

# *ENVIRONMENTAL ASSESSMENT*

## **I-81 Corridor Improvement Study Tier 2 – I-77/I-81 Overlap Wythe County and Town of Wytheville**



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July 2011

 U.S. Department of Transportation  
Federal Highway Administration

 **VDOT**  
Virginia Department of Transportation

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
and  
VIRGINIA DEPARTMENT OF TRANSPORTATION

## **ENVIRONMENTAL ASSESSEMENT**

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### **I-81 Corridor Improvement Study Tier 2 – I-77/I-81 Overlap**

Wythe County and Town of Wytheville  
State Project No.: 0077-098-104, PE-100;  
UPC No. 51441  
From: Exit 72 (I-77)  
To: Exit 81 (I-77)

Submitted Pursuant to 42 U.S.C. 4332(2)(C)

Approved for Public Availability:

7/26/11

Date



For: Division Administrator  
Federal Highway Administration

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All technical reports are available at: [http://www.virginiadot.org/projects/bristol/i-77-81\\_overlap.asp](http://www.virginiadot.org/projects/bristol/i-77-81_overlap.asp) or upon request.



# 1. PURPOSE & NEED

## 1.1 Project Description

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA), is conducting a location study to evaluate alternatives to meet existing and future travel needs along the I-77/I-81 overlap section. To facilitate this action, VDOT and FHWA completed a Tier 1 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) in 2007, and this Environmental Assessment (EA) serves as the second tier study.

The Tier 1 ROD, approved by the FHWA, selected the variable-lane widening concept to be advanced to Tier 2. In addition, the Tier 1 ROD defined eight Sections of Independent Utility (SIU) and identified the appropriate level of environmental documentation to be initiated for each SIU for the Tier 2 NEPA studies.

This chapter of the I-77/I-81 overlap EA provides an overview and description of the I-77/I-81 overlap section (i.e., SIU #2) and identifies the transportation problems that would be addressed by the proposed improvements.

Improvements to the I-77/I-81 overlap section are listed in local and regional planning documents, including the Town of Wytheville's 2006 Comprehensive Plan and the Wythe County 2007 Comprehensive Plan. The discussion in both Plans centers on the great economic importance of the overlap area to the vitality of the region and the problematic increases in traffic along this section. Funding is provided in the short term in VDOT's Six Year Improvement program for preliminary engineering and location studies. A 2006 joint resolution in support for the project was issued by the Wythe County Board of Supervisors, Wytheville Town Council, Rural Retreat Town Council, Joint Industrial Development Authority, and the Wytheville-Wythe-Bland Chamber of Commerce. Discussions have also been held with representatives of the Town of Wytheville, Wythe County, and the Joint Industrial Development Authority over the last few years regarding the project.

## 1.2 Study Area

The study area generally extends north and south of I-81 between Interchange 72, west of the Town of Wytheville, and Interchange 81. The study area is limited by the Jefferson National Forest north of I-81 and the Big Survey Wildlife Management Area south of I-81 and, thus, generally extends 1.5 miles south and 3 miles north of the I-77/I-81 overlap section as shown on Figure 1.1. In the I-77/I-81 overlap section, I-77 and I-81 form a wrong-way concurrency with I-77 North also signed as I-81 South and vice versa through this area. The study area also includes portions of I-77 north of the overlap and I-77 south of the overlap.

## 1.3 Project History and Background

In November 2003, the Federal Highway Administration (FHWA) and the Virginia Department of Transportation (VDOT) entered into a Process Streamlining Agreement to follow a tiered decision-making process for the I-81 Corridor Improvement Study. As discussed in detail in the I-81 Corridor Improvement Study Tier 1 Final Environmental Impact Statement (Tier 1 FEIS), tiering addresses broad programs and issues in an initial or system-level analysis and analyzes site-specific proposals and impacts in subsequent studies. The Process Streamlining Agreement

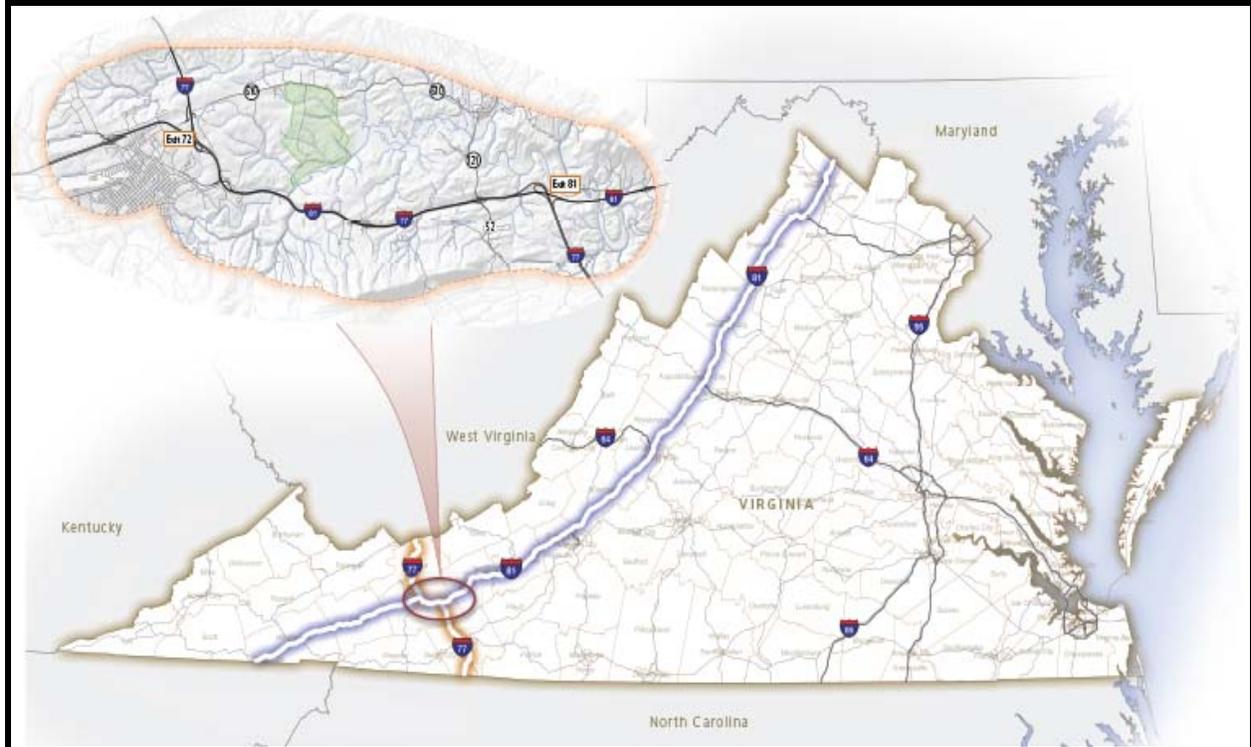


Figure 1.1 Project Location & Study Area

defined the decisions to be made and the approvals to be granted at specific milestones of the tiered National Environmental Policy Act (NEPA) process and defined the study approach and elements to be included in each stage of the tiered analysis. See Chapter 1, NEPA Tiering Process, of the Tier 1 FEIS for a detailed description of the tiering process.<sup>1</sup>

On June 6, 2007, FHWA issued a Record of Decision (ROD) for the Tier 1 FEIS. The Tier 1 ROD made six decisions, as follows:

- Advancing to Tier 2 a non-separated variable lane highway facility concept that involves constructing no more than two general purpose lanes in each direction, where needed, to address 2035 traffic demands. In addition, along with the concept that was advanced to Tier 2, a decision was made to advance smaller, independent safety and operational improvements independent of the sections of independent utility (SIU).
- Advancing I-81 as a toll pilot facility in accordance with Section 1216(b) of the Transportation Equity Act for the 21st Century.
- Defining eight SIUs for subsequent Tier 2 analysis.
- Determining the appropriate level of environmental documentation to be initiated for each SIU and the independent safety and operational improvements.
- Determining the location of the corridor for studying alignments in Tier 2.
- Determining that the Tier 1 FEIS provides information to support decisions on hardship acquisitions or protective purchases of specific right-of-way parcels in the future on a case-by-case basis.

<sup>1</sup> The Tier 1 FEIS and Tier 1 Record of Decision are available at [http://www.virginiadot.org/projects/bristol/i-77-81\\_overlap.asp](http://www.virginiadot.org/projects/bristol/i-77-81_overlap.asp)



#### **1.4 Purpose**

The Purpose and Need identified in the Tier 1 FEIS is the foundation of the Purpose and Need for each Tier 2 section of independent utility. The Tier 1 FEIS identified the need for improvements on a broad scale along the 325-mile I-81 roadway facility in Virginia for the purpose of addressing existing and future capacity needs and safety conditions. The Purpose and Need from Tier 1 has been refined for this Tier 2 study to address the specific traffic conditions within this SIU and to reflect local transportation priorities while maintaining consistency with the variable-lane widening concept advanced from Tier 1.

The specific purpose of the I-77/I-81 Overlap Study is to increase roadway system capacity to address existing traffic volume and projected 2035 travel demand in order to improve the general operating conditions along this section of I-81 in Virginia. The existing and future traffic needs are discussed in the following section.

#### **1.5 Needs**

The following discussion describes the needs within the I-77/I-81 overlap study area based on data gathered as part of the Tier 1 FEIS as well as new data collected at the permanent count station locations along I-81 and I-77.

##### **1.5.1 Existing and Future (2035) Traffic Volumes**

Traffic volumes along the I-77/I-81 overlap section are among the highest in western Virginia. Traffic volumes have more than doubled since 1978, while capacity has remained unchanged (see Table 1.1). VDOT historical count data for the I-77/I-81 overlap section show a 2.9 percent annual growth from 1978 through 2008 at the permanent count location.

Tables 1.2 and 1.3 show projected total traffic growth within the I-77/I-81 overlap section, assuming that only those highway projects with construction funding commitments in the Fiscal Years 2012-2017 Virginia Transportation Six-Year Improvement Program (SYIP) are built. The forecast for the 2035 AADT volume was based on historical traffic volume trends, known development plans for the area, and future land use plans.<sup>2</sup>

Freight movements (and the resultant growth in truck traffic) along the I-77/I-81 overlap section are expected to more than double by the year 2035, contributing to capacity issues along the roadway section. Table 1.4 presents existing traffic volumes and historical growth taken at count stations on I-77, just north and south of the I-77/I-81 overlap section. The large volume increases between 1978 and 1996 can be attributed to the completion of I-81 and I-77 through this portion of Virginia, thereby, opening the corridor to increased tourism and goods movement.

##### **1.5.2 Existing and Future Levels of Service**

A level of service (LOS) analysis was conducted for the mainline of the I-77/I-81 overlap section, as well as for all ramp merge and diverge areas. LOS is a qualitative measurement of the operating conditions that takes into account a number of variables, such as speed, vehicle maneuverability, and traffic interruptions. A letter grade ranging from a high LOS A (representing the free flow of traffic) to a low LOS F (representing a forced breakdown in traffic

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<sup>2</sup> Information on the methodology used to determine existing and future traffic volumes is documented in the *I-77/I-81 Study Transportation Technical Report*.



flow) is assigned to each location. A Policy on Geometric Design of Highways and Streets, published by the American Association of State Highway and Transportation Officials (AASHTO), is referenced in the Code of Federal Regulations and is used to provide the LOS standard for highways on the National Highway System, which includes I-77 and I-81.<sup>3</sup>

The level of service standard for mainline operations along freeway facilities is LOS B in rural areas and LOS C in urban areas. Based on FHWA guidelines, the I-77/I-81 overlap section is considered an urban freeway. The standard for all ramps and weave areas (the crossing of two or more traffic streams traveling in the same direction along a significant length of highway) is LOS C. While all mainline, ramp, and merge segments in the I-77/I-81 overlap section currently operate at acceptable levels of service, high truck volumes and heavy weekend recreational traffic patterns add to congestion along the corridor. By 2035, without further investment in the infrastructure beyond that already planned and funded in the Six-Year Transportation Improvement Program, traffic operating conditions along the I-77/I-81 overlap section would deteriorate, as described in the following paragraphs.

**Freeway Facilities** – As shown in Table 1.5, all mainline sections within the I-77/I-81 overlap currently operate above the level of service standard (LOS C for urban areas) but degrade in 2035. Five of the nine northbound miles and eight of the nine southbound miles (67 percent of the overlap section) will operate worse than the level of service standard by 2035. Table 1.6 presents the existing and future level of service for diverge and merge movements at interchanges within the I-77/I-81 overlap section. While all ramp movements currently operate above the level of service standard (LOS C), 11 of the 20 ramps (55 percent) serving the overlap section are expected to operate worse than the level of service standard in 2035, with seven ramps operating at LOS F conditions.

**Ramp Intersections** – Within the I-77/I-81 overlap section, there are two interchanges with local roadways (Interchanges 77 and 80). The remaining three interchanges in the I-77/I-81 overlap section (Interchanges 72, 73, and 81) provide system-to-system direct ramp connections between the two Interstate highways or, in the case of Interchange 73, between the Interstate highway and U.S. Route 11 in downtown Wytheville.

Permanent Count Location	AADT Volume				Truck Percentage		Percent Growth Rate (1978-2008)	
	1978	1997	2004	2008	2004	2008	Average Annual	Aggregate
U.S. Route 11 to North Corporate Limit of Wytheville (I-77/I-81 overlap)	21,400	46,800	51,900	50,800	26	25	2.9	137

AADT – Average Annual Daily Traffic

<sup>3</sup> A Policy on Geometric Design of Highways and Streets Fifth Edition, AASHTO, Washington DC, 2004.

**Table 1.2**  
**Projected Total Traffic Volume Growth along I-77/I-81 Overlap Section: 2008-2035**

Permanent Count Location	Milepost	AADT Volume		Truck Percentage		Percent Growth Rate (2008-2035)	
		2008	2035	2008	2035	Average Annual	Aggregate
U.S. Route 11 to North Corporate Limit of Wytheville (I-77/I-81 overlap)	75.4	50,800	100,000	25	34	2.5	97

AADT – Average Annual Daily Traffic

**Table 1.3**  
**Projected Truck Traffic Volume Growth along I-77/I-81 Overlap Section: 2008-2035**

Permanent Count Location	Truck AADT		Percent Growth Rate (2008-2035)	
	2008	2035	Average Annual	Aggregate
U.S. Route 11 to North Corporate Limit of Wytheville (I-77/I-81 overlap)	13,500	33,900	3.3	151

AADT – Average Annual Daily Traffic

**Table 1.4**  
**Existing Traffic and Historical Traffic Volume Growth along I-77: 1978-2008**

Permanent Count Location	AADT Volume				Truck Percentage		Percent Growth Rate (1978-2008)	
	1978	1996	2002	2008	2004	2008	Average Annual	Aggregate
North of Overlap	7,100	36,000	39,000	37,000	20	21	5.6	421
South of Overlap	8,200	28,000	28,000	27,000	15	25	4.0	229

AADT – Average Annual Daily Traffic

As shown in Table 1.7, only one of the ramp intersections currently operates below LOS C. However, with one exception, all ramp intersections are projected to operate below the level of service standard by 2035. These poor intersection operations are exacerbated by the operations at frontage roads next to the ramp intersections, a condition that may also affect the safety of these locations by 2035.

### 1.6 Safety

Geometric conditions and recent crash data along the I-77/I-81 overlap section were reviewed to determine whether sections of the corridor experience a higher than average number of crashes and whether substandard geometric conditions could be a potential cause of these crashes. As discussed in the Transportation Technical Report and the I-81 Tier 1 EIS, geometric deficiencies (based on current AASHTO geometric design criteria) exist at a number of locations along the overlap section. A review of the crash data indicate only two northbound segments of the I-77/I-81 overlap section (Milepost 73 to Milepost 74 and Milepost 80 to Milepost 81) and zero southbound segments exhibit crash rates higher than the statewide weighted crash score. To determine whether geometric deficiencies could be contributing factors to crashes along the two northbound segments, comprehensive State police crash records were reviewed for patterns of



crash type, frequency, and/or cause. Time of day and weather conditions during a crash were also reviewed, but the data illustrate that these factors did not contribute to crashes along either segment. A combination of traffic congestion, high speed ramp movements, and short distances between interchanges appear to be a factor in the crashes occurring along the overlap section between Milepost 73 and Milepost 74. While no specific pattern or frequency is apparent, the source of many crashes along the segment was cited to be general congestion on the roadway. Secondary to congestion, a number of crashes between Milepost 73 and Milepost 74 were incidents of out-of-control vehicles entering the I-77/I-81 overlap section (northbound) at Interchange 72, striking fixed objects or other vehicles, and then overturning. These incidents may be attributed to the high speed of vehicles entering from the I-77 southbound to I-81 northbound entrance ramp, to recreational motorists who are commonly unfamiliar with the geometry of the ramp and traffic congestion along the Overlap section. Substandard sight distance noted at Milepost 74.5 northbound may also contribute to vehicular slowdowns between Milepost 73 to Milepost 74 and, ultimately, crashes along this upstream segment.

Along the northbound segment between Milepost 80 and Milepost 81, general traffic congestion along I-81 again appears to be the primary cause of many crashes; where vehicles slowed or were stopped in traffic when the vehicle was struck from behind by an inattentive motorist. Based on a review of the crash data, the safety concerns along the I-77/I-81 overlap section appear to be primarily related to capacity. Therefore, correcting substandard geometric features along the I-77/I-81 overlap section is not a need in the context of this Environmental Assessment and is not a basis for the evaluation of alternatives. Notwithstanding, improving capacity should improve safety. In addition, this study does not preclude correction of the substandard geometric features on the I-77/I-81 overlap section independently of this study.

			Existing Conditions			2035 Conditions		
Direction	From Interchange	To Interchange	Volume <sup>1</sup>	V/C ratio <sup>2</sup>	LOS	Volume	V/C ratio	LOS
I-77 Southbound/	72	73	1,750	0.40	B	3,750	0.89	D
I-81 Northbound	73	77	2,050	0.38	B	4,150	0.80	D
	77	80	1,950	0.34	B	3,950	0.69	C
	80	81	1,900	0.33	B	3,950	0.70	C
I-77 Northbound/	81	80	1,800	0.33	B	4,050	0.74	D
I-81 Southbound	80	77	1,750	0.36	B	4,100	0.83	D
	77	73	1,750	0.41	B	4,150	0.96	E
	73	72	1,600	0.29	A	3,700	0.66	C

1 Traffic volume per hour per direction  
2 Volume to Capacity

**Table 1.6**  
**Existing and 2035 Future Ramp Operations**

		Existing Conditions				2035 Conditions			
		Exit Ramp Operations		Entrance Ramp Operations		Exit Ramp Operations		Entrance Ramp Operations	
Direction	Interchange	Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
I-77 Southbound	72	7.1	A	13.7	B	12.3	B	--	F
	73	18.0	B	12.1	B	--	F	26.5	C
I-81 Northbound	77	12.7	B	10.2	B	27.4	C	23.5	C
	80	11.1	B	9.2	A	24.0	C	29.2	D
	81	5.9	A	10.1	B	26.3	C	24.9	C
I-77 Northbound	81	8.2	A	9.8	A	--	F	--	F
	80	15.1	B	11.9	B	--	F	29.9	D
I-81 Southbound	77	12.1	B	13.6	B	28.6	D	--	F
	73	15.0	B	4.6	A	32.7	D	20.4	C
	72	2.9	A	1.4	A	--	F	8.3	A

1 Density of diverge or merge influence area is measured in passenger cars per mile per lane (pc/mi/ln) and -- indicates ramp volume exceeds capacity therefore LOS F conditions prevail and density cannot be calculated.

**Table 1.7**  
**Existing and 2035 Intersection Operations**

Intersection <sup>1</sup>	Critical Movement <sup>2</sup>	Existing Conditions		2035 Conditions	
		Delay <sup>3</sup>	LOS	Delay	LOS
Interchange 77 Northbound Ramps at U.S. Routes 11/52/Route 336	Northbound Exit Ramp LTR	16	C	120+	F
Interchange 77 Southbound Ramps at U.S. Routes 11/52/Route 336	Southbound Exit Ramp LTR	35	E	120+	F
Route 121 at E. Lee Highway <sup>4</sup>	Westbound E. Lee Highway	14	B	38	E
Interchange 80 Northbound Ramps at U.S. Routes 52/121	Intersection	8	A	72	E
Interchange 80 Southbound Ramps at U.S. Routes 52/121	Intersection	21	C	116	F
Route 52 at Chapman Road	Intersection	17	B	18	B

1 Signalized Intersections are displayed in bold print, and Delay and LOS data listed applies to the overall intersection  
2 Delay and LOS data listed for unsignalized intersections are for either the critical movement on the cross street or the minor(exit ramp) approach  
3 Delay = Average delay, expressed in seconds per vehicle  
4 As presented in the Draft Proposed Interchange Modification Report for Interchange 80 Safety

### 1.7 Summary

Improvements to the I-77/I-81 overlap section are needed to address existing and future transportation conditions, which are summarized below.

#### 1.7.1 Existing Transportation Conditions Along the I-77/I-81 Overlap Section

- Traffic volumes on the I-77/I-81 overlap section have more than doubled since 1978; and
- One of the ramp intersections operates below Level of Service C.



### 1.7.2 Projected 2035 Conditions

- Traffic volumes along the I-77/I-81 overlap section are expected to almost double by 2035.
- Truck traffic along the I-77/I-81 overlap section is projected to more than double by 2035.
- Five of the nine northbound miles and seven of the nine southbound miles of the I-77/I-81 overlap section will operate at worse than the LOS standard by 2035.
- All entrance ramps and most exit ramps are projected to operate at or below the level of service standard by 2035.
- All but one ramp intersection are projected to operate below the level of service standard by 2035.

## 2. ALTERNATIVES

### 2.1 Introduction

This chapter discusses the range of alternatives evaluated, the factors considered in their evaluation, alternatives eliminated from further consideration, and alternatives carried forward for detailed study. The alternatives carried forward for detailed evaluation are identified below:

- The No-Build Alternative, which serves as a baseline for alternatives comparison.
- An alternative on new location, referred to as Alternative C1-81 or Candidate Build Alternative (CBA) A.
- An alternative that adds one lane in each direction to the roadway section co-designated for I-77 and I-81 (the I-77/I-81 overlap section), referred to as Alternative D-81/77 or CBA B.

The Tier 1 Record of Decision approved an improvement concept that consists of a non-separated variable lane highway facility that involves constructing no more than two general purpose lanes in each direction, where needed, to address 2035 traffic demands. Therefore, the range of alternatives considered is constrained by the decision reached in Tier 1 concerning the conceptual improvements to be considered and the location of the corridor. A more detailed discussion of the development of alternatives and the analysis performed is provided in the Alternatives Technical Report that supports this EA.

### 2.2 Alternatives Development, Analysis, and Screening

The flowchart presented in Section 2.3 illustrates the steps in the alternative development and screening process. This process involved developing a wide range of alternatives initially and then narrowing the options to two CBAs for detailed consideration. In the course of developing alternatives, a typical cross section (Figure 2-1) was developed to be used as a template for the alternatives. This template is based on criteria from VDOT's design standards for an Urban Freeway in rolling/mountainous terrain. The project would have the following design criteria and typical cross section elements:

- Interstate Classification;
- 70 mph Design Speed;
- 65 mph Posted Speed Limit;
- 5 percent Maximum Grade;
- Limited Access;
- 200-foot Minimum right-of-Way;
- 12-foot travel lanes;
- 12-foot inside and outside paved shoulders for a roadway cross section of six or more lanes, 4-foot inside and 12-foot outside for a four-lane roadway cross section; and
- Grade separated interchanges or crossings

### 2.3 Preliminary Alternatives

Based on the Tier 1 Record of Decision, the identified purpose and need, traffic, engineering, and environmental considerations, suggestions received from Resource Agencies, and comments

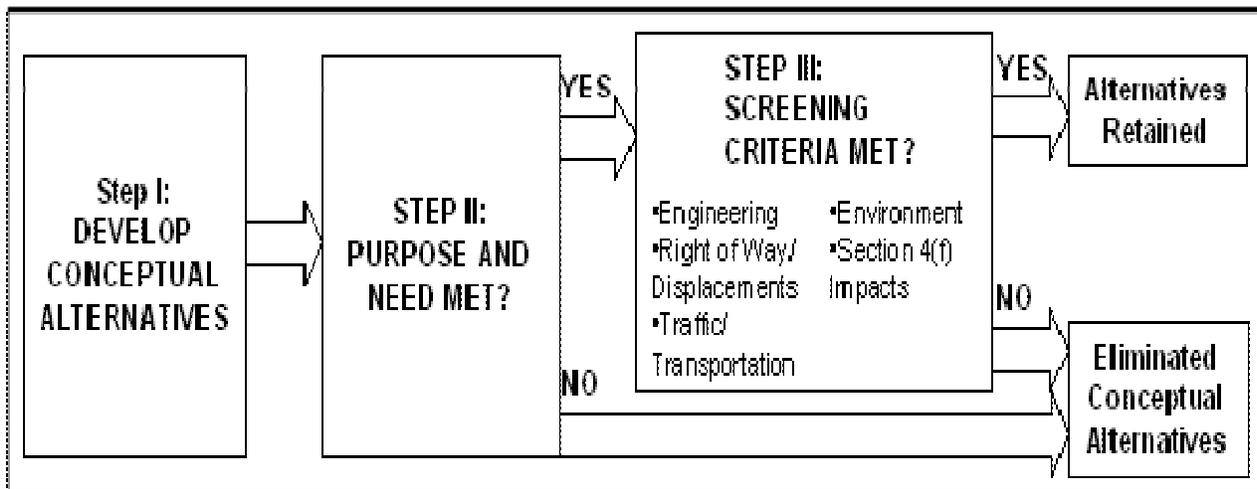
from a Citizen Information Meeting held December 2008, preliminary alternatives were developed (see Figure 2.2). Figure 2.2 is a map that depicts the preliminary alternative corridors. The preliminary alternatives were developed using the nodes (connecting points) illustrated. The nodes for the new location alternatives were developed primarily at locations where it was desirable to have the new alignment pass through areas that either best accommodated the geometric requirements for the new alignment or through areas that minimized impacts to known environmental constraints. In addition, node locations were established at the various tie-in points so that the new alignment would connect to the existing I-77 and I-81 facilities. The nodes formed a total of 18 alternatives that connect to either I-77 or I-81.

**Alternative Screening Process**

Each of the preliminary alternative corridors was evaluated by:

- Their ability to meet Purpose and Need;
- Engineering considerations noted above;
- Projected traffic volumes;
- A range of environmental criteria; and
- Cost

Environmental criteria range from natural resource impacts to land use and cultural resource impacts. The preliminary alternatives that would have the largest impacts on the surrounding environment were eliminated from further consideration.



**2.4 Alternatives Eliminated from Detailed Study**

As a result of the alternative development, analysis, and screening process, several alternatives were eliminated from consideration for detailed study. Table 2.1 lists the eliminated alternatives and the reason(s) for their elimination.



## **2.5 Alternatives Carried Forward**

The No-Build Alternative is being studied consistent with NEPA regulations and to serve as a baseline for alternatives comparison. The No Build condition is reflective of the expected corridor conditions during the design year if no improvement was made to the corridor beyond the minor modifications currently programmed in the most recent version of the Commonwealth's Six-Year Improvement Program. These improvements include mostly safety upgrades and paving services, which while critical to the long-term viability of the corridor, do little to address current and anticipated capacity needs.

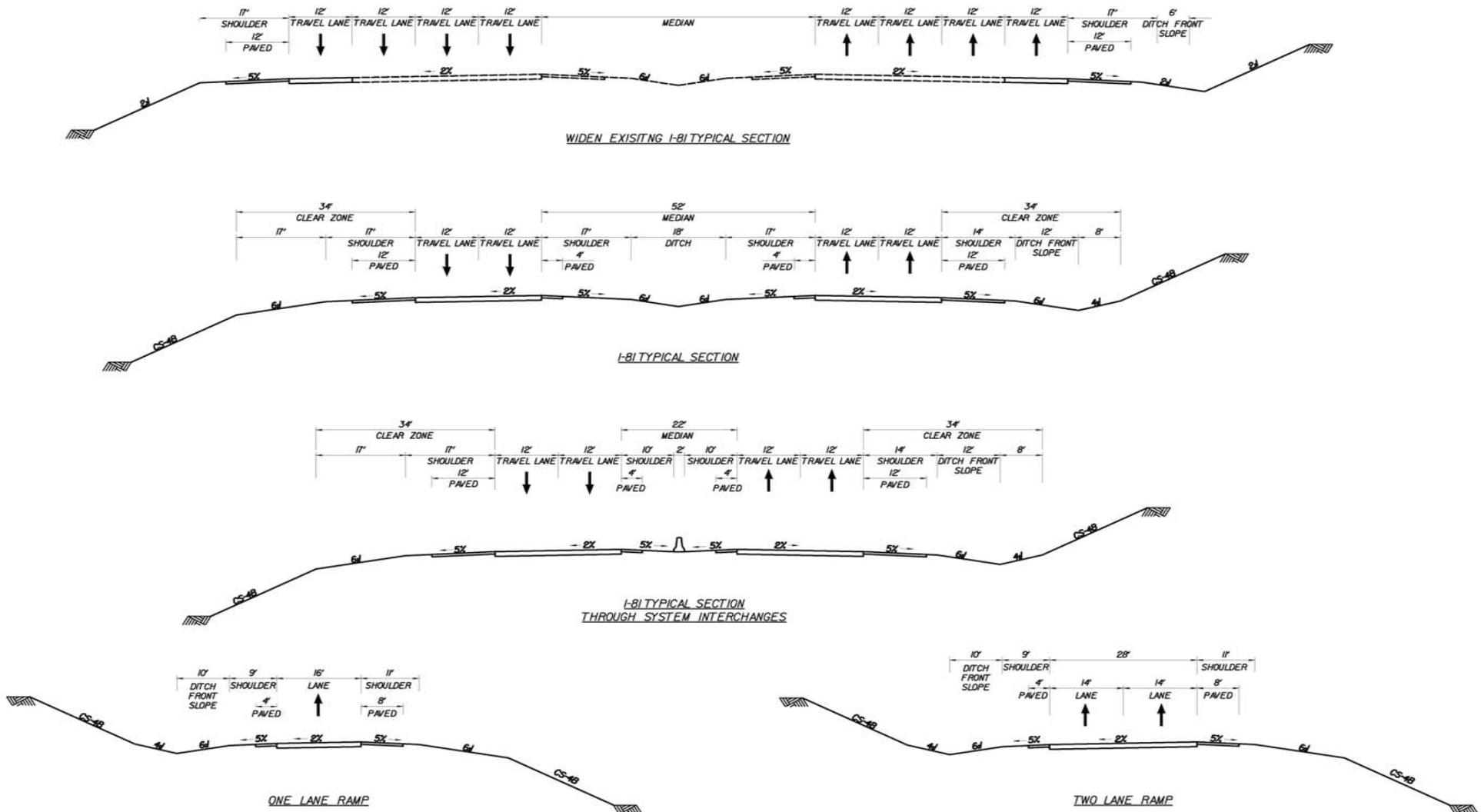


Figure 2-1 Typical Cross Section

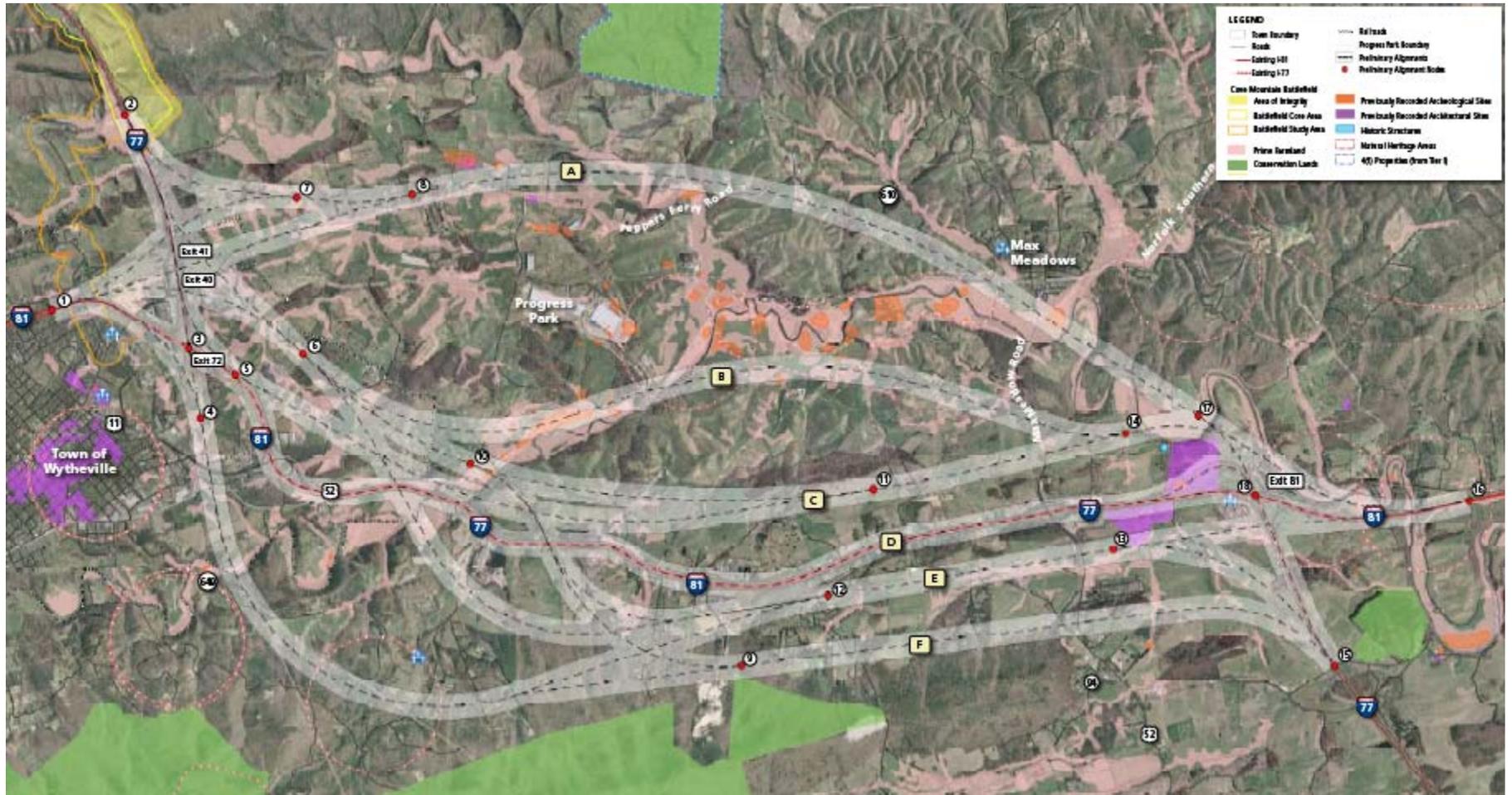


Figure 2-2 Preliminary Alternatives Considered



Figure 2-3 Candidate Build Alternatives

**Table 2.1  
Alternatives Eliminated from Detailed Study (see Figure 2-2 for alternative alignment)**

Alternative	Description	Basis for Elimination
A-81	I-81 on new alignment “A” north of existing highway	Linear footage of stream crossings, impacts to wetlands, and prime farmland
A1-81	I-81 on new alignment “A” north of existing highway	Impacts to residential parcels
A2-77	I-77 on new alignment “A” north of existing highway	Acres of parkland involvement, impacts to battlefields New roadway would require six lanes as opposed to four lanes <sup>1</sup>
B-81	I-81 on new alignment “B” north of existing highway	Number of stream crossings required
B1-77	I-77 on new alignment “B” north of existing highway	Impacts to prime farmland and battlefields New roadway would require six lanes as opposed to four lanes <sup>1</sup>
C-81	I-81 on new alignment “C” north of existing highway	Impacts to business parcels
C2-77	I-77 on new alignment “C” north of existing highway	Acres of parkland involvement, impacts to battlefields New roadway would require six lanes as opposed to four lanes <sup>1</sup>
C3-77	I-77 on new alignment “C” north of existing highway	New roadway would require six lanes as opposed to four lanes <sup>1</sup>
E-81	I-81 on new alignment “E” south of existing highway	Number of stream crossings required, acres of parkland involvement, impacts to battlefields
E1-81	I-81 on new alignment “E” south of existing highway	Number of stream crossings required, acres of parkland involvement, impacts to prime farmland
E2-81	I-81 on new alignment “E” south of existing highway	Acres of parkland involvement, impacts to prime farmland, battlefields, residential parcels, and business parcels
E3-77	I-77 on new alignment “E” south of existing highway	Number of stream crossings required, new roadway would require six lanes as opposed to four lanes <sup>1</sup>

<sup>1</sup> 23 CFR 470, Appendix A requires that a final environmental document be approved prior to a State officially proposing to FHWA that a roadway be part of the Interstate system. In addition, for purposes of the traffic analysis, the name for each alternative on new location had to be assumed because it has a bearing on the amount of traffic that would use the facility. Since federal regulations do not dictate the roadway designation for a new location alternative, a designation (either I-81 or I-77) had to be assumed. It is reasonable to assume that a new location roadway would be designated as I-81 as discussed in the Transportation Technical Report and in the following:

- Designating the roadway as I-81 would allow the 2035 traffic to be accommodated with four lanes, as opposed to six lanes if it were designated as I-77. Constructing four lanes as opposed to six lanes would reduce environmental impacts and cost.
- The Town of Wytheville prefers that the existing roadway remains as I-77 (see the Scoping Summary Report).

<b>Table 2.1 Alternatives Eliminated from Detailed Study (continued)</b>		
<b>Alternative</b>	<b>Description</b>	<b>Basis for Elimination</b>
E4-77	I-77 on new alignment “E” south of existing highway	Number of stream crossings required, acres of parkland involvement, impacts to battlefields, residential parcels, and business parcels New roadway would require six lanes as opposed to four lanes <sup>1</sup>
E5-77	I-77 on new alignment “E” south of existing highway	Number of stream crossings required, acres of parkland involvement, and impacts to prime farmlands New roadway would require six lanes as opposed to four lanes <sup>1</sup>
F-77	I-77 on new alignment “F” south of existing highway	New roadway would require six lanes as opposed to four lanes. In addition, the U.S. Army Corps of Engineers does not prefer the southern alignments because of the higher number of stream crossings. The U.S. Army Corps of Engineers has jurisdiction by law pursuant to their permitting authority under Section 404 of the Clean Water Act.
F1-77	I-81 on new alignment “F” south of existing highway	New roadway would require six lanes as opposed to four lanes <sup>1</sup>
<p><sup>1</sup> 23 CFR 470, Appendix A requires that a final environmental document be approved prior to a State officially proposing to FHWA that a roadway be part of the Interstate system. In addition, for purposes of the traffic analysis, the name for each alternative on new location had to be assumed because it has a bearing on the amount of traffic that would use the facility. Since federal regulations do not dictate the roadway designation for a new location alternative, a designation (either I-81 or I-77) had to be assumed. It is reasonable to assume that a new location roadway would be designated as I-81 as discussed in the Transportation Technical Report and in the following:</p> <ul style="list-style-type: none"> <li>▪ Designating the roadway as I-81 would allow the 2035 traffic to be accommodated with four lanes, as opposed to six lanes if it were designated as I-77. Constructing four lanes as opposed to six lanes would reduce environmental impacts and cost.</li> <li>▪ The Town of Wytheville prefers that the existing roadway remains as I-77 (see the Scoping Summary Report).</li> </ul>		

An alternative that would construct I-81 on new location and an alternative that would widen the existing interstate highway are being carried forward for detailed study (see Figure 2.3). These alternatives had relatively low environmental impacts and construction cost.

As opposed to the preliminary alternatives analyses that were developed using 1,000-foot corridors, the candidate build alternatives were evaluated based on a 500-foot corridor. The actual width of the required right of way would be determined during final design should either CBA be selected.

### **2.5.1 Candidate Build Alternative (CBA) A**

CBA A is an Interstate 81 designation on new location that is immediately north of the I-77/I-81 overlap section. The I-77/I-81 overlap section would then be designated as I-77 only. The new section of I-81 would be a four-lane highway designed to Interstate standards.

CBA A would include service roads and/or overpasses to facilitate connectivity from one side of the interstate facility to the other.

For this alternative, conceptual interchange improvements have been developed at Interchanges 72 and Interchange 81 to provide connectivity between the two separate facilities.<sup>4</sup> For purposes of this chapter, both I-81 and I-77 are treated as northbound/southbound movements, (1) Northbound I-81 to Roanoke; (2) Southbound I-81 to Bristol; (3) Northbound I-77 to West Virginia; (4) Southbound I-77 to North Carolina. Figures 2.4 through 2.6 provide conceptual renderings of proposed interchange improvements and a typical section of CBA A.

The length of the corridor is approximately 10 miles and the total area within the 500-foot corridor is approximately 460 acres. New interchanges connecting the new alignments at Interchanges 72 and 81 would encompass an additional 780 acres. This alternative would meet the capacity needs identified in the Purpose and Need for the project. The proposed alignment would follow rolling and mountainous terrain and would impact some agricultural, commercial, and residential property. However, impacts to environmental resources would be avoided or minimized to the extent practicable.

### **2.5.2 Candidate Build Alternative (CBA) B**

CBA B would add one travel lane (and additional left/right shoulder width) in each direction on the roadway section co-designated as I-77 and I-81 (the I-77/I-81 overlap section) thereby creating an eight-lane typical roadway section that meets interstate standards. This widening would occur between Interchange 72 and Interchange 81. To accommodate the widened section of roadway in this corridor, conceptual design improvements would be developed for the adjacent service roads, entrance/exit ramps at Interchanges 73/77/80, and overpasses. In addition, a substandard horizontal curve would be corrected at approximately Milepost 76.0, sight lines improved via a rock cut on the inside of a curve at approximately Milepost 74.5, and substandard vertical clearances of structures would be corrected to meet standards.

Also for this alternative, conceptual interchange improvements have been developed at Interchanges 72 and Interchange 81.<sup>5</sup> As with CBA A, for purposes of this chapter, both I-81 and I-77 are treated as northbound/southbound movements, (1) Northbound I-81 to Roanoke; (2) Southbound I-81 to Bristol; (3) Northbound I-77 to West Virginia; (4) Southbound I-77 to North Carolina. Figures 2.7 through 2.9 provide conceptual renderings of proposed interchange improvements and a typical section of CBA B.

The length of the corridor is approximately eight miles and the total area within the 500-foot corridor is approximately 450 acres. (It should be noted that much of this acreage is within

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<sup>4</sup> These conceptual interchange improvements were developed for the purposes of this study only and will be refined during the detailed design phase, if a build alternative is selected.

<sup>5</sup> These conceptual interchange improvements were developed for the purposes of this study *only* and will be refined during the detailed design phase, if a build alternative is selected.



the limits of the existing corridor) New interchanges connecting the new alignments at Interchanges 72 and 81 would encompass an additional 490 acres.

This alternative would meet the capacity needs identified in the Purpose and Need for the project. The proposed alignment would generally remain as it exists today and would impact some agricultural, commercial, and residential property. However, impacts to environmental resources would be avoided or minimized to the extent practicable.



Figure 2.4 – Overview of Candidate Build Alternative (CBA) A

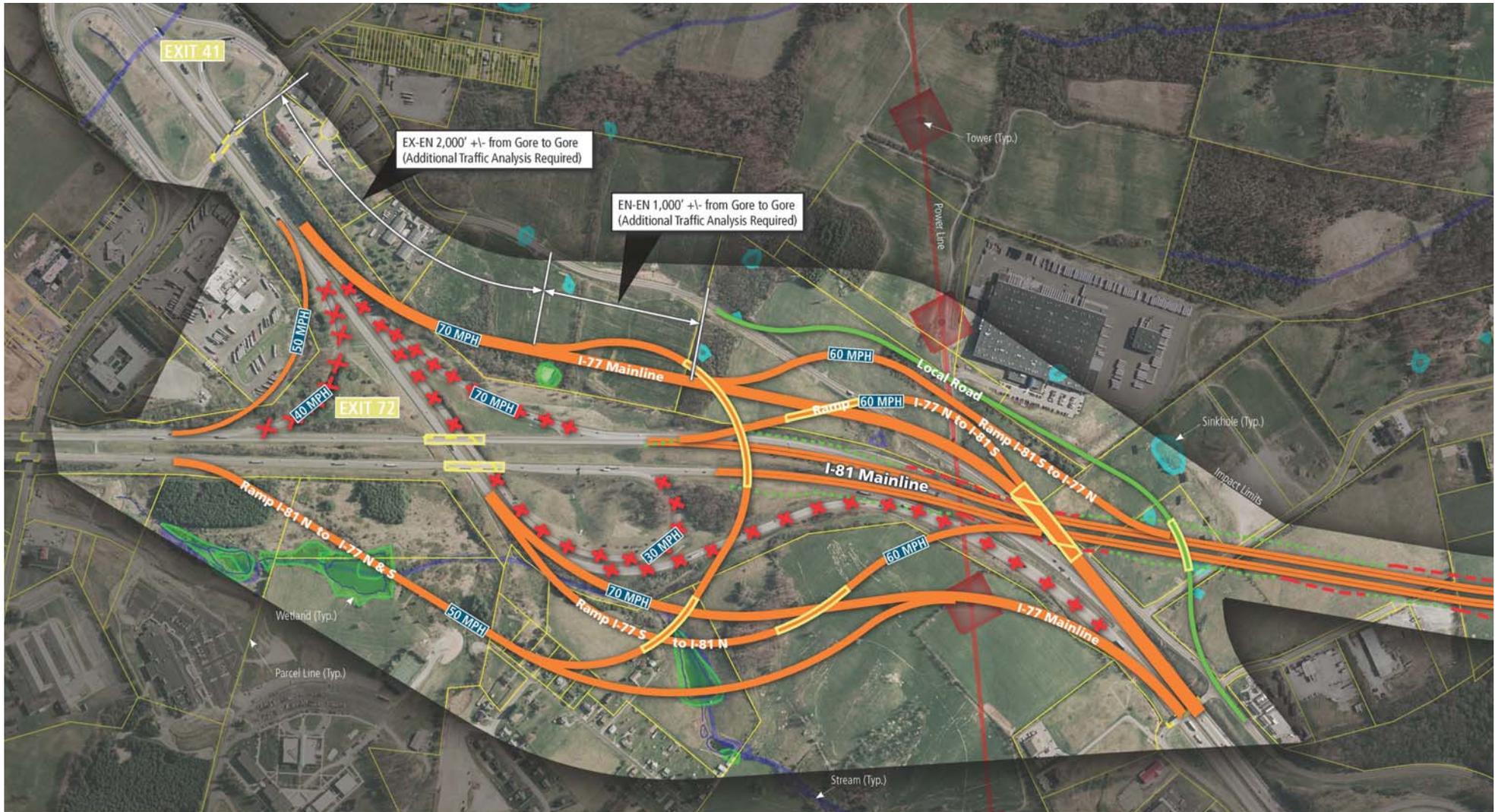


Figure 2.5 – Exit 72 (CBA A)



Figure 2.6 – Exit 81 (CBA A)



Figure 2.7 – Overview of Candidate Build Alternative (CBA) B

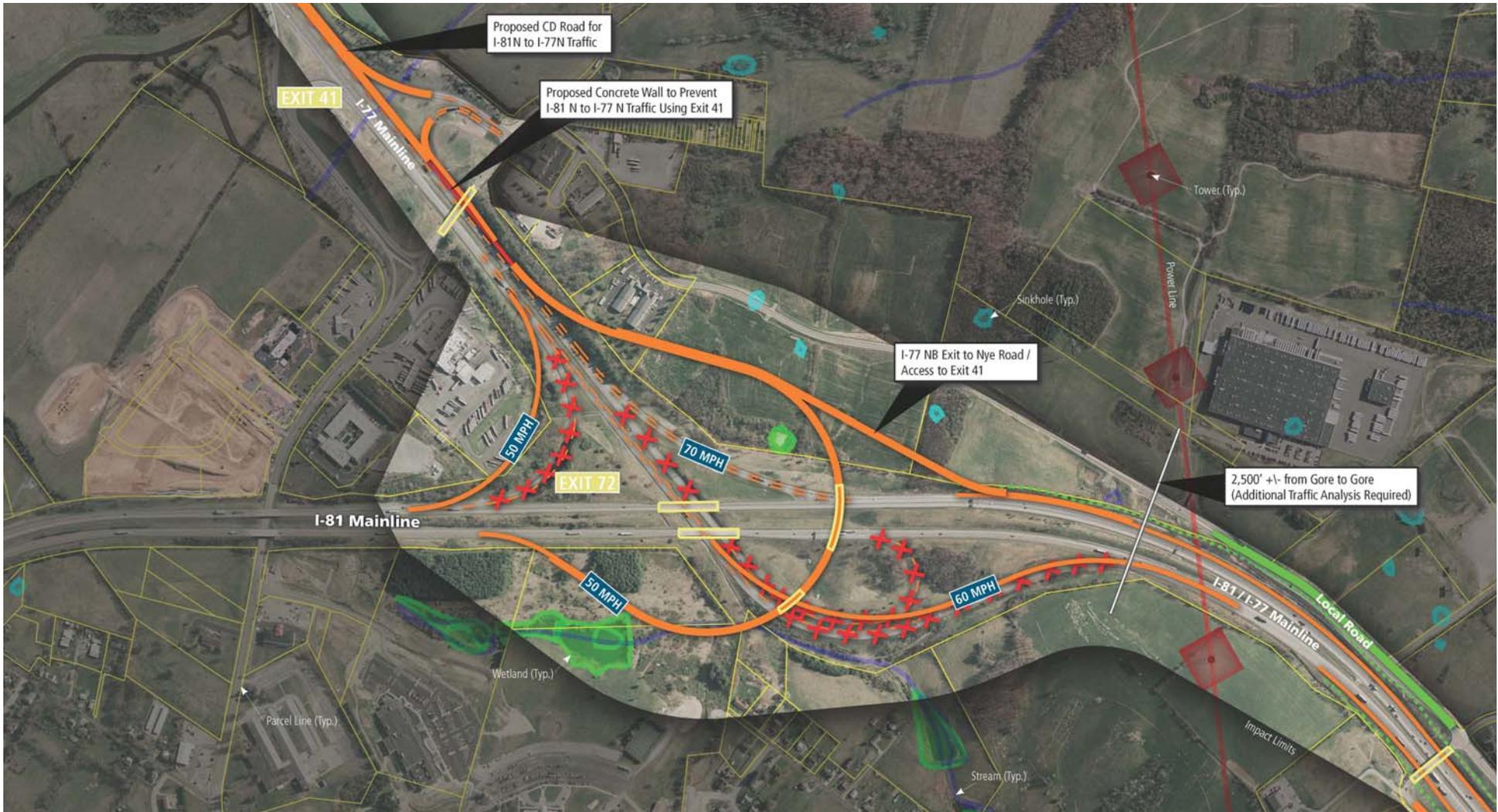


Figure 2.8 – Exit 72 (CBA B)

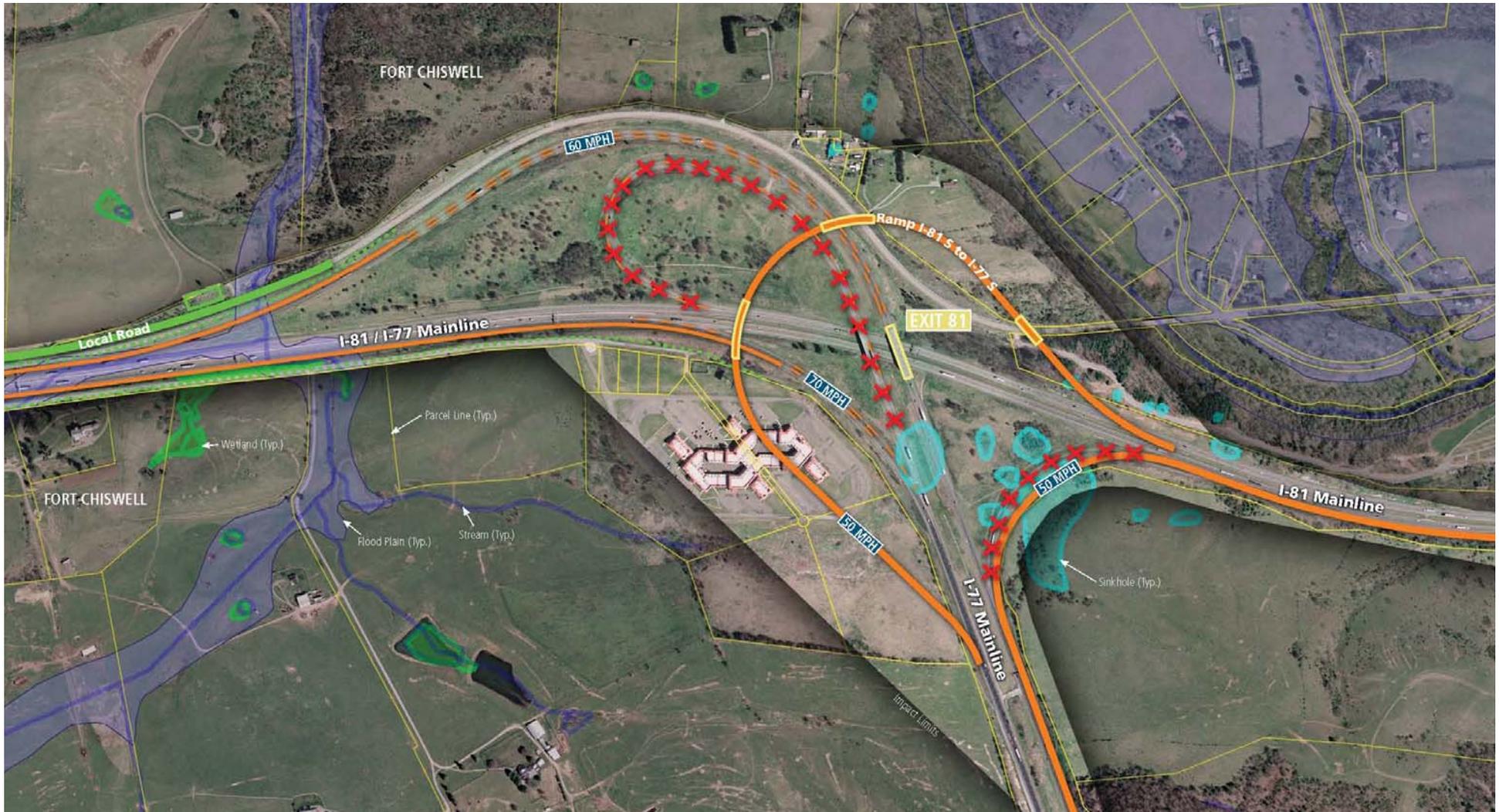


Figure 2.9 – Exit 81 (CBA B)

### 3. ENVIRONMENTAL CONSEQUENCES

#### 3.1 Overview of Environmental Issues

Table 3.1 summarizes environmental issues and their relevance to the project. Key issues requiring further discussion are addressed following the table.

<b>Table 3.1 Summary of Environmental Issues</b>	
<b>Resource/Issue</b>	<b>Relevance to Project</b>
Land Use	Agriculture dominates land use in most of the area traversed by the study area. Residential, commercial, and industrial land uses occur along the existing corridor and in the Town of Wytheville.
Socioeconomics and Environmental Justice	No minority or low-income populations under the purview of Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would be affected by the project.
Right of Way & Relocations	Construction of either CBA would require residential as well as commercial relocations.
Agriculture, Prime Farmland, and Soils	Much of the land along CBA A is agricultural, while the majority of land directly adjacent to the existing corridor (CBA B) is mixed use with large portions already developed. The federal Farmland Protection Policy Act (FPPA) requires assessment of potential conversions of certain farmland to nonagricultural uses. State law protects agricultural and forestal districts, one of which is located in the study area. The Fairview agricultural and forestal district lies northwest of both CBAs. Neither of the CBAs would require use of any land from this district.
Federal Properties	There is no federal property within the project limits.
Parks and Recreational Resources	Neither of the CBAs would require the use of any publicly owned parks or recreational resources.
Historic Properties	Three historic properties that are on or eligible for the National Register of Historic Places are within the Area of Potential Effects.
Waters of the U.S., Including Wetlands	Construction of CBA A would require multiple crossings of Reed Creek, while the construction of CBA B would involve the widening of an existing crossing. Culverts would be needed for several other smaller tributaries for both CBAs. For both CBAs wetlands generally consist of small patches of palustrine types along streams and pond margins.
Water Quality	Portions of Reed Creek and Muskrat Branch are designated by the Virginia Department of Environmental Quality under the Clean Water Act, Section 303(d), as “impaired water” due to the presence of Escherichia coli bacteria resulting from livestock access to surface waters. A total maximum daily load (TMDL) implementation plan has been developed by the state to identify best management practices and strategies to meet the water quality standards.

<b>Table 3.1 Summary of Environmental Issues</b>	
<b>Resource/Issue</b>	<b>Relevance to Project</b>
Public Water Supplies	There are no sole-source aquifers designated by the U.S. Environmental Protection Agency in the study area. Groundwater is an important source of drinking water for County residents. Public supply wells near Fort Chiswell and Max Meadows intersect different aquifers, and the Ivanhoe Water Treatment Plant provides drinking water by treating surface water from Powder Mill Branch.
Floodplains	Reed Creek and Muskrat Run are associated with a 100-year floodplain as designated by the Federal Emergency Management Agency. Both CBAs would entail crossings of the floodplains.
Air Quality	The project lies within an area that is currently in attainment with all of the National Ambient Air Quality Standards (NAAQS) and will not cause or contribute to a violation of the NAAQS. In regards to Mobile Source Air Toxics, best available information indicates that the project is of a type that would have low potential for these effects.
Noise	There are noise-sensitive receptors (mainly residential sites) along both CBAs.
Karst Terrain	The project lies on multiple rock formations that support the development of karst topography. Both CBA A and B intersect mapped sinkholes. CBA A encompasses 11.32 acres of sinkholes, whereas CBA B intersects 9.5 acres. Any proposed roadway improvement would require the implementation of best management practices (BMPs) to attenuate stormflow from road surfaces and to mediate pollutant loads.
Forest Resources	Forest resources have limited presence in the study area due to agricultural activities and other development.
Threatened and Endangered Species	Impacts to Federally threatened and endangered species are not anticipated.
Wildlife and Waterfowl Refuges	There are no wildlife or waterfowl refuges in the vicinity of the study area.
Invasive Species	In accordance with Executive Order 13112, Invasive Species, the potential for the establishment of invasive terrestrial or aquatic animal or plant species during construction would be minimized by following provisions in VDOT's Road and Bridge Specifications.
Scenic Byways / Scenic Rivers	The Southern Highlands, a state-designated scenic byway is located within the study area, beginning on Route 52 north, heading out of Wytheville. There are no scenic rivers and no federally designated wild and scenic rivers located within or near the study area.
Open Space Easements	The project would not affect any open space easements held by the Virginia Outdoors Foundation.
Hazardous Materials	Potential Hazardous Material sites (sites potentially containing flammable, explosive, corrosive, or toxic substances, etc.) are located within both CBA corridors. They include gas stations, industrial sites, underground/aboveground storage tanks, etc.

### 3.2 Land Use

The dominant existing land use for Wythe County is agricultural. According to the County Comprehensive Plan, the County is predominantly rural with only small portions being utilized for intensive development.<sup>6</sup> However, the County's goal for land use is to balance future economic growth with more efficient land use through existing ordinances and the development of a land use management plan. Land use within the study area is no different and consists mainly of agricultural land with small pockets of residential and industrial development. The majority of commercial and industrial development currently occurs along the existing I-77/I-81 Overlap corridor and to the North of the Overlap (Progress Park Industrial Park).

Both the Town of Wytheville and County Comprehensive Plans recognize a need for improvements to the existing I-77/I-81 overlap section. Discussion in both Plans centers on the great economic importance of the overlap area to the vitality of the region and the problematic increases in traffic along this section. Both CBAs are consistent with these plans.

### 3.3 Socioeconomics

The project would not have a disproportionate negative impact on low-income or minority populations as there is not a disproportionately high concentration of low-income or minority populations in the study area. Low-Income is defined as any person whose median household income is at or below the Department of Health and Human Services poverty guidelines. The poverty level for families in Wythe County was \$19,806 in 2005. Approximately 12.2 percent of the residents in Wythe County have incomes below the poverty level. However none are located within either CBA corridor. A "Minority" is defined as an individual or racial/ethnic group that is categorized as not White and follows the racial classifications used by the Census Bureau. Approximately four percent of the displaced residents are members of a minority population. According to the 2000 Census, less than five percent of Wythe County's population is comprised of minorities.

Approximately 15 percent of the affected residents are 65 years old or older. According to the 2000 Census, approximately 15 percent of the population of Wythe County is 65 years old or older. The elderly population would not be disproportionately impacted in the long term; however, additional assistance may be necessary to provide for the relocation of elderly persons because of their potential physical limitations (see Right of Way and Relocations).

Neither CBA would result in divisive social impacts, such as separating a community from its community facilities. CBA A would not inhibit access to community facilities, residences, and businesses north of the I-77/I-81 overlap section. The interchanges on I-77/I-81 and the roadways associated with the interchanges would remain; therefore, no changes in access are anticipated with CBA A. CBA B would require the relocation of the Wythe County Water Department building and would require portions of the frontage road parallel to the I-77/I-81 overlap section to be relocated. While access to the state police building and

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<sup>6</sup> The Wythe County Comprehensive Plan is available at <http://www.wytheco.org/documents/2007compplan.pdf>



to churches would be maintained during construction of the relocated frontage road. There may be temporary traffic delays during construction, but no major impact to the community is anticipated.

Both CBAs introduce new travel patterns. CBA A would involve building a new four-lane highway separating I-77 traffic from I-81 traffic. The increased capacity of the dual facilities and the mitigation of some geometric deficiencies along the overlap section would address safety concerns related to entering and exiting the alignment at both ends. CBA B consists of widening the I-77/I-81 overlap section to eight lanes (four lanes per direction). The two interstate facilities would remain co-located and all interchanges would remain. The additional capacity and improvements to geometric deficiencies should improve safety. Access to some properties may be altered or relocated; however, the exact locations of such changes would not be known for certain until the detailed design process is undertaken.

### **3.4 Right of Way and Relocations**

CBA A would require the acquisition of 87 structures, specifically, 33 residential structures, 19 business structures, six shed/garages, two trailers, 20 barns, two unknown structures, two government buildings, and three structures associated with a church. The values of properties in the affected area range from \$30,000 to over \$1 million. The total right of way and relocation cost of the proposed CBA A would be approximately \$59 million based on current information. This value includes the costs of the land and buildings of the 49 affected parcels along with buildings, relocation assistance, and demolition costs.

CBA B would require the acquisition of 73 structures, specifically, 27 residential structures, 23 business structures, one government building, nine barns, seven sheds or garages, five trailers, and one structure associated with a church. The values of properties in the affected area range from \$60,000 to over \$1 million. The total right of way and relocation cost of the proposed CBA B would be approximately \$52 million based on current information. This value includes the costs of the land and buildings of the 45 affected parcels along with buildings, relocation assistance, and demolition costs.

If a build alternative is selected, VDOT would develop a detailed relocation plan upon completion of a more in-depth design to ensure that orderly relocation of all displacees can be accomplished in a satisfactory manner. The acquisition of right of way and the relocation of displacees would be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Assurance is given that relocation resources would be available to all displacees without discrimination.

Based on current real estate multiple listings services (MLS), there appears to be adequate housing and business replacement sites in the Wythe/Wytheville area. VDOT has the ability and, if necessary, is willing to provide housing of last resort, including the purchase of land or dwellings; repair of existing dwellings to meet decent, safe, and sanitary conditions; relocation or remodeling of dwellings purchased by VDOT; or construction of new dwellings. Assurance is given that all displaced families and individuals would be relocated to suitable replacement housing, and that all replacement housing would be fair housing available to all persons without regard to race, color, religion, sex, or national origin and

would be within the financial means of the displaced. Each person would be given sufficient time to negotiate for and obtain possession of replacement housing. No residential occupants would be required to move from property needed for the project until comparable decent, safe, and sanitary replacement dwellings have been made available to them.

### **3.5 Historic Properties**

Identification of historic properties is being conducted in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR 800. Detailed information about these findings is available in the cultural resource technical reports. Historic properties are archaeological sites and historic buildings, structures, objects, and districts that are listed in, or eligible for listing in, the National Register of Historic Places (NRHP). The VDOT has completed surveys to identify above-ground historic properties and coordinated the results with the Virginia State Historic Preservation Officer (VA SHPO). Three properties that are on or potentially eligible for the NRHP were identified within the area of potential effects (APE) for both CBAs (see Figure 3.1):

**Fort Chiswell Mansion (VDHR #098-0005):** This mid- 19th-century Roman/Greek Revival structure was built by the McGavocks, a prominent Wythe County pioneering family, and was listed on the NRHP in May 1971. The northern boundary of the historic property follows the existing highway right-of way line on the south side of a frontage road (Factory Outlet Drive) and Interstate 81. The historic property is comprised of approximately 55 acres.

**McGavock Cemetery (VDHR #098-0022):** This cemetery is known for its collection of decorative gravestones, executed in Germanic style by Laurence Krone, the most important of Southwest Virginia carvers. The cemetery was listed on the NRHP in 1979, and the boundary of the historic property is defined by the iron fence enclosing the graveyard.

**Keesling Log House (VDHR #098-5051):** This log structure was built around 1790 by Conrad Keesling, an early settler in the area. The house is an early example of a dogtrot log house. Although in deteriorated condition, it retains much of the original materials and historic form. The VDOT and the VA SHPO have concurred that Keesling Log House is eligible for the NRHP under Criterion C for its architectural style and Criterion D for the property's potential to yield information that could prove important to the study of late-eighteenth century farmsteads in the region. The NRHP boundary is defined as the current 12.9 acre parcel that is bordered to the north by the current Lee Highway and to the south by the original Lee Highway alignment.

Based on review of information in the VA SHPO's archives, and the historic context and geography of the study area, both CBAs have the potential to contain NRHP-eligible archaeological sites from all periods of Native American prehistory and from the early colonial and post-colonial periods of settlement in Southwest Virginia. If NHRP-eligible archaeological sites are present, they are likely to be important chiefly for what can be learned through archaeological data recovery and have minimal historical value for preservation in place. If a build alternative is selected, VDOT will conduct archaeological

field investigations to identify specific archaeological sites present within the APE of that alternative.

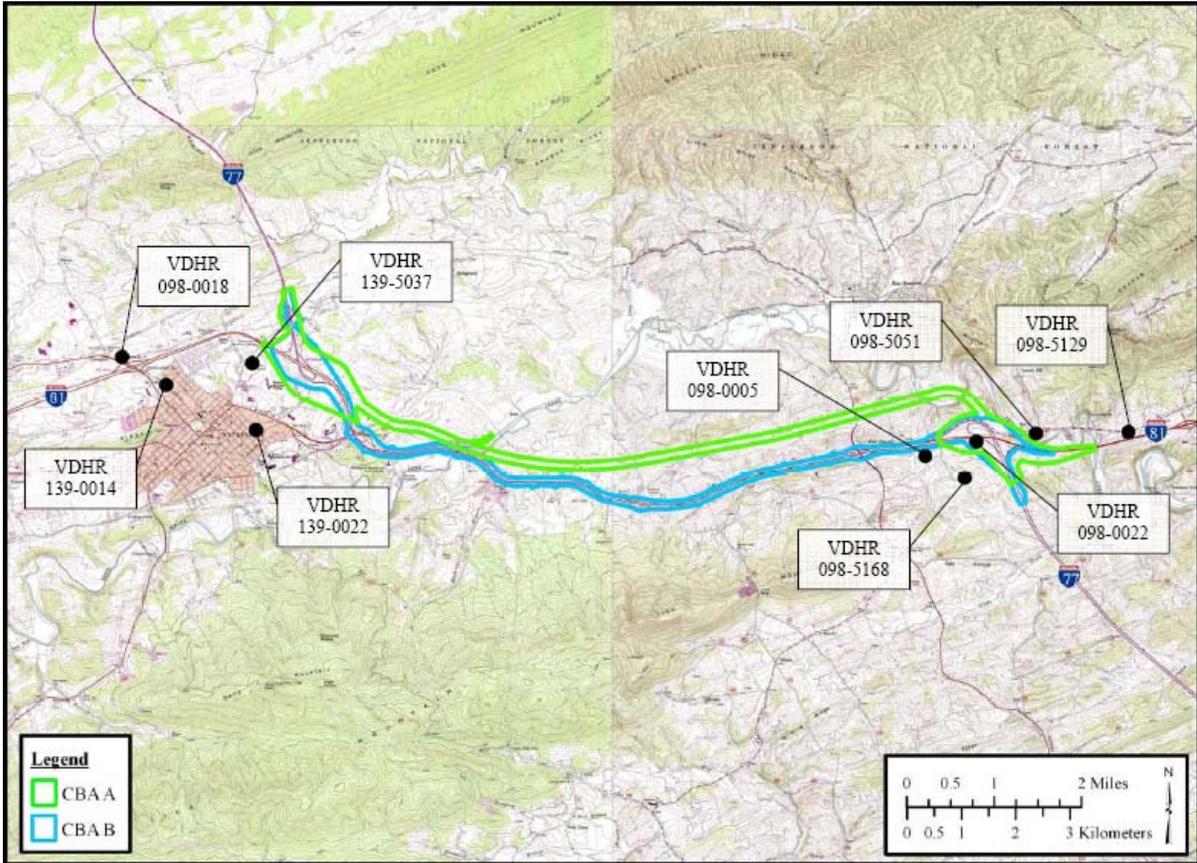


Figure 3.1 VDHR Resource Locations & Study Area

### 3.5.1 Effects on Historic Properties

Neither CBA will require right of way from Fort Chiswell Mansion, McGavock Cemetery, or the Keesling Log House. Additionally, none of these properties will be physically impacted by construction activities of either CBA.

If a build alternative is selected, and after any necessary archaeological survey is completed, a formal determination of effect on historic properties within the APE will be prepared by VDOT and coordinated with the VA SHPO. Per 36 CFR 800.16(i), “Effect” is defined as an alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP. Based on current information and preliminary consultation with the VA SHPO there is the potential for either CBA to adversely effect the McGavock Cemetery.

If necessary and in accordance with 36 CFR Part 800, a Memorandum of Agreement (MOA) will be developed to establish measures to mitigate the effects of a build alternative on historic properties.

### **3.5.2 Section 4(f) Applicability**

Neither CBA would require the use of land from any known property on or eligible for the NRHP, public parks or recreation areas, or wildlife refuges. Therefore, an evaluation pursuant to Section 4(f) of the U.S. Department of Transportation Act of 1966, as amended, is not necessary.

### **3.6 Farmland**

As required by the Federal Farmland Protection Policy Act (FPPA), 7 CFR part 658, Form CPA-106, Farmland Conversion Impact Rating for Corridor Type Projects was submitted to the Natural Resources Conservation Service's (NRCS) District Conservationist.

According to the NRCS District Conservationist, there are approximately 150,000 acres of farmable land in Wythe County, of which approximately 25% or 37,500 acres meet the definition of farmland under the FPPA. The NRCS District Conservationist confirmed that farmland as defined by the FPPA lies within the limits of each CBA. CBA A would convert approximately 88 acres of farmland to highway use, while 42 acres are estimated for CBA B. For either CBA this would amount to less than 0.10% of farmland in Wythe County and less than 0.20% of acres that meet the definition of farmland under the FPPA in the county.

Furthermore, in accordance with NRCS guidelines, the total assessment score for each CBA on Form CPA-106 was less than 160. Based on this assessment, no further consideration is required for farmland protection measures or other alternatives that might reduce farmland conversion.

### **3.7 Water Resources**

#### **3.7.1 Jurisdictional Streams and Wetlands**

The Tier 2 – I-77/I-81 Overlap study area lies within the 200+ square mile Reed Creek watershed with numerous first, second, and third order tributary streams. Reed Creek is the main stem that conveys the water eastward to the New River. Land use in the immediate study areas consists mostly of pastures with patches of forested wood lots and residential lots. Most streams within pastures occur as incised channels that are disconnected from their historic floodplains. Several channels within the I-81 right of way have been modified and re-routed using concrete V-shaped channels. No streams are listed as cold water trout streams by the Virginia Department of Game and Inland Fisheries (VDGIF).

Wetlands include “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”.<sup>7</sup> Wetlands within the study area are small groundwater seeps, wet banks of stream channels, or man-made ditches dominated by emergent vegetation. These systems are classified as

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<sup>7</sup> U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. Department of the Army, Washington, DC. 100pp with appendices.U.S.

palustrine emergent (PEM) based on classifications of waters developed by Cowardin et al.,<sup>8</sup> and provide groundwater discharge, water quality filtration, and limited stormwater retention functions. Farm ponds with open water classified as palustrine unconsolidated bottom (PUB) are also present within valleys as watering holes for livestock.

For the purpose of this assessment, the degree of stream and wetland impact associated with either candidate build alternative was estimated in conservative fashion. Specifically, any stream or wetland found within the boundaries of the alternative was considered impacted. An inventory approach is appropriate for this level of assessment as it provides a relative degree of impact between alternatives. Precise impact figures for the chosen alternative will be determined based on the U.S. Army Corps of Engineers Wetland Delineation Manual (1987) and current regulatory guidance regarding Section 404 jurisdiction once the delineation work is completed and a more detailed roadway design plan is drafted.

### 3.7.2 Stream Impacts

Stream impacts for the two alternatives are displayed in table 3.3. The construction of CBA A would result in the impact of approximately 5,130 linear feet of intermittent stream channel and 5,500 linear feet of perennial channel. A portion of the impacts would be attributable to bridges built over Reed Creek. Three bridges would be needed at meander bends of Reed Creek just north of the easternmost I-77/I-81 interchange, and another bridge would be installed at Reed Creek just east of Wytheville. Pipe culverts would be installed at all other stream crossings. Culverts would be adequately sized to accommodate flood flows in accordance with state and federal standards.

CBA B would impact approximately 3,350 linear feet of intermittent stream channel and 13,500 linear feet of perennial stream channel at 24 different locations. Of the 13,500 linear feet of perennial impacts, 6,700 linear feet of impacts would occur to existing concrete-lined channels adjacent and parallel to the interstate roadway. The existing I-81 bridge at Reed Creek just west of Wytheville would be widened, and remaining stream impacts would be from piped culverts. All culverts would be extensions of existing culverts and sized to match existing culverts.

### 3.7.3 Wetland Impacts

Wetland impacts associated with the two alternatives are displayed in table 3.4. CBA A bisects mostly pastureland where approximately 1.84 acres of emergent (PEM), along with 3.98 acres of farm ponds (PUB wetlands) may be impacted for a total of 5.82 acres.<sup>9</sup> These impact figures are reflective of mostly new interstate right of way and connecting on/off ramps.

<b>Table 3.2 Stream Impact</b>		
<b>STREAM TYPE</b>	<b>IMPACTS (Linear Feet)</b>	
	<b>CBA A</b>	<b>CBA B</b>
Intermittent	5,130	3,350
Perennial	5,500	13,500
Total	10,630	16,850

<sup>8</sup> Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. Office of Biological Services, Fish and Wildlife Service, U.S. Department of Interior. Washington, DC.

<sup>9</sup> Ibid.

The boundary for CBA B contains 1.97 acres of emergent (PEM) wetlands, 0.04 acre of emergent/scrub shrub (PSS) wetlands, and 2.30 acres of farm ponds (PUB wetlands) for a total of 4.31 acres that could potentially be impacted.<sup>10</sup> Impacts would depend on the final design of the widening project and the exact location of on/off ramps.

### 3.7.4 Stream/Wetland Compensation

Engineers and roadway designers will attempt to avoid and minimize stream and wetland impacts where feasible in compliance with applicable State and federal guidelines. For those impacts that are necessary, a mitigation plan may be provided as part of permit conditions to compensate for stream and wetland losses. The degree and amount of compensation would be determined for each surface water feature on a case-by-case basis using agency-approved assessments to quantify functional values. Once the amount of mitigation is determined, a mitigation plan would be proposed to offset project losses. A mitigation plan may include, but is not limited to the following:

- On-site opportunities to restore surface water systems where available, such as stream restoration using natural channel design;
- Off-site compensation either through a project-specific restoration plan or the purchase of mitigation credits from a local, private mitigation bank or the Virginia Aquatic Restoration Trust Fund;
- A combination of on-site and off-site restoration; or
- A project specific negotiated compensation package to offset stream and wetland losses that meets regulatory requirements

WETLAND IMPACT TYPE	IMPACTS (Acres)	
	CBA A	CBA B
Palustrine Emergent (PEM)	1.84	1.97
Palustrine Emergent/ Scrub-Shrub (PEM/PSS)	--	0.04
Palustrine Unconsolidated Bottom (PUB)	3.98	2.30
<b>Total</b>	<b>5.86</b>	<b>4.27</b>

### 3.7.5 Floodplains

Executive Order 11988: Floodplain Management requires the protection of floodplains for the purpose of preventing adverse impacts associated with the occupancy and modification of floodplains, and to ensure that work within the 100-year floodplain will not increase downstream flooding. Floodplains are regulated by the Federal Emergency Management Agency (FEMA) and administered by local floodplain management ordinances within individual localities.

CBA A contains an estimated total of 39 acres of land within the 100-year floodplain associated with Reed Creek and Muskrat Run. This alternative would require bridges that would cross the meandering channel of Reed Creek at the eastern and western ends of the project area and a box culvert at Muskrat Run. Bridge supports may be required in

<sup>10</sup> Ibid.

floodplains, but these structures are expected to be so small as to not impair floodflow storage or create downstream flood hazards.

Overall, impacts to floodplains are unavoidable, and will be mitigated through the design of bridges and culverts properly sized so as not to impede storm flows or decrease flood storage capacity.

CBA B contains an estimated 47 acres of land within the 100-year floodplain. This alternative would impact the Reed Creek floodplain at one location at the western end of the alternative, where the widening of an existing bridge would be needed. Other impacts associated with CBA B are minimal and include expansion into the floodplain associated with Muskrat Branch and other unnamed tributaries to Reed Creek, most having already been modified with concrete-line channels in association with the existing alignment. The impacts associated with existing concrete-lined channels would be mitigated by proper engineering of new channels designed to handle flood volumes per state requirements.

### **3.8 Water Quality**

#### **3.8.1 Surface Waters**

The water quality of existing surface water features in the project study area is reflective of livestock management as the dominant land use. Farmers currently provide cattle direct access to ponds and stream channels resulting in soil disturbance along stream banks, sediment and erosion, and deposition/runoff of animal waste in surface waters. The Virginia Department of Environmental Quality (DEQ) has classified sections of Reed Creek and Muskrat Branch as state impaired waters due to the presence of *Escherichia coli* bacteria resulting from livestock access to surface waters.<sup>11</sup>

The two proposed CBAs would both result in an increase in impervious surface area and stormwater runoff. Pollutants from such runoff may include grease, oils, metals, de-icing salts, and nutrients. Both CBAs may include a stormwater management plan and may contain and/or treat runoff and control flooding through a series of stormwater basins, vegetated swales, and other proven design concepts before runoff is allowed to discharge into natural systems. Such stormwater management features would reduce stormwater volumes, remove pollutants, and/or attenuate stormflow. Construction of the project would comply with applicable federal and state water quality control measures.

Immediate impacts to surface water quality related to construction would be temporary and low for both alternatives. Erosion and sediment control practices will be implemented in accordance with VDOT's Road and Bridge Specifications during construction to protect groundwater or surface water from non-point source pollutants due to stormwater runoff.

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<sup>11</sup> Virginia Department of Environmental Quality. 2008. List of Impaired (Category 5) Waters: New River Basin. Available on-line at [http://www.deq.virginia.gov/wqa/pdf/2008ir/appendices/ir08\\_AppendixA\\_Cat\\_5\\_Factsheets\\_New.pdf](http://www.deq.virginia.gov/wqa/pdf/2008ir/appendices/ir08_AppendixA_Cat_5_Factsheets_New.pdf). Accessed August 18, 2009.

### 3.8.2 Groundwater

The eastern and western limits of the study area coincide with the existing I-81/I-77 interchange and the Town of Wytheville, and are floored by Cambrian carbonaceous rocks: dolostone and limestone. The intervening corridor is largely underlain by Cambrian shale, within occasional outcroppings of Cambrian and Ordovician carbonates and Ordovician shales and mudstones.

Carbonate rocks within the valleys of the Valley and Ridge Province generally represent the most productive aquifers, yielding from 150 to 1,000 gallons per minute).<sup>12</sup> Wythe County operates four public water supply wells, located in Fort Chiswell and Max Meadows.<sup>13</sup> All of these wells lie outside the study area. Based on available GIS data, six other public water supply wells are present just south of the existing I-81/77 alignment near the center of the study area. Only one of these wells actually lies within the study area. It is located within the CBA B corridor, in the grassy median between the I-81N / I-77S off ramp at Exit 77 and Chapman Road, very near the intersection with Ready Mix Road.

Sinkholes can occur where carbonaceous rocks outcrop. Both Candidate Build Alternatives A and B occur in karst terrain with known sinkholes. CBA A encompasses 11.32 acres of sinkholes, and 9.5 acres of sinkholes can be found within CBA B corridor. The larger acreage amount attributed to CBA A is a result of a relatively large sinkhole in the vicinity of the eastern interchange where I-77 diverges to the south. Sinkholes are particularly concentrated in this area, with one particularly large occurrence (4.1 acres) mapped in the southeast quadrant of the interchange. CBA A intersects two other clusters of sinkholes that CBA B avoids altogether. The first is located near the center of the study area, where the Alternative A footprint overlies three sinkholes northeast of Kent. The second area is north and east of the US-11 interchange.

Any proposed roadway improvement would require the implementation of best management practices (BMP's) to attenuate stormflow from road surfaces and to mediate pollutant loads. Under the provisions of the Safe Drinking Water Act, the EPA regulates the discharge of stormwater runoff to "improved" sinkholes through the Underground Injection Control (UIC) Program. Any routing of stormwater to a sinkhole may require a permit from the EPA. If a build alternative is selected, the final design of the roadway will be carried out in accordance with VDOT Instructional and Information Memorandum LD-228.1, entitled Guidelines for the Discharge of Stormwater at Sinkholes.

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<sup>12</sup> U.S. Geological Survey. 1997. Ground Water Atlas of the United States: Delaware, Maryland, New Jersey, North Carolina, Pennsylvania, Virginia, West Virginia. Available online at: <http://pubs.usgs.gov/ha/ha730/gwa.html>. Accessed August 26, 2009.

<sup>13</sup> Wythe County Water Department. 2008. Annual Drinking Water Quality Report for 2007 Calendar Year: Ivanhoe / Max Meadows. Available online at: [http://www.wytheco.org/docs/entries/2008waterqualityreport\\_ivanhoe.pdf](http://www.wytheco.org/docs/entries/2008waterqualityreport_ivanhoe.pdf). Accessed August 26, 2009.

Based on a windshield survey of the proposed alignments, no springs lie within the footprint of CBA A, while two springs lie within the footprint of CBA B. These springs appear to have limited to no function as sources of drinking water, though they do help sustain emergent wetlands downgradient of where they discharge. These springs have been improved by the construction of springhouses and lie very near other manmade infrastructure, including residences.

No public wells are intersected by CBA, while one public well is intersected by CBA B and there are no sole source aquifers present within the study area. The public water supply is sustained by more than one source of water, including both ground and surface waters. Public supply wells near Fort Chiswell and Max Meadows intersect different aquifers, and the Ivanhoe Water Treatment Plant provides drinking water by treating surface water from Powder Mill Branch. No impacts are expected to drinking water supplies associated with either CBA.

### **3.9 Wildlife and Fisheries**

#### **3.9.1 Wildlife**

Wildlife habitats in this vicinity of Wythe County range between various successional stages of vegetative development depending on the intensity of land use. Most of the habitats consist of pastures or open grassland communities.

Overall, wildlife species utilizing these habitats occur in sustainable and stable numbers, such that the loss of habitat from either alternative would have very minimal impacts to wildlife population levels.

#### **3.9.2 Fisheries**

Reed Creek and perennial tributaries within the study area are aquatic habitats for a variety of fish and mollusk species. Potential impacts to aquatic habitats associated with CBA B would be fewer compared with CBA A, mainly due to a lower number of crossings of Reed Creek. Impacts to aquatic habitats would occur for both alternatives because of the need to place culverts in stream channels. CBA B is expected to have fewer culverts.

Although both alternatives would incorporate bridges at Reed Creek, the potential for impacts to fisheries habitat and water quality due to siltation and discharges of suspended solids during construction are greater with the construction of three bridges for CBA A compared to the one crossing for CBA B. For both alternatives, oversight during construction would be implemented to insure compliance with federal, state, and local permit conditions protecting water quality.

### **3.10 Threatened and Endangered Species**

Prior to any field studies, the U.S. Fish and Wildlife Service (USFWS) and the Virginia Department of Natural Heritage (DNH) were consulted regarding the potential presence of Federal and State listed plant and animal species in the immediate vicinity of the project area. A literature review of each species was performed to determine specific habitat requirements. In addition, the Virginia Department of Game and Inland Fisheries maintains a database of

documented sightings of Federal and State listed animal species throughout the state. The combination of these available agency resources were used as the basis for determining if impacts may occur to listed species resulting from either of the CBAs.

### 3.10.1 Listed Plant Species

The Virginia Department of Conservation and Recreation Division of Natural Heritage (DNH) indicated the potential presence of the smooth coneflower (*Echinacea laevigata*) and the Virginia spiraea (*Spiraea virginiana*). Each is federally endangered and stated threatened, and has specific habitat needs. An investigation into the presence of these habitats within the study area was performed.

A habitat evaluation for smooth coneflower was conducted within the corridor of each CBA. In general, the corridors lack potential habitat for smooth coneflower. Anthropogenic disturbances within the existing CBA B corridor, particularly industrial, commercial, and residential development, as well as ROW clearing and maintenance surrounding the Interstate and secondary roads, renders this area generally unsuitable for smooth coneflower. In addition, the proposed route for CBA A exists almost exclusively within agricultural fields maintained for either commodity crops (tilling and planting) or livestock pasture (mowing/hay production). This type of management regime does not emulate a natural stress-disturbance condition (e.g., fire) and is therefore not conducive to smooth coneflower colonization.

Virginia spiraea is only known from 4 counties (Wise, Dickenson, Carroll, Grayson). FWS records, as well as the Digital Atlas of the Virginia Flora, indicate that Virginia spiraea has never been documented in Wythe County. This species inhabits higher-order streams and rivers with a channel gradient sufficient to produce high flows under appropriate conditions.<sup>14</sup> Virginia spiraea is intolerant of competition from trees and aggressive colonizers, the most substantial effect of which is shading from canopy closure.<sup>15</sup> In general, Reed Creek is the only major tributary stream in the corridors of the two build alternatives that could satisfy the habitat needs. However, Reed Creek is lined by canopy trees which shade the banks; and Reed Creek is over-widened with vertical banks that do not provide sufficient substrate to develop toe structures such as point-bar formations or debris dams suitable for the species. Given the lack of habitat and the fact that no recordings of the plant exist in Wythe County, the probability of impacts to this species of plant is very low.

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<sup>14</sup> Clarkson, R. B. 1959. The West Virginia spiraea. *Castanea* 24:143-146.

U.S. Fish and Wildlife Service. 1992. Virginia spiraea (*Spiraea virginiana* Britton) recovery plan. U.S. Fish and Wildlife Service, Region 5, Newton Corner, MA. 42 pp.

Weakley, A. S. 2006. Flora of the Carolinas, Virginia, Georgia, and Surrounding Areas. Working draft of January 2006. UNC Herbarium, University of North Carolina, Chapel Hill, NC.

<sup>15</sup> U.S. Fish and Wildlife Service. 1992. Virginia spiraea (*Spiraea virginiana* Britton) recovery plan. U.S. Fish and Wildlife Service, Region 5, Newton Corner, MA. 42 pp.

### 3.10.2 Listed Animal Species

The USFWS indicates the potential presence of the federally endangered Indiana bat (*Myotis sodalists*) due to the confirmed sighting of bats in the neighboring county. The VDGIF lists no “T & E Waters” within both study corridors. A review of the habitats within both CBA corridors reveals a very low probability of impact to state-listed animal species.

Indiana bats primarily use caverns for daytime roosting but are known to occupy bridges, underpasses, buildings, ditches, culverts, tree cavities, standing snags, tunnels and shafts. No caverns occur within either CBA corridor, and no documented evidence of Indiana bats has been recorded in the study area. The potential for impacts to the species resulting from either alternative is very low.

### 3.11 Noise

The potential noise impact of the proposed alternatives has been assessed in accordance with FHWA guidelines published in Volume 7, Chapter 7, Section 2 of the Federal Aid Policy Guide (FAPG 7-7-2) and with the State Noise Abatement Policy.<sup>16</sup> Included in the FAPG 7-7-2 is the Noise Abatement Criteria (NAC), which are noise levels (measured in decibels, denoted as dBA) established to determine the degree of impact of highway traffic noise on human activity. The NAC applies to areas where regular human activity occurs.

The noise analysis performed for this study quantified design year (2035) noise levels for the No-build and each of the Candidate Build Alternatives (CBA). If, for a given activity, the design year noise levels “approach or exceed” the NAC, then the activity is impacted and a series of abatement measures must be considered. The VDOT State Noise Abatement Policy defines “approach” as 1 dBA less than the NAC. A noise impact is also deemed to occur if the design year build noise levels are substantially higher than existing levels, even though the levels may not reach the NAC. As with areas where noise levels exceed the NAC, abatement measures must be considered where design year build noise levels are substantially higher than existing levels. The State Noise Abatement Policy defines a substantial increase as 10 or more dBA. If traffic noise impacts are identified as a result of this project, then consideration of noise abatement measures are necessary. The final decision on whether or not to provide noise abatement along a project corridor will take into account the feasibility and reasonableness of proposed noise abatement.

The noise analysis performed for the No-build alternative and each CBA assessed noise levels at five noise sensitive areas representing 101 residences, three churches, 15 commercial properties, and three hotels. The projected levels of noise impacts for each of the CBAs are described below.

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<sup>16</sup> This study is in compliance with the State Noise Abatement Policy effective January 1997. In July 2011, the noise policy was revised to be in compliance with new federal regulations. The final design noise analysis for the selected build alternative will be completed in compliance with the new noise policy.

### **3.11.1 CBA A**

Of the 122 noise-sensitive properties evaluated for CBA A, 52 sites are predicted to have noise levels that approach or exceed the NAC impact criterion of 66dBA under the 2035 design year build condition. Additionally, seven sites are predicted to experience a substantial increase in noise levels (10 or more dBA increase over existing levels). Noise abatement measures appear to be feasible but not reasonable at nine properties and would not be considered further unless third party funding becomes available. Additional analysis of potential barriers at these locations would occur in the final design phase of the project.

### **3.11.2 CBA B**

For CBA B, 41 sites are predicted to have noise levels that approach or exceed the NAC impact criterion of 66dBA under the 2035 design year build condition. Additionally, one site is predicted to experience a substantial increase in noise levels (10 or more dBA increase over existing levels). Noise abatement measures appear to be feasible but not reasonable at 20 properties and would not be considered further unless third party funding becomes available. Additional analysis of potential barriers at these locations would occur in the final design phase of the project.

## **3.12 Construction**

During construction, temporary environmental impacts usually can be controlled, minimized, or mitigated through careful attention to prudent construction practices and methods. Potential temporary construction impacts and preventive practices are summarized below.

### **3.12.1 Water Quality**

During construction, there is the potential for non-point source pollutants to enter the groundwater or surface water from stormwater runoff. To minimize these impacts, appropriate erosion and sediment control practices will be implemented in accordance with VDOT's Road and Bridge Specifications. In the event of accidental spills, the contractor is required to immediately notify all appropriate local, state, and federal agencies and to take immediate action to contain and remove the contaminant.

### **3.12.2 Air**

Emissions may be produced in the construction of this project from heavy equipment and vehicle travel to and from the site, as well as from fugitive sources. Construction emissions are short term or temporary in nature. In order to mitigate these emissions, all construction activities are to be performed in accordance with VDOT's Road and Bridge Specifications. Additionally, the following DEQ air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-50-60 et seq., Fugitive Dust precautions; and 9 VAC 5-40-5600 et seq., Open Burning precautions.

### **3.12.3 Noise**

Construction activity may cause intermittent fluctuations in noise levels. During the construction phase of the project, all reasonable measures will be taken to minimize noise impact from these activities.

### 3.12.4 Hazardous Materials

Hazardous material assessments were conducted for both CBAs. The assessments consisted of a database search, supplemented by field reconnaissance. The assessments identified several hazardous materials sites and several potential hazardous materials sites within each CBA corridor. In general, the area within CBA B corridor is heavily developed with multiple truck stop facilities, convenience store/gas stations, truck/automotive service centers, restaurants, retail stores, etc. Scattered residential dwellings are also located within this corridor. The CBA A corridor is relatively undeveloped farmland/pastureland with scattered residential dwellings and commercial development. Two truck stop facilities were observed at the eastern end of the CBA A corridor at Exit 84.

Additional evaluation of identified hazardous materials sites may be required as highway construction plans are developed. These additional evaluations would be utilized to develop mitigation measures that could be incorporated into construction plan design during the highway construction phase of the project to minimize or eliminate hazardous materials impacts. If a known or potential hazardous materials site may impact the selected alignment, additional hazardous materials evaluations may include detailed information about the site, environmental impact, public health concerns and proposed mitigation measures.

### 3.12.5 Indirect Effects

Indirect effects are those that are caused by a proposed action but occur later in time or farther in distance, but are still considered reasonably foreseeable.<sup>17</sup> Indirect effects typically include impacts to human and natural systems from changes in land use patterns that are induced by the proposed action.

The No-Build would generally maintain existing conditions on I-77/I-81 Overlap. Therefore, indirect effects are not expected to occur.

CBA A is on new location just north of the existing alignment. Except for where CBA A ties into the existing alignment at interchanges 72 and 81 (these areas are currently made up of mixed land uses), the land is largely agricultural. This land is accessible through the current roadway network and is subject to development even in the absence of the construction of CBA A. For example, the Town of Wytheville's future land use plan shows expansion of residential, business, and industrial development in the area surrounding interchange 72. Still, the potential does exist that access into these currently undeveloped lands could be enhanced with the construction of CBA A. In this sense, the proposed project could provide additional opportunities for property owners to develop their lands, especially in the area surrounding Progress Park (Industrial Park). However, it cannot be said that the construction of CBA A by itself would be the direct cause of such development because other factors, such as economic conditions, land availability and prices, play a larger role in development decisions. Even so, the potential for induced development would be countered by the Town and County Comprehensive plans which seek to protect the environment and preserve the

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<sup>17</sup> 40 CFR Section 1508.8(b)

areas rural characteristics through balanced growth with more efficient land use through existing ordinances and the development of a land use management plan.

CBA B would add an additional travel lane in each direction to the existing facility. Potential indirect impacts to land use would be limited because this CBA would not be creating a new transportation facility on a new location, but would be implementing improvements to an existing facility. Additionally, the majority of land directly adjacent to the existing corridor is mixed use with large portions already developed.

In summary, either CBA would serve, but would not directly cause, development on adjoining lands.

### **3.12.6 Cumulative Effects**

Cumulative impacts are defined 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 regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time”.<sup>18</sup>

The assessment of cumulative effects requires an assessment of the impact that past and present actions have had on the environmental resources in the project study area that will also be impacted by the project. The current affected environment as described previously in this section is a reflection of the impacts of those past and present actions over time.

Additionally, a review of cumulative effects requires an assessment of how reasonably foreseeable future actions may affect the same environmental resources that would be affected by the project. Table 3.2 summarizes the key environmental resources in the project study area that would be impacted by the project, the incremental impact expected from the proposed project, identification of other potential reasonably foreseeable future actions, and the potential impact that may occur from these actions.

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<sup>18</sup> 40 CFR Section 1508.7

<b>Table 3.4 Cumulative Effects Matrix</b>			
<b>Environmental Resources in Study area</b>	<b>Impacts from Proposed Project</b>	<b>Potential Future Action</b>	<b>Potential Impact on Resources from Potential Future Actions</b>
Economics	Improved highway service results in positive economic effects caused by increased employment and tax revenues.	Build-out of residential and commercial development in accordance with Wythe County’s Comprehensive Plan.  Meeting the goals of the Joint Industrial Development Authority of Wythe County, Wytheville, and Rural Retreat - Strategic Planning report that calls for:	Positive economic effects from increases in employment, tax revenues, tourism spending.
Wetland & Water Quality	Minor impacts to wetlands and streams; potential temporary water quality impacts.	Continued development and expansion of 1200 acre Progress Park Construction of a connector road from the interstate to Progress Park Development of a Wytheville Business Park	Diminishment of water quality as a result of increased impervious surfaces from roads and development.
Historic Properties		Continued development of the workforce by expanding local companies while recruiting new companies	

## 4. COORDINATION

### 4.1 Agency & Organization Coordination

In the process of preparing this document, the organizations listed below were consulted to obtain relevant information and to identify key issues regarding potential environmental impacts, which were then incorporated into this Environmental Assessment (EA). Additionally, VDOT held an Agency Scoping meeting on December 18, 2008 inviting these organizations to attend and provide comments on the alternatives, issues, and potential impacts identified at that point.

- U.S. Department of Interior,
  - Soil and Water Conservation Division
- Fish and Wildlife Service
- National Park Service
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Department of Housing and Urban Development
- U.S. Department of Agriculture,
  - District Conservationist
- U.S. Forest Service
- Virginia Department of Agriculture and Consumer Services
- Virginia Department of Rail and Public Transportation
- Virginia Department of Mines, Minerals, and Energy
- Virginia Department of Health
- Virginia Cooperative Extension
- Virginia Department of Game and Inland Fisheries
- Virginia Museum of Natural History
- Big Walker Soil and Water Conservation District
- Virginia Department of Environmental Quality,
  - Air Division
  - Water Division
  - Waste Division
- Virginia Department of Forestry
- Virginia Department of Conservation and Recreation,
  - Natural Heritage Division
- Virginia Department of Historic Resources
- Virginia Marine Resource Commission
- Virginia Outdoors Foundation
- Wythe County,
  - County Administrator
  - Public Schools
  - Water Department
  - Planning Director
- Mount Rogers Planning District Commission
- Town of Wytheville,
  - Town Manager
  - Public Works
  - Parks, Recreation and Tourism
  - Redevelopment and Housing Authority
  - Director of Planning
- Joint Industrial Developmental Authority of Wythe County
- Section 106 Consulting Parties:
  - Mr. & Mrs. Lancaster, Locust Hill
  - Mr. Disibbio, Fort Chiswell Mansion
  - Mr. Mabe, Fort Chiswell mansion
  - Representative, St. John's Church
  - Ms. Mahala, McGavock Cemetery



- Mr. & Mrs. Fink, Keeslin  
Log House
- Fort Chiswell Mansion,  
Ingleside, Wytheville

Knitting Mill, Sanders  
Farm, Huffard House

#### **4.2 Public Involvement**

VDOT held a Scoping/Citizen Information meeting on December 4, 2008. The purpose of this meeting was to provide preliminary information and seek public input on the scope of issues to be addressed in the study.

At a future date VDOT will hold a location public hearing for this project. The purpose of this hearing will be to present the project and the findings of this EA, to provide a discussion forum between the public and VDOT, and to obtain input and comments from the public. The EA will be made available for review and comment for a minimum of 30 days. Any comments received during the public hearing and public comment period will become part of the public hearing record and any substantive comments will be addressed in a revised EA.