Project, Nor the Project's Ability to Meet this Need, Has Been Established**

Section 4.1 of the DEIS compares the projected 2030 Average Daily Traffic (ADT) volumes of the three CBAs with existing conditions and with conditions predicted under the No-Build alternative. The information suggests that expanding east-west capacity is the key to improving traffic in the study area. Similarly, the summary in Table 1.3-5 of predicted levels of service of the different segments of the three CBAs “shows much worse congestion for east-west travel than for north-south travel.” Smart Mobility Study at p. 6. Rather than focusing time, money and effort on north-south improvements, the real potential for improvement of traffic problems in the study area lies in expanding east-west capacity, something the DEIS largely ignores and the TCP would not accomplish.

For instance, the ADT projections for the Comprehensive Plan CBA show that “[t]he lowest ADT volumes...occur just north of I-66, as the majority of vehicles utilize Segment E [the segment of this CBA that is south of I-66] as a feeder to eastbound I-66 (in the morning peak) and from westbound I-66 (in the evening peak). There are relatively low through volumes between Segment E south of I-66 and Segment F north of I-66.” DEIS at p. 87.

As for the West Four CBA, “a similar situation to the Comprehensive Plan CBA exists where volumes on the [currently existing] connecting roadway (VA 234 Bypass) south of I-66 carry much higher volumes than on Build Segment C north of I-66....” Id.

The same situation occurs with the West Two CBA, where the 116,800 drivers projected to use the VA 234 Bypass south of I-66 plummets to roughly 40,000 drivers who would stay on this CBA once it passes over I-66. DEIS at p. 88. It should be noted that although 40,000 vehicles per day is a moderately high volume of traffic, most of this traffic would be either traffic induced by the project itself, or traffic diverted from uncongested local roads, rather than traffic diverted from parallel congested roads. See Smart Mobility Study at p. 20.

The evaluation of mass transit as an alternative on page 20 also seems to highlight the lack of need for this project. DEIS at p. 20. According to the DEIS, “the development patterns and traffic patterns and volumes within the study corridor do not favor north-south through movement along the corridor.... The through volumes are by far the weakest in the study area and would not attract sufficient transit riders to make such service viable.” Id. If, as the DEIS states, traffic and development patterns do not favor north-south through movement, then that finding would seem to call into question the need for a TCP and might instead point to the

desirability of pairing more limited north-south improvements with expanded east-west capacity in the study area.

Perhaps more importantly, it does not appear that the project would actually meet its stated purposes. These purposes can be boiled down to reducing congestion and improving safety, and none of the CBAs markedly reduce congestion or improve safety in a way that would justify their exorbitant costs. See Smart Mobility Study at p. 23- 24. Specifically, sections 4.1.8 through 4.1.11 make clear that none of the CBAs would significantly reduce average travel time, vehicle miles traveled, or vehicle hours traveled in the study area when compared with the No-Build alternative. In fact, the DEIS states that vehicle hours traveled -- one significant indicator of congestion -- “will increase approximately 68 percent from 2005 to 2030 regardless of the alternative selected.” DEIS at p. 93. Notably, this statistic includes the No-Build alternative, so that none of the CBAs appear to have a measurable effect on reducing congestion. See Smart Mobility Study at pp. 5-20.

Moreover, the TCP would only reduce by *one to three* minutes those trips from one end of the proposed corridor to the other. This is one of the few origin-destination paths included in the study for which travel time would be reduced, yet this path represents only 3.73% of the work trips from the Manassas area in 2001 and 3.9% in 2025. Id. at p.21.

In addition, level of service (LOS) indicators show that the CBAs provide insignificant LOS improvement versus the No-Build alternative. Id. at pp. 7-8. This lack of improvement is due to the fact that the CBAs primarily serve to simply redistribute traffic onto the TCP from non-congested roads rather than accepting traffic from more congested roadways. DEIS at p. 19; Smart Mobility Study at p. 20.

Taken together, these points demonstrate that a new north-south thoroughfare is unnecessary, and that, in any event, none of the proposed configurations of the TCP would accomplish the stated needs of the project more effectively than the No-Build alternative or a combination of other alternatives that were prematurely dismissed. VDOT’s planning efforts and state and federal taxpayers’ funds would be better invested in improving the efficiency and capacity of I-66 as an east-west thoroughfare as well as upgrading VA 28 to improve north-south movement, rather than constructing a new north-south parkway that is not needed and would do little to alleviate congestion in the region.

**Inadequate Evaluation of Alternatives in Chapter 2**

Some seemingly viable preliminary alternatives were not thoroughly evaluated in the DEIS, while other realistic concepts that may serve the purpose and need of the project equally well (if not better) than the CBAs have been summarily dismissed without adequate explanation or evaluation.

## 1. Transportation System Management Alternative

It is difficult to understand exactly which Transportation System Management (TSM) measures were included in the TSM Alternative described in section 2.3.1. That section states that “[m]ajor improvements such as the addition of lanes...would be considered a separate build alternative and *not* a TSM alternative.” DEIS at p. 19 (emphasis added). However, the section then refers to the “wide array” of TSM improvements addressing the TCP study area that are already contained within the 2003 Constrained Long-Range Plan (CLRP) and the Six Year Plan and concludes that “[t]here are no practicable TSM measures beyond those already proposed in the CLRP and VDOT Six Year Plan which could reasonably be implemented to adequately address the purpose and need” for the TCP. DEIS at pp. 19-20. Because these unidentified improvements would not satisfy the purpose and need of the project, the TSM Alternative is eliminated from further consideration. *Id.* In order to afford decision makers and the public a realistic opportunity to assess the TSM Alternative, the DEIS needs to perform a full analysis of a TSM alternative and state exactly which of those measures in the 2003 CLRP and Six Year Plan it considered as part of the TSM Alternative, and which it did not. See Smart Mobility Study at pp. 37-38.

Further (as will be discussed below), the No-Build alternative appears to include all of those transportation projects contained in the 2003 CLRP and the Six Year Plan that lie within the study area. Therefore, if the TSM Alternative does *not* include all of these projects (as the quotation above about the exclusion of major improvements such as the addition of lanes seems to indicate), then it is actually a more limited alternative than the No-Build alternative. This is an illogical result. It is difficult to conceive how an alternative that is made more limited than the No-Build alternative could ever qualify as a “reasonable alternative under NEPA” to deserve additional consideration in an EIS. DEIS at p. 19. The final EIS should include a TSM Alternative that explores the possibility of adding capacity, improving operating deficiencies, and adopting access management strategies to maximize the efficiency of the existing transportation system in the study area. This would presumably require looking beyond any improvements already assumed as part of the No-Build alternative and not simply making the claim, as this DEIS does on pages 19 and 20, that no such additional TSM measures exist.

## 2. Mass Transit

The reasons cited for rejecting mass transit as a stand-alone alternative all revolve around the problems that would purportedly be faced in developing and expanding mass transit in the study area. First, the DEIS points out that there is no transit authority (either current or planned) that would cover the entire study area. Second, while *studies* to provide transit service within the study area exist, “these studies have neither financial plans, detailed project scopes, alignments, nor costs associated with them – nor are they slated for construction in the CLRP.” DEIS at p. 20. Third, the DEIS suggests that traffic patterns in the study area do not favor north-south through movement along the corridor because most trips are to points outside the corridor or along only a portion of the corridor. As a result, according to the DEIS, the through volumes are not sufficient to make such service viable. *Id.*

With regard to the first point that “there is no transit authority in existence whose service area covers the entire study area,” the DEIS acknowledges that there are four transit authorities in the study area that span jurisdictional lines. *Id.* The DEIS then dismisses any need to further discuss potential mass transit alternatives afforded by these authorities by asserting that these authorities focus on east-west commuter trips into and from Washington D.C. and the inner suburbs and do not focus on local service. While it may be true that the bulk of the passengers that board the Metrorail or the buses are longer distance commuters, that does not mean that local riders do not use these transit alternatives. Nor would it follow that any expansion of the system would be available only for east-west travel to and from the inner suburbs and Washington. Instead of engaging in an analysis of the ability of existing transit authorities in the area to provide for increasing demand, the DEIS dismisses the need for such an analysis out of hand.

With regard to the remoteness of mass transit alternatives currently under study, the final EIS should examine the potential effects of all mass transit alternatives that are included in the region’s CLRP. As we discuss later in the section “Ambiguity of the No-Build alternative,” the DEIS is very inconsistent in the weight it gives projects included in the region’s CLRP. Here, the DEIS dismisses several transit studies as too remote because they lack details on scope, alignment, and cost. In aggregate, however, these projects could significantly contribute to fulfillment of the goals of this TCP study. *See* Smart Mobility Study at pp. 37-38. In particular, a combination of a north-south light rail system along VA 28 from Manassas to Dulles Airport and east-west rail and bus improvements along US 50 between Loudon County and Arlington County and along I-66 between Fauquier County and Arlington County could significantly lessen projected traffic congestion along those routes. The expansion of Virginia Railway Express to Haymarket – a project already in the planning stages – would have a similarly beneficial effect on traffic patterns and volume in the study area. The DEIS also fails to discuss the effect of the implementation of east-west rail service along the Dulles Access Road/Toll Road Corridor despite the fact that the CLRP includes implementation of this project as a detailed plan and not simply a study. A supplemental DEIS or the final EIS should include a thorough examination of the potential for all mass transit alternatives discussed in the region’s CLRP to at least partially satisfy the goals of this project.

The DEIS does not make clear why mass transit would fail to accommodate those trips that are within only a portion of the corridor. Presumably bus and rail service would have “stops” along the routes that would be located near those areas where most travelers would desire ingress to, and egress from, the traffic system. Similarly, such a transit system would presumably tie into other mass transit systems in the area so that commuters traveling to points outside the study area could be accommodated.

At a minimum, mass transit deserves further evaluation to determine its ability to partially meet the needs of the study. VDOT is obligated to evaluate mass transit as a partial alternative, since NEPA requires lead agencies to consider reasonable alternatives even if they achieve only partially the objectives of a proposed action. *See, e.g., Natural Resources Defense Council v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972) (stating that an agency may not “disregard alternatives merely because they do not offer a complete solution to the problem.”);

North Buckhead Civic Ass'n v. Skinner, 903 F.2d 1533, 1542 (11th Cir. 1990) (“discussion of alternatives that would only partly meet the goals of the highway project may allow the decision-maker to conclude that meeting part of the goal with less environmental impact may be worth the trade-off with a preferred alternative that has a greater environmental impact”). Some combination of mass transit with other improvements or more limited road upgrades should be evaluated in the final EIS or in a supplement to this DEIS. Indeed, a transit alternative could be an important part of an alternative land use scenario that further reduces vehicle trips, vehicle miles traveled, and both north-south and east-west highway travel demand.

### 3. The East Two CBA (VA 28)

This Candidate Build Alternative would consist of Segments A and B as shown in Figure 2.1-2 on page 14. Segments A and B are those portions of VA 28 that lie north and south, respectively, of its intersection with I-66. According to the DEIS, the Segment A portion of this CBA is comprised of those improvements in the CLRP that are “generally described as the widening of existing VA 28 to an eight-lane, divided freeway facility.” DEIS at p. 21. In evaluating the impacts, the DEIS then points out that the Segment A portion of this CBA would affect 59 acres of E.C. Lawrence Park and 17 acres of Sully Park – the second highest impact on parklands of the CBA segments assessed. Further, Segment A would impact “7.7 acres of wetlands (the second highest effect to wetlands of those CBA segments assessed) and would require 10 stream crossings (the third highest effect to streams of those CBA segments assessed).” DEIS at p. 21. However, these impacts attributed to Segment A were presumably included within the impacts resulting from the No-Build alternative since the widening of VA 28 along Segment A is a part of the No-Build. These impacts should not be mentioned as if they are limited to this CBA when they would be incurred with the adoption of any CBA, including the No-Build alternative. The DEIS should be revised to eliminate consideration of these impacts from the discussion of CBA East Two, and to instead assess those impacts of this CBA that are not already a part of the No-Build alternative.

Similarly, the DEIS should explain the improvements and construction measures that comprise Segment B of the East Two CBA. If, like Segment A, Segment B is composed solely of those measures that are already in the CLRP and, hence, are already a part of the No-Build alternative, then the feasibility of expanding or otherwise improving VA 28 to serve the purposes of the study has not been explored. There must be some strategies that can be taken to improve traffic efficiency and capacity along VA 28 that lie outside of the routine maintenance and improvement measures already included in the CLRP. A failure to explore such strategies renders illusory any analysis of upgrades to VA 28 as a legitimate alternative, as it essentially amounts to calling the No-Build alternative by another name.

After appearing to overstate the impacts of the East Two CBA, the DEIS then offers nothing more than a conclusory rejection of its potential benefits. It offers minimal support for its conclusion that this alternative would not serve the needs of the study, stating “[m]odeled traffic scenarios clearly indicate that the corridor defined by Segments A and B fails to provide any substantial relief to the transportation measures of capacity, delay, and travel time savings in the study area.” Id. A statement such as this, with no references for the models relied on or

further detail about the resulting traffic scenarios, is insufficient to allow decision makers and the public to assess the degree of relief offered by these improvements. If nothing else, this alternative, like the mass transit alternative above, should be evaluated for its potential to at least partially meet the stated north-south traffic needs.

### **Ambiguity of the No-Build Alternative**

The No-Build alternative is inconsistently defined throughout the DEIS. Definitions of the improvements and road projects it includes are so general and variable that it is impossible to discern exactly what the “base case” includes.

For example, section 2.4.1 contains the following definition:

“The No-Build Alternative includes...currently programmed, committed, and funded roadway and transit projects as included in the 2003 CLRP and the VDOT Six Year Program.... Projects programmed in the CLRP and VDOT Six Year Program include roadway widening and interchange improvements in the VA 28 corridor between the City of Manassas and VA 7. They also include an array of TSM improvements to improve the efficiency of vehicles traveling along the roadways in the study area. A complete listing of roadway and transit projects assumed as part of the No-Build Alternative is listed in the Alternatives Identification and Screening Technical Report (VDOT, 2004).”

DEIS at p. 22. The Alternatives Identification and Screening Technical Report (AISTR) then states that “[r]oadway and transit projects assumed as part of the No-Build Alternative are listed in Appendix A and Appendix B [of that document]. Further examination reveals that Appendix A of the AISTR is the “Northern Virginia Excerpts” from the Virginia Transportation Six-Year Improvement Program for Fiscal Years 2005-2010, while Appendix B is the 2003 Update to the Constrained Long Range Plan for the Metropolitan Washington Council of Governments. Therefore, every project listed in these two appendices is apparently part of the No-Build alternative, regardless of the stage of planning or level of funding for each individual project contained within those documents.

On the other hand, section 4.1.1 of the DEIS states that:

[t]he No-Build alternative includes *planned and programmed* highway and transit improvements from the most recently adopted CLRP from the metropolitan Washington region.

DEIS at p. 85 (emphasis added). This definition makes no mention of *funding* as a factor, and it does not reference the Six-Year Program as a source of projects included in the No-Build alternative.

Similarly, the description of this alternative in the section of the DEIS evaluating cumulative impacts states that the No-Build alternative “assumes that all roadway and transit projects programmed for construction in the region’s CLRP will be implemented except the Tri-County Parkway.” DEIS at p. 203. Again, there is no mention of the Six-Year Program. Moreover, the cumulative impacts section also notes that the Manassas National Battlefield Park Bypass is “assumed to be built in the future conditions under the No-Build condition,” despite the fact that the Battlefield Bypass does not appear to be listed in either the 2003 CLRP or the Six-Year Program and has not been funded. DEIS at p. 206.

As a result, the reader is left to guess what has and has not been included in the No-Build alternative. With such a wide array of projects apparently included – each with varying possibilities of actually being constructed – the No-Build alternative becomes a confusing concept whose precise parameters are unintelligible. A sentence in the section of the DEIS addressing coastal zone management highlights the difficulty that this generality poses, and how it severely limits the usefulness of the analyses in the DEIS:

Although small amounts of new right-of-way may be required for implementation of programmed improvements associated with the No-Build Alternative, no major impacts to coastal zone resources are anticipated; however evaluation of the potential effects to coastal zones may be required if any programmed improvement involves major new construction.

DEIS at p. 190. Essentially, this sentence seems to say that if the No-Build alternative includes major new construction, then the analysis of effects on coastal zones will need to be reevaluated. This sentence shows that the extent of the “programmed improvements” that are being included in the No-Build alternative are not even clear to the drafters of the DEIS. As a standard for comparison, then, this No-Action is generally unhelpful.

Indeed, the lack of a true standard for comparison manifests itself throughout Chapter 4 in the numerous places in which the DEIS purports to set forth the impacts of the No-Build alternative as either “minor” or “not substantial,” without providing any quantification. See, e.g., DEIS at p. 95 (Land Use); DEIS at p. 96 (Residential Development); DEIS at p. 101 (Parklands and Recreation Areas), DEIS at p. 143 (Stormwater Pollution Loads); etc. Moreover, in the chart summarizing overall impacts at pages S-4 and S-5 of the DEIS, the impacts attributed to the No-Build are generated simply by “assum[ing] that effects associated with the TSM components of the No-Build alternative (the base case) are equivalent to roughly 10 percent of lowest CBA effect.” This arbitrary baseline is not an adequate use of the No-Build, the purpose of which is to provide a benchmark that will enable “decisionmakers to compare the magnitude of environmental effects of the action alternatives.” Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026 (1981).<sup>1</sup>

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<sup>1</sup> See also Half Moon Bay Fishermen’s Marketing Ass’n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988) (“without establishing...baseline conditions...there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA.”); Council of Environmental Quality, Considering Cumulative Impacts under the National Environmental Policy Act (Jan. 1997) (“The concept of a baseline against

When the impacts of the No-Build alternative are either dismissed without quantification as being “minor” or are merely assumed to be a certain fraction of the impacts of the least-damaging CBA, there is no firm standard that can be used to evaluate each of the CBAs. More must be done in a supplemental DEIS or the final EIS to establish and quantify the impacts of a No-Build to provide an accurate comparison for the impact each CBA will have on the environment. The first step to take in this direction is to establish a specifically definable scenario for the No-Build. The current No-Build is inherently speculative and unreliable, and, as a result, it is not particularly helpful. NEPA does not permit the use of a “moving target” with unquantifiable impacts as a No-Build alternative.

### **Inadequate Evaluation of Impacts in Chapter 4**

#### 1. Direct Impacts

##### A. Water Quality

Chapter 3 reveals numerous existing water quality problems in the study area. There are three stream sections within the study area that qualify as “impaired waters” under section 303(d) of the Clean Water Act: one on Bull Run, one on Little Bull Run, and one on Broad Run. DEIS at p. 63. The Bull Run segment is impaired due to aquatic life and benthics, as well as PCBs in fish tissue. *Id.* Little Bull Run and Broad Run are impaired by fecal coliform. *Id.* The DEIS also notes that aquatic benthic communities reflect an overall tendency towards water quality degradation in Cub Run and Bull Run. Additionally, the headwaters of Young’s Branch are listed by VDEQ as “threatened” with regard to the aquatic life goal. *Id.*

Section 4.11 acknowledges that highway runoff could exacerbate the elevated concentration of these pollutants in Bull Run and Little Bull Run. This section also acknowledges that implementation of a build alternative has the potential to contribute to adverse indirect effects and cumulative impacts related to increases in impervious cover (and associated water quality changes) by potentially influencing zoning and land use policies. DEIS at p. 141. However, this section fails to quantify the pollutant levels, and gets no more specific than saying the CBAs “have the potential” to further degrade these waterways.

More analysis is necessary. The DEIS fails both in section 4.17 (Direct Effects on Surface Waters) and section 4.24.5 (Secondary and Cumulative Effects on Natural Resources) to quantify impacts to surface water quality. The DEIS should include numerical estimates of additional loads of nutrients, sediments, and other contaminants that will result from construction of the various alternatives, as well as the effects these additional loads will have on the streams in the study area, especially the impaired sections of those streams. Failure to provide quantitative information on loadings of pollutants precludes compliance determinations with various applicable state and federal statutes, such as the Clean Water Act. The lack of

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which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process”).

consideration of the impacts of the various alternatives on surface waters results in the DEIS providing insufficient information for decision makers and the public to adequately evaluate the proposed project. See Coalition for Canyon Preservation v. Bowers, 632 F.2d 774, 782 (9th Cir. 1980) (finding, inter alia, that the EIS failed to give decision makers sufficient data from which to draw conclusions regarding pollution impacts where the agency merely acknowledged that the proposed highway project would cause temporary pollution but failed to provide facts or studies that to support its conclusion).

### B. Wetlands

The analysis of wetlands impacts in the DEIS fails to demonstrate compliance with the requirements of Section 404 of the Clean Water Act, which in conjunction with EPA regulations give the Army Corps of Engineers the discretion to permit non-water-dependent projects that impact wetlands only if it is shown that the project proponents choose the least damaging practicable alternative. 40 C.F.R. § 230.10(a) and (c). The first step in choosing the least damaging practicable alternative is to ensure that the project avoids all impacts to the maximum extent practicable. Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines. While the DEIS analyzes the wetlands impacts of each of the CBAs, as well as the No-Build alternative, it does not sufficiently demonstrate that each of these alternatives is chosen so that wetlands are avoided whenever possible. Instead, the DEIS merely assures its readers that “mapping developed and investigated using GIS techniques for the wetland assessment effectively documents avoidance and minimization of significant acreage of aquatic habitats.” DEIS at p. 176. This assurance does not provide enough information to assess the possibilities considered and the ways in which wetlands were avoided. Furthermore, this assurance seems to contradict the DEIS’s later statement that “[s]hould a CBA be selected, the alternative would be developed further through advanced design and engineering techniques to avoid wetland and other aquatic resource encroachments and displacements where feasible, and to the maximum extent practicable.” DEIS at p. 178. The DEIS fails to provide evidence that it has complied with the necessary Section 404 permitting requirements. Instead, it provides decision makers and the public with contradictory statements regarding compliance.

### C. Historic Resources

The DEIS’s assessment of direct impacts on historic resources, especially the Manassas National Battlefield Park and the associated Historic District, is inadequate. The DEIS states that VDOT assessed the impacts on historic resources in accordance with Section 106 of the National Historic Preservation Act (NHPA). DEIS at p. 124. For the Manassas National Battlefield Park and the associated Historic District, the DEIS states that all of the CBAs will adversely impact historic resources. Id. Unfortunately, the DEIS provides no information about what types of direct and indirect impacts each alternative will have on those two locations. Without this information, VDOT cannot demonstrate that it has adequately examined the historic impacts associated with the proposed alternatives in accordance with NEPA’s requirements and the requirements of Section 106 of the NHPA. Moreover, the public has not been afforded an

adequate opportunity to understand, evaluate, and comment on the historic impacts associated with each alternative.

Further, the DEIS does not evidence compliance with Section 106 of the NHPA, which raises questions about VDOT's Section 4(f) evaluation. In particular, the DEIS inappropriately assumes that the adverse effects will be addressed later in time. Under Section 106, the DEIS must identify historic resources that will be adversely affected and seek measures to "avoid, minimize, or mitigate" those effects through consultation *prior* to the approval of the Tri-County Parkway. 16 U.S.C. § 470f. Here, the DEIS indicates that the adverse effects of each alternative on the Manassas National Battlefield Park and the associated Historic District will be addressed, in compliance with Section 106 of the NHPA, through the completion of an MOA. DEIS at p. 127. However, according to Corridor H Alternatives, Inc. v. Slater the agency "must complete its Section 106 determinations before it can comply with Section 4(f)." Corridor H Alternatives, Inc. v. Slater, 166 F.3d 368, 371 (D.C. Cir. 1999). In short, VDOT cannot make a meaningful Section 4(f) determination until they have completed the Section 106 process of identifying historic resources, determining adverse effects, and delineating measures to avoid, minimize, or mitigate those adverse effects.

## 2. Indirect Effects and Cumulative Impacts

### A. Indirect Effects on Land Use and Travel Demand

The DEIS performs an overly restrictive assessment of indirect effects on land use. First, it recognizes that it is reasonable to conclude that a certain degree of development will occur as a result of the new highway, but it then overly restricts analysis of this impact. The DEIS states that "[a] zone of potential influence having a one-half mile radius around each proposed interchange/intersection was used to estimate the amount of undeveloped land that could be developed for non-highway use that is not accounted for in the various county comprehensive plans." DEIS at p. 194. The DEIS offers no basis for choosing the limited distance as the "zone of potential influence" (ZPI) or for limiting its evaluation of the indirect effects to the areas immediately surrounding proposed interchanges and intersections. Nor, as experience shows, is there any reason to suspect that development will be so limited. See Smart Mobility Study at p. 30. Ignoring those land use changes outside the ZPIs may help explain why the DEIS is able to reach the overall conclusion in this section that development and land use conversions under each of the CBAs "will be comparable to those projected under the No-Build condition" so that "indirect effects is not a critical factor in selecting an alternative." DEIS at p. 196. This is highly unlikely. The CBAs will likely accelerate development both inside and outside the ZPIs well beyond the projected development spurred by the No-Build. This likelihood must be addressed in a supplement to this DEIS or in a final EIS.

Moreover, the DEIS acknowledges that the intersections/interchanges of the various CBAs "may serve to accelerate land conversions," but concludes that such conversions will gradually take place regardless of the existence of the TCP, so that indirect effects are a trivial concern in choosing between the CBAs. *Id.* Essentially, the DEIS is saying that these areas will ultimately be developed under the No-Build anyway, so it makes little difference which of the

CBA drives the area there the fastest. Again, this is an inadequate attempt to compare the indirect effects of each CBA on land use and development.

Additionally, the argument that land use conversions may be accelerated by the CBAs but will not affect development in the long run ignores the fact that acceleration of growth within a smaller part of the study area increases (or at least accelerates) development within the study area as a whole. The faster you use up parcels of available land within the study area, the sooner you must look to other parts of the study area to satisfy development pressures. Therefore, this acceleration in land use conversions could have a substantial effect throughout the study area. Moreover, the new highway could impact not only the location and speed of development, but the scale of development as well. The final EIS should include projected land uses throughout the study area at different points in the future, alongside comparative future land uses under the No-Build alternative, to show the effect and degree of accelerated and intensified change.

As an aside, we request clarification of one point in this section. Tables 4.13-4 and 4.13-5 compare the West Two and West Four CBAs according to the amount of undeveloped lands that would be subject to induced or accelerated development by the construction of these two CBAs. For those proposed intersections that the two CBAs have in common (I-66 West of Manassas National Battlefield Park (MNB), US 29 West of MNB, and Sudley Road), the amount of land subject to induced development is different for the two CBAs. For instance, for the proposed intersection at I-66 west of MNB, the West Two CBA would subject 422.4 acres to induced development or the entire total of the existing acreage within the intersection assessment area minus the direct effects of the interchange itself. However, the West Four CBA would only subject 111.6 acres of that same interchange to induced development. We are unclear on how this conclusion was reached. Why would the West Four CBA subject less land within the same interchange area to development than the West Two CBA? We ask for clarification of this issue in a supplement to this DEIS or in the final EIS.

Finally, the DEIS fails to adequately consider the effects of induced travel demand that would result from the construction of the new roadway. In a congested region like the study area, the equivalent of 80 percent of new roadway capacity will be filled by induced traffic. Smart Mobility Study at p. 29. Not all of this induced traffic will be on the new roadway, as some of it will further clog other nearby roadways. Therefore, by failing to account for the induced travel demand of a road as large as the Tri-County Parkway, the DEIS likely overstates the limited relief of congestion that the build alternatives might offer. Id.

#### B. Indirect Effects on Water Quality

According to section 4.13.1.2, the watershed comprising nearly all of the study area presently contains 30,660 acres of land uses that substantially contribute to impervious surface. The DEIS then states, “[b]ased on future land use projected under local comprehensive plans, portions of this watershed potentially affected by intersection/interchange zones of influence will be comprised of 592.1 acres of impervious surface contributing land uses under implementation of the West Two CBA (for a net increase of 1.9 percent), 848.7 acres of impervious surface contributing land uses under implementation of the West Four CBA (for a net increase of 2.8

percent), and 2,055 acres of impervious surface contributing land uses under implementation of the Comprehensive Plan CBA (for a net increase of 6.7 percent) by the year 2030.” DEIS at p. 199. The DEIS does not explain the source of these figures (30,660, 592.1, 848.7 and 2,055 acres). It is unclear whether they are a subset of, or an addition to, the acreage subject to induced development for each CBA documented in the tables on page 198. An explanation of how these numbers were derived is necessary to avoid confusion.

Moreover, the DEIS fails to evaluate what effects these increases in impervious surface would have upon a watershed that, by the admission of VDOT, is already “severely degraded.” DEIS at p. 199. Section 4.13.1.4 states that the land use conversions attributable to the CBAs would place additional stresses on wetlands, floodplains, and other environmentally sensitive areas. However, other than stating that such effects would be of greatest concern under the Comprehensive Plan CBA, the DEIS fails to differentiate among the indirect effects that each CBA would have on these resources. See *Silva v. Lynn*, 482 F.2d 1282, 1287 (1st Cir. 1973) (stating that “the agency must go beyond mere assertions and indicate its basis for them”); *Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 92 (2d Cir. 1975) (“[i]t is absolutely essential to the NEPA process that the decision maker be provided with a detailed and careful analysis of the relative environmental merits and demerits of the proposed action and possible alternatives”). These discussions of indirect impacts should be expanded in a supplemental DEIS or in the final EIS.

### C. Cumulative Impacts, Generally

Cumulative impacts are defined in CEQ regulations as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.” 40 C.F.R. § 1508.7. As such, VDOT is required to analyze the additive impact that reasonably foreseeable future projects will, in combination with each of the CBAs, have on the environment. However, none of the sections evaluating cumulative impacts on natural resources adequately evaluates this additive impact. Some of the sections recognize that cumulative impacts will equal impacts from the No-Build alternative added to impacts from each of the CBAs, but then claim that it is too difficult to assess impacts from the No-Build alternative since not all the projects included within it have gone forward for development.<sup>2</sup> As a result, only figures for direct impacts from each CBA are given and the reader is left to guess what the cumulative impacts will be. (See, e.g., section 4.13.2.2.5, Relocation Impacts; section 4.13.2.2.10, Wetland Impacts.<sup>3</sup>) Similarly, another means by which the DEIS avoids assessing cumulative impacts is to argue that the contributions to the overall cumulative impact on a resource from each of the CBAs will be insignificant in comparison to the predicted overall impact. (See, e.g., 4.13.2.2.1, Land Use; section 4.13.2.2.3, Energy

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<sup>2</sup> This highlights the problems that inhere in using such an expansive and undefinable No-Build, as set forth earlier in these comments.

<sup>3</sup> This particular section commits the additional error of simply setting forth a range of impacts the three CBAs will have on wetlands without breaking down the impacts by individual CBA so that they can be compared. This amounts to an additional NEPA violation.

Impacts). A third strategy is to simply state that a cumulative impact will occur even without any CBA and then end the analysis. (See, e.g., section 4.13.2.2.2, Socioeconomic Impacts). Missing from these sections is any consideration of the effect of adding impacts of each CBA to impacts of other foreseeable future projects. Therefore, these attempts to assess cumulative impacts are inadequate under NEPA. See Natural Resources Defense Council, Inc. v. Hodel, 865 F.2d 288, 299 (D.C. Cir. 1988) (rejecting the agency's purported cumulative impacts analysis of the impacts of multiple off-shore drilling sites on migratory species because its "perfunctory references do not constitute analysis useful to a decisionmaker in deciding whether, or how, to alter the program to lessen cumulative environmental impacts").

Moreover, even where the DEIS provides figures comparing the cumulative impacts of the different CBAs, the figures are extremely confusing and no source for them is provided. For example, section 4.13.2.2.1 discusses cumulative impacts on land use. This section states that "land use conversions from undeveloped to developed is projected to be 30,660 acres by year 2030." DEIS at p. 202. However, this 30,660 acre figure is the same amount used in the discussion of indirect impacts on water quality (section 4.13.1.2) to represent the acreage within the study area that is *presently* comprised of land uses that substantially contribute to impervious surface. DEIS at p. 199. Barring a sizable coincidence, this figure is being used in separate parts of this DEIS to represent what appear to be two entirely different concepts. This needs to be explained. Further, the DEIS does not explain how it has come up with the numbers for the amount of land use conversion that would result from implementation of each CBA (348, 370, and 532 for the West Two, West Four, and Comprehensive Plan CBAs, respectively). These numbers are significantly smaller than the numbers representing the total acreage of undeveloped land that each CBA would subject to induced development (as set forth in Tables 4.13-4, 4.13-5, and 4.13-6). This seems to be an illogical result, considering an assessment of cumulative impacts on land use should include figures for the direct effects of each CBA *plus* the effects from other highways and developments that will be built in the area.<sup>4</sup> See 40 C.F.R. §1508.7 (emphasis added) (defining cumulative impacts as the "impact on the environment which results from the incremental impact of the action when *added* to other past, present and future reasonable foreseeable future actions")(emphasis added); Fritiofson v. Alexander, 772 F. 2d 1225, 1245 (5th Cir. 1985) (stating that a cumulative impact assessment must include "the overall impact that can be expected if the individual impacts [from reasonably foreseeable projects in the same area] are allowed to accumulate").

#### D. Shared Location Effects

One significant problem with the section of the DEIS that assesses the cumulative impacts from the Tri-County Parkway, the VA 234 Bypass North Extension, and the Manassas Battlefield Park Bypass (MBB) is that it fails to evaluate the total (additive) impact that the three

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<sup>4</sup> Other sections assessing cumulative impacts that are similarly deficient for failing to explain the source of the acreage figures used therein are 4.13.2.2.4 (Farmland Impacts), 4.13.2.2.8 (Water Quality Impacts), 4.13.2.2.9 (Wildlife Habitat), 4.13.2.2.10 (Wetland Impacts), 4.13.2.2.11 (Floodplain Impacts), and 4.13.2.2.12 (Park, Recreation, & Open Space Impacts).

projects would have on the environment.<sup>5</sup> The DEIS sets forth the impacts of each CBA and then compares those numbers with the *reductions* in those impacts that may occur if the Build Alternatives are co-located with possible segments of either the MBB or the 234 Bypass North Extension. Nowhere does the DEIS calculate or analyze the *additive* impacts of the three projects together. See Tables 4.13-9, 4.13-10, and 4.13-11. Yet this is a clear requirement of cumulative impact assessments, as CEQ regulations make clear. 40 C.F.R. §1508.7. The attempt to satisfy this requirement by instead *subtracting* those impacts that might be shared with other projects does not provide the information needed to adequately assess the cumulative impacts from these different projects.

#### E. Cumulative Air Quality Impacts

The evaluation of cumulative impacts on air quality in the DEIS is insufficient in that it simply defers to the fact that the TCP was included in the most recent air quality conformity analysis for the region. According to that analysis, the cumulative impact on regional air quality emissions that will result from the implementation of all reasonably foreseeable regionally significant future transportation improvements will not exceed the SIP budgets for motor vehicles established for the area under the Clean Air Act. Therefore, the DEIS concludes, the cumulative air quality impact from the implementation of all these improvements will not increase the number or severity of violations that have caused the area to be designated as a nonattainment area. DEIS at pp. 203-04. Moreover, the DEIS reasons that the TCP is just one improvement and its contribution to the regional vehicle miles traveled is insignificant compared to the cumulative total of vehicle miles traveled for the region.

Particularly since the study area lies within a major nonattainment area, the DEIS should evaluate with a greater level of detail how each CBA for the TCP will contribute to the overall emissions within this area. Agencies must be extremely sensitive to building in non-attainment areas, as new roads inevitably spur additional driving and increase the population of the area. See Smart Mobility Study at pp. 27-35. It must be borne in mind that the emissions allotments that are afforded to the TCP in the SIP are then no longer available for other regional transportation projects. To simply say that the TCP will not cause the area to exceed its emissions budget under the SIP does not allow a decision maker to determine the relative share of regional allotments the TCP will require. This information is especially important considering that, as pointed out above, the need for this project is open to question.

In addition, the DEIS considers an overly narrow range of air pollutants that motor vehicles will emit. Among other things, the final EIS should include more information on the release of carbon monoxide and urban precursors (nitrogen oxides, volatile organic compounds, sulfur dioxide, and particulates), as well as information on air toxins and carbon dioxide.

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<sup>5</sup> The National Park Service and the Federal Highway Administration recently released the Manassas National Battlefield Bypass Study DEIS. That DEIS does not evaluate the additive impacts from the TCP, the MBB, and 234 BNE either.

## **Inadequate Evaluation under Section 4(f) of the Department of Transportation Act**

The Section 4(f) evaluation in the DEIS is deficient because it fails to propose avoidance alternatives that do not “use” Manassas National Battlefield Park and the associated Historic District, fails to provide appropriate evidence to support the dismissal of alternatives as not feasible or prudent, and fails to support the conclusion that all efforts to minimize the “use” of historic resources were considered. Section 4(f) prohibits the “use” of parks or historic properties for a transportation project *unless* (1) there is no “prudent and feasible” alternative to the “use,” and (2) the proposed project includes all possible planning to minimize harm to the protected properties. 49 U.S.C. § 303(c). The Section 4(f) regulations require that “any use of lands from a section 4(f) property shall be evaluated early in the development of the action when alternatives to the proposed action are under study.” 23 C.F.R. § 771.135(l).

The Section 4(f) evaluation for the Manassas National Battlefield Historic District is deficient because it has inappropriately dismissed two avoidance alternatives -- the alternative going through Conway Robinson Memorial State Forest and the “western avoidance alternative” presented in Figure 4.15-4 -- as imprudent and unfeasible. Transportation officials are prohibited from rejecting alternatives that would avoid or minimize harm to protected sites unless they can show that the less harmful alternatives would result in costs or community disruption of “extraordinary magnitude,” or other unique factors. Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 413 (1971). Even though the first avoidance alternative would use another Section 4(f) park, the DEIS has not clearly balanced this alternative with the proposed “use” alternatives to determine which one is less harmful to Section 4(f) resources. Druid Hills Civic Ass’n v. Federal Highway Administration, 772 F.2d 700, 718 (11<sup>th</sup> Cir. 1985) (concluding that “it will not suffice to simply state that an alternative route would affect 4(f) properties without providing some rational, documented basis for such a conclusion.”). Also, despite the fact that the Figure 4.15-4 avoidance alternative would affect 116 residences and cost more, it is not clear that these factors would be considered to be “extraordinary” in magnitude. Again, there is not enough analysis about the historic resources affected by the West Two and the West Four CBAs to support this conclusion.

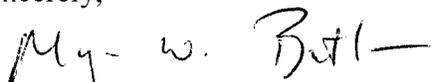
Additionally, the Section 4(f) discussion of measures to minimize harm for the Manassas National Battlefield Park and the associated Historic District lacks specificity about the historic resources harmed (see DEIS 124-26, 211-217) and the proposed ways to minimize the harm. The DEIS states for both resource areas that it will explore measures to minimize harm through the Section 106 process. DEIS at pp. 214, 217. However, the Section 4(f) regulations require that this evaluation and possible measures to minimize harm be presented in the Draft EIS. 23 C.F.R. § 771.135(i). The DEIS must provide more specificity about the measures to minimize harm. See Druid Hills Civic Ass’n, 772 F.2d 717-18. Overall, VDOT must complete the identified issues in order to satisfy the requirements of Section 4(f).

## Conclusion

In sum, there are a number of significant deficiencies in the DEIS that must be addressed before the final EIS is released. Until these deficiencies are corrected, the DEIS cannot satisfy its purpose of informing decision makers and the public of the environmental impacts of this project and the feasibility of other alternatives. While there is much useful information in the DEIS, these shortcomings must be added in either as a supplement to this DEIS or in the final EIS in order for the requirements of NEPA to be met.

Thank you for your consideration of these comments. Please contact us if you would like additional information on any of the above points or to discuss any of these matters. We look forward to your response.

Sincerely,

  
Morgan W. Butler  
Richard A. Parrish  
Southern Environmental Law Center

cc: Chris Miller (Piedmont Environmental Council)  
Stewart Schwartz (Coalition for Smarter Growth)  
Joseph Lerch (Chesapeake Bay Foundation)  
Betsy Merritt (National Trust for Historic Preservation)  
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November 20, 2007

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Re: Tri-County Parkway

Dear Mr. Sundra and Ms. Markham:

These comments are being submitted on behalf of the National Trust for Historic Preservation, the Southern Environmental Law Center, the Coalition for Smarter Growth, and the Piedmont Environmental Council, as a follow-up to the Section 106 consultation meeting that took place on October 31, 2007.

The proposed Tri-County Parkway would have a significant adverse effect on historic properties throughout the corridor, especially the Manassas National Battlefield Park ("MNBP" or "Battlefield Park"). As a result, the Section 106 consultation process requires us to "develop and evaluate alternatives or modifications to the project that would avoid, minimize or mitigate adverse effects on historic properties." 36 C.F.R. § 800.6(a). This letter will comment on a variety of those alternatives and modifications.

**An Alternative Package of Transportation Measures Would Substantially Address any Need for the Project While Avoiding and Minimizing Harm to Historic Resources and Parkland.**

All four of our organizations continue to find that the Tri-County Parkway is not needed from a transportation perspective, and the minimal traffic benefits of the project certainly do not justify the level of damage to parkland and historic resources

*Protecting the Irreplaceable*



that would be inflicted by the project. Instead of a major new north-south highway along the western border of the Battlefield Park, the Draft Environmental Impact Statement (DEIS) makes it clear that expanding east-west capacity is the key to improving traffic congestion in the study area. As set forth in the DEIS comments submitted on June 13, 2005 by the Southern Environmental Law Center on behalf of a number of groups, and in the Smart Mobility study attached to and incorporated into those comments, a combination of other regional and local transportation and land use improvements would better accomplish the stated needs of the project. That combination includes:

- Improving I-66 as an east-west thoroughfare, including extension of HOV lanes;
- Funding and expanding the capacity of the Gainesville Interchange, in order to allow traffic to flow more smoothly to and from I-66;
- Extending Virginia Railway Express to Gainesville and Haymarket, and improving bus transit along Route 50 in Loudoun County, I-66, and Route 28;
- Targeting local road and safety improvements to cost-effectively reduce incidents in the high accident sections;
- Upgrading local roads like Sudley Road north of the Park and Pageland Road west of the Park with shoulders and roundabouts at intersections (at 659 and Sudley; Sudley and Pageland; and 29 and Pageland);
- Protecting Prince William County's Rural Crescent and the Loudoun Transition Zone from overdevelopment that would add more traffic to major east-west commuting routes, while shifting development to locations with enhanced access to transit;
- Recognizing that local residents north of the Battlefield will have access to alternate shopping outlets, not requiring driving south through the Battlefield to Manassas. Those future locations include Loudoun's Route 50 Corridor, Gainesville, and Haymarket; and,
- Funding and completing the upgrade of Route 28 to improve access from the I-66 corridor to the major job concentrations east of Dulles Airport.

We find that this more comprehensive approach offers the most effective option for avoiding and minimizing harm to the Manassas Battlefield Historic District and Pageland Road corridor, by not building a highway through the Battlefield.

### **The Analysis of Indirect and Cumulative Effects is Inadequate.**

There was a brief discussion at our October 31 meeting regarding the indirect and cumulative effects of the project, especially foreseeable changes in land use and the corresponding impacts to parkland and historic resources. We continue to be concerned about the inadequacy of the indirect and cumulative effects analysis overall, and we refer you to the pertinent sections of our joint comments on the DEIS.

Specifically, the DEIS limits the “zone of potential influence” (ZPI) within which potential indirect and cumulative effects were considered to a one-half mile radius around various interchanges and intersections proposed within the study area. This results in a failure to adequately account for development beyond the one-half mile radius, which this highway will either induce on its own or significantly accelerate, and a failure to assess the degree to which those indirect and secondary impacts will diminish the value of the parkland and historic resources in the study area. This analysis must be expanded and improved upon in the final EIS.

Section 106 review independently requires consideration of indirect and cumulative effects, as spelled out in the Section 106 regulations, which define adverse effects to include “reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.” 36 C.F.R. § 800.5(a)(1). The newly revived Section 106 consultation process would be an ideal opportunity to address indirect and cumulative effects that were not adequately addressed in the DEIS, and to develop specific measures to reduce those impacts.

### **Measures to Minimize Harm**

If we constrain our analysis to the proposed alternative that was approved by the Commonwealth Transportation Board, and which VDOT seeks to advance in the Final EIS, we have a number of concerns with the proposed alignment. Little, if any, effort seems to have been made to plan the project in a way that would minimize harm to historic properties. At the consultation meeting, we discussed a dozen different strategies for reducing the adverse effects of the project, all of which we endorse. These should be developed in more detail, through further consultation, and incorporated into the plans for the project:

- **Reduce the Footprint.** The October 11, 2007 letter from the FHWA to the Advisory Council on Historic Preservation (ACHP) does not disclose the

magnitude of the impact on the Historic District, but the DEIS states that 26 acres of land would be taken within the Historic District. DEIS at 216, 230. This impact is unnecessary and excessive. The width of the proposed right-of-way (200-225 feet) is grossly out of scale, especially in light of the recent determination that the Tri-County Parkway will be limited to four lanes, even where co-located with the Manassas Battlefield Bypass. The portion of the project that cuts through historic areas, especially the portion along the boundary of the Battlefield Park, should be reduced to the narrowest possible footprint to minimize intrusion on the landscape. Context sensitive design principles should be required, and VDOT should be required to seek design exceptions. For example, travel lanes should be limited to 11 feet wide, paved shoulders should be minimized, and the median (proposed to be 42 feet wide!) should be minimized or eliminated.

- **Eliminate and Minimize Access Roads.** The proposed access road for the existing Pageland Lane properties along the west side of the proposed alignment, across from the Brawner Farm, is not only highly inefficient from a transportation perspective, but also needlessly destructive of the historic battlefield. In addition, the proposed configuration of access roads would require that the Brawner Farm be limited to right-in/right-out access, with the apparent expectation that visitors coming from the “wrong” direction would simply make U-turns in order to access the Brawner Farm. This degree of interference with access to a portion of the Battlefield Park is unacceptable and easily avoidable. It may even rise to the level of a “constructive use” under Section 4(f) of the Department of Transportation Act, 49 U.S.C. § 303, see 23 C.F.R. § 771.135(p)(4)(iii). The entire network of access roads needs to be redesigned with the goal of minimizing impact.
- **Acquire Conservation Easements.** In order to protect the historic landscape along the Tri-County Parkway route, conservation easements should be acquired along both sides for the entire length of the project. This would provide meaningful restrictions on the amount of development that would be induced or accelerated by construction of the Parkway, and would limit the adverse visual impact on Manassas Battlefield and other parks and historic resources. VDOT has suggested limiting consideration of easements to the portion of the Tri-County Parkway immediately adjacent to the Battlefield Park. However, this is the stretch of land least in need of protection through easement because it is already protected as parkland. Adjacent conservation easements must be considered for the entire length of the highway and on both sides. A

special effort should be made to acquire easement protection for identified historic properties along the corridor that are privately owned and vulnerable to destruction. For example, we were relieved to learn from Justin Patton that the 1860 Putnam-Patton House had not been destroyed, as earlier feared, but the reality is that nothing currently protects this historic property from destruction, and the Tri-County Parkway would inevitably hasten its demise. Specific measures should be developed to protect it.

- **Realign the Intersection with Route 29.** The intersection with Route 29 should be realigned farther to the west, as discussed at the October 31 consultation meeting, along the right-of-way that VDOT apparently already owns. Using the western alignment for the intersection, rather than the currently proposed alignment, would reduce harm to the Battlefield Park by pulling the road farther away, and would apparently allow the Dunklin Monument to be avoided.<sup>1</sup>
- **Eliminate the Intersection With Route 29.** Ideally, there should be no intersection at all where the Tri-County Parkway would cross Route 29. Creating an intersection here would exacerbate traffic impacts on the Manassas National Battlefield Park, and would induce incompatible development in very close proximity to both the Battlefield and the Conway Robinson Memorial State Forest.
- **Prohibit Trucks.** Trucks should be prohibited from using the Tri-County Parkway. This would reduce the impacts to historic resources caused by noise, air quality deterioration, vibration from heavy truck traffic, and additional traffic congestion through and adjacent to the Battlefield.
- **Plant Landscape Buffers.** Extensive landscaping should be included in the project to minimize the visual intrusion of the highway on all historic properties. The landscaping plan should be developed by a Historic Landscape Architect and specifically designed to protect significant historic landscape features and viewsheds.
- **Incorporate Features to Reduce Noise Impacts.** The project should include state-of-the-art noise reduction technology, including quiet pavement. Further

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<sup>1</sup> Thus, we disagree with the statement on page 5 of the October 11, 2007 letter from FHWA to the Advisory Council on Historic Preservation that “it is not possible to expand the capacity of the road in a prudent manner without disturbing a portion of the [Dunklin Monument] site [44PW0579].”

consultation should be pursued to evaluate in detail alternatives for structural measures to reduce noise, such as various types of sound barriers. Every effort should be made to develop, through consultation, options for noise-reduction structures that would not exacerbate adverse visual effects.

- **Minimize Lighting.** Lighting should be kept to an absolute minimum along the road, especially through historic areas, and any light fixtures should be selected through further consultation to be compatible in design and to minimize light diffusion.
- **Build it Below-Grade.** VDOT should develop and evaluate in detail a below-grade alternative, and a partially-below-grade alternative, in order to determine through consultation whether either of these alternatives would reduce net harm to the Battlefield Park.
- **Minimize Harm to All Historic Properties.** Little or no effort has been made yet to minimize harm to historic properties, even though this is required by Section 4(f) of the Department of Transportation Act, as discussed below. For example, the October 11, 2007 letter from FHWA to ACHP contends at page 5 that “there is no prudent and feasible alternative to *avoid*” the Unfinished Manassas Gap Railroad. Even if this were true, no effort has been made to *minimize* harm to this historic resource by designing the highway in a less intrusive way. Similarly, the Pageland Lane properties<sup>2</sup> and all other historic properties require a much more detailed design analysis to reduce and minimize the impacts of the project.

### **Mitigation Measures to Compensate for Harm**

In addition to the measures described above, which would actually reduce the magnitude of the project’s impacts on historic properties, we would also like to voice our support for a number of more traditional mitigation strategies that would compensate for the adverse impacts of the project on historic resources, even though they would not reduce or minimize the impacts. Those strategies include:

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<sup>2</sup> We strongly disagree with the determination in the October 11, 2007 letter to the ACHP (p.5) that the effects of the project on the Pageland I and Pageland II properties will not be adverse. Statements at the October 31 consultation meeting suggested that a direct taking of land would occur from the Pageland I property. The documentation provided to the ACHP is not sufficient to substantiate a determination of no adverse effect.

- **Archaeological Study.** Thorough archaeological research of all properties within the corridor should be closely coordinated with the National Park Service.
- **Public Interpretation.** Mitigation for the project should include the preparation of interpretive material to provide an opportunity for the public to learn more about the historic properties affected by the project and any archaeological findings. This should be closely coordinated with the National Park Service, and could include signage, printed material, video and audio programs, and oral history.
- **Documentation.** Efforts should be made to document unprotected historic properties within the corridor that could be damaged or destroyed either directly by the project or indirectly by third parties engaging in development activities induced by the project.

### **The Proposed Project Does Not Comply With Section 4(f) of the Department of Transportation Act.**

We would like to reiterate our concern that the FHWA has not satisfied the stringent requirements of Section 4(f) of the Department of Transportation Act, which prohibits the “use” of historic sites and parkland, “unless (1) there is no feasible and prudent alternative to the use of such land,” and (2) the project “includes all possible planning to minimize harm” to the protected resource. 49 U.S.C. § 303. This mandate is substantive, and reflects Congress’ directive that the protection of parks and historic properties be given “paramount” importance when planning federally funded transportation projects. *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 412-13 (1971).

Unlike NEPA, which imposes only procedural obligations on federal agencies to consider impacts and alternatives, Section 4(f) does not allow the FHWA to “engage in a wide-ranging balancing of competing interests.” *Id.* at 411. In order to justify rejecting a less harmful alternative as “not prudent” under Section 4(f), the Secretary must find that it would present “unique problems” – that there are “truly unusual factors present,” or that the cost or community disruption resulting from the alternative would reach “extraordinary magnitudes.” *Id.* at 413.

It is important to remember the relationship between Section 106 and Section 4(f), and the fact that Section 106 compliance is a precondition to Section 4(f). The FHWA cannot make a meaningful Section 4(f) determination until after completion of the

Edward Sundra, FHWA  
Loretta Markham, VDOT  
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Section 106 review to identify historic resources, determine adverse effects, and delineate measures to avoid, minimize, or mitigate those adverse effects. *Corridor H Alternatives, Inc. v. Slater*, 166 F.3d 368, 371 (D.C. Cir. 1999).

If there are less harmful alternatives that would avoid or minimize the use of Section 4(f) resources, then the FHWA *must select* the least harmful alternative, unless it can be shown to be imprudent for reasons *other than* its 4(f) impacts. *Druid Hills Civic Ass'n v. Federal Highway Administration*, 772 F.2d 700, 716-17 (11th Cir. 1985); *Louisiana Environmental Society v. Coleman*, 537 F.2d 79, 85-86 (5th Cir. 1976). See also *Merritt Parkway Conservancy v. Mineta*, 424 F. Supp. 2d 396 (D. Conn. 2006); *City of South Pasadena v. Slater*, 56 F. Supp. 2d 1106 (C.D. Cal. 1999). The asserted "need" for the project cannot suffice to rule out alternatives that would avoid using protected sites. See *Stop H-3 Ass'n v. Dole*, 740 F.2d 1442, 1450-58 (9th Cir. 1984), *cert. denied*, 471 U.S. 1108 (1985).

As previously stated in our DEIS comments, we believe that avoidance alternatives were dismissed in the DEIS without adequate evaluation under Section 4(f), and for reasons not substantiated by the regulations or applicable case law. Furthermore, though the DEIS postponed to the Section 106 review the process of "minimizing" harm to the Manassas National Battlefield Park and other historic properties, little effort has been made to date to engage in a meaningful process to minimize harm. Unless these Section 4(f) deficiencies are corrected, the current proposal for the Tri-County Parkway will remain legally vulnerable under Section 4(f) as well as NEPA.

## **Conclusion**

As described above, we have proposed an alternative set of transportation measures in lieu of a new highway corridor in this historically sensitive location, which will satisfy the requirements of Section 4(f) and Section 106. Since avoiding and minimizing harm to historic properties under Section 106 is best achieved through the alternative transportation and land use solutions outlined on page 2 above, we also request that this comprehensive alternative to a new highway corridor be evaluated in the Final EIS and adopted as the preferred alternative.

In addition, we strongly urge you to convene an additional Section 106 consultation meeting to allow for continued consultation to develop and more thoroughly discuss these proposed mitigation strategies. At the October 31 meeting, VDOT

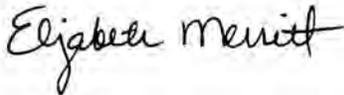
Edward Sundra, FHWA  
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representatives were unable or unprepared to answer many of the questions that were raised. As a result, many issues remain unresolved.

Finally, we request the latest updated traffic modeling information and traffic numbers for all key roadways and intersections in the study area. This is especially necessary to understand the impact of a new corridor in the event that Routes 29 and 234 are not closed through Manassas National Battlefield Park.

Thank you for your consideration of these comments. Please contact us if you would like additional information on any of the above points or to discuss any of these matters.

Sincerely,



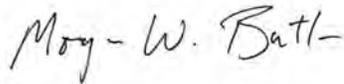
Elizabeth S. Merritt  
Deputy General Counsel  
National Trust for Historic Preservation



Stewart Schwartz  
Executive Director  
Coalition for Smarter Growth



Todd Benson  
Fauquier Field Officer  
Piedmont Environmental Council



Morgan Butler  
Staff Attorney  
Southern Environmental Law Center

cc: Mary Ann Naber, Federal Preservation Officer, FHWA  
Carol Legard, Advisory Council on Historic Preservation  
Patricia Jones, Acting Superintendent, Manassas National Battlefield Park  
Tonya Gossett, American Battlefield Protection Program,  
National Park Service  
Marc Holma, Virginia Dep't of Historic Resources  
Ethel Eaton, Virginia Dep't of Historic Resources  
Tom Blaser, Prince William County

Edward Sundra, FHWA  
Loretta Markham, VDOT  
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Justin Patton, County Archaeologist, Prince William County  
Heidi Siebentritt, Loudoun County  
Carol Lew, Loudoun County  
Catharine Gilliam, Virginia Program Manager, Nat'l Parks Conservation Ass'n  
Jim Campi, Civil War Preservation Trust  
Harvey Simon, Friends of Manassas National Battlefield Park  
Richard Young, Bull Run Civil War Roundtable  
Greg Gorham



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January 12, 2009

Mr. Nicholas Nies, Project Manager  
Environmental Division  
Virginia Department of Transportation  
1401 East Broad Street  
Richmond, VA 23219

Dear Mr. Nies:

As Section 106 consulting parties on the Tri-County Parkway, we received a letter from Helen Ross, District Preservation Manager, dated November 14, 2008. In her letter, Ms. Ross notes that you have assumed the role of project manager for the Tri-County Parkway location study. Ms. Ross's letter also states that new funding to complete the location study was recently identified, and that efforts to complete the final environmental impact statement (EIS) have resumed.

We are part of a coalition of groups that have been extensively involved in analyzing the various components of the location study over the past several years. On behalf of ourselves, the Piedmont Environmental Council, the Coalition for Smarter Growth, the National Trust for Historic Preservation, and the Virginia Chapter of the Sierra Club, we are writing to reiterate our strong objection to further consideration of this ineffective and damaging proposal. The severity of the state's transportation funding crisis, combined with the significant energy and environmental challenges Virginia is facing, make it unreasonable for VDOT to consider moving ahead with a new highway project that provides as little transportation benefit as the Tri-County Parkway. With the recent introduction of major new state policies for reducing energy use and greenhouse gas emissions, as well as a renewed emphasis on achieving Virginia's goals for restoring the health of the Chesapeake Bay, it is clear that the asphalt-centered transportation approach this project represents is outdated, and that Virginia's scarce transportation funds must instead be put toward more beneficial projects.

As set forth in the comment letter and traffic study we submitted on the draft EIS in June 2005, VDOT's own modeling demonstrates that the proposed new highway would not significantly reduce vehicle miles traveled, average travel time, or vehicle hours traveled in the study area. The project fails to serve the vast majority of trips, which are moving east-west in the area and which can be better accommodated with transit, expanded HOV, and other operational improvements. Further, any assumed need for the new highway and any slight traffic improvements this project might offer based on the travel demand projections included in the draft EIS have likely been undermined by the dramatic downturn in residential development in the study area and more permanent reductions expected in demand for residential locations far from jobs, as well as recent declines in vehicle miles traveled. At a time when the state is making major cuts to the Six-Year Plan to reflect unprecedented budget shortfalls, proceeding

further with the Tri-County Parkway diverts scarce funds from upgrades to existing roads and other comprehensive improvements that can more effectively address the area's transportation needs – particularly the east-west traffic movement.

Further, pushing ahead with the proposed Tri-County Parkway runs counter to two key policy initiatives recently proposed to address Virginia's increasing energy consumption and growing environmental challenges. In September 2007, Governor Kaine released the *2007 Virginia Energy Plan*, calling for a 30 percent reduction in statewide greenhouse gas (GHG) emissions by the year 2025. Significantly, the plan notes that transportation is the single largest and fastest-growing energy-using sector in the state. It also highlights the link between land-use patterns and energy use, describing how sprawling development patterns lead to increased driving.

However, the energy plan also recognizes the abundant opportunities for reducing energy use and GHG emissions by improving our existing transportation system. In order to curb transportation-related energy use and emissions, the energy plan recommends reducing vehicle miles traveled through a combination of transportation efficiency measures, including an expansion of alternatives to single-occupant vehicle commutes and developing expanded and more reliable transit service. It also recommends that government policies promote clustered development patterns, as well as infill and brownfield development, to reduce sprawl-related energy usage.

Similarly, the *Climate Change Action Plan* released December 15, 2008 by the Governor's Commission on Climate Change finds that transportation is responsible for roughly one-third of the overall GHG emissions in the Commonwealth, and it emphasizes the importance of reducing transportation emissions to the overall success of any climate change mitigation efforts. It also stresses the land-use/transportation/energy use link, explaining that “[a]reas with compact development patterns and readily available transit services have lower vehicle miles traveled per capita than areas with sprawling development and limited transit, and...generally have lower per-capita energy consumption overall.”

The Commission was tasked with, among other things, identifying actions beyond those identified in the *2007 Virginia Energy Plan* that need to be taken to achieve the Governor's goal for reducing GHG emissions. As with the energy plan, one of the principal recommendations the climate plan offers is to reduce emissions related to vehicle miles traveled by expanding commuter choice, improving transportation system efficiency, and designing better communities. Specific strategies include requiring projections of GHG emissions and climate change impacts from major transportation projects, funding regional modeling of the difference in energy use and GHG emissions from compact versus sprawling development patterns, and ensuring that VDOT include transit, rail and other transportation modes within every project analysis.

As mentioned above, a project like the proposed Tri-County Parkway conflicts with the broader goals and more specific strategies outlined in these new energy and environmental policies. Rather than reducing vehicle miles traveled, the proposed highway would increase traffic in the area by inducing driving and by opening up new areas to development. This, in turn, would lead to more GHG emissions and greater energy use. In addition, at a time when the

state is refocusing on what it will take to clean up the Chesapeake Bay, this highway would spur development that would increase the influx of pollutants to that important water body. More effective and less damaging transportation alternatives exist, and we refer you to our comment letter on the draft EIS for a discussion of those alternatives.

In summary, the Tri-County Parkway represents the type of sprawl-inducing road project that will lead to increased energy use and pollution while doing little to solve the state's transportation challenges. The project is particularly unjustifiable in light of the growing budget deficit the Commonwealth is struggling to close, and the enormity of the more pressing transportation needs Northern Virginia has right now. We urge VDOT to reject further consideration of this proposal and to reprogram the study funds to the assessment of more beneficial projects. If, however, VDOT insists upon completing the EIS, we urge you to reconsider the need for the project in light of more recent land use and transportation trends, to expand the study to include a much more thorough examination of the proposed highway's impacts on land use, water quality, energy consumption and GHG emissions, and to further evaluate less destructive, more cost-effective alternatives such as those described in the comments and professional traffic analysis we submitted on the draft EIS.

Sincerely,



Morgan Butler  
Staff Attorney  
Southern Environmental Law Center

cc: Pierce R. Homer, Secretary of Transportation  
David S. Ekern, Commissioner, VDOT  
✓Helen P. Ross, District Preservation Manager, VDOT  
Edward Sundra, Environmental Specialist, FHWA  
Corey A. Stewart, Chairman, Prince William County Board of Supervisors  
Scott K. York, Chairman, Loudoun County Board of Supervisors  
Chris Miller, Piedmont Environmental Council  
Stewart Schwartz, Coalition for Smarter Growth  
Elizabeth S. Merritt, National Trust for Historic Preservation  
Roger Diedrich, Virginia Chapter of the Sierra Club



National Parks Conservation Association®  
Protecting Our National Parks for Future Generations®

December 6, 2010

Ms. Helen P. Ross  
Virginia Department of Transportation  
Fredericksburg District Environmental Section  
87 Deacon Road  
Fredericksburg, VA 22405  
[Helen.Ross@VDOT.Virginia.Gov](mailto:Helen.Ross@VDOT.Virginia.Gov)

By Email and U.S. Mail

Dear Ms. Ross:

As a follow-up to the November 5, 2010 meeting of the Section 106 consulting parties for the proposed Tri-County Parkway, these comments are being submitted on behalf of the Southern Environmental Law Center, the National Trust for Historic Preservation, the Piedmont Environmental Council, the Coalition for Smarter Growth, and the National Parks Conservation Association.<sup>1</sup>

Our groups were very interested to hear more about potential changes to the project and mitigation ideas that have been considered since our last Section 106 consulting parties meeting on October 31, 2007. Although we were encouraged to learn that some of the suggestions we raised in our November 20, 2007 joint comment letter may be incorporated into the proposal if it moves forward, we remain extremely concerned about the significant adverse effect this project would have on the Manassas National Battlefield Park ("Park"), the Manassas Battlefield Historic District ("Historic District"), and nearby historic properties, regardless of the number of design tweaks or the amount of mitigation that might be included in the project.

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<sup>1</sup> The National Parks Conservation Association (NPCA) is not a Section 106 consulting party for this project; however, NPCA does significant work to protect Manassas National Battlefield Park and wishes to join in these comments.

## **Manassas National Battlefield Park is Nationally Significant, and its Historic Character Must be Protected from Further Degradation.**

Congress established Manassas National Battlefield Park in 1940 to preserve the historic landscapes of two nationally-significant<sup>2</sup> Civil War battles for the use, inspiration, and benefit of the public – for as long as there is a United States of America. According to the National Park Service, only a few Civil War battlefield parks include the majority of the actual battlefield areas where troops formed, fought, and died, and Manassas National Battlefield Park is one of this select group.

The Park's most important resources are the large tracts of land managed to represent the battlefield landscape as it existed at the time of the Civil War. The Park's woodlands, fields, streams, gently rolling hills, and certain views evoke the physical setting existing at the time of the battles. The Park also includes a number of historic structures such as the Stone House, road traces, and cemeteries.

Manassas National Battlefield Park is an invaluable resource not only because of its history and meaning, but also because of its role in the local economy. According to the National Park Service, non-local visitors to the Park in 2008 spent \$7.84 million, supporting 147 jobs and generating \$3.6 million in labor income.<sup>3</sup>

Interest in the Civil War and visitation of related sites such as the Park are predicted to increase significantly as a result of the 150<sup>th</sup> anniversary of events related to the Civil War, with commemorative events already underway. The 150<sup>th</sup> anniversary observations emphasize the relevance of our concerns, and the urgency of protecting the Park for our children and grandchildren. As such, it is particularly disturbing that, on the eve of the sesquicentennial of the battles of First and Second Manassas, the Commonwealth of Virginia and the federal government would pursue construction of a major new highway along the western boundary of the Park and through the expanded Historic District, cutting across the historic approach of the Army of Northern Virginia en route to the Battle of Second Manassas.

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<sup>2</sup> The two battles of Manassas are significant in the nation's history because:

- The Battle of First Manassas (July 21, 1861) was the first major land battle of the Civil War, and it dispelled all preconceived notions of a short war. The 900 Americans killed on the battlefield were graphic proof that Civil War would be a protracted, bloody struggle.
- The Battle of Second Manassas (August 28-30, 1862) brought the Confederacy to the height of its power and opened the way for the first Confederate campaign into the North.

The two battles of Manassas are significant in the region's history because:

- The two battles illustrate northern Virginia's role in the Civil War and teach aspects of that history to visitors from other parts of the region, the nation, and other countries.
- The park preserves a historic agrarian landscape as the setting for the two battles.”

(See Manassas National Battlefield Park Final General Management Plan/Environmental Impact Statement, “Purpose and Need for the Plan, pp.8-9, April 2008.)

<sup>3</sup> See National Park Visitor Spending and Payroll Impacts, Daniel J. Stynes, Michigan State University, 2008, National Park Service Social Science Program, p. A-7, available at <http://web4.canr.msu.edu/mgm2/> (last viewed on December 2, 2010).

Although development already encroaches upon the Park in many ways, existing degradation does not justify a decision to allow additional deterioration of the Park's historic character. The Park remains a national treasure, a local amenity, and a contributor to local economic vitality. Elected and agency officials at all levels of government must work together with concerned citizens to protect its remaining integrity.

As our groups have advocated throughout the reviews of this proposal under the National Environmental Policy Act (42 U.S.C. § 4321 *et seq.*), Section 4(f) of the Department of Transportation Act (49 U.S.C. § 303(c)), and Section 106 of the National Historic Preservation Act (16 U.S.C. § 470 *et seq.*), adverse impacts to the Park and nearby historic features and properties can best be avoided and minimized by rejecting the Tri-County Parkway proposal altogether, and by proceeding with an alternative package of comprehensive transportation measures. Similarly, these comprehensive measures demonstrate the availability of prudent and feasible alternatives to the proposed highway.

**An Alternative Package of Transportation Measures Would Substantially Address any Purported Need for the Project While Avoiding and Minimizing Harm to Parkland and Historic Resources.**

All five of our organizations continue to find that the Tri-County Parkway is not needed from a transportation perspective, and that the minimal traffic benefits the project might offer do not justify the level of damage to parkland and historic resources that would result from building the proposed highway. The now outdated transportation studies underlying the analysis in the Draft Environmental Impact Statement ("DEIS") made it clear even then that expanding east-west capacity is the key to improving traffic congestion in the study area. The major economic and transportation funding changes that have occurred since the publication of the DEIS—and even since the October 31, 2007 meeting of the Section 106 consulting parties—have only highlighted the lack of need for a major new north-south highway along the western border of the Park.

As set forth in the DEIS comments submitted on June 13, 2005 by the Southern Environmental Law Center on behalf of a number of groups, and in the Smart Mobility study attached to and incorporated into those comments, a combination of other regional and local transportation and land use improvements would better accomplish the stated needs of the project. That combination includes:

- Improving I-66 as an east-west thoroughfare, including extension of HOV and bus lanes;
- Funding and expanding the capacity of the Gainesville Interchange in order to allow traffic to flow more smoothly to and from I-66;
- Extending Virginia Railway Express to Gainesville and Haymarket, and improving bus transit along Route 50 in Loudoun County, I-66, and Route 28;
- Targeting local road and safety improvements to cost-effectively reduce incidents in the high accident sections;
- Upgrading local roads like Sudley Road north of the Park and Pageland Road west of the Park with shoulders and roundabouts at intersections (at 659 and Sudley; Sudley and Pageland; and 29 and Pageland);

- Protecting Prince William County’s Rural Crescent and the Loudoun Transition Zone from overdevelopment that would add more traffic to major east-west commuting routes, while shifting development to locations with enhanced access to transit;
- Recognizing that local residents north of the Battlefield will have access to alternate shopping outlets, not requiring driving south through the Battlefield to Manassas. Those future locations include Loudoun’s Route 50 Corridor, Gainesville, and Haymarket; and,
- Funding and completing the upgrade of Route 28 to improve access from the I-66 corridor to the major job concentrations east of Dulles Airport.

This more comprehensive approach offers the most effective option for avoiding and minimizing harm to the Park, the Historic District, and the Pageland Road corridor.

**Traffic Projections Relied Upon in DEIS Need to Be Updated to Reflect Changed Circumstances.**

During the November 5 meeting, there was a brief mention by a VDOT official of how the Final Environmental Impact Statement (“Final EIS”) will need to include updated secondary and cumulative impacts analyses and supporting figures to reflect the effects of the significant economic downturn. We agree that the impacts analyses included in the DEIS need to be augmented to, among other things, reflect the major economic changes that have occurred since the DEIS was published. However, the economic downturn is even more pertinent to the analysis of the need for the project, as well as its efficacy (or lack thereof) in improving mobility and reducing congestion in the study area.

As stated in a January 12, 2009 letter jointly submitted by many of the signatories to this letter, “any assumed need for the new highway and any slight traffic improvements this project might offer based on the travel demand projections included in the DEIS have likely been undermined by the dramatic downturn in residential development in the study area and more permanent reductions expected in demand for residential locations far from jobs, as well as recent declines in vehicle miles traveled.” Since our 2009 letter, major development projects in the vicinity of the study area have been abandoned and their land auctioned off, and real estate experts are describing a fundamental long-term change in the demographics of market demand. Like the secondary and cumulative impacts analyses, the travel demand projections from the DEIS upon which the purported project need was based must be updated, and results from the recent census should also be incorporated into the travel demand projections to ensure a more accurate forecast.

Similarly, the acknowledgement at the November 5 meeting that the Commonwealth Transportation Board has directed VDOT to seek alternative funding for the project pursuant to the Public-Private Transportation Act—and that the Tri-County Parkway would likely be a toll road if funded pursuant to that statute—renders the travel demand projections used in the DEIS obsolete for additional reasons. Tolling the road would clearly impact the number of vehicles that would use the road, but travel demand estimates used in the DEIS do not appear to have assumed the project would be tolled. This is further reason to revise the needs analysis with an updated set of travel demand projections for the study area.

Because updated travel demand projections will likely cast further doubt on the purported need for this new highway and demonstrate even more clearly that our proposed alternative package of transportation measures would substantially address the real transportation needs in the study area while avoiding harm to historic resources, they are central to the NEPA and Section 106 analyses and should be made available to the public to review and comment upon before either process is completed. Toward this end, no further action should be taken until the results of the recent census and revised travel demand projections can be incorporated into an updated needs analysis that is made publicly available.

### **Significant Changes are Still Necessary to Reach Compliance with Section 4(f).**

We have raised concerns about the project's impact on Section 4(f) resources in the past (see our joint Section 106 comment letter dated November 20, 2007), but the project as conceived will have a more serious cumulative effect on those resources than initially understood. The most recent design proposal includes an interchange with Route 29 that would lead to more traffic, not less, passing through the Park as vehicles continue to seek to avoid backups on Interstate 66. Construction of the Tri-County Parkway as a toll road would divert traffic to the local roads including Route 29 and Route 234 through the Park. The western alignment of the highway will also fuel additional sprawling development and traffic.

Without closure of the roads through the Park, this additional development, the use of tolls, and the proposed interchange at Route 29 will generate a significant cumulative impact on the Park and surrounding historic resources. It would further increase traffic within the Park and could even lead to revived proposals to widen Route 234 and Route 29 through the Park. Unless the Section 106 analysis, the Final EIS, and the Record of Decision incorporate the northern arc of the proposed Battlefield Bypass and the closure of the roads through the Park as integral parts of the project, and unless there is legal commitment and funding for the concurrent construction of the Battlefield Bypass northern arc and closure of the roads through the Park, then the Tri-County Parkway will have unacceptable impacts on Section 4(f) resources – destroying the historic integrity and experience of both battles.

In addition, and as previously stated in our comments in the DEIS, we believe that avoidance alternatives were dismissed in the DEIS without adequate evaluation under Section 4(f), and for reasons not substantiated by the regulations or applicable case law. Unless these Section 4(f) deficiencies are corrected, the proposed Tri-County Parkway will remain legally vulnerable under Section 4(f) as well as NEPA.

### **Any Project, if Approved, Must Include All Possible Measures to Minimize Harm to the National Battlefield and its Historic Character.**

Although we continue to oppose this project, we would like to take this opportunity to comment on some of the design changes and mitigation ideas that were discussed at the November 5 meeting. We support the reduction of the right-of-way for the proposed road from 200/225 feet down to 100 feet. Should you continue to move toward approval of this project, we encourage you to use every means possible to reduce further the width of the right-of-way. In

particular, we support the idea that was raised at the November 5 meeting of further reducing lane widths from 12 feet to 11 feet even if this would require a design exception.

We also support the idea VDOT proposed in which VDOT would fund a land conservation effort to mitigate the anticipated damage to the Park that this highway would cause. Adequate mitigation will require that sufficient land be protected to offset the damage to the Park as well as to compensate for land diverted from Park use to road purposes. In addition, the land conservation effort must result in strategic acquisitions of land in order to prevent connections to the Tri-County Parkway; such connections would accelerate development that would further impact the Park adversely.

We understood from the discussion at the November 5 meeting that VDOT is wary of getting involved directly in the land conservation “business” and instead seeks to provide funding to a third party to implement acquisition of land. A monetary amount will have to be determined that is sufficient to accomplish the goals set forth above. Moreover, since the proposed corridor was chosen principally because alternative alignments that were analyzed were deemed to be too expensive (an unacceptable rationale under a Section 4(f) analysis), the monetary contribution should not be less than the difference between construction of the Section 4(f) avoidance alternatives that were considered in the DEIS and the preferred (or West Two) alternative. In this way, VDOT can ensure that damage is not occurring to the Park simply because it is cheaper to route the roadway immediately adjacent to and through the Park. Obviously, funds will also need to be allocated to undertaking a proper economic analysis to determine the amount of money that is necessary for proper mitigation. Finally, any proposed monetary contribution should include an escalator clause to ensure that the mitigation funds continue to be sufficient should road construction be delayed. The economic analysis for determining the amount of the contribution, as well as language making clear VDOT’s intent to establish the fund, need to be included in the Final EIS or in the final Section 106 documentation.

### **Trucks Should be Prohibited from the Tri-County Parkway.**

One of the recommendations we made in our 2007 joint letter was to prohibit trucks from using the Tri-County Parkway. As we stated in that earlier letter, prohibiting trucks would reduce the impacts to historic resources caused by noise, air quality degradation, vibration, and additional traffic congestion occurring within the borders of, and adjacent to, the Park. Our groups continue to urge you to prohibit trucks from using the proposed highway as a way to reduce and avoid adverse impacts.

### **An Interchange with the Tri-County Parkway and Route 29 is Inappropriate Due to Harmful Impacts to Park Resources and Historic Character.**

The proposed interchange between the Tri-County Parkway and Route 29 is problematic. As the Prince William County Planning Commissioner pointed out during the November 5 meeting, such a condition is inconsistent with the County’s long-term planning for this road. Depending upon the type of intersection, either a stop light will be added or considerable land will be required for interchange access ramps; the first impedes traffic flow and the second

further damages the Park. Most troubling, an interchange, where proposed, will close Pageland Road. This, in turn, will require a new road through historically significant land if the Brawner Farm is to be accessed from the Park. Section 4(f) prohibits the use of a historic site unless there is no feasible and prudent alternative and the project includes all possible planning to minimize the harm of the project. Closing Pageland Road to allow an interchange with the Tri-County Parkway and Route 29 does not appear to withstand Section 4(f) analysis. Significant changes are required to avoid or mitigate the problems created by this proposed interchange.

**VDOT Must Provide Examples of Context-Sensitive Design in Comparable Situations to Inform Consideration of Alternative Designs.**

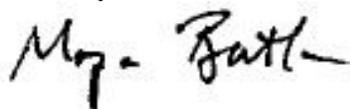
In order to assist our groups in evaluating the real potential for minimizing impacts on the Park and its historic character, please provide us with three or more examples of context-sensitive designs in comparably-scaled highway projects that successfully protect the historic character of comparably-scaled Civil War battlefields, or similar historic and cultural resources. The examples should illustrate steps taken to protect historic character including lines of sight, natural soundscapes, overall integrity of the site, in addition to steps taken to protect the visitor experience and sense of place. Preferably, these will be projects completed by VDOT. If no such examples are available, please provide examples of projects in nearby states. We request a site visit with VDOT and NPS officials to at least two of these sites prior to decisions being reached in this phase of project development.

**Conclusion**

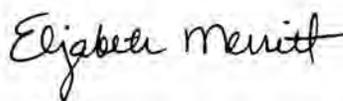
In closing, although some of the proposed tweaks and mitigation concepts raised at the November 5 consulting parties meeting are worthy of consideration, the Tri-County Parkway remains an unneeded project that would have major adverse effects on the Manassas National Battlefield Park, its historic character, and on the surrounding historic area. Since avoiding and minimizing harm is best achieved by our recommended package of comprehensive transportation improvements, we reiterate our request that the Tri-County Parkway proposal be abandoned, and that our proposed set of alternative improvements be evaluated in the Final EIS and adopted as the preferred alternative.

Thank you for your consideration of these comments. Please contact us if you would like additional information on any of the above points or to discuss any of these matters.

Sincerely,



Morgan Butler  
Senior Attorney  
Southern Environmental Law Center



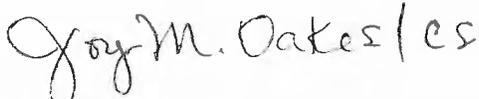
Elizabeth S. Merritt  
Deputy General Counsel  
National Trust for Historic Preservation



Todd Benson  
Fauquier Field Officer  
Piedmont Environmental Council



Stewart Schwartz  
Executive Director  
Coalition for Smarter Growth



Joy M. Oakes  
Senior Regional Director  
National Parks Conservation Association

cc: Nicholas Nies, VDOT, Location Studies Project Manager  
Mary Ellen N. Hodges, VDOT, Cultural Resources Program  
Ed Sundra, Federal Highway Administration  
Marc Holma, DHR, Office of Review and Compliance  
Ed Clark, Superintendent, Manassas National Battlefield Park  
Martha Hendley, Planning Commission, Prince William County  
Nicholas Redding, Civil War Preservation Trust

**Coalition for Smarter Growth, Piedmont Environmental Council,  
Southern Environmental Law Center**

March 16, 2011

Commonwealth Transportation Board  
c/o Office of the Secretary of Transportation  
Patrick Henry Building, 3rd Floor  
1111 East Broad Street  
Richmond, VA 23219

Dear Secretary Connaughton and members of the Commonwealth Transportation Board:

We are writing concerning a resolution that we understand will be introduced at your meeting today proposing to add a new north-south corridor in Northern Virginia (North-South Corridor) as a Corridor of Statewide Significance (“CoSS”). Among other things, we are concerned that such designation would likely be used to advance the wasteful and controversial Tri-County Parkway and related connections that offer little transportation benefit for their exorbitant costs. Moreover, extensive analysis has failed to identify a critical need for the proposed corridor, and designating the North-South Corridor as a CoSS would divert scarce resources from the more pressing transportation corridor in this area – as well as from more pressing corridors in other parts of the Commonwealth. We urge you to reject the proposal to add this new Corridor of Statewide Significance, and not to take any actions that could result in north-south highway projects in this corridor becoming a priority for funding in the upcoming Six-Year Plan update.

**The Proposed CoSS Designation Would Promote Wasteful and Costly Highway Proposals**

The Commonwealth has an enormous list of critical transportation needs. A new highway in the North-South Corridor is not one of them. It is not surprising that the Tri-County Parkway and related projects were not mentioned by the Administration throughout the recent debate on the Governor’s \$4 billion transportation funding proposal. The many more pressing transportation needs facing the Commonwealth include \$3.7 billion in structurally deficient bridges, \$1 billion in deficient pavement, transit maintenance and operating shortfalls, and bottlenecks on existing transportation corridors. With resources so scarce we must choose our priorities wisely.

Designating the North-South Corridor as a CoSS would likely advance ineffective north-south highway proposals such as the Tri-County Parkway and related proposals that have been shown to offer little

benefit for their extremely high price. Here are some of the reasons why no further actions should be taken by the CTB that could advance those north-south highway projects:

- 1) The most accurate measurements of existing traffic congestion were recently released by INRIX and showed that the DC region's worst areas of congestion were on I-66, I-95 and the Beltway.<sup>i</sup> The CTB's own Corridors of Statewide Significance study of the Northern Virginia Corridor shows that the failing highways now and in 2035 are, and will be, the radial corridors including the east-west corridors of I-66, Route 50 and Route 29. This report does not show north-south congestion problems on Route 28.<sup>ii</sup>
- 2) East-west travel, not north-south travel, in Loudoun and Prince William Counties, represents the overwhelming preponderance of the traffic volumes and is the issue in need of priority attention. Smart Mobility, Inc., a national transportation modeling consultant, has analyzed the draft Environmental Impact Statement for the Tri-County Parkway and for the proposed Manassas National Battlefield Park Bypass,<sup>iii</sup> as well as the Loudoun County Transportation Plan. All three analyses confirm these east-west traffic flows.
- 3) The CTB's Corridors of Statewide Significance report for the Northern Virginia Corridor between Winchester and Washington DC does not substantiate a need for a new highway corridor. In addition to mapping the predominant east-west traffic problem, it shows that air freight shipped through Dulles Airport represents just .1 percent by weight and .2 percent by value of all freight moving in the northern Virginia corridor.<sup>iv</sup> The narrative also acknowledges that investments in Route 28, including new interchanges, has improved access to Dulles Airport.<sup>v</sup>
- 4) Proponents of the new corridor have cited the need for access to Dulles Airport from the west, but the main entrance to the airport for passengers who use Dulles Airport is on the east side. A new highway in a western corridor would be about four to five miles longer for a trip from Innovation Research Park to the Dulles Airport entrance than one using I-66 and Route 28. As for enhancing freight access, the comparative freight levels are minimal compared to other freight movements (see 3 above).<sup>vi</sup>

The proposed highway is listed in the state's VTrans 2035 Surface Transportation Report as costing \$474,756,000 for the approximately ten mile corridor from I-66 to Route 50.<sup>vii</sup> Part of the reason for this high price tag is likely the extensive mitigation that would be required to provide any reasonable level of buffering for the Manassas National Battlefield Park from noise and visual pollution. The proposal first mentioned at your February meeting also included expansion of Route 606 (part of the so-called Dulles Loop) and Route 50 or other connections, ten additional miles of highway which would increase costs. For example, the current estimate for an interim upgrade of Route 606 to a continuous 4-lane divided roadway is \$52,650,000,<sup>viii</sup> but this excludes the full cost of the proposed 8-lane freeway and at least four interchanges, two of which would be major interchanges. At a cost of \$80 million per major interchange and \$40 million for a smaller interchange,<sup>ix</sup> Route 606 alone could cost another \$280-\$300 million to

construct. Thus, the total price tag for the Tri-County western alignment and Route 606 (not counting the Route 50 expansion) could be as much as \$775 million. Certainly there are more cost-effective economic development strategies for Prince William County.

- 5) For current and future traffic, the Smart Mobility consultants have recommended a set of solutions that include focusing on I-66 and Route 50 east-west traffic, Virginia Railway Express upgrades, express bus service, and providing roundabouts and safety upgrades for local roads. These local upgrades would meet traffic needs without fueling significant new residential development in the Prince William Rural Crescent and Loudoun County Transition Zone. These are the types of projects that should be the focus of planning efforts in this area, rather than new north-south highways.
- 6) This year, Virginia will join the nation in honoring the 150<sup>th</sup> Anniversary of the Civil War, including the 150<sup>th</sup> Anniversary of the First Battle of Manassas.<sup>x</sup> Next year will be the 150<sup>th</sup> anniversary of the Second Battle of Manassas. Yet, this highway would destroy the historic landscape on the western boundary of Manassas Battlefield. It would impact an area of some of the worst fighting in the Second Battle – at Brawner Farm; areas of troop movement to both battles; an historic district adjacent to the battlefield; and Stuart’s Hill – land that cost the taxpayers \$134 million to protect from a proposed mall.<sup>xi</sup>

**Access to Dulles Airport is covered in a decade’s worth of VTrans analysis and was not identified as a critical priority**

Proponents of the North-South Corridor have mentioned benefits that would accrue from improving access to Dulles Airport from the west. However, such access has not been identified as a critical priority in the CoSS planning processes that have occurred to date. Further, the additional study likely to be part of the new CoSS designation would potentially cost in the hundreds of thousands of dollars, if not over one million dollars. This expenditure of taxpayer dollars to advance a priority of questionable need cannot be justified.

The VTrans statewide transportation planning process, including Corridors of Statewide Significance, involved nearly a decade of study at a probable cost of millions of dollars. The process began with legislation passed in 2000. The CTB completed VTrans 2025 in 2004 and VTrans 2035 in January 2010. VDOT completed its Surface Transportation Plan in 2010. Yet these planning processes and underlying analyses did not make access to the west side of Dulles a top priority.

Nor was the North-South Corridor identified during the specific process of identifying the existing 11 Corridors of Statewide Significance. As set forth in the VTrans 2035 documents, that process was thorough and involved participants and technical advisors from a wide array of regional and statewide perspectives representing all modes of transportation. Although access to Dulles Airport from the west was mentioned in the analysis of the Northern Virginia Connector CoSS<sup>xii</sup> (see page 37 of VTrans 2035, and the CoSS report), such access to the airport was NOT described as a very significant problem, and strong justification for this western connection is not offered.

The expert technical advisors developed the Corridors of Statewide Significance with full knowledge of demographic projections and socioeconomic and travel demand forecasts. (See page 13 of the VTrans report, explaining that such forecasts “were used to guide the analysis of Corridors of Statewide Significance.”)<sup>xiii</sup> In full consideration of these forecasts, the various VTrans reports did not elevate western access to Dulles Airport as a critical priority. Designating a CoSS now to help provide that access would therefore ignore the CoSS priorities that emerged from the extensive analysis that VDOT, DRPT, other agencies, consultants and the CTB have undertaken.

Further, the proposed North-South Corridor fails to meet some of the key criteria that must be satisfied to qualify as a CoSS. According to the VTrans 2035 Report approved by the Commonwealth Transportation Board:

“The CoSS concept was first introduced in VTrans2025 as the Multimodal Investment Network (MIN). The purpose of the MINs was to focus on multimodal solutions to move people and goods within and through Virginia. The criteria for being designated a MIN included:

- The corridor must have multiple modes or be an extended freight corridor;
- The corridor connects regions, states, and/or major activity centers;
- The corridor provides for a high volume of travel; and
- The corridor provides a unique statewide function and/or addresses statewide goals.

Technical advisors representing rail, transit, highway, aviation, port, MPO, and PDC interests developed and applied the criteria that yielded 11 MINs. Although their names have changed, these remain the Commonwealth’s significant corridors, as represented in Exhibit 12.”<sup>xiv</sup>

The proposed North-South Corridor fails to meet key criteria that would qualify it as a CoSS.

- In particular, it does not provide for a high volume of travel. As we have substantiated, the main travel volumes are east-west. Route 28 has already been expanded to handle future north-south traffic in this area.
- The western alignment would create a highway that will initially go through rural areas and some new suburban areas that are unlikely to generate significant demand for transit, so it is unlikely to be a truly multimodal corridor.
- The VTrans report shows that air freight is just .1 percent by weight and .2 percent by value of shipments in the existing Northern Virginia Connector CoSS so the proposed new North-South Corridor seems unlikely to qualify as a critical extended freight corridor
- It does not appear to have a “unique statewide function.”

Thus, a decade worth of analysis at a probable cost of millions of dollars did not identify access to Dulles

Airport as a critical problem and did not identify western access via a north-south highway as a Corridor of Statewide Significance. Further, the proposed North-South Corridor fails to meet the criteria necessary to qualify as a CoSS.

For all of these reasons, we urge you to reject addition of this corridor to the Corridors of Statewide Significance and not to take any actions that could advance north-south highway projects in this area or prioritize their funding in the upcoming Six-Year Plan update.

Thank you.

Sincerely,



Stewart Schwartz  
Coalition for Smarter Growth

Chris Miller  
Piedmont Environmental Council

Trip Pollard  
Southern Environmental Law Center

SOURCES:

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<sup>i</sup> INRIX Traffic Scorecard, <http://www.inrix.com/scorecard/>

<sup>ii</sup> Corridors of Statewide Significance – Northern Virginia, [http://www.vtrans.org/resources/Northern\\_Virginia\\_Connector\\_I-66.pdf](http://www.vtrans.org/resources/Northern_Virginia_Connector_I-66.pdf), see pages 22-25.

<sup>iii</sup> Smart Mobility, Inc., Review of the Battlefield Bypass and Tri-County Parkway Environmental Impact Statements (2 reports included), <http://www.smartergrowth.net/anx/ass/library/11/smartmobility.pdf>

<sup>iv</sup> Corridors of Statewide Significance – Northern Virginia, [http://www.vtrans.org/resources/Northern\\_Virginia\\_Connector\\_I-66.pdf](http://www.vtrans.org/resources/Northern_Virginia_Connector_I-66.pdf), see page 13.

<sup>v</sup> Corridors of Statewide Significance – Northern Virginia, [http://www.vtrans.org/resources/Northern\\_Virginia\\_Connector\\_I-66.pdf](http://www.vtrans.org/resources/Northern_Virginia_Connector_I-66.pdf), see page 34.

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<sup>vi</sup> Corridors of Statewide Significance – Northern Virginia,  
[http://www.vtrans.org/resources/Northern\\_Virginia\\_Connector\\_I-66.pdf](http://www.vtrans.org/resources/Northern_Virginia_Connector_I-66.pdf), see pages 13.

<sup>vii</sup> Surface Transportation Plan – Northern Virginia --  
[http://www.virginiadot.org/Projects/vtransNew/resources/VSTP\\_%20by\\_Chapter/Chapter%206%20by%20Region/Chap6\\_2Northern.pdf](http://www.virginiadot.org/Projects/vtransNew/resources/VSTP_%20by_Chapter/Chapter%206%20by%20Region/Chap6_2Northern.pdf), see page 121.

<sup>viii</sup> Dulles Loop Implementation Group, Dulles Loop Implementation Plan, May 15, 2009.

<sup>ix</sup> Interchange Cost Estimates, Gorove/Slade Presentation to Senator Herring’s Loudoun Route 7 committee, page 10.

<sup>x</sup> Virginia Sesquicentennial Commemoration of the Civil War, <http://www.virginiacivilwar.org/>

<sup>xi</sup> \$134 million to protect Stuart’s Hill, <http://www.landscapeonline.com/research/article.php?id=7360>

<sup>xii</sup> VTRANS 2035 Report, [http://vtrans.org/resources/VTrans\\_2035\\_Report.pdf](http://vtrans.org/resources/VTrans_2035_Report.pdf), page 37

<sup>xiii</sup> VTRANS 2035 Report, [http://vtrans.org/resources/VTrans\\_2035\\_Report.pdf](http://vtrans.org/resources/VTrans_2035_Report.pdf), page 13

<sup>xiv</sup> VTRANS 2035 Report, [http://vtrans.org/resources/VTrans\\_2035\\_Report.pdf](http://vtrans.org/resources/VTrans_2035_Report.pdf), page 27.



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SouthernEnvironment.org

February 1, 2012

Mr. Nicholas Nies, Project Manager  
Environmental Division  
Virginia Department of Transportation  
1401 E. Broad Street  
Richmond, VA 23219

Dear Mr. Nies:

Thank you for taking the time to speak with me in mid-December to update me on the status of the NEPA and Section 106 reviews of the proposed Tri-County Parkway. As you know, the Southern Environmental Law Center is part of a coalition of groups that have serious concerns with this proposal and have been extensively involved throughout the NEPA, Section 4(f), and Section 106 review processes. As I mentioned during our conversation, we believe it would be appropriate to hold a public hearing and provide interested organizations and agencies an opportunity to review and submit comments on the required written evaluation of the Draft Environmental Impact Statement when it is completed. On behalf of ourselves, the Coalition for Smarter Growth, the National Parks Conservation Association, the National Trust for Historic Preservation and the Piedmont Environmental Council, we are now writing to formalize that request.

Many of the aforementioned groups jointly submitted a detailed letter dated June 13, 2005 commenting on the original Draft Environmental Impact Statement (DEIS). Our comments were accompanied by a report from Smart Mobility, Inc., a transportation consulting firm that analyzed the traffic data presented in the original DEIS. Our comments and the accompanying report detailed a number of flaws in the analysis of alternatives, the ambiguity of the No-Build Alternative, the inadequate evaluation of a number of environmental impacts of the project, and the ineffectiveness of the three Candidate Build Alternatives in meeting the project purpose and need.

Notably, the United States Environmental Protection Agency and the United States Army Corps of Engineers raised some of the same concerns in their 2005 comment letters on the DEIS. Among the concerns the agencies raised were the lack of information explaining how the project would affect the level of service on other roadways in the region and therefore satisfy the purpose and need, the lack of clarity about how the project would impact traffic in the study area in comparison to other planned transportation improvements, and the cumulative effects of the Tri-County Parkway when combined with other proposed roadway improvements.

We also sent you a letter on January 12, 2009 on behalf of a number of preservation groups highlighting several ways in which new information and changed circumstances had exposed additional shortcomings in the DEIS. The changed circumstances include the dramatic downturn in residential development in the study area as a result of the economic recession and

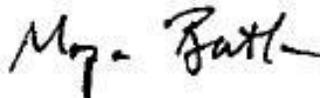
declining rates of vehicle miles traveled, and our letter raised the concern that those changing land use and transportation trends have likely undermined the travel demand projections that were used in the DEIS.

Finally, the National Park Service sent VDOT a letter on May 4, 2011 referring to the “significant change in the [study] area that may warrant the preparation of a supplemental DEIS and Section 4(f) Evaluation.” Among various concerns with the DEIS raised in that letter are deficiencies with the Transportation and Technical Report that was used to prepare the traffic data and comparison of alternatives, and the lack of a rigorous exploration of alternatives or a detailed discussion of the environmental effects of the alternatives that were explored.

Under 23 C.F.R. 771.129(a), the purpose of the written evaluation that must be conducted is to determine whether or not a supplement to the DEIS or a new DEIS is needed. It is clear that our coalition of groups and several federal agencies have raised significant concerns about deficiencies with the original DEIS, and there are new circumstances and information that cast doubt on the data used in the DEIS to compare alternatives and assess the degree to which alternatives satisfy the purpose and need of the project.

In order to make an informed decision regarding whether a new or supplemental DEIS is necessary, we urge you to hold a public hearing and provide a formal opportunity for the public and the agencies with jurisdiction over different aspects of this project to review and submit comments on the written evaluation. Obtaining that input before the decision is made should save time and effort, increase public confidence in the outcome of this process, and lead to a more informed and better overall result.

Sincerely,



Morgan Butler  
Senior Attorney

cc: Ed Sundra, Planning and Environmental Program Manager, Federal Highway Administration  
Stewart Schwartz, Executive Director, Coalition for Smarter Growth  
Nicholas J. Lund, Civil War Associate, National Parks Conservation Association  
Pamela Goddard, Chesapeake and Virginia Program Manager, National Parks Conservation Association  
Rob Niewig, Director, National Trust for Historic Preservation’s Southern Field Office  
Daniel Holmes, Director of State Policy, Piedmont Environmental Council



**National Trust for  
Historic Preservation**  
*Save the past. Enrich the future.*



**COALITION FOR  
SMARTER GROWTH**

August 24, 2012

Mary Ellen N. Hodges  
Preservation Program District Coordinator  
Virginia Department of Transportation  
1401 East Broad Street  
Richmond, VA 23219-1939

**Re: Comments on Draft Programmatic Agreement for the Tri-County Parkway in Prince William and Loudoun Counties, Virginia**

Dear Ms. Hodges:

The following comments on the Draft Programmatic Agreement (PA) for the Tri-County Parkway (TCP) are submitted on behalf of the Southern Environmental Law Center, the Piedmont Environmental Council, the Coalition for Smarter Growth, the National Trust for Historic Preservation, and the National Parks Conservation Association.

Our organizations recognize the irreplaceable value of Manassas National Battlefield Park (Battlefield).<sup>1</sup> We share the important goal of removing commuter traffic from the two highways that currently cross the Battlefield. However, we are committed to ensuring that the chosen solution does not increase the overall impacts to the Battlefield from traffic or simply shift the negative impacts from one area of the Battlefield to another—especially when far less damaging alternatives have not been adequately considered. Similarly, we believe it is critical that the Programmatic Agreement for any new project proposed near the Battlefield incorporate the level of protection and mitigation warranted for a resource of such significance to the history of the Commonwealth and the entire country. We offer the following comments with those objectives in mind.

As an initial matter, we request that the Federal Highway Administration (FHWA) and the Virginia Department of Transportation (VDOT) schedule a meeting of the Section 106 Consulting Parties to discuss the Draft PA prior to developing a final draft of the agreement. As set forth below, there are

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<sup>1</sup> The Manassas National Battlefield commemorates the site of two of the Civil War's most important battles. Fought in July of 1861, the First Battle of Manassas was the first major battle of the war, resulting in more than 4,800 casualties and sending a sobering realization throughout the nation that this war would not be quickly or easily won. The two armies met again on the same ground in August, 1862 – 150 years ago this month – to fight again. One of the largest battles of the war, Second Manassas resulted in more than 18,000 casualties and gave the Confederates the confidence to set their sights on an invasion of the North.

several aspects of the Draft PA that warrant additional consideration, and we have offered several recommendations that should be explored with the entire group.

Overall, while the Draft PA is a positive step towards resolving some of the many problematic issues related to the TCP, it is nonetheless inadequate to protect the Manassas National Battlefield Park, one of the Commonwealth's most sacred Civil War landscapes. As explained in further detail below, the Draft PA fails to include consideration of an alternative package of transportation measures described in our December 6, 2010 Section 106 comment letter, which could potentially accomplish the stated needs of the project while minimizing impacts to the Battlefield and the Historic District. We believe this "low build" alternative represents a potential feasible and prudent alternative that could avoid and minimize the use of historic properties, under Section 4(f) of the Department of Transportation Act. 23 U.S.C. § 138, 49 U.S.C. § 303(c).

Another significant problem with the Draft PA is the attempt to segment consideration of the TCP and the proposed Manassas Battlefield Bypass, when a significant portion of the two projects are co-located, and the Battlefield Bypass is a crucial component of the long-term commitments to minimize and mitigate harm to the Battlefield.

Further, the proposed measures to minimize and mitigate harm in the Draft PA are not commensurate with the magnitude of the adverse effects to the Manassas Battlefield and the Historic District<sup>2</sup> and certainly do not represent "all possible planning to minimize harm," as required by Section 4(f) of the Department of Transportation Act. For example, as discussed in more detail below, the Draft PA does not include sufficient commitments to ensure the closures of Route 234 and Route 29 through the Manassas Battlefield. Nor does the Draft PA include any *specific* commitment to reduce the right-of-way to a width of less than 200 feet within the Battlefield and the Historic District, which is grossly excessive. The vague proffer in Stipulation I.B. to attempt to minimize the width at a later date—"provided the typical section still meets the TCP's purpose and need"—is inadequate. And the \$3 million proffered in Stipulation II.12.a., to protect the historic setting of the Battlefield and the Historic District, is a gesture that we appreciate and support, but the amount of funding allocated will be severely inadequate to accomplish its goal.

These and other deficiencies in the Draft PA must be addressed. Notably, this month marks the 150-year anniversary of the Second Battle of Manassas. In another 150 years, we hope that Americans can look back upon the debates over the proposed TCP and Manassas Battlefield Bypass with thanks for all involved for protecting the important and irreplaceable historic, cultural and scenic values provided by the Manassas National Battlefield and adjacent Historic District. With the application of the proper consultation, mitigation, and transportation strategies recommended in our comments below and in the enclosed "markup" of the Draft PA (Enclosure 1), we can have greater assurance that the Battlefield and the Historic District can be effectively preserved, and commuter traffic can be removed from the Battlefield, all while traffic flow in the region is improved.

## **I. The Draft PA Fails to Properly Consider a Low-Build Alternative.**

As members of this coalition have maintained since our comments on the Draft EISs for the TCP and Battlefield Bypass in 2005, VDOT and FHWA have failed to consider alternatives to the TCP that

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<sup>2</sup> With respect to direct, physical destruction of historic properties, during the November 2010 consultation meeting, the taking of land from within the Manassas Battlefield and the Historic District was estimated at 20 acres. Draft PA, Encl. 2, at p.15 (Minutes from Nov. 5, 2010 meeting, prepared by VDOT). However, our own analysis indicates that the total use of land from within the Battlefield and the Historic District may be much greater than 20 acres. See Enclosure 3.

could achieve the goals of the projects, while minimizing adverse impacts to the Manassas Battlefield and Historic District. As we set forth in our comments on the TCP DEIS and the Battlefield Bypass DEIS, neither of those documents adequately studied alternatives that would employ a mix of strategies to address the purposes of the projects. TCP DEIS Comments at 3-6; Battlefield Bypass DEIS Comments at 4-7. Building on those concerns, we described the specific components of a “low-build” alternative to the TCP in the December 6, 2010 joint comment letter we sent following up on the November 2010 meeting of the Section 106 Consulting Parties.

FHWA and VDOT should, in coordination with the Consulting Parties, study this low-impact, multi-modal avoidance alternative prior to completing the Final EIS for the TCP. The results of the study should be independently reviewed by national transportation planners, engineers and modelers. If the results show that this alternative is feasible and prudent (i.e., addresses connectivity, traffic congestion, and safety while avoiding and minimizing harm to historic resources), then the low-impact, avoidance alternative should be advanced, and the Section 106 process and the focus of the PA should be shifted to the new alternative. In our view, this process is necessary to ensure compliance with Section 4(f) and NEPA, and to achieve the goal of protecting the Manassas Battlefield while improving traffic connectivity in the region. We have proposed a clause in Enclosure 1 that captures this recommendation.

Further, in light of the interconnected nature of the TCP and the Battlefield Bypass (discussed in more detail below), it may be prudent to evaluate instead a broader “low build” alternative that could satisfy the purposes of both projects. This alternative would combine the list of improvements proposed in our December 2010 letter as the “low build” alternative for the TCP along with the various “low build” improvements we have proposed for the Battlefield Bypass (co-location of Route 29 onto Interstate 66; upgrading the existing east-west road at the southern boundary of the Battlefield between the Park Headquarters and Groveton Road; and completing parallel roads along the Route 50 corridor). This comprehensive approach could minimize damage to the Battlefield and Historic District, provide alternatives for the traffic that uses Route 29 and Route 234 through the Battlefield, allow for local traffic movement and accessibility, and address the pressing transportation needs in this area. Indeed, as a result of the economic downturn beginning in 2008, many of the assumptions about traffic growth that were made in the Draft EISs for the two projects are demonstrably over-inflated. An updated study of both projects is further needed because of these changed circumstances.

## **II. The TCP and Battlefield Bypass Evaluations Are Improperly Segmented, and Fail to Consider Cumulative Impacts.**

As the process for the study and construction of the Tri-County Parkway continues, efforts are also being made to advance the Manassas Battlefield Bypass – a road proposal that is literally interconnected with the TCP. The Battlefield Bypass proposal emerged as a result of the Manassas National Battlefield Park Amendments of 1988, which sought to find a way to remove traffic from the Battlefield in order to improve the visitor experience. See Battlefield Bypass DEIS at S-1. As currently proposed, the Battlefield Bypass is planned to run east-west above the northern boundary of the Manassas Battlefield before co-locating with the segment of the TCP between Route 29/Pageland Lane and Route 234 at Catharpin. A Draft EIS for the Battlefield Bypass was published in 2005.

The co-location of the TCP and the Battlefield Bypass along the western boundary of the Manassas Battlefield requires that the cumulative impacts to the Battlefield resulting from the two highway projects be considered together. The Section 106 regulations explicitly require consideration of “cumulative” impacts, 36 C.F.R. § 800.5(a)(1), as does the National Environmental Policy Act, 40 C.F.R. § 1508.7. Unfortunately, the cumulative impacts of these two projects on the Manassas Battlefield, the

Historic District, and the particular resources therein were given scant discussion in the Draft EISs for both projects, and there has been little consideration of the additional impacts the Battlefield Bypass would have on these resources during this Section 106 process for the TCP. As a result, there is inadequate information to properly assess the overall impacts of these projects on the Manassas Battlefield and the Historic District. In order for the competing goals and designs for destructive new highway(s) along the edges of the Manassas Battlefield to be properly assessed, a study that considers the impacts and purposes of both the TCP and the Battlefield Bypass needs to be conducted. To do otherwise would ignore the reality of the combined impact of the TCP and Battlefield Bypass on one of our nation's most hallowed areas.

### **III. The Draft PA's Assurances of Road Transfers, Closures and Traffic Calming Measures are Inadequate.**

The need to relieve traffic pressure on the portions of Route 29 and Route 234 that transect the Manassas Battlefield has long been recognized. VDOT studied the possibility of relocating these roads in the 1970s, and the study reflected in the Battlefield Bypass DEIS was mandated by Congress in 1988. The Draft PA appears to attempt to advance that goal, but the process proposed in the Draft PA for closing Route 234 to commuter traffic is inadequate, and there are no clauses in the Draft PA that relate to the closure of Route 29.

#### A. Closure of VA Route 234 Through the Manassas Battlefield

Regarding the closure of Route 234, the Draft PA would simply require VDOT, upon the execution of the PA, to recommend to the Commonwealth Transportation Board (CTB) that Route 234 be abandoned or discontinued through the Battlefield, and that management or ownership of the right-of-way be turned over to the National Park Service (NPS). However, if the CTB were to vote against abandonment despite the recommendation from VDOT, Route 234 could remain in the possession of the state and open to traffic indefinitely, despite the construction of the TCP. We are also concerned that a new administration in Richmond might change the composition (and votes) of the CTB, which could result in a future reversal of the decision. Further, even if the CTB were to ultimately accept the recommendation, the Draft PA states that closure of Route 234 and transfer of ownership to the NPS would not occur until the TCP is opened. This provides inadequate assurance that the transfer and closure of Route 234 to commuter traffic—which is critical to enhancing the experience of visitors to the Battlefield and improving historic preservation efforts—will be accomplished.

We strongly recommend an approach in which the PA stipulates that the CTB abandonment process and the transfer of the segment of Route 234 to the NPS be complete before commencing construction of the TCP. Specifically, upon the execution of the PA, the Commissioner of Highways should commence the process of abandonment. Upon completion of the abandonment process, the Commissioner of Highways should then convey ownership of the relevant section of Route 234 to the NPS in an executed agreement in which the NPS agrees to keep the relevant section of Route 234 open and operational until the construction of the TCP is complete and opened to traffic. The agreement should also provide that, upon completion and opening of the TCP, the NPS will restrict commuter traffic on the relevant section of Route 234.<sup>3</sup> This approach would better ensure that the transfer to the NPS and ultimate closure of Route 234 through the Battlefield—an integral component of the mitigation for the

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<sup>3</sup> A provision of the NPS/VDOT agreement could also stipulate that ownership of the right-of-way for the transferred portion of Route 234 should revert to VDOT if the TCP is not open to traffic by some future date, such as January 1, 2022.

TCP's impacts on the Battlefield—would actually occur if the TCP is constructed. We have proposed changes to the relevant clause of the Draft PA in Enclosure 1 that flesh out this recommendation.

#### B. Closure of US Route 29 Through the Manassas Battlefield

Similarly, because of the importance of closing Route 29 through the Manassas Battlefield to the mitigation efforts for the TCP and the interrelated Battlefield Bypass, the PA for the TCP should commit FHWA, the NPS, and VDOT to initiating and completing the process for transferring to the NPS the portion of Route 29 that bisects the Battlefield prior to construction of the TCP. Again, the NPS could commit to keeping Route 29 open to through traffic until the Bypass is completed.

#### C. Traffic Calming Measures on Route 29

The Draft PA explicitly acknowledges that construction of the TCP will result in additional traffic through the Manassas Battlefield. (Stipulation II.7.) We agree that traffic calming measures along Route 29 are necessary to reduce the adverse effects of this additional traffic through the Manassas Battlefield brought on by TCP construction. However, because this increase in traffic through the Manassas Battlefield on Route 29 would have detrimental effects on visitors, and on the historical and cultural resources in the Battlefield, specific traffic calming measures that will be used should be identified in advance in a traffic calming plan and be adopted via a separate agreement between the NPS and VDOT prior to the completion of the Final EIS and ROD for the TCP, as set forth in a clause in our Enclosure 1. All Consulting Parties should have an opportunity to comment on the traffic calming plan prior to its adoption. Construction of the traffic calming measures should be completed no later than six (6) months prior to the commencement of construction for the TCP.

#### D. Completion of Studies, Permitting, Engineering and Funding for the Battlefield Bypass

Stipulation II.10 in the Draft PA – *Preliminary Engineering and Design for MNBP Bypass* – proposes a relatively minor funding commitment to advance the planning of the Battlefield Bypass. This funding is apparently being proposed as an indirect method of mitigating the impacts the TCP would have on the Battlefield and Historic District, and it appears to be based on the view, legitimate or not, that construction of both the TCP *and* the Battlefield Bypass is necessary to achieve the goal of closing both Route 234 and Route 29 through the Battlefield to commuter traffic. However, based on agency comments submitted on the DEIS for the Battlefield Bypass, there could be serious objections from other agencies such as the Corps of Engineers which may make it much more difficult to get approval for that proposal.

To ensure that the clauses in the Draft PA regarding the Battlefield Bypass and its advancement do not become false incentives, VDOT, FHWA, and the NPS should ensure, prior to the construction of the TCP, that there is a viable route for the Battlefield Bypass and that it has received all relevant federal permits, including necessary permits for impacts to wetlands and streams. These permits should be granted, and the Battlefield Bypass Final EIS and Record of Decision should be complete, prior to construction of the TCP.

Additionally, the Draft EIS for the Battlefield Bypass was completed by FHWA, in conjunction with the NPS, in 2005. As the agency responsible for the study and design of the Battlefield Bypass to this point, FHWA should remain the lead agency responsible for the procurement and administration of a contract for preliminary engineering and design of the Battlefield Bypass, with cooperative coordination from VDOT and the NPS. FHWA should commit to funding at least fifty (50) percent of the cost of construction of the Battlefield Bypass, and VDOT should commit to funding at least twenty-five (25)

percent of the cost of construction of the Battlefield Bypass over and above the cost of constructing the portion of the Battlefield Bypass proposed to be co-located with the TCP. Enclosure 1 includes language that effectuates these recommendations.

#### **IV. The Draft PA's Proposed Design Specifications for the TCP are Inadequate.**

##### **A. Limiting Road Width to Four Lanes, and Committing to Reduction of the Right-of-Way**

As you know, Section 4(f) of the Department of Transportation Act requires that FHWA and VDOT incorporate into this project "all possible planning to minimize harm" to historic properties. In our view, FHWA and VDOT have not satisfied this requirement. Among other things, they have not made adequate commitments to reducing the width of the right-of-way, which is estimated to be 200 feet wide.

First of all, questions need to be answered about the total number of acres from within the Battlefield and the Historic District that would actually be "used" by the project. Although VDOT has suggested that the total use would be 20 acres or less, our own GIS analysis suggests that the actual acreage used from within the historic areas would be 35 acres. As shown in Enclosure 3, existing Pageland Lane occupies roughly 8.5 acres of the Historic District. A reasonable road design of 116 feet (discussed in more detail below) would use a total of 20.4 acres, or about 12 acres more than existing Pageland Lane. Comparatively, the current proposal for a road design of 200 feet would use an *additional* 14.6 acres from the Battlefield and Historic District – or an overall total of 35 acres – to achieve the same level of service as the road design of 116 feet. This level of destruction is excessive and unnecessary.

To minimize the impacts of the TCP on the Manassas Battlefield and the Historic District, it is essential that the TCP be limited to a maximum of four lanes. This commitment should be included in the PA. Specifically, this section of the road should be designed to parkway standards, reducing the cross section to 116 feet using four 11-foot travel lanes, two three-foot inside shoulders, two 8-foot exterior shoulders, a 20-foot median, a 10-foot ditch on each side, and a 10-foot multiuse trail on one side. The road should have mountable curbs to allow for an additional area for safely removing a vehicle from the through lanes. Further, in order to meet the objective stated in the DEIS of enhancing the experience of visitors to the Battlefield and to improve historic preservation efforts, FHWA and VDOT should incorporate context sensitive solutions into the roadway design to the maximum extent possible. These commitments should be specifically incorporated into the PA, including a diagram of the cross-section for the portion of the project that runs through the Historic District and the Battlefield.

##### **B. Stronger Commitments to the Mitigation of Potential Visual and Noise Effects**

To limit harm to the quality of the visitors' experience at Manassas Battlefield, stronger and more specific commitments should be made in the PA to ensure that potential visual and noise effects of the road are minimized. At a minimum, in addition to the other visual and noise mitigation measures developed pursuant to the pertinent stipulations in the Draft PA, a commitment to using noise-reducing pavement should be made expressly in the PA.

In order to comply with the requirements of Section 4(f), VDOT and FHWA must design the southern section of the TCP to avoid and minimize the use of land from the Battlefield and the Historic District for right-of-way. Building on a clause in the Draft PA, along the relevant section of the TCP, VDOT should be responsible for designing and installing enhancements to the Battlefield and the Historic District for the purpose of minimizing the visual effects of the TCP within the Battlefield, but it should be clear that VDOT shall not acquire this land for right-of-way. VDOT should develop these enhancements in consultation with the NPS in order to achieve mitigation measures in the best interest of the visitors'

experience at the Battlefield. VDOT and FHWA should fund the full cost of designing and installing these enhancements. Please refer to Enclosure 1 for language that incorporates these changes.

#### C. Limitations on Truck Traffic

As stated in our prior Section 106 joint comments, tractor-trailer trucks on the TCP will have negative noise, visual, air quality, and vibration impacts on the Manassas Battlefield and its visitors. Further, neither the TCP DEIS nor the Battlefield Bypass DEIS adequately considered the likelihood of induced truck traffic or the increased visual and noise impacts of induced truck traffic on the Manassas Battlefield. As indicated in our attached markup of the Draft PA, a detailed study of truck traffic is needed, including recommendations for potential measures to discourage truck traffic on the TCP and otherwise minimize the adverse effects of trucks on the Manassas Battlefield and the Historic District.

#### D. Access to Brawner Farm and Stuart's Hill Center

In addition to the significant acreage from the Manassas Battlefield and the Historic District that would be taken for the construction of the TCP, additional lands would be impacted by the necessary replacement of access roads to both the Brawner Farm and to Stuart's Hill Center. These new roads would be constructed through areas of land with tremendous importance to the First and Second Battles of Manassas, and therefore the utmost care and concern should be taken for their plan and placement. Because of the high potential for impacts of these new roads on the historic and archaeological resources of the Battlefield, FHWA, the NPS, and VDOT should complete archeological studies, assess the impacts, and select the alignment for any new access roads before completion of the FEIS and ROD. If archeological studies show that adverse effects to the Battlefield cannot be avoided, FHWA, the NPS, and VDOT should develop an additional treatment plan, in consultation with all Consulting Parties.

#### E. Closure of Pageland Lane

To ensure the proper transfer of Pageland Lane to the NPS in keeping with the overall goals of the TCP and Battlefield Bypass projects, an affirmative vote of the CTB on the abandonment or discontinuance of the relevant section of Pageland Land should be obtained prior to the construction of the TCP. We have added language to this effect to the relevant clause of the Draft PA in Enclosure 1.

### **V. The Preservation Fund is Inadequate to Protect the Historic Setting of the Manassas Battlefield and the Historic District.**

We are concerned that the amount of funding proposed for land preservation within the Draft PA is insufficient to accomplish the stated objectives, and that several factors could further decrease the acreage this funding could be expected to protect in the eligible area. We also seek clarity on the objectives for preservation as it pertains to limiting access, because this could greatly alter the cost for the proposed preservation effort.

As set forth in the analysis and map attached hereto as Enclosure 2, we have researched comparable parcels in the area and have discovered four comparables that give some indication of the value of the land within the eligible area. We have also taken into account the most recent assessed values for the eighteen eligible properties, totaling some 696 acres. However, assessed values are not a reflection of actual values when viewed against recent sales prices, so the comparables provide a better indication of the true cost of purchasing the needed protection in this area. Also, the objectives for preservation may drive up the cost of an easement beyond that typically associated with securing scenic or open-space easements. The restrictions that would be necessary to adequately protect the character and

setting of the Battlefield and the Historic District could devalue the property substantially. The restrictive nature of the easement may also limit the number of willing participants or require fee-simple purchase as the most practical tool available to the land conservation group charged with administering the fund. In addition, owners may see this as an opportunity to demand higher prices for either an easement or fee simple purchase. In short, the objectives for preservation will greatly impact the ability to use easements, the overall cost for preservation, and willingness of the landowners to negotiate a preservation outcome.

Using comparables and assessed values, the total estimated value for the 696 acres of eligible properties is \$13,933,967.10. Small lots with improvements and recent speculative purchases of larger properties in the corridor are largely responsible for this figure. Speculative purchases will likely further inflate the total cost/value moving forward.

In conclusion, it is likely that a combination of preservation for both small and large lots needs to occur in order to adequately protect the character and setting of the Battlefield and the Historic District. It is also likely that speculation will further complicate this effort and will result in higher costs for securing easements (which could be greater than 50 percent the value of the property) and may, as a practical matter, require fee-simple purchase as the main vehicle for preservation of these lands. We believe the PA should address these issues by increasing the funding to a minimum of 50 percent of the total estimated value of the eligible lands. Thus, as indicated in our attached markup of the Draft PA, we recommend that an appropriate range of funding is \$7 million - \$14 million. In the event that preservation goals are hindered by unwilling land owners or can be met with less funding than the amount provided, there is no danger of excess funds being lost. The PA already provides language ensuring the return of unused funds, if any, to the agency. Providing sufficient funding upfront will demonstrate that the Signatories to this agreement are serious about protecting these resources and limiting access points to the TCP in order to maintain the integrity of the Battlefield and the Historic District.

#### **VI. The Draft PA Should Not Restrict Opportunities for Participation in Follow-up Consultation Exclusively to Concurring Parties.**

Section 106 requires the agency to consult with all Consulting Parties to “develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties.” 36 C.F.R. § 800.6(a). The PA establishes a process to develop ways to avoid, minimize or mitigate the adverse effects of the TCP, even though the details are left to be determined after the PA is signed. However, the Draft PA would restrict participation in that crucial post-PA consultation process exclusively to those parties who are willing to sign the PA as Concurring Parties. As a matter of national policy, we disagree with the proposal to offer these kinds of special, exclusive privileges as a way to pressure Consulting Parties to endorse a Section 106 agreement.

Because of our concerns about the TCP’s adverse impacts on the Battlefield and the Historic District, many of our groups may not feel comfortable endorsing the final PA as Concurring Parties. However, as groups with experience in the Section 106 review process for other road proposals, and with a keen interest in protecting the character of the setting and the Battlefield landscape at Manassas, we have valuable insight into efforts to avoid, minimize and mitigate the TCP’s impacts on the Battlefield and Historic District. To restrict much of the subsequent planning for the avoidance, minimization and mitigation of adverse effects of the TCP exclusively to “Signatories and Concurring Parties” would restrict our ability to serve this important role. Therefore, in multiple sections throughout our attached markup of the Draft PA, we have changed “Concurring Parties” to “Consulting Parties.” Those sections include:

- I.B – Typical Section
- I.C.1 – Consultation on Further Design
- II.1 – Streetscape Design for the TCP (section II.2 in Enclosure 1)
- II.2 – Minimization of Potential Noise Effects (section II.3 in Enclosure 1)
- II.3 - Minimization of Potential Visual Effects on MNBP (section II.4 in Enclosure 1)
- II.4 – Access to Brawner Farm (section II.6 in Enclosure 1)
- II.5 – Access to Stuart’s Hill Center (section II.7 in Enclosure 1)
- II.7 – Traffic Calming on US 29 (section II.9 in Enclosure 1)
- II.8 – Mitigation of Potential Visual Effects on Putnam-Patton House/Deseret (section II.10 in Enclosure 1)
- III – Identification and Treatment of Archaeological Historic Properties
- IV.C – Post Review Discoveries
- V.C – Treatment of Human Remains<sup>4</sup>
- VII.B-C – Preparation and Review of Plans and Documents
- X – Assignment of Responsibilities
- XI – Monitoring and Reporting
- XII – Dispute Resolution
- XVI – Execution

**VII. The Draft PA Fails to Adequately Provide for the Identification and Treatment of Archaeological Historic Properties.**

Because of the national historic importance of the Manassas Battlefield, the treatment of archaeological historic properties in this PA should be strengthened. Plans for the TCP and the new access roads to Brawner Farm and the Stuart’s Hill Center should be subject to special scrutiny and review to determine potential impacts to archaeological resources. If newly discovered archaeological resources are identified, we believe they are likely to have significance above and beyond merely their potential research value under Criterion (d) of the National Register of Historic Places. If a newly identified historic property will be adversely affected by the TCP or the access roads, then FHWA and VDOT, in consultation with the other Consulting Parties, should do everything possible to avoid the property, rather than merely adopt routine treatment in the form of “data recovery.” VDOT should provide the SHPO and the NPS the opportunity to review and determine whether avoidance should be required.

**VIII. The PA Should Provide Ample Opportunities for Public Input.**

The Manassas Battlefield is a part of the National Park System, and belongs to every American. That fact, combined with the great importance of the First and Second Battles of Manassas to American history, necessitates a high level of responsiveness to public concerns. Therefore, we strongly recommend that the PA include a provision for members of the public to raise objections and concerns about the implementation of the PA stipulations, and provide an administrative mechanism for the

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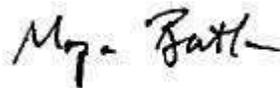
<sup>4</sup> This stipulation includes a prohibition on releasing photos, which we assume the agencies would want to be applicable to all Consulting Parties in any event.

transportation agencies to attempt to resolve any such objections. The Signatories and Consulting Parties should be notified and have the opportunity to review and comment on the proposed resolution of the objection.

**IX. Conclusion.**

For the foregoing reasons, the Draft PA should be amended to reflect: (1) adequate consideration of the Battlefield Bypass along with the TCP, and adequate consideration of a Low-Build Alternative; (2) binding commitments to road transfers, closures, and traffic calming measures within the Manassas Battlefield; (3) binding commitments to substantially reduce the width of the right-of-way for the TCP; (4) substantially increased funding that is adequate to protect the historic setting of the Battlefield and the Historic District; and (5) the opportunity for all Consulting Parties to be involved in follow-up meetings about design review and the development of specific mitigation measures. Thank you for giving us the opportunity to comment on the Draft PA. We reiterate our request for a meeting of all Section 106 Consulting Parties to discuss the Draft PA prior to the development of a final agreement, and we look forward to further coordination and consultation on all of the above-referenced topics.

Sincerely,



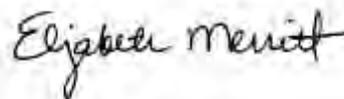
Morgan Butler, Senior Attorney  
Southern Environmental Law Center



Christopher G. Miller, President  
Piedmont Environmental Council



Stewart Schwartz, Executive Director  
Coalition for Smarter Growth



Elizabeth S. Merritt, Deputy General Counsel  
National Trust for Historic Preservation



Joy M. Oakes, Senior Regional Director  
National Parks Conservation Association

Enclosures:

1. Draft Programmatic Agreement with Track-Changes and Comments
2. Analysis of real estate values of parcels eligible for protective acquisition (including map)
3. GIS Analysis of total amount of land within Manassas Battlefield and Historic District that would be “used” for the TCP project

cc: Ed Clark, Superintendent, Manassas National Battlefield Park  
Tammy Stidham, National Park Service  
Steve Whitesell, National Park Service  
Mary Ann Naber, Federal Preservation Officer, FHWA  
Jack Van Dop, Eastern Federal Lands Division, FHWA  
Edward Sundra, FHWA  
Carol Legard, Advisory Council on Historic Preservation  
Najah Duvall-Gabriel, Advisory Council on Historic Preservation  
Charlene Vaughn, Advisory Council on Historic Preservation  
Reid Nelson, Advisory Council on Historic Preservation  
Antony Opperman, VDOT  
Nicholas Nies, VDOT  
Kathleen Kilpatrick, Virginia SHPO  
Marc Holma, Va. Dep’t of Historic Resources  
James Lighthizer, President, Civil War Trust

# Enclosure 1

**DRAFT July 10, 2012**  
**PROGRAMMATIC AGREEMENT AMONG**  
**THE FEDERAL HIGHWAY ADMINISTRATION,**  
**THE VIRGINIA STATE HISTORIC PRESERVATION OFFICER,**  
**THE VIRGINIA DEPARTMENT OF TRANSPORTATION, AND**  
**MANASSAS NATIONAL BATTLEFIELD PARK**  
**REGARDING THE TRI-COUNTY PARKWAY,**  
**PRINCE WILLIAM AND LOUDON COUNTIES, VIRGINIA**  
**VDOT Project No.- R000-96A-102, P101 (UPC 52405); DHR File No. 2003-0042**

**WHEREAS**, the Virginia Department of Transportation (VDOT) proposes to construct a highway, the Tri-County Parkway (TCP), on new location from the intersection of Interstate 66 and Route 234 in Prince William County and extending north to Route 50 in Loudoun County (hereinafter referred to as the Undertaking) (VDOT Project No.- R000-96A-102, P101, UPC 52405; DHR File No. 2003-0042) (Attachment 1); and

**WHEREAS, the VDOT in conjunction with Loudoun County proposes additional connections north to Route 7 using Northstar Boulevard and Belmont Ridge Road; and**

**WHEREAS, the VDOT is also studying a Corridor of Statewide Significance from I-95 to Route 7 which could utilize the corridor proposed for the Tri-County Parkway (TCP); and**

**WHEREAS**, the VDOT anticipates receiving federal financial assistance for the TCP from the Federal Highway Administration (FHWA); and

**WHEREAS**, the FHWA has determined that the provision of financial assistance for the TCP is an undertaking as defined in 36 CFR Part 800.16(y); and

**WHEREAS**, pursuant to Section 10 of the Rivers and Harbors Appropriations Act of 1899 (33 U.S.C. 401 and 403) and Section 404 of the Clean Water Act of 1973 (33 U.S.C. 1344), a Department of the Army permit will likely be required from the Corps of Engineers (Corps), and the Corps has designated the FHWA as the lead federal agency to fulfill federal responsibilities under Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. 470f); and

**WHEREAS**, the FHWA and the VDOT studied a No-build Alternative and three Candidate Build Alternatives for the location of the TCP in a Draft Environmental Impact Statement -approved by the FHWA March 16, 2005, and the Commonwealth Transportation Board (CTB) approved the location of the TCP on Candidate Build Alternative West Two by resolution dated November 17, 2005; and

**WHEREAS**, the FHWA and the National Park Service (NPS) studied a No-build Alternative and Candidate Build Alternatives for the location of the Manassas National Battlefield Park Bypass (MNBP Bypass) in a Draft Environmental Impact Statement approved by the FHWA January 28, 2005, the CTB approved the location of the MNBP Bypass on Candidate Build Alternative D by resolution dated June 15, 2006, and the NPS subsequently developed Modified Candidate Build Alternative D; and

**WHEREAS**, the corridors for the TCP and the MNBP Bypass approved by the CTB overlap in the vicinity of Manassas National Battlefield Park (MNBP) and Manassas Battlefield Historic District (MBHD), from I-66 at US 29 and Pageland Lane to the intersection with Route 234 at Catharpin; and

WHEREAS, until the studies and permitting process are completed for the remainder of the Manassas National Battlefield Bypass, it cannot be known that construction of the MNBP will be granted necessary permits or is prudent and feasible under Section 4(f) of the Department of Transportation Act.

WHEREAS, the FHWA has authorized the VDOT to conduct consultation with the Virginia State Historic Preservation Officer (SHPO) for the Undertaking on its behalf pursuant to Section 106 of the NHPA (16 U.S.C. 470), including the initiation of the Section 106 process, identification of historic properties, and assessment of adverse effects; and

WHEREAS, the VDOT, in consultation with the SHPO, has defined the Area of Potential Effects (APE) for Candidate Build Alternative West Two (Attachment 2) for the TCP in accordance with 36 CFR 800.4(a)(1). -The APE for direct effects is a 600-foot-wide corridor that includes the proposed highway right of way and any related temporary or permanent easements where direct impacts from construction of the proposed highway may occur. -The APE for indirect effects (visual, auditory) is a 1000-foot-wide corridor plus any above-ground resources adjacent to or visible from the corridor. Secondary effects may occur in proposed intersection areas and on other rural land areas near the corridor, where there is the potential for changes in land use induced by the Undertaking; and

WHEREAS, the VDOT has determined that the TCP will take a total of twenty (20) acres of land from within the MNBP and MBHD; and

WHEREAS, the 2006 National Register form for the MBHD boundary increase states: "The battlefield retains integrity of location, setting, feeling, and association with the historic events that occurred on the property during the Civil War. With reference to the man-made resources, such as the dwellings, military embattlements, and the Unfinished Railroad, Manassas Battlefield has integrity of design, workmanship, and material."; and

WHEREAS, at its broadest conception, the project will convert a portion of relatively intact rural landscape comprising the historic setting of the battlefield properties into a highway, while also introducing into this setting an increase in traffic-generated noise and visual elements that will alter and potentially obscure significant battlefield viewsheds. These direct and indirect effects will result in a diminishment of the integrity of setting, feeling, and association of MNBP and MBHD; and

WHEREAS, the VDOT, in consultation with the SHPO, has completed studies to identify any buildings, structures, non-archaeological districts, and objects meeting the criteria for listing on the National Register of Historic Places (NRHP) within the Undertaking's APE (Attachment 3), and has coordinated its findings with the SHPO and other Consulting Parties (Attachment 4); and

WHEREAS, the VDOT, in consultation with the SHPO, has initiated the studies necessary to identify within the TCP's APE any archaeological sites or districts meeting the criteria for listing on the NRHP (Attachment 3), and coordinated its findings with the SHPO and other Consulting Parties (Attachment 4); and

WHEREAS, the VDOT, in consultation with the SHPO, has determined that the Undertaking will have an adverse effect on historic properties. -Properties potentially affected include (i) the Manassas National Battlefield Park (MNBP) (DHR Inventory No. 076-0271, listed on the NRHP October 1966) and a contributing element, the unfinished Independent Line of the Manassas Gap Railroad

(“Unfinished Railroad”) (44PW0580/44PW0299); (ii) Manassas Battlefield Historic District (MBHD) (076-0271, amended NRHP nomination and boundary expansion January 2006 ) and the contributing elements Pageland I (076-0138), Pageland II (076-0137), the Dunklin Monument (44PW0579), and the “Unfinished Railroad”; and (iii) the Putnam-Patton House/Deseret (076-0179) (see Attachment 5); and

WHEREAS, Pageland I and Pageland II are largely undeveloped properties that preserve a sense of what the landscape would have looked like during the two significant Civil War battles at Manassas; and

WHEREAS, construction of the TCP will result in an increase in through traffic on Route 29 within the MNBPN; and

WHEREAS, land development in areas served by the TCP may also be induced by the new highway. Changes particularly might be accelerated at intersection areas, most notably the intersections of the TCP with Sudley Road (Route 234) and Route 29, where a high proportion of agricultural and forested lands exist. The latter intersection would be located just outside the western boundary of MNBPN and within the MBHD; and

WHEREAS, the FHWA, with the assistance of VDOT, has consulted with the SHPO to resolve the potential adverse effects of the TCP on historic properties in accordance with Section 106 of the NHPA (16 U.S.C. 470f), and its implementing regulations, 36 CFR Part 800; and

WHEREAS, the Undertaking requires lands from the MNBPN and the MBHD, and FHWA’s use of land from the two historic properties is contingent on compliance with Section 4(f) of the Department of Transportation Act, 23 U.S.C. 138 and 49 U.S.C. 303 (Section 4(f)); and

WHEREAS, the FHWA’s acquisition of an easement over federal land within the MNBPN will be addressed via a separate legal instrument, in accordance with [insert citation for applicable law or regulation]; and

WHEREAS, pursuant to 36 CFR 800.6(a)(1), the FHWA has notified the Advisory Council on Historic Preservation (ACHP) of the consultation to develop this Programmatic Agreement (Agreement) by letters dated October 11, 2007, and July X, 2012, and the ACHP has chosen/chosen not to participate in consultation as stated in their letters of November 20, 2007, and Month X, 2012, to FHWA; and

WHEREAS, the VDOT has participated in the Section 106 consultation for the Undertaking pursuant to 36 CFR Part 800.2(c)(4), and the FHWA has invited the VDOT to join the FHWA and the SHPO as a Signatory to this Agreement pursuant to 36 CFR Part 800.6(c)(2)(iii); and

WHEREAS, the NPS, the federal Agency with jurisdiction over the MNBPN, has participated in the Section 106 consultation for the Undertaking pursuant to 36 CFR Part 800.2(c)(5), and the FHWA has invited the NPS to join the FHWA, the SHPO, and the VDOT as a Signatory to this Agreement pursuant to 36 CFR Part 800.6(c)(2)(iii); and

WHEREAS, Loudoun and Prince William counties have participated in the Section 106 -process for the Undertaking as a Consulting Party pursuant to 36 CFR Part 800.2(c)(3), and the FHWA has

invited each county to concur in this Agreement pursuant to 36 CFR Part 800.6(c)(3); and

**WHEREAS**, the FHWA has provided the Eastern Shawnee Tribe of Oklahoma the opportunity to participate in the Section 106 process for the Undertaking as a Consulting Party pursuant to 36 CFR Part 800.2(c)(2)(ii), and the FHWA has invited the tribe to concur in this Agreement pursuant to 36 CFR Part 800.6(c)(3); and

**WHEREAS**, the FHWA has recognized the American Battlefield Protection Program, the Bull Run Civil War Roundtable, the Civil War Trust, the Coalition for Smarter Growth, the Friends of Manassas National Battlefield Park; the National Trust for Historic Preservation; the Piedmont Environmental Council, the Southern Environmental Law Center, the Sudley Springs Catharpin Civic Association, the Washington Airports Task Force, the National Parks Conservation Association, and property owners John Bradshaw, Keith Webster, Patricia Ferguson, Mary Ann Ghadan, and Shawn Moler as Consulting Parties to the Section 106 process for the Undertaking pursuant to 36 CFR Part 800.2(c)(5), and has invited each of these parties to concur in this Agreement pursuant to 36 CFR Part 800.6(c)(3); and

**WHEREAS**, the terms “Signatory” and “Consulting Party” are used herein as defined in 36 CFR 800.6(c)(1) and 36 CFR 800.2(c), respectively; and the term “Concurring Parties” shall be used herein to mean a Consulting Party who signs this Agreement in concurrence.

**NOW, THEREFORE**, the FHWA, [\[ACHPI\]](#), the SHPO, the VDOT, and the NPS agree that this Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties.

## STIPULATIONS

The FHWA, in coordination with VDOT, shall ensure that the following stipulations are carried out:

### I. General Design Parameters of the TCP within Approved Corridor

A. The VDOT shall design the TCP in the vicinity of MNBPN and MBHD so that the alignment of the TCP within the 600-foot corridor studied for Candidate Build Alternative West Two coincides with the corridor for Modified Candidate Build Alternative D for the MNBPN Bypass (Attachment 6). -South of Route 29, the TCP alignment will run west of the Dunklin Monument and shall avoid direct impacts to this property. -As the TCP proceeds north from Route 29, the alignment will run west of Pageland Lane (Route 705) to a point north of the "Unfinished Railroad," where the alignment will cross to the east of Pageland Lane onto MNBPN property.

B. **Typical Section** – In order to minimize effects on the MNBPN and MBHD, the VDOT shall, in consultation with the Signatories and ~~Concurring~~ Consulting Parties to this Agreement, minimize the width of the ~~typical section of the TCP~~ right of way in areas adjacent to MNBPN and MBHD ~~provided the typical section still meets~~. Specifically, the VDOT shall permanently limit the TCP through the TCP's purpose MNBPN and need MBHD to a maximum of four lanes and utilize parkway standards, reducing the cross section to 116 feet using four 11-foot travel lanes, two three-foot inside shoulders, two 8-foot exterior shoulders, a 20-foot median, a 10-foot ditch on each side, and a 10-foot multiuse trail on one side. The road shall have mountable curbs to allow for an additional area for safely removing a vehicle from the through lanes. A diagram of the cross-section through the historic areas is attached as Exhibit XX to this Agreement. The VDOT and FHWA shall also incorporate into the roadway design context sensitive solutions to the maximum extent possible in order to enhance the experience of visitors to the MNBPN and to improve historic preservation efforts.

### C. Consultation on Further Design

1. The FHWA and VDOT shall develop the design of the TCP in consultation with the Signatories and ~~Concurring~~ Consulting Parties to this Agreement. - Pursuant to the terms of Stipulation VII.B of this Agreement, the VDOT shall provide the Signatories and ~~Concurring~~ Consulting Parties the opportunity to review and comment on the plans, in relation to the project's effects on historic properties, at thirty percent (30%) development, sixty percent (60%) development, and at final design prior to the VDOT's internal design approval. ~~The design of the TCP shall comply with Prince William County's Comprehensive Plan and must meet applicable American Association of State Highway and Transportation Officials (AASHTO) and VDOT design standards. Within these parameters the VDOT shall incorporate into the design context sensitive solutions that integrate the roadway into its surroundings so that it is compatible with the historic settings of the MNBPN and MBHD to the degree prudent and feasible maximum extent possible.~~

**Comment [J1]:** We strongly object to these provisions, which are formulaic highway standards that are completely inappropriate for a road going through a National Battlefield and Historic District. See language below in Stipulation C.3.

2. The FHWA, VDOT and the NPS shall cooperate in developing and implementing a process for frequent consultation, review, and approval on the design of the portion of the TCP that passes through MNBP.- The FHWA and VDOT shall contact the NPS to initiate development of this process within six (6) months of execution of this Agreement.

~~3. After consideration of all comments received, the VDOT shall make final decisions as outlined under Stipulation I.C. on the design of the Undertaking.~~

~~3. After consideration of all comments received, the FHWA shall make final decisions, in consultation with NPS, on the design of the Undertaking. FHWA and VDOT shall include a requirement in the project's Request for Proposals, and in the design and construction contract, which directs the contractor to minimize the width of the road and the right-of-way through the Manassas Battlefield and Historic District. In attempting to minimize the width of the road, the contractor shall be directed to seek design waivers and exceptions from VDOT for lane width, length of turning lanes, median and shoulder width, size of gutter pan, signage, and other elements of the standard roadway design that may be required by VDOT, with the ultimate goal of narrowing the width of the road and the right-of-way through the Manassas Battlefield and Historic District. VDOT shall consider all design waivers and exceptions and shall work to accommodate such waivers and exceptions to the maximum extent possible, as provided for in VDOT Instructional and Informational Memorandum: Design Exceptions/Waivers, IIM-LD-227.5 and IIM-S&B-70.3, which recognizes the FHWA publication "Mitigation Strategies for Design Exceptions," as providing mitigation efforts that shall be followed when processing design exceptions. In the event that the waivers or exceptions are not granted, FHWA shall consider other alternatives, including but not limited to, dedicating a portion of the right of way for landscaping and buffering, and for pedestrian use, with the overall goal of minimizing the right-of-way width through the Battlefield and Historic District.~~

**Comment [J2]:** We strongly object to this language. FHWA is legally responsible under Section 4(f) to defend any decision as to whether the project includes all possible planning to minimize harm. Moreover, since the proposal is to bulldoze four acres of National Park land, FHWA should be the agency making the final decision, in consultation with NPS.

**Comment [J3]:** This provision is modeled after one developed very recently with SHPO for a Section 106 agreement applicable to a six-lane expressway through the Woodlawn Historic District near Mt. Vernon.

## II. Avoidance, Minimization, and Mitigation Measures

The FHWA shall take the following actions to address the adverse effects to historic properties associated with the TCP:

1. Study a Low-Impact, Avoidance Alternative – Prior to completion of the Final Environmental Impact Statement for the TCP, the VDOT shall, in coordination with the Consulting Parties, study a low-impact, avoidance alternative as proposed by the Consulting Parties in order to avoid the impacts to the MNBP and MBHD that are likely under the currently proposed highway corridor. The results of that study shall be independently reviewed by national transportation planners, engineers and modelers. If the results of the study show that the alternative addresses connectivity, traffic congestion and safety while avoiding and minimizing harm to historic resources, then the low-impact, avoidance alternative shall be advanced and this Agreement and all auxiliary agreements referred to herein shall be redrafted to reflect the new alternative.

2. Streetscape Design for the TCP – The VDOT shall ensure that the streetscape elements of the TCP (to include, but not limited to treatments for pavement, curb, gutter, medians, guardrail, lighting, and signage) are compatible with the historic settings of MNBP and MBHD.- The VDOT shall develop the streetscape design in consultation with the Signatories

and ~~Concurring~~ Consulting Parties.- Pursuant to the terms of Stipulation VII.B of this Agreement, the VDOT shall provide the Signatories and ~~Concurring~~ Consulting Parties the opportunity to review and comment on these enhancements in terms of their compatibility with adjacent historic properties.- After consideration of all comments received, the ~~VDOT~~ FHWA shall make final decisions on the design of the streetscape elements—

**Comment [J4]:** We strongly object to this language. FHWA is legally responsible under Section 4(f) to defend any decision as to whether the project includes all possible planning to minimize harm. FHWA should be the agency making the final decision, in consultation with NPS.

**3. Minimization of Potential Noise Effects** – The VDOT shall incorporate features into the design of the TCP that will minimize potential auditory effects on MNBP and MBHD, ~~including, at a minimum, noise-reducing pavement.~~ The VDOT shall develop these features in consultation with the Signatories and ~~Concurring~~ Consulting Parties.- Pursuant to the terms of Stipulation VII.B of this Agreement, the VDOT shall provide the Signatories and ~~Concurring~~ Consulting Parties the opportunity to review and comment on these features. After consideration of all comments received, the VDOT shall determine what type of noise reduction features are appropriate to use with consideration of a proposed measure’s demonstrated effectiveness in reducing traffic noise levels, ability to meet structural and safety requirements, durability, and overall cost effectiveness. ~~–The VDOT and FHWA shall fund the full cost of designing and installing the noise-reducing modifications.~~

**4. Minimization of Potential Visual Effects on MNBP** – The VDOT shall design the section of the TCP within or adjacent to MNBP and MBHD ~~to include sufficient right-of-way on the east side to accommodate enhancements so that it minimizes the use of MNBP and MBHD land for right-of-way. Along this section of the TCP, the FHWA and VDOT shall be responsible for designing and installing enhancements to MNBP and MBHD land~~ for the purpose of minimizing the visual effects of the TCP within the viewsheds from MNBP toward areas of MBHD west of Pageland Lane and toward Bull Run Mountain.- The VDOT ~~and the NPS~~ shall develop these enhancements in consultation with the Signatories and ~~Concurring~~ Consulting Parties.- Pursuant to the terms of Stipulation VII.B of this Agreement, the VDOT, ~~FHWA, and the NPS~~ shall provide the Signatories and ~~Concurring~~ Consulting Parties the opportunity to review and comment on these enhancements in terms of their compatibility with adjacent historic properties.- After consideration of all comments received, the ~~VDOT~~ NPS and FHWA shall make final decisions on the design of these enhancements. ~~The VDOT and FHWA shall fund the full cost of designing and installing the enhancements.~~

**5. Limitations on Truck Traffic.** ~~Prior to the initiation of construction of the TCP, the VDOT shall conduct a detailed study on the impacts of truck traffic on noise, air quality, vibration, and views within the MNBP. The VDOT shall also disclose, assess and recommend potential measures to discourage truck traffic on the TCP and otherwise minimize the adverse effects of trucks on the MNBP and the MBHD. The Signatories and Consulting Parties shall then have the opportunity to review and comment on the study and its accompanying recommendations.~~

**6. Access to Brawner Farm** – Construction of the TCP will require the VDOT to close the section of Pageland Lane (Route 705) between its intersection with Route 29 and the point north where the TCP will cross Pageland, subject to successful completion of the requirements for the abandonment or discontinuance of secondary roads as defined in Article 10 of Title 33.1 (33.1 -150 et seq.) of the *Code of Virginia*. -The closing of this road section will eliminate existing access to Brawner Farm (076-0168), a significant feature of MNBP, from Pageland Lane.

Prior to the ~~commencement of construction~~ completion of the EIS and ROD for the TCP, the VDOT shall ~~fund, design, and construct the NPS~~ complete archeological studies, assess impacts of a new access road to Brawner Farm from Route 29 to mitigate the effect of the closure of Pageland Lane. ~~The new access road will, and FHWA will design the new access road. The VDOT and FHWA shall also fund and construct this new road. The new access road is proposed to~~ run north from Route 29 along the east side of a hedge row just east of the Swart Cemetery, or follow another alignment mutually agreed upon by the VDOT and ~~MNBP.~~

~~NPS. If adverse effects cannot be avoided, the NPS, FHWA, and VDOT, in consultation with the Signatories and Consulting Parties to this Agreement, shall develop a treatment plan for the archaeological historic property.~~

**7. Access to Stuart's Hill Center** – Construction of the TCP on its alignment where it intersects Route 29 will require that the NPS's existing access road to the Stuart's Hill Center off of Pageland Lane (Route 705) to be closed. - Prior to the ~~commencement of construction~~ completion of the Final EIS and ROD for the TCP, the ~~FHWA, VDOT, and NPS~~ shall ~~fund, design, and construct the NPS~~ complete archeological studies, assess impacts of a new access road to Stuart's Hill Center from Route 29 on an alignment mutually agreed upon by the ~~VDOT and NPS.~~ FHWA, VDOT and NPS, and design the new access road. The FHWA and VDOT shall also fund and construct this new road. If adverse effects cannot be avoided, the NPS, FHWA, and VDOT, in consultation with the Signatories and Consulting Parties to this Agreement, shall develop a treatment plan for the archaeological historic property.

**8. Pageland Lane** – After construction of the new access roads to Brawner Farm and the Stuart's Hill Center, and prior to the construction of the TCP, VDOT shall initiate the process for abandonment or discontinuance of secondary roads as defined in Article 10 of Title 33.1 (33.1-150 et seq.) of the *Code of Virginia* for the section of Pageland Lane to be closed as a consequence of the TCP. ~~Closure~~ An affirmative vote of this section of Pageland Lane is contingent on the CTB on the successful completion of either the abandonment or discontinuance process. ~~Unless precluded by of the requirements of Article 10 of Title 33.1 (33.1-150 et seq.) of relevant section of Pageland Lane is required prior to the Code~~ construction of Virginia, ~~the TCP.~~ VDOT shall remove the pavement and other modern structures from within the Pageland Lane right of way but shall leave the configuration of the cross-section and profile of the historic road bed intact. ~~The VDOT and the NPS shall then execute an agreement assigning the NPS responsibility for future maintenance of the abandoned or discontinued section of the public road.~~

**9. Traffic Calming on US 29** – ~~Within one (1) year of~~ Prior to the completion of the TCP Final Environmental Impact Statement and FHWA's issuance of a Record of Decision, in partnership with the NPS the VDOT shall formalize with a separate agreement agreed upon traffic calming measures for Route 29 within MNBP. The VDOT shall fund fifty (50) percent of the design and construction of traffic calming measures along US 29. ~~This partnership will be formalized with a separate agreement that will outline the process for working together.~~ Signatories and Consulting Parties shall have an opportunity to comment on the agreement prior to its adoption. Construction of the traffic calming measures shall be completed no later than six (6) months prior to the ~~opening~~ commencement of construction of

the TCP.- The purpose of these traffic calming measures is to minimize the effect of additional traffic through the MNBP brought on by construction of the TCP, reduce traffic speeds, and deter traffic while preserving the historic character of the MNBP. -Traffic calming shall follow the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (1996) ([http://www.nps.gov/history/history/online\\_books/hps/contents.htm](http://www.nps.gov/history/history/online_books/hps/contents.htm)), ([http://www.nps.gov/history/history/online\\_books/hps/contents.htm](http://www.nps.gov/history/history/online_books/hps/contents.htm)), or any revision or replacement to that document, and NPS park standards.- NPS, FHWA, and VDOT shall collaborate on how effectively to ensure that traffic calming is completed to NPS standards and is compatible with the historic character of the Battlefield.

**10. Mitigation of Potential Visual Effects on Putnam-Patton House/Deseret** – In order to avoid direct impacts on the historic property, the VDOT has shifted the corridor for Candidate Build Alternative West Two so that the alignment of the TCP will lie approximately 800 feet west of the Putnam-Patton House/Deseret (DHR Inventory No. 076-0179).

Once preliminary engineering of the highway is sufficiently advanced so that the typical section and elevation of the portion of the TCP in the vicinity of the Putnam-Patton House/Deseret is more clearly understood, the VDOT shall assess the visual effects of the TCP on the property in consultation with the SHPO, other signatory and ~~concurring parties~~ Consulting Parties to this Agreement, and the property owner in accordance with 36 CFR Part 800.5.

If it is determined that the TCP will have an adverse visual effect on the Putnam-Patton House/Deseret, the VDOT shall seek the permission of the owner of the historic property to design and install a landscape plan on the private property that would obscure the view of the highway.

If the owner of the historic property so agrees, the VDOT shall install a planting scheme approved by the SHPO and the property owner.- Pursuant to the terms of Stipulation VII.B of this Agreement, the VDOT shall provide the SHPO and the property owner the opportunity to review and approve the draft landscape plan. -The VDOT shall install the landscape plan prior to the completion of TCP construction, and shall maintain the plantings for an establishment period of one year after installation.

**11. Closure of Route 234 Through MNBP (Restriction of Through Traffic / Access Control)** – Upon execution of this Agreement, the ~~VDOT will recommend to the CTB that Route 234 be abandoned or discontinued and that management or ownership of the Right-of-way be turned over to the NPS, who will~~ Commissioner of Highways shall commence the process of abandonment of a road in the State Highway System, as defined in Article 10 of Title 33.1 (33.1-144 et seq.) of the Code of Virginia, for the portion of Route 234 that runs through MNBP. Upon the successful completion of the abandonment process, the Commissioner shall convey the right-of-way for the abandoned portion of Route 234 to the NPS in an executed agreement in which the NPS agrees to keep the relevant portion of Route 234 open and operational and the VDOT agrees to maintain the portion of the road, until construction of the TCP is complete and the roadway is open to traffic. The agreement shall also provide that, upon completion of the TCP and the opening of the roadway to traffic, the NPS shall restrict through traffic on Route 234 from the southern park boundary just north of

the Northern Virginia Community College and through the Battlefield to the area known as Sudley Springs north of the Battlefield while accommodating park traffic and residents who own properties along the right-of-way. ~~Closure within the area encompassed by MNBP. The agreement shall also provide that, if the TCP is not open to traffic by 01/01/2022, then ownership of the right-of-way for the abandoned portion of Route 234 and shall revert to the VDOT. Construction of the TCP shall be contingent upon transfer of management responsibilities or ownership of the Right-of way to the NPS is contingent on a result of the successful completion of the process for either the abandonment or discontinuance of a road in the State Highway System as defined Article 10 of Title 33.1 (33.1-144 et seq.) of the Code of Virginia and the construction of the TCP and shall coincide with the opening of the TCP.~~

**12. Completion of the Environmental Impact Study, Record of Decision and Permitting for the Manassas National Battlefield Park Bypass** – Prior to construction of the TCP, the VDOT, the FHWA and the NPS shall ensure that there is a viable route for the MNBP Bypass and that it has received all relevant federal permits, including necessary permits for impacts to wetlands and streams. In order for construction to proceed, these permits shall first be granted and the Final EIS and Record of Decision for the MNBP shall be complete.

**13. Preliminary Engineering and Design for MNBP Bypass** – Upon completion of the Final Environmental Impact Statement and the Record of Decision for the TCP, the ~~VDOT~~ FHWA Federal Lands Division shall lead the procurement and administration of a contract for preliminary engineering and design of the MNBP Bypass. The VDOT shall commit Four million dollars (\$4,000,000.00) to be used for this effort. The ~~VDOT~~ FHWA Federal Lands Division and the NPS shall develop and implement a process for cooperative coordination of the selection of a contractor and review and approval of the design.

**14. Funding for Construction of the MNBP Bypass** – The FHWA shall commit to funding at least fifty (50) percent of the cost of constructing the MNBP Bypass. In addition, the VDOT shall commit to funding at least twenty-five (25) percent of the cost of constructing the MNBP Bypass over and above the cost of constructing the TCP.

**15. Closure of Route 29 through MNBP** – Prior to construction of the TCP, the FHWA, the NPS and the VDOT shall initiate and complete the process for transferring to the NPS the portion of U.S. 29 that bisects the MNBP.

**16. Avoidance or Minimization of Impacts to Archaeological Properties within MNBP** – The FHWA and VDOT shall coordinate with the NPS to develop alignments for the section of the TCP within MNBP and the new access roads to Brawner Farm and the Stuart's Hill Center that either avoid or minimize impacts to the "Unfinished Railroad", the quarry associated with the railroad, and other archaeological properties located within the boundaries of MNBP and considered to contribute to the park's significance. The FHWA, VDOT and the NPS shall determine the locations of these alignments by mutual agreement.

**17. Preservation of Land Associated with MNBP and MBHD**

a. The VDOT shall partner with a land conservation organization, approved by the NPS, and provide ~~Three~~ ~~between Seven and Fourteen~~ million dollars (\$~~3~~7,000,000.00).

~~\$14,000,000~~ in funds to be used by this organization for the preservation of land located within or immediately adjacent to the NRHP boundaries of MNBP or MBHD along the section of the TCP where it is collocated with the MNBP Bypass (to include any boundary increases to either property approved by the Keeper of the NRHP subsequent to the execution of this Agreement) (Attachment 6).— The purpose of the land preservation fund is to preserve the historic setting of MNBP and MBHD, preclude the widening of the TCP and the addition of access points within the area where the TCP and the MNBP are collocated, and provide a buffer for the MNBP and MBHD and adjacent community from the TCP. All preservation funds shall be expended before construction of the TCP can commence.

**b.** Any identified saving from the ~~VDOT~~ funds made available for the preliminary engineering and design of the MNBP Bypass shall be added to the land preservation fund.

**c.** Working as the VDOT’s agent, the land conservation organization shall use these funds to preserve land held by willing sellers through either fee simple purchase or the purchase of conservation easements.— For the purposes of this Agreement, “preserve” shall mean to maintain in existing condition or maintain in or restore to a condition compatible with the historic setting of MNBP.—The VDOT shall transfer the land preservation funds to its partnering organization no later than thirty (30) days following VDOT’s internal approval of a design presented at the Design Public Hearing.

**d.** The VDOT shall require that the land conservation organization it partners with shall:

**i.** Consult closely with the VDOT, NPS, and the SHPO on determining the specific land transactions on which the VDOT’s funds will be used, and shall consult with the VDOT, NPS, and the SHPO on the terms of any conservation easements or fee simple transactions that will be purchased with the VDOT’s funds prior to executing the transaction.

**ii.** Hold in perpetuity any lands it acquires through fee simple transactions using the VDOT’s funds or it shall transfer ownership of these lands to the NPS or to another land trust approved by the SHPO; and hold in perpetuity any conservation easements it acquires using the VDOT’s funds or it shall transfer these easements to the NPS or to another land trust approved by the SHPO.

**iii.** Return any unused funds to the VDOT within ~~six (6)~~ ten (10) years of receipt if the organization is unable to expend all of the funds for the purposes defined in Paragraph A of this Stipulation.

**Comment [J5]:** If our suggestion in clause ii.17.a that the preservation funds be expended prior to commencement of construction is not accepted, then more time may be necessary to ensure the most productive expenditure of the preservation funding given the anticipated complexity of the easement purchasing process.

### III. Identification and Treatment of Archaeological Historic Properties

The FHWA, NPS, SHPO, and VDOT shall review the final plans for the TCP, and for the new access roads to Brawner Farm and the Stuart’s Hill Center, (hereinafter collectively referred to as “access roads”), and the traffic calming measures to be implemented on Route 29 (described in Stipulations II.4, II.5, and II.7 of this Agreement) to determine if known archaeological resources on or eligible for the NRHP will be impacted by ~~TCP construction~~ construction of the TCP, the access roads, or the traffic calming measures along Route 29 or if construction impacts will otherwise extend beyond the Area of Potential Effects previously surveyed for archaeological resources.— The ~~VDOT Signatories~~

shall report ~~its~~ these findings to the ~~Signatory and Concurring Consulting~~ Parties, pursuant to the requirements of Stipulation VII.B of this Agreement. - If the ~~FHWA, NPS, SHPO, or~~ VDOT, in consideration of the comments of the ~~Signatories and Concurring Consulting~~ Parties to this Agreement, determines that further efforts to identify, evaluate, or treat archaeological historic properties are necessary to take into account the ~~TCP's effects~~ effects of the TCP, the access roads or the Route 29 traffic calming measures on archaeological resources, the VDOT shall implement these efforts as stipulated below:

1. The VDOT shall complete efforts to identify archaeological historic properties in accordance with 36 CFR Part 800.4(b). ~~The VDOT shall conduct these identification efforts in a manner consistent with Stipulation VII.A of this Agreement. -In a manner consistent with Stipulation VII.B of this Agreement, the VDOT shall provide the SHPO and the NPS the opportunity to review and approve, and the other Signatories and Concurring Consulting Parties to this Agreement the opportunity to review and comment on a report on its findings.~~

2. The VDOT shall conduct any further investigations necessary to evaluate the NRHP-eligibility of any resources identified as a result of the activities described in Stipulation III.1 of this Agreement. ~~These evaluations shall be conducted in accordance with 36 CFR Part 800.4(c), and in a manner consistent with Stipulation VII.A of this Agreement. -In a manner consistent with Stipulation VII.B of this Agreement, the VDOT shall provide the SHPO and the NPS the opportunity to review and approve, and the other Signatories and Consulting Parties to this Agreement the opportunity to review and comment on a report on its findings.~~

3. If historic properties meeting the criteria for listing on the NRHP are identified as a result of the activities described in Stipulations III.1 and III.2, the VDOT shall assess the effects of the Undertaking on these properties in a manner consistent with 36 CFR 800.5, and submit its findings to the SHPO and the NPS for its review and concurrence, and to the other Signatories and ~~Concurring Consulting~~ Parties to this Agreement for review and comment pursuant to Stipulation VII.B of this Agreement.

4. If the VDOT, in consultation with the Signatories and ~~Concurring Consulting~~ Parties to this Agreement, determines that a historic property will be adversely affected by the TCP ~~or the access roads~~, the VDOT, in consultation with the FHWA ~~and NPS~~, shall ~~determine whether avoidance or minimization of adverse effects~~ do everything possible to avoid the property is prudent and feasible. If adverse effects cannot be avoided, the VDOT, in consultation with the Signatories and ~~Concurring Consulting~~ Parties to this Agreement, shall develop a treatment plan for the archaeological historic property. -In a manner consistent with Stipulation VII.B ~~of this Agreement, the VDOT shall provide the FHWA, SHPO and the NPS the opportunity to review and approve, and the determine whether avoidance is required.~~ The other Signatories and Concurring Consulting Parties to this Agreement will have the opportunity to review and comment on a-the treatment plan avoidance decision.

~~5.-The~~ In the case of necessary minimization of adverse effects to the property, the VDOT shall ensure that the treatment plan is implemented and that any agreed upon data recovery field operations are complete before ground disturbing activities associated with the TCP are initiated at an affected archaeological historic property.- The VDOT shall notify the SHPO and the NPS once data recovery field operations have been completed so that a site visit may be scheduled, if the SHPO or the NPS find a visit appropriate. ~~The proposed construction~~

may proceed following this notification while the technical report is in preparation. The VDOT shall ensure that the archaeological site form on file in the SHPO's Data Sharing System is updated to reflect the implementation of the treatment plan for each affected site.

#### IV. Post Review Discoveries

A. In the event that a previously unidentified archaeological resource is discovered during ground-disturbing activities associated with the construction of the TCP ~~or access roads~~, the VDOT, in accordance with Section 107.16(d) of the VDOT's *Road and Bridge Specifications*, shall require the construction contractor to halt immediately all construction work involving subsurface disturbance in the area of the resource and in the surrounding areas where additional subsurface remains can reasonably be expected to occur. Work in all other areas of the TCP may continue.

B. The VDOT shall notify the FHWA, ~~NPS~~, the SHPO, and the other Signatory and ~~Concurring Consulting~~ Parties to this Agreement within two (2) working days of the discovery. In the case of prehistoric or historic Native American sites, the VDOT, on behalf of the FHWA, shall also notify appropriate Indian tribes recognized by the Commonwealth of Virginia (hereinafter "Virginia Indian tribes") and any federally recognized Indian tribes with an interest in the area within two (2) working days of the discovery.

C. The VDOT shall ensure that an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 44739) investigates the work site and the resource, and then the VDOT shall forward to the FHWA, the SHPO, appropriate Virginia Indian tribes, any federally recognized Indian tribes with an interest in the area, and the other Signatory and ~~Concurring Consulting~~ Parties to this Agreement an assessment of the NRHP eligibility of the resource (36 CFR Part 60.4) and proposed treatment actions to resolve any adverse effects on historic properties. The SHPO, appropriate Virginia Indian tribes, federally recognized Indian tribes, and the other Signatory and ~~Concurring Consulting~~ Parties to this Agreement shall respond within five (5) working days of receipt of the VDOT's assessment of NRHP eligibility of the resource and proposed action plan. The VDOT, in consultation with the FHWA, shall take into account the recommendations of the SHPO, appropriate Virginia Indian tribes, federally recognized Indian tribes, and the other Signatory and ~~Concurring Consulting~~ parties to this Agreement regarding NRHP eligibility of the resource and the proposed action plan, and then carry out the appropriate actions.

D. The VDOT shall ensure that construction work within the affected area does not proceed until the appropriate treatment measures are developed and implemented or the determination is made that the located resource is not eligible for inclusion on the NRHP.

#### V. Treatment of Human Remains

A. The VDOT shall treat all human remains and gravesites in a manner consistent with the ACHP's *Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects* (February 23, 2007; <http://www.achp.gov/docs/hrpolicy0207.pdf>).

B. Human remains and associated funerary objects encountered during the course of actions taken as a result of this Agreement shall be treated in a manner consistent with the provisions of the Virginia Antiquities Act, Section 10.1-2305 of the *Code of Virginia* and its implementing

regulations, 17 VAC5-20, adopted by the Virginia Board of Historic Resources and published in the *Virginia Register* on July 15, 1991, and the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001) and its implementing regulations, 36 CFR Part 10. In accordance with the regulations stated above, the VDOT may obtain a permit from the SHPO for the archaeological removal of human remains should removal be necessary.

C. In the event that the human remains encountered are likely to be of Native American origin, whether prehistoric or historic, the VDOT, on behalf of the FHWA, shall immediately notify appropriate tribal leaders of Virginia Indian tribes and any federally recognized Indian tribes with an interest in the area. -The VDOT shall determine the treatment of Native American human remains and associated funerary objects in consultation with appropriate tribal leaders of Virginia Indian tribes and any federally recognized Indian tribes with an interest in the area. -The VDOT shall make all reasonable efforts to ensure that the general public is excluded from viewing any Native American gravesites and associated funerary objects. -The Signatories and ~~Concurring~~ Consulting Parties to this Agreement shall release no photographs of any Native American gravesites or associated funerary objects to the press or to the general public.

#### VI. Professional Qualifications

All archaeological work carried out pursuant to this Agreement shall be conducted by or under the direct supervision of an individual or individuals who meet, at a minimum, the Secretary of the Interior's Professional Qualifications Standards for Archaeology (48 FR 44738-44739, September 29, 1983).

#### VII. Preparation and Review of Plans and Documents

A. All archaeological studies, technical reports, and treatment plans prepared pursuant to this Agreement shall be consistent with the federal standards entitled Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44716-44742, September 29, 1983), the SHPO's *Guidelines for Conducting Historic Resource Survey in Virginia* (October 2011), and the ACHP's *Recommended Approach for Consultation on Recovery of Significant Information from Archaeological Sites* (1999), or subsequent revisions or replacements to these documents.

B. The SHPO and the other Signatory and ~~Concurring~~ Consulting Parties to this Agreement agree to provide comments to the ~~FHWA and~~ VDOT on all plans, technical materials, findings, and other documentation arising from this Agreement within thirty (30) calendar days of receipt in Adobe Acrobat (PDF) format. - If no comments are received from the SHPO or other Signatory or ~~Concurring~~ Consulting Parties to this Agreement, the ~~FHWA and~~ VDOT may assume that the non-responding party has no comment. - The ~~FHWA and~~ VDOT shall take into consideration all comments received in writing from the SHPO and the other Signatory and ~~Concurring~~ Consulting Parties to this Agreement within the thirty (30) calendar day review period.

C. The VDOT shall provide the SHPO three copies [one hard copy and two in Adobe Acrobat format (PDF) on compact disk] of all final reports prepared pursuant to this Agreement. -The VDOT shall also provide any other Signatory or ~~Concurring~~ Consulting Party to this Agreement a copy of any final report (in hard copy or Adobe Acrobat format, as requested) if so requested by the party. - Such requests must be received by the VDOT in writing prior to completion of construction of the TCP.

## VIII. Curation Standards

A. Except as described in Paragraph C of this Stipulation, the VDOT shall ensure that all original archaeological records (research notes, field records, maps, drawings, and photographic images) produced in connection with the TCP and all archaeological collections recovered from VDOT highway right of way in association with the TCP are provided to the SHPO for permanent curation. In exchange for its standard collections management fee as published in the Virginia Department of Historic Resources State Collections Management Standards (June 26, 2009), or subsequent revisions or replacements to that document, the SHPO agrees to maintain such records and collections in accordance with 36 CFR 79, Curation of federally Owned and Administered Archaeological Collections.

B. Except as described in Paragraph C of this Stipulation, the VDOT shall return to an individual property owner any artifact collection that the VDOT has recovered from his or her property, unless the VDOT and the property owner have reached agreement on an alternative arrangement. If the property owner donates the artifact collection to the Virginia Department of Historic Resources (DHR) by executing a donation agreement for the collection with the DHR within ninety (90) days of receipt of written notification from the VDOT of its intent to return the collection to the private property owner, the VDOT shall assume responsibility for payment of DHR's standard collections curation fee for the donated artifact collection.

C. The disposition of original archaeological records (research notes, field records, maps, drawings, and photographic images) and collections produced or recovered in association with archaeological investigations conducted on federal lands shall be governed by the terms of the federal permit issued pursuant to the Archaeological Resources Protection Act (16 U.S.C. 470ee, ff, gg) authorizing the investigations.

## IX. Requirements for Archaeological Investigations on NPS Lands

The VDOT shall obtain all necessary permits required under the Archaeological Resources Protection Act (ARPA) (16 U.S.C. 470ee, ff, gg) prior to conducting any archaeological investigations on federal lands managed by the NPS. Preparation, submittal, and review of VDOT's ARPA permit applications shall be subject to NPS requirements as described in the *NPS Archaeology Guide - Part 1 - Permits for Archaeological Investigations* (<http://www.nps.gov/archeology/npsGuide/permits/overview.htm#permit>), or any subsequent revisions or replacements to this document. Any archaeological investigations carried out under the terms of an ARPA permit shall meet the requirements of that permit, which may supersede the requirements of Stipulations VI-VIII of this Agreement.

## X. Assignment of Responsibilities

It is permissible for the VDOT to authorize and assign to a Public Private Transportation Act Concessionaire the responsibility to act on the VDOT's behalf in fulfilling any of the requirements of Stipulations I-IX of this Agreement, provided VDOT so notifies the FHWA, the SHPO, the other Signatories, and Concurring Consulting Parties to this Agreement in advance.

## XI. Monitoring and Reporting

Each January 31st following the execution of the Agreement until it expires or is terminated, FHWA, in coordination with the VDOT, and the other Signatories as appropriate, shall provide all Signatories and ~~Concurring Consulting~~ Parties to this Agreement a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in the FHWA's efforts to carry out the terms of this Agreement.

## XII. Dispute Resolution

### A. Objection by Signatory or ~~Concurring Consulting~~ Party

1. Should any Signatory or ~~Concurring Consulting~~ Party to this Agreement object in writing to FHWA to any determinations made pursuant to this Agreement or the manner in which the terms of this Agreement are implemented, the FHWA shall first consult with the objecting party to resolve the objection. If the FHWA determines that the objection cannot be resolved through such consultation, the FHWA shall then consult with all Signatories to this Agreement to resolve the objection. If the FHWA then determines that the objection cannot be resolved through consultation, the FHWA shall forward all documentation relevant to the objection to the ACHP, including the FHWA's proposed response to the objection. Within thirty (30) calendar days after receipt of all pertinent documentation, the ACHP shall exercise one of the following options:

a. Advise the FHWA that the ACHP concurs with the FHWA's proposed response to the objection, whereupon the FHWA will respond to the objection accordingly; or

b. Provide the FHWA with recommendations, which the FHWA shall take into account in reaching a final decision regarding its response to the objection; or

c. Notify the FHWA that the objection will be referred for comment pursuant to 36 CFR 800.7(a)(4), and proceed to refer the objection and comment. The FHWA shall take the resulting comment into account in accordance with 36 CFR 800.7(c)(4).

2. Should the ACHP not exercise one of the above options within thirty (30) calendar days after receipt of all pertinent documentation, the FHWA may assume the ACHP's concurrence in its proposed response to the objection.

3. The FHWA shall take into account any ACHP recommendation or comment provided in accordance with this stipulation with reference only to the subject of the objection; the FHWA's responsibility to carry out all actions under this Agreement that are not the subjects of the objection shall remain unchanged.

### B. Objection from Public

At any time during the implementation of the measures stipulated in this Agreement, should a member of the public object to the FHWA or the VDOT regarding the manner in which the measures stipulated in this Agreement are being implemented, the FHWA shall notify the Signatories to this Agreement and ~~the Consulting Parties and~~ consult with the objector to solve the objection. The Signatories ~~may and Consulting Parties have the right to request that the FHWA notify the Concurring Parties to this Agreement about and be granted a meeting of all~~

parties to discuss the objection ~~as well~~ and to review and comment on the manner of addressing the objection.

### XIII. Amendments

Any Signatory to this Agreement may propose to the FHWA that the Agreement be amended, whereupon the FHWA shall consult with the other Signatories to consider such an amendment. -36 CFR 800.6(c)(7) shall govern the execution of any such amendment. - This Agreement may be amended when such an amendment is agreed to in writing by all Signatories.

### XIV. Termination

A. If any Signatory to the Agreement determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XIII, above. -If agreement over an amendment cannot be reached, any Signatory may terminate the MOA thirty (30) days following written notification to the other Signatories of its intent to terminate.

B. If the FHWA and the VDOT decide they will not proceed with the TCP, they may so notify the Signatories and the Concurring/Consulting Parties to this Agreement in writing and then this Agreement shall become null and void.

C. In the event that this Agreement is terminated or rendered null and void, the VDOT shall submit to the SHPO a technical report on the results of any archaeological investigations conducted prior to and including the date of termination, and shall ensure that any associated collections and records recovered are curated in accordance with Stipulation VIII of this Agreement.

D. In the event of termination, and prior to work continuing on the Undertaking, - the FHWA shall either (a) execute a Memorandum of Agreement pursuant to 36 CFR 800.6(c)(1) or (b) request the comments of the ACHP under 36 CFR 800.7(a). - The FHWA shall notify the Signatories as to the course of action it will pursue.

E. Upon termination of this Agreement, any funds provided by VDOT to third parties and not already used for intended purposes under this Agreement shall be returned to VDOT within ninety (90) days.

### XV. Duration

This Agreement shall continue in full force and effect until the Undertaking is complete and the requirements of all Stipulations of this Agreement have been met. -The Undertaking is considered complete only upon agreement by the FHWA, the SHPO, the VDOT, and the NPS. -At any time in the six (6)-month period prior to such date, the VDOT may request that the Signatories consider an extension of this Agreement. -No extension or modification shall be effective unless all Signatories to the Agreement have agreed with it in writing.

### XVI. Execution

This Agreement may be executed in counterparts, with a separate page for each Signatory. -Separate pages may also be provided for each ~~ConeurringConsulting~~ Party. -The FHWA shall ensure that each Signatory and ~~ConeurringConsulting~~ Party is provided with a copy of the fully executed Agreement.

#### **XVII. Miscellaneous**

A. Anti-Deficiency Act – Federal Parties: -This PA is subject to applicable laws and regulations. As to the Signatories only, fulfillment of this PA and all of the provisions herein are subject, pursuant to the Anti-Deficiency Act, 31 U.S.C. § 1341 et seq., to the availability of funds. -This PA is not an obligation of funds in advance of an appropriation of such funds, and it does not constitute authority for the expenditure of funds. -If a Signatory does not have sufficient funds available to fulfill the Stipulations of this PA, such Signatory shall so notify the other Signatories and shall take such actions as are necessary to otherwise comply with 36 C.F.R. Part 800. -GSA, DHS and ACHP shall make reasonable and good faith efforts to seek funding for implementing this PA.

B. Recitals and Exhibits: The recitals (Whereas clauses) and exhibits are incorporated herein as a substantive part of this Agreement.

C. Authority of Signers: Each Signatory hereto represents that the person or persons executing this PA on behalf of such Signatory has full authority to do so.

#### **XVIII. Compliance of Other Agencies with Section 106 for the Undertaking**

A federal agency, other than the original Signatories, that intends to provide funding or approval(s) for the Undertaking may comply with its Section 106 responsibilities for the Undertaking by sending a letter to the original Signatories. -That letter must: (1) be signed by that federal agency’s “agency official,” as that term is defined in 36 CFR § 800.2(a) and (2) state that the federal agency agrees to the terms of this Agreement. -When the letter is received by the original Signatories, the federal agency will be deemed to be a Signatory of this Agreement.

#### **XIX. Signatures**

Execution of this Programmatic Agreement by the FHWA, the SHPO, the VDOT, and the NPS, and its submission to the ACHP in accordance with 36 CFR 800.6(b)(1)(iv) shall, pursuant to 36 CFR 800.6(c), be considered to be an agreement with the ACHP for the purposes of Section 110(~~H~~) of the National Historic Preservation Act (16 U.S.C. ~~470~~-~~470h-2(I)~~). Execution and submission of the Programmatic Agreement, and implementation of its terms, is evidence that the FHWA has afforded the ACHP an opportunity to comment on the proposed Undertaking and its effects on historic properties, and that the FHWA has taken into account the effects of the Undertaking on historic properties.

#### **FEDERAL HIGHWAY ADMINISTRATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Irene Rico, Division Administrator  
Virginia Division

#### **VIRGINIA STATE HISTORIC PRESERVATION OFFICER**

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Kathleen S. Kilpatrick, Director  
Virginia Department of Historic Resources

**VIRGINIA DEPARTMENT OF TRANSPORTATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Gregory A. Whirley, Sr.  
Commissioner of Highways

**DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE, NATIONAL CAPITAL REGION**

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Stephen E. Whitesell  
Regional Director

[A signature page for each Consulting Party will be added]

# Enclosure 2

## Analysis of the Preservation Fund established in the Draft PA

We are concerned that the funding related to preservation within the Draft Programmatic Agreement is insufficient to accomplish the stated objectives and that several factors would make it more difficult than usual to protect the acreage in the eligible area. We also seek clarity on the objectives for preservation as it pertains to limiting access.

The language of the Draft PA limits the use of the funding (\$3 million dollars) to properties that are along the corridor, within and adjacent to the Manassas National Battlefield Park or the Manassas Battlefield Historic District. In our research, we discovered four comparables that give us some indication of the value of the parcels within the eligible area. We have also taken into account the most recent assessed values for the eighteen eligible properties, totaling some 696 acres. But assessed values are not a reflection of actual values when viewed against recent sales prices. The comparables below demonstrate the challenge of achieving the preservation goals, especially with regard to small parcels with significant improvements. All parcels below are zoned Agricultural (allowing for 1 unit every 10 acres).

1. 7498-96-2370 – 146.02 acres with improvement located within the eligible area  
Last sale: 11/5/2010 - \$2,079,750  
Last Assessment: Land - \$1,378,400 Use Value - \$116,800 Improvement - \$172,900 Total – Use value \$289,700 Assessed market value 1,551,300  
Sales price included parcel 7498-75-5154 – 0.56 acres
2. 7498-60-2830 – 7.46 acres with improvement – located within the eligible area  
Last Sale: 1/4/2011- \$605,000  
Last Assessment: Land - \$219,700 Improvement - \$272,100 Total - \$491,800
3. 7598-43-4546 – 8.9 acres with improvement within the MBP (not eligible)  
Last Sale: 6/25/2010 \$400,000  
Last Assessment: Land - \$167,700 Improvement - \$90,500 Total - \$258,200
4. 7598-76-9478 – 1 acre with improvement within the MBP (not eligible)  
Last Sale: 6/17/2010 \$170,000  
Last Assessment: Land - \$88,400 Improvement - \$62,300 Total - \$150,700

The first two examples are from within the eligible area. The second two are within the Manassas Battlefield National Park, but in proximity to the eligible area as demonstrated by the provided map.

The main objectives for preservation would be to preclude the widening of the TCP, to limit access, and to provide a buffer between the road and the Battlefield and Historic District. These objectives may drive up the cost of an easement beyond that typically associated with securing scenic or open-space easements. The restrictions that would be necessary to achieve the objectives of the preservation could devalue the property substantially. As well, the restrictive nature of the easement may limit the number of willing participants, or make it necessary to use fee-simple purchase as the main tool available to the nonprofit group in question. Furthermore, property owners may see this as an opportunity to demand higher prices for either an easement or a fee simple purchase. In short, the objectives for preservation will greatly impact the ability to use easements, and will also affect the overall cost for preservation, and the willingness of the

landowners to negotiate a preservation outcome. For these reasons, the organization administering the preservation fund will need to address and resolve the following questions with regard to the objective of limiting access: What is the definition of limiting access? Does it include removal of existing access to small lot single-family homes or removal of the homes entirely? Is the goal only to limit access from new parcels, residences and business that may locate in the eligible area?

For the purpose of this analysis, we have broken the 18 eligible lots into 3 classifications and assigned an estimated value per acre for preservation using fee-simple purchase. It is important to note, these values do not represent the likely additional costs associated with the complications described above (unwillingness of land owner to sell, speculation, objectives – limited access, etc.)

Lot classifications and average price per acre

9 Small lots (10.5 acres or less):

Total acreage – 63.8 acres

Estimated value per acre - \$67,528.73

Total estimated value - \$4,308,332.97

3 Medium lots\* (10.5-15 acres):

Total acreage – 39 acres

Estimated value per acre: \$31,073.17

Total estimated value - \$1,211,853.63

\*Estimate based solely off assessed value

6 Large Lots (40+ acres):

Total acreage – 593 acres

Estimated value per acre - \$14,188.50

Total estimated value - \$8,413,780.5

Total estimated value for the 696 acres of eligible properties: \$13,933,967.10

Half of the parcels in the eligible area are 10.5 acres or less (9 of 18 parcels), but may be no less valuable than larger parcels in meeting the objectives for preservation, especially limiting access and providing a buffer to the Battlefield and the Historic District. It is important to note that the prices for examples two through four (7498-60-2830, 7598-43-4546, and 7598-76-9478) above equal \$1,175,000 yet total less than 17.4 acres. In many cases, the house or improvement may be of greater value than the associated land. If fee-simple purchase were used and focused largely on small parcels, the cost for purchase would average out to \$67,528.73 an acre. Using this figure, less than 45 acres of the eligible 696 acres could be preserved, or less than 6.5 percent of the eligible area.

Large lot values may also be significantly higher than anticipated as announcement of the road appears to be creating competition along the corridor, further reducing the amount of

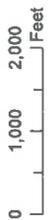
preservation possible. We believe parcel 7498-96-2370 was a speculative purchase made partially in response to the inclusion of this corridor as a Corridor of Statewide Significance (COSS) by the Commonwealth Transportation Board. This may be a demonstration of competition for the corridor that could result in higher land values, and competing interests that undermine the preservation effort within the battlefield area, thus reducing the acreage protected. There are 6 parcels of 40 acres or greater for a total of 592.77 acres. Using the comparable for parcel 7498-96-2370, the average price per acre for large lots is \$14,188.50. If we apply this value per acre to large lots, less than 212 acres of this lot type could be protected using fee-simple purchase, or less than 31 percent of the total eligible acreage.

In conclusion, it is likely that a combination of small and large lots would need to be protected in order to achieve the preservation objectives. It is also likely that speculation and perceived rights will complicate this effort and will result in higher costs for securing easements (which could be greater than 50 percent of the value of the property), and may as a practical matter require fee-simple purchase as the main vehicle for preservation of these lands. It is our belief that the PA should address these issues by increasing the funding to a minimum of 50 percent of the total estimated value of the eligible lands. Therefore, the appropriate range of funding would be \$7 million to \$13 million. (In the event that preservation goals could be met with less funding, there is no danger of excess funds being lost; the PA already provides language ensuring the return of unused funds, if any, to the agency. Providing sufficient funding upfront will demonstrate that the signatories of this agreement are serious about the protection of the resources and limiting access to maintain the integrity of the Battlefield and the Historic District.

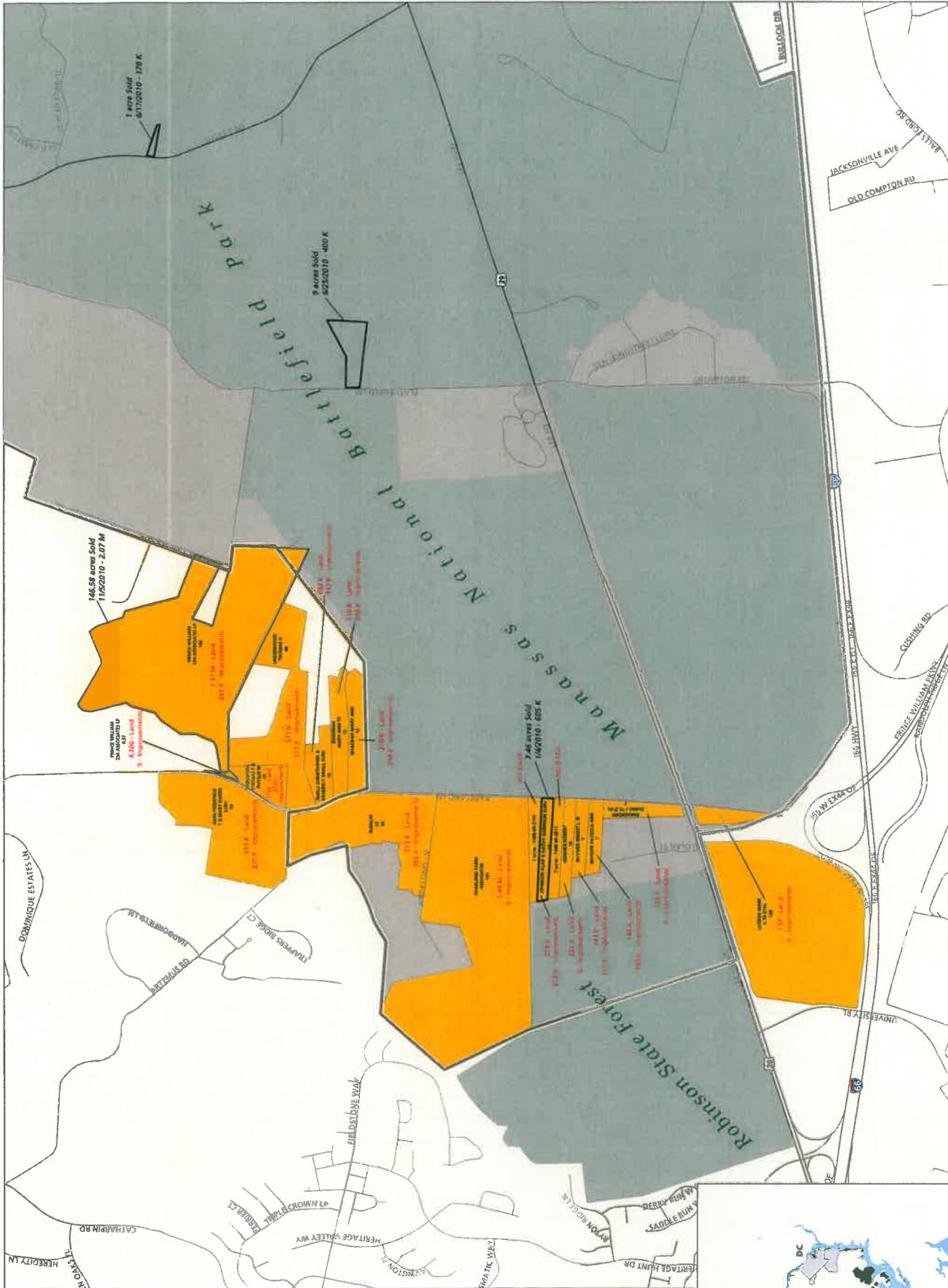
# Manassas National Battlefield Property Eligible for Conservation Fund



- Eligible Parcels
- Comparables
- Historic Districts
- Park Land

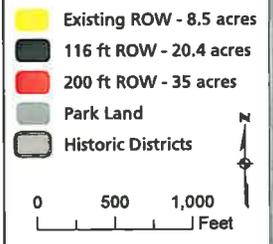


Map created by REC for presentation purposes only. Data provided is for informational purposes only. The data is not intended to be used for any other purpose. The data is not intended to be used for any other purpose. The data is not intended to be used for any other purpose.

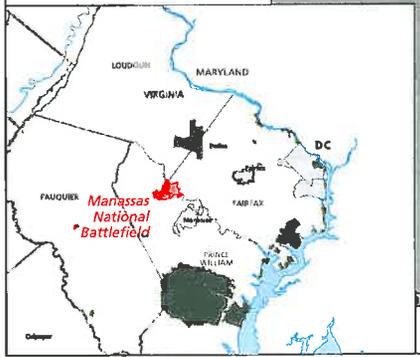


# Enclosure 3

**Manassas National  
Battlefield  
Pageland Lane  
Right of Way**



Map created by PEC for presentation purposes only. Data source: Paper Witham, County GIS, Prince William County, Real Property, Assessment Land Survey, although errors may occur due to source data or errors in our processing. For more information, please visit [www.pecva.org](http://www.pecva.org) 5/2012



**From:** Stewart Schwartz <[stewart@smartergrowth.net](mailto:stewart@smartergrowth.net)>

**Date:** January 8, 2013, 1:09:41 PM EST

**To:** "Hodges, Mary Ellen N. (VDOT)" <[ME.Hodges@vdot.virginia.gov](mailto:ME.Hodges@vdot.virginia.gov)>, <[Betsy\\_Merritt@nthp.org](mailto:Betsy_Merritt@nthp.org)>, Morgan Butler <[mbutler@selcva.org](mailto:mbutler@selcva.org)>, Chris Miller <[cmiller@pecva.org](mailto:cmiller@pecva.org)>, Joy Oakes <[joakes@npca.org](mailto:joakes@npca.org)>, Dan Holmes <[dholmes@pecva.org](mailto:dholmes@pecva.org)>, Ed Gorski <[egorski@pecva.org](mailto:egorski@pecva.org)>, Nicholas Lund <[nlund@npca.org](mailto:nlund@npca.org)>, Pamela Goddard <[PGoddard@npca.org](mailto:PGoddard@npca.org)>, Jim Campi <[jcampi@civilwar.org](mailto:jcampi@civilwar.org)>, <[pcooussan@civilwar.org](mailto:pcooussan@civilwar.org)>

**Cc:** <[Ed\\_W\\_Clark@nps.gov](mailto:Ed_W_Clark@nps.gov)>, <[Tammy\\_Stidham@nps.gov](mailto:Tammy_Stidham@nps.gov)>, "Moore, Garrett, PE (VDOT)" <[Garrett.Moore@vdot.virginia.gov](mailto:Garrett.Moore@vdot.virginia.gov)>, "Nicholas M. Nies" <[nnies@wrallp.com](mailto:nnies@wrallp.com)>, Charlene Vaughn <[cvaughn@achp.gov](mailto:cvaughn@achp.gov)>, "Langan, Julie (DHR)" <[Julie.Langan@dhr.virginia.gov](mailto:Julie.Langan@dhr.virginia.gov)>, "Kilpatrick, Kathleen (DHR)" <[Kathleen.Kilpatrick@dhr.virginia.gov](mailto:Kathleen.Kilpatrick@dhr.virginia.gov)>, <[marc.holma@dhr.virginia.gov](mailto:marc.holma@dhr.virginia.gov)>, <[Jack.VanDop@dot.gov](mailto:Jack.VanDop@dot.gov)>

**Subject:** Updated Coalition Composite Alternative

Mary Ellen and Nick:

Please see the attached update to the composite alternative which we believe will meet transportation needs while better protecting historic Manassas National Battlefield. Our alternative assumes closure of the roads through the battlefield.

It includes all of the past recommendations of our groups plus additional north-south local connections and comments on the growth assumptions. It is reorganized under east/west, north/south, and growth assumptions and other factors.

As part of the alternative scenario analysis, we ask that you include our expert, Norm Marshall of Smart Mobility, Inc., on the consulting team that develops and runs the modeling scenario, with full input to the scenario, access to all information relevant to the scenario and the modeling, and input to the drafting of the report.

Thank you,

Stewart Schwartz  
Executive Director  
Coalition for Smarter Growth  
202-675-0016 ext 121 (new)  
[stewart@smartergrowth.net](mailto:stewart@smartergrowth.net)  
[www.smartergrowth.net](http://www.smartergrowth.net)  
Twitter: @betterDCregion

Note our new address: 316 F Street NE, Suite 200, Washington, DC 20002

**Coalition for Smarter Growth, Piedmont Environmental Council, Southern Environmental Law Center, National Parks Conservation Association, and National Trust for Historic Preservation**

**UPDATED COMPOSITE ALTERNATIVE**

**January 7, 2013**

**Expanded List of Components of a Composite Set of Transportation Solutions for the Tri-County Parkway and Manassas Battlefield Bypass**

At the Section 106 Consulting Parties meetings, Virginia Department of Transportation officials have asked for more details on the north-south components of a "low build" or "composite" alternative to the VDOT proposal for the Tri-County/Bi-County Parkway. The following includes additional local north-south connections, reorganization of the recommendations, and recommendations for alternative growth estimates, land use and other factors that should be included.

The traffic modeling and associated land use forecasting for this alternative should not assume the construction of any of the major new north-south highways in this area that are currently components of local Comprehensive Plans and/or state plans that are called the Tri-County Parkway, the Bi-County Parkway, the 234 Bypass Extension, the N-S Corridor of Statewide Significance or other named road co-located with this facility.

Our alternative is designed to address the much greater need for east-west commuter movement and to provide for dispersed, local north-south movement for current and future traffic. Access to Dulles is provided by the completion of upgrades to Route 28 from I-66 north, improvements to the I-66 corridor, and upgrades to the Route 234/Route 28 connection and Route 28 on the east side of the Cities of Manassas and Manassas Park. The composite set of connections is designed to improve traffic movement throughout the area, benefitting more travelers and trip types than would the single large north-south highway proposal.

Note: We assume closure of Routes 29 and Route 234 within the boundaries of Manassas National Battlefield Park.

**East-West:**

- Co-location of Route 29 onto Interstate 66
- Focus on I-66 corridor upgrades including extension of VRE to Gainesville and Haymarket, Metrorail to Centreville, and express bus/HOV-3 between Fauquier and Arlington
- Complete the Gainesville Interchange in order to allow traffic to flow more smoothly to and from I-66
- Upgrade the existing east-west road at the southern boundary of the Battlefield between the Park Headquarters and Groveton Road if necessary for local movement

- For the Route 50 corridor -- install dedicated bus lane and complete proposed parallel roads (maintain the undivided two lane rural arterial west of the proposed Lenah Loop Road)
- Use the Route 50 northern parallel connector as a truck connector from Route 28 to Route 606, providing access to future Dulles Airport facilities
- Utilize the east-west local connector known as Cedar Ridge Boulevard to connect to an upgraded Bull Run Post Office Road

#### **North-South:**

- Finish the Route 28 interchanges between I-66 and Route 7 and improve the connection from I-66 east to Route 28 north to improve access from the I-66 corridor to the major job concentrations east of Dulles Airport
- Provide a bus rapid transit or light rail connection from the Cities of Manassas and Manassas Park up to the Dulles Corridor along Route 28
- Recognize the existing upgrade of Route 15 in Prince William and install roundabouts at Route 15 and Route 234 (Sudley Road)
- Utilize roundabouts to ease the flow of N-S traffic in the Gum Springs/Pageland Road N-S corridors, with roundabouts located at Route 659 (Gum Springs Road) and Route 234 (Sudley Road); at Sudley Road and Pageland Lane; and at Pageland Lane and Route 29.
- Do targeted upgrades for safety and install roundabouts where necessary for Catharpin Road, Bull Run Post Office Road and Pleasant Valley Road. Roundabout locations include Catharpin and Sudley Rd; Bull Run Post Office Road and Route 29; Bull Run Post Office Road and Braddock Road; Pleasant Valley Road and Braddock Road.
- In Loudoun, between Braddock Road and Route 50, implement N-S connections for local traffic; and between Route 50 and Route 7, complete upgrade of Route 606 and Route 659 to four-lane divided roadways

#### **Improving Area Traffic Flow South of I-66**

- Evaluate additional road connection improvements south of I-66 including Wellington Road, Balls Ford Road, Sudley Manor Drive and Godwin Drive (Godwin would also meet north-south movement needs and was part of one of the TCP alternatives -- use Mr. Robert Moler's connection recommendation for connecting to Route 28 and I-66)
- Install Route 234 to Route 28 interconnection improvements and Route 28 upgrades on the east side of the Cities of Manassas and Manassas Park up to I-66

#### **Growth Projections, Land Use and other Factors:**

- Recognize and address the significantly greater east-west travel demand as compared to north-south movement in the area west of Route 28 in the I-66 and Route 50 corridors
- Incorporate the more likely scenario that the vast majority of job attractors will remain east of Route 28

- Assume that the Rural Crescent north of I-66 and in the Loudoun Transition Policy Area south of Braddock and west of Route 659 are maintained at their current lower densities and that land conservation measures are utilized to preserve significant tracts of land in each area, ensuring that these areas do not add more traffic.
- In developing an alternative growth projection, discard the Round 8.0 regional forecasts.
  - The regional forecasts allocate growth to each jurisdiction based on underlying comprehensive plans and zoning and also tend to be based on past trends, and not on the significant shifts the region and the nation are seeing in demographics, the real estate market, and energy prices.
  - Federal government downsizing, the aging population, the preference of "millennials" for urban living, the shift from ownership to rental, increase in transit-oriented centers in the region, and higher energy prices should all be factored in, and are likely to show slower growth rates and a smaller increment of growth than the Round 8.0 regional forecasts for Loudoun and Prince William.
- Base projections on a true no-build scenario for the MBB and Tri-County/Bi-County/234 Bypass Extended/N-S Corridor.
  - Do not base the growth and traffic projections on the assumption that the Tri-County/Bi-County Parkway and Manassas Battlefield Bypass are in place.
  - Recognize that by not including the proposed highway, which would attract new long-distance vehicle trips including more truck travel to Dulles Airport, new travel demand in the area would be less under the composite scenario than with the proposed new highway.
- Recognize that local residents north of the Battlefield will have access to alternate shopping outlets, not requiring driving south through the Battlefield to Manassas. Those future locations include Loudoun's Route 50 Corridor, Gainesville, and Haymarket
- Target local road and safety improvements to cost-effectively reduce incidents in the high accident sections;
- Include Transportation Systems Management (TSM)

**MEMORANDUM: ANALYSIS OF THE SUBSTITUTE VISION PROVIDED BY SELC ET AL.  
AS AN ALTERNATIVE TO THE TRI-COUNTY PARKWAY  
Tri-County Parkway Location Study, Reevaluation and Final Environmental Impact Statement  
State Project No.: R000-96A-102, PE-101; Federal Project No. STP-5401 (385)  
Prince William, Fairfax, and Loudoun Counties**

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**ATTACHMENT B  
COST ESTIMATE DETAILS**

**PLANNING-LEVEL COST ESTIMATES**

Source: TRANSPORTATION & MOBILITY PLANNING DIVISION  
STATEWIDE PLANNING LEVEL COST ESTIMATES

Costs Reflected as of January 2009  
Factored to Year 2013 based on 1% growth per year  
For the NOVA Region, Low

Costs include 25% for PE and Construction Contingencies. The following typical section estimates do not include bridge, right-of-way (ROW) or other improvement costs.

CATEGORY	REF CODE	DESCRIPTION			COSTING BASIS	UNIT COST
Urban Typical Sections	1	Bike Lanes		4' pavement both sides	CPM	\$ 540,000
	2	2 lanes	U2	26'-30' pavement	Reconstruct or New	CPM \$ 4,680,000
	3	3 lanes	U3	36'-40' pavement	Reconstruct or New	CPM \$ 6,560,000
	4	4 lanes	U4	40'-48' pavement	Reconstruct or New	CPM \$ 10,610,000
	5	4 lanes divided	U4D	48' pavement w/16' raised median	Reconstruct or New	CPM \$ 11,030,000
	6	4 lanes divided	U4D	48' pavement w/28' raised median	Reconstruct or New	CPM \$ 12,070,000
	7	6 lanes divided	U6D	72' pavement w/16' raised median	Reconstruct or New	CPM \$ 13,740,000
	8	6 lanes divided	U6D	72' pavement w/28' raised median	Reconstruct or New	CPM \$ 14,260,000
	9	8 lanes divided	U8D	96' pavement w/16' raised median	Reconstruct or New	CPM \$ 15,300,000
	10	8 lanes divided	U8D	96' pavement w/ 28' raised median	Reconstruct or New	CPM \$ 15,820,000
Rural Typical Sections	11	Bike Lanes		4' pavement both sides	CPM	\$ 540,000
	12	1 lane		12' pavement	CPM	\$ 490,000
	13	2 lanes	R2	18' pavement	Reconstruct or New	CPM \$ 2,390,000
	14	2 lanes	R2	20' pavement	Reconstruct or New	CPM \$ 3,120,000
	15	2 lanes	R2	22' pavement	Reconstruct or New	CPM \$ 4,160,000
	16	2 lanes	R2	24' pavement	Reconstruct or New	CPM \$ 5,100,000
	17	3 lanes	R3	36' pavement	Reconstruct or New	CPM \$ 6,350,000
	18	4 lanes divided	R4D	48' pavement	Reconstruct	CPM \$ 7,280,000
	19	4 lanes divided	R4D	48' pavement	New	CPM \$ 9,260,000
	20	4 lanes divided	R4D	48' pavement	Parallel	CPM \$ 6,040,000
	21	4 lanes divided	R4D	48' pavement w/16' raised median	Reconstruct or New	CPM \$ 9,570,000
	22	4 lanes divided	R4D	48' pavement w/28' raised median	Reconstruct or New	CPM \$ 10,090,000
	23	6 lanes divided	R6D	72' pavement widen 4-6 lanes	Reconstruct	CPM \$ 6,970,000
	24	6 lanes divided	R6D	72' pavement w/depress median	New	CPM \$ 11,030,000
	25	8 lanes divided	R8D	96' pavement widen 6-8 lanes	Reconstruct	CPM \$ 6,970,000
	26	8 lanes divided	R8D	96' pavement widen 4-8 lanes	CPM	\$ 11,860,000
Right/Left Turn Lanes on Four-Lane Road	27	Right turn lane		100' parallel and 100' taper	@	\$ 230,000
	28	Left turn lane		200' parallel and 200' taper	@	\$ 280,000
	29	Crossover			@	\$ 210,000
	30	Provide new crossover with two right and two left turn lanes			@	\$ 1,040,000
Right/Left Turn Lanes on Two-Lane Road	31	One left turn lane		500' parallel and two 700' taper	@	\$ 1,140,000
	32	Two left turn lanes		900' parallel and two 700' taper	@	\$ 1,460,000
	33	Right and left turn lane			@	\$ 1,460,000
	34	Two right and two left turn lanes			@	\$ 1,770,000
Bridge Cost	35	Over 25' to 200' in length			Widen Reconst or New per sq ft	\$ 260
	36	Over 200' in length			Widen Reconst or New per sq ft	\$ 260
Other Improvement Costs	37	Estimate parking, restripe (both sides)			CPM	\$ 100,000
	38	Provide signal at unsignalized intersection			@	\$ 420,000
	39	Improve, replace signal at intersection			@	\$ 210,000
	40	Improve phasing as system, signalized intersections			@	\$ 100,000
	41	Provide pedestrian signal phase			@	\$ 50,000
	42	Provide pedestrian crosswalk			@	\$ 20,000
	43	Downtown signage			CPM	\$ 50,000
	44	Close open ditch drainage and provide curb & gutter			CPM	\$ 3,120,000
	45	Widen radius for truck turning			@	\$ 100,000
	46	Install railroad warning lights (no gates)			@	\$ 100,000
	47	Provide park & ride facility			COST PER PARKING SPACE	\$ 10,000
	48	Provide 5 ft. sidewalk			CPM	\$ 310,000
	49	Wide Curb Lane (2 additional feet of pavement in each direction)			CPM	\$ 310,000
	50	Paved Shoulder (4 foot wide paved shoulder in both directions)			CPM	\$ 540,000
	51	Provide 10 ft. paved shared use path off road			CPM	\$ 940,000
	52	Sound barrier wall (multiply height x length)			per sq ft	\$ 70
	53	Improve grade separated interchange			@	\$ 31,220,000
	54	Provide new grade separated interchange (Rural) LOW			@	\$ 36,420,000
	55	Provide new grade separated interchange (Rural) HIGH			@	\$ 67,640,000
	56	Provide new grade separated interchange (Urban) LOW			@	\$ 41,620,000
57	Provide new grade separated interchange (Urban) HIGH			@	\$ 78,050,000	
ROW & Utility Costs	58	Roundabouts		1 lane		\$ 1,040,000
	59	Roundabouts		2 lanes		\$ 2,080,000
	60	Rural				30%
	61	Residential/Suburban low density				55%
Unit Costs from Other Sources: I-66 Tier 1 EIS	62	Outlying business/Suburban high density				75%
	63	Central business district				125%
	64	VRE Extension			CPM	\$ 24,138,000
	65	Metrorail Extension			CPM	\$ 208,786,000
	66	Managed Lane (1 each direction)			CPM	\$ 45,242,000
	67	Managed Lane (2 each direction)			CPM	\$ 77,742,000
	68	Light Rail			CPM	\$ 96,024,000
	69	Bus Rapid Transit			CPM	\$ 18,940,000
	70	Express Bus (O&M only; 50 mile service)			CPM	\$ 1,158,000
	71	Striping			CPM	\$ 264,000