Wise, Dickenson, and Buchanan Counties, Virginia

final environmental impact statement

Breaks Interstate Park

September 2001
COALFIELDS EXPRESSWAY
FINAL ENVIRONMENTAL IMPACT STATEMENT
Buchanan, Dickenson, and Wise Counties, Virginia

U.S. Department of Transportation-Federal Highway Administration
and
Virginia Department of Transportation

Submitted Pursuant to:
42 U.S.C. 4332(2)(c); 23 U.S.C. 128(a);
16 U.S.C. 470(f);

Cooperating Agencies
US Army Corp of Engineers-Norfolk District, US Environmental Protection Agency-Region III,
US Fish and Wildlife Service

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Date of Approval

9/12/01
Date of Approval

The following persons may be contacted for additional information concerning this document.

Mr. Earl T. Robb
Environmental Administrator
Virginia Department of Transportation
1201 East Broad Street
Richmond, Virginia 23219
(804) 786-4559

Mr. Roberto Fonseca-Martinez
FHWA Division Administrator
Room 750
400 North 8th Street
Richmond, Virginia 23240
(804) 775-3320

The Coalfields Expressway Location Study evaluates potential highway corridors from Pound, Virginia to the West Virginia state line near Paynesville, Virginia. The project study area is located in Buchanan, Dickenson, and Wise Counties. As proposed, the Coalfields Expressway would be a four-lane, median divided, limited access highway on mostly new location. The project would address the transportation and economic needs of the study area. This Final Environmental Impact Statement evaluates seven Build Alternatives and the No-Build Alternative. For each alternative, engineering, economic, social, cultural, and environmental impacts are considered.

Comments on this FEIS must be received by Mr. Earl Robb, Environmental Administrator, Virginia Department of Transportation, 1201 East Broad Street, Richmond, Virginia 23219 by 11/5/01.
# TABLE OF CONTENTS

LIST OF EXHIBITS  
LIST OF TABLES  
LIST OF ABBREVIATIONS  
GLOSSARY OF COMMONLY USED TERMS

EXECUTIVE SUMMARY .................................................................................................................. 1
  S-1  PROJECT DESCRIPTION ........................................................................................................ 1
  S-2  PURPOSE AND NEED ........................................................................................................... 1
  S-3  OTHER MAJOR ACTIONS .................................................................................................... 2
    S-3.1  Levisa Fork Basin/Haysi Dam Project ............................................................................. 2
    S-3.2  Grundy Flood Damage Reduction/Highway Upgrade Project ....................................... 2
    S-3.3  The Coalfields Expressways in West Virginia ................................................................. 3
    S-3.4  US Route 460 Connector ............................................................................................... 3
  S-4  ALTERNATIVES .................................................................................................................. 4
  S-5  SUMMARY OF BENEFICIAL AND ADVERSE IMPACTS ................................................ 6
  S-6  OTHER FEDERAL ACTIONS AND PERMITS REQUIRED .................................................. 8

1. PURPOSE OF AND NEED FOR ACTION ................................................................................. 1-1
  1.1  PROJECT HISTORY AND STATUS ...................................................................................... 1-1
  1.2  LEGISLATIVE PURPOSE AND NEED .................................................................................. 1-2
  1.3  TRANSPORTATION PURPOSE AND NEED ...................................................................... 1-3
    1.3.1  System Linkage and Intermodal Connection ................................................................. 1-3
    1.3.2  Roadway Deficiencies and Corridor Mobility ............................................................... 1-3
    1.3.3  Safety .......................................................................................................................... 1-5
    1.3.4  Capacity ....................................................................................................................... 1-7
  1.4  ECONOMIC DEVELOPMENT NEED .................................................................................... 1-9
    1.4.1  Replacement of Coal Mining Employment ................................................................. 1-9
    1.4.2  Industry Recruitment and Economic Diversification ................................................... 1-11

2. ALTERNATIVES ......................................................................................................................... 2-1
  2.1  OVERVIEW OF ALTERNATIVES SELECTION PROCESS ............................................... 2-1
  2.2  STEP I—PRELIMINARY ALTERNATIVES SELECTION .................................................... 2-1
    2.2.1  Alternatives Eliminated ............................................................................................... 2-2
    2.2.2  Alternatives Retained .................................................................................................. 2-6
  2.3  STEP II—INTERMEDIATE ALTERNATIVES SELECTION ............................................... 2-7
    2.3.1  Establish Design Criteria and Typical Sections .......................................................... 2-7
    2.3.2  Develop Evaluation Criteria ....................................................................................... 2-8
2.3.3 Develop Trial Segments.............................................................................. 2-10
2.3.4 Evaluate Trial Segments.............................................................................. 2-10
2.3.5 Evaluate Concept Segments......................................................................... 2-10
2.4 SUMMARY OF ALIGNMENT SHIFTS .............................................................. 2-12
2.5 DESCRIPTIONS OF BUILD ALTERNATIVES ................................................. 2-13
  2.5.1 Alternative A............................................................................................ 2-14
  2.5.2 Alternative B............................................................................................ 2-15
  2.5.3 Alternative C............................................................................................ 2-16
  2.5.4 Alternative D............................................................................................ 2-16
  2.5.5 Alternative E............................................................................................ 2-17
  2.5.6 CTB Approved Alternative F1 .................................................................... 2-18
  2.5.7 Alternative F2............................................................................................ 2-20

3. AFFECTED ENVIRONMENT ............................................................................. 3-1
  3.1 PHYSIOGRAPHY AND GEOLOGY ................................................................. 3-1
    3.1.1 Physiography.......................................................................................... 3-1
    3.1.2 Geology.................................................................................................. 3-1
    3.1.3 Soils........................................................................................................ 3-2
  3.2 SOCIAL ENVIRONMENT .............................................................................. 3-3
    3.2.1 Land Use.................................................................................................. 3-3
    3.2.2 Demographics......................................................................................... 3-5
    3.2.3 Communities......................................................................................... 3-7
    3.2.4 Community Facilities............................................................................ 3-7
    3.2.5 Public Utilities....................................................................................... 3-10
    3.2.6 Transportation Facilities......................................................................... 3-11
  3.3 CULTURAL RESOURCES ........................................................................... 3-12
    3.3.1 Archaeological Sites............................................................................... 3-12
    3.3.2 Architectural Resources........................................................................ 3-13
  3.4 ECONOMIC ENVIRONMENT ..................................................................... 3-14
    3.4.1 Structure.................................................................................................. 3-14
    3.4.2 Unemployment....................................................................................... 3-15
    3.4.3 Personal Income.................................................................................... 3-15
  3.5 PHYSICAL ENVIRONMENT ........................................................................ 3-16
    3.5.1 Air Quality.............................................................................................. 3-16
    3.5.2 Noise........................................................................................................ 3-17
    3.5.3 Hazardous Materials............................................................................. 3-18
    3.5.4 Visual Quality.......................................................................................... 3-18
  3.6 WILDLIFE AND VEGETATION .................................................................. 3-19
    3.6.1 Natural Communities............................................................................ 3-19
    3.6.2 Terrestrial Wildlife............................................................................... 3-20
  3.7 AQUATIC RESOURCES .............................................................................. 3-21
    3.7.1 Water Resources And Water Quality...................................................... 3-21
4.12.2 Impacts ........................................................................................................... 4-42
4.13 AQUATIC RESOURCES .................................................................................... 4-45
  4.13.1 Potential Water Quality Impacts ................................................................. 4-45
  4.13.2 Impact Avoidance And Minimization ....................................................... 4-46
  4.13.3 Floodplain Impacts ................................................................................... 4-47
  4.13.4 Wild and Scenic Rivers Impacts ................................................................. 4-50
4.14 WETLAND IMPACTS ....................................................................................... 4-51
  4.14.1 Wetland Determination Methods ............................................................... 4-51
  4.14.2 Impact Avoidance and Minimization ....................................................... 4-52
  4.14.3 Impacts ........................................................................................................ 4-52
  4.14.4 Compensation ........................................................................................... 4-52
4.15 WATERS OF THE US IMPACTS .................................................................... 4-54
  4.15.1 Methods ...................................................................................................... 4-54
  4.15.2 Impacts ........................................................................................................ 4-56
  4.15.3 Compensation ........................................................................................... 4-56
4.16 PROTECTED SPECIES IMPACTS .................................................................. 4-59
  4.16.1 Methods ...................................................................................................... 4-59
  4.16.2 Impact Avoidance And Minimization ....................................................... 4-61
  4.16.3 Impacts ........................................................................................................ 4-62
4.17 CONSTRUCTION IMPACTS ........................................................................... 4-62
  4.17.1 Air Quality Impacts .................................................................................... 4-62
  4.17.2 Noise Impacts ............................................................................................. 4-63
  4.17.3 Water Quality Impacts ............................................................................... 4-63
  4.17.4 Earthwork .................................................................................................. 4-64
  4.17.5 Traffic Maintenance and Control ............................................................... 4-64
  4.17.7 Health and Safety ...................................................................................... 4-65
4.18 RELATIONSHIP BETWEEN SHORT-TERM USES OF HUMAN ENVIRONMENT AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY .............................................. 4-65
4.19 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES 4-66
4.20 SECONDARY AND CUMULATIVE IMPACTS ................................................ 4-66
  4.20.1 Methods ...................................................................................................... 4-67
  4.20.2 Impacts ........................................................................................................ 4-73

5. LIST OF PREPARERS ............................................................................................. 5-1
6. LIST OF DEIS RECIPIENTS ................................................................................. 6-1
7. COMMENTS AND COORDINATION ................................................................... 7-1
  7.1 FEDERAL, STATE, AND LOCAL AGENCY COORDINATION ................................. 7-1
    7.1.1 Scoping Activities ..................................................................................... 7-1
    7.1.2 Agency Comments .................................................................................... 7-3
    7.1.3 DEIS Comments and Responses ............................................................... 7-5
    7.1.4 West Virginia Coordination .................................................................... 7-20
APPENDICES

APPENDIX A: CORRESPONDENCE

The following appendices are bound in separate volumes:

APPENDIX B: NATURAL RESOURCES TECHNICAL REPORT
APPENDIX C: NOISE STUDY
APPENDIX D: AIR QUALITY ANALYSIS
APPENDIX E: POTENTIAL CONTAMINATION SITES SURVEY
APPENDIX F: BIOLOGICAL ASSESSMENT
LIST OF EXHIBITS

Exhibit S.1: Project Vicinity
Exhibit S.2: Build Alternatives

Exhibit 1.1: Project Vicinity
Exhibit 1.2: Regional System Linkage
Exhibit 1.3: High Accident Sections
Exhibit 1.4: Level of Service
Exhibit 1.5: Average Weekday Traffic (August 1997)
Exhibit 1.6: Percent Trucks
Exhibit 1.7: 2020 No Build Daily Traffic Projections

Exhibit 2.1: Alternatives Selection Process
Exhibit 2.2: Typical Sections
Exhibit 2.3: Concept and Trial Segments
Exhibit 2.4: Build Alternatives

Exhibit 3.1: Future Land Use
Exhibit 3.2: Community Facilities and Services
Exhibit 3.3: Watersheds
Exhibit 3.4: Impaired Stream Segments
Exhibit 3.5: Potential Wild and Scenic Rivers

Exhibit 4.1: Segment Locations
Exhibit 4.2: U.S. Census Block Groups
Exhibit 4.3: Cultural Resources
Exhibit 4.4: Air Quality Analysis Sites
Exhibit 4.5: Ambient Noise Measurement Sites
Exhibit 4.6: Noise Receptor Sites and Impact Location
Exhibit 4.7: Impacted Location 623
Exhibit 4.8: Impacted Location 927 and Barrier 1
Exhibit 4.9: Potential Hazardous Materials Site
Exhibit 4.10: FEMA Floodplain Impact Locations
Exhibit 4.11: Wetland and Wetland Impact Locations
Exhibit 4.12: Virginia Spiraea Survey Locations
Exhibit 4.13: Small Whorled Pogonia Survey Locations
Exhibit 4.14: Potential Industrial Development Areas
LIST OF TABLES

Table S.1: Build Alternatives........................................................................................................... 6
Table S.2: Impact Summary Matrix.................................................................................................. 7

Table 1.1: Route 83: High Accident Sections .............................................................................. 1-6
Table 1.2: Distances and Travel Times from Major Cities to Haysi, Virginia................................. 1-12

Table 2.1: Purpose and Need Analysis.......................................................................................... 2-2
Table 2.2: Proposed Design Criteria for Coalfields Expressway .................................................. 2-8
Table 2.3: Preliminary Evaluation Criteria .................................................................................... 2-9
Table 2.4: Concept Segments Eliminated ...................................................................................... 2-11

Table 3.1: Population Data, Estimates, and Projections ............................................................... 3-5
Table 3.2: Median Household Income (1989 & 1995) .................................................................. 3-5
Table 3.3: 1990 Population Count by Race .................................................................................... 3-6
Table 3.4: 1989 Poverty Status by County .................................................................................... 3-6
Table 3.5: Communities .................................................................................................................. 3-7
Table 3.6: Employment by Industry ............................................................................................... 3-13
Table 3.7: Per-Capita Income ........................................................................................................ 3-15
Table 3.8: Watersheds ..................................................................................................................... 3-21
Table 3.9: Impaired Streams .......................................................................................................... 3-23
Table 3.10: Federal and State Status of Species Identified through Agency Coordination (by County) ........................................................................................................... 3-31

Table 4.1: Farmland Impacts ........................................................................................................ 4-4
Table 4.2: Nonprofit Facility Impacts ............................................................................................. 4-6
Table 4.3: Corridor Mobility (in Minutes) ....................................................................................... 4-8
Table 4.4: Persons by Minority Group and Poverty Level Status (1990) ..................................... 4-11
Table 4.5: Families Displaced by Alternative .................................................................................. 4-18
Table 4.6: Potential Business Displacements ............................................................................... 4-19
Table 4.7: Potential Employment Increases from Phased Project Construction .......................... 4-21
Table 4.8: Summary of the Potential for Archeological Sites by Alternative ............................... 4-24
Table 4.9: Eligible Architectural Resources .................................................................................... 4-27
Table 4.10: Air Quality Analysis Sites ............................................................................................ 4-29
Table 4.11: Estimated Worst Case CO Concentrations
(1 Hour / 8 Hour in ppm) .............................................................................................................. 4-30
Table 4.12: FHWA Noise Abatement Criteria ............................................................................... 4-31
Table 4.13: Ambient Noise Measurements: Existing Leq's ............................................................ 4-33
Table 4.14: Impact Summary ......................................................................................................... 4-35
Table 4.15: Potential Contamination Sites ...................................................................................... 4-39
Table 4.16: Forest Impacts ............................................................................................................. 4-44
Table 4.17: Wildlife Habitat Impacts by Alternative ..................................................................... 4-45
Table 4.18: FEMA Floodplain Impacts ................................................. 4-49
Table 4.19: Wetland Impacts by Alternative ........................................ 4-53
Table 4.20: Created Wetland Compensation Estimates by Alternative – Hectares ...... 4-55
Table 4.21: Created Wetland Compensation by Alternative – Acres .................... 4-55
Table 4.22: Waters of the US Impacts by Alternative .................................. 4-57
Table 4.23: Estimated Earthwork Volumes ................................................. 4-64
Table 4.24: County Representatives .......................................................... 4-68
Table 4.25: Industrial Growth Areas ......................................................... 4-70
Table 4.26: Estimated Resource Impacts from Projected Industrial Development ...... 4-75

Table 7.1: Coordination Comments .................................................................. 7-3
List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>AASHTO</td>
<td>American Association of State Highway Transportation Officials</td>
</tr>
<tr>
<td>ADHS</td>
<td>Appalachian Development Highway System</td>
</tr>
<tr>
<td>ADT</td>
<td>Average Daily Traffic</td>
</tr>
<tr>
<td>ARC</td>
<td>Appalachian Regional Commission</td>
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<tr>
<td>BMP</td>
<td>Best Management Practice</td>
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<tr>
<td>CEQ</td>
<td>President's Council on Environmental Quality</td>
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<tr>
<td>CERCLIS</td>
<td>Comprehensive Environmental Response Compensation and Liability Information System</td>
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<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
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<tr>
<td>CO</td>
<td>Carbon Monoxide</td>
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<tr>
<td>COE</td>
<td>U.S. Army Corps of Engineers</td>
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<tr>
<td>CWA</td>
<td>Clean Water Act</td>
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<tr>
<td>DACS</td>
<td>Virginia Department of Agriculture and Consumer Services</td>
</tr>
<tr>
<td>dBA</td>
<td>Decibels on the A-weighted scale</td>
</tr>
<tr>
<td>DCR</td>
<td>Virginia Department of Conservation and Recreation</td>
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<tr>
<td>DEIS</td>
<td>Draft Environmental Impact Statement</td>
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<tr>
<td>DEQ</td>
<td>Virginia Department of Environmental Quality</td>
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<tr>
<td>DGIF</td>
<td>Virginia Department of Game and Inland Fisheries</td>
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<tr>
<td>DHR</td>
<td>Virginia Department of Historic Resources</td>
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<tr>
<td>DMME</td>
<td>Virginia Department of Mines, Minerals and Energy</td>
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<tr>
<td>DTM</td>
<td>Digital Terrain Model</td>
</tr>
<tr>
<td>EIS</td>
<td>Environmental Impact Statement</td>
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<tr>
<td>EPA</td>
<td>United States Environmental Protection Agency</td>
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<tr>
<td>ERA</td>
<td>Economic Research Associates</td>
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<tr>
<td>ERNS</td>
<td>Emergency Response Notification System</td>
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<td>ESA</td>
<td>Endangered Species Act</td>
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<td>FAPG</td>
<td>Federal Aid Policy Guide</td>
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<td>FEIS</td>
<td>Final Environmental Impact Statement</td>
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Coalfields Expressway
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<th>Abbreviation</th>
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<tbody>
<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
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<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
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<tr>
<td>FIRM</td>
<td>Flood Insurance Rate Map</td>
</tr>
<tr>
<td>FTA</td>
<td>Federal Transit Authority</td>
</tr>
<tr>
<td>FWS</td>
<td>Fish and Wildlife Service</td>
</tr>
<tr>
<td>ISTEA</td>
<td>Intermodal Surface Transportation Efficiency Act</td>
</tr>
<tr>
<td>KPH</td>
<td>Kilometers Per Hour</td>
</tr>
<tr>
<td>LK</td>
<td>Linear Kilometers</td>
</tr>
<tr>
<td>LM</td>
<td>Linear Miles</td>
</tr>
<tr>
<td>LOS</td>
<td>Level of Service</td>
</tr>
<tr>
<td>LUST</td>
<td>Leaking Underground Storage Tanks</td>
</tr>
<tr>
<td>MET</td>
<td>Mountain Empire Transit</td>
</tr>
<tr>
<td>MGD</td>
<td>Millions Gallons per Day</td>
</tr>
<tr>
<td>MPH</td>
<td>Miles Per Hour</td>
</tr>
<tr>
<td>MSL</td>
<td>Mean Sea Level</td>
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<tr>
<td>NAAQS</td>
<td>National Ambient Air Quality Standards</td>
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<tr>
<td>NAC</td>
<td>Noise Abatement Criteria</td>
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<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
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<tr>
<td>NPL</td>
<td>National Priorities List</td>
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<td>NRCS</td>
<td>National Resource Conservation Service</td>
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<td>NRI</td>
<td>Nationwide River Inventory</td>
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<tr>
<td>NWI</td>
<td>National Wetland Inventory</td>
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<tr>
<td>O₃</td>
<td>Ozone</td>
</tr>
<tr>
<td>PEM</td>
<td>Palustrine Emergent (wetlands)</td>
</tr>
<tr>
<td>PFO</td>
<td>Palustrine Forested (wetlands)</td>
</tr>
<tr>
<td>PPM</td>
<td>Parts Per Million</td>
</tr>
<tr>
<td>PREP</td>
<td>Pollution Complaints</td>
</tr>
<tr>
<td>PSA</td>
<td>Public Service Authority</td>
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<tr>
<td>PUB</td>
<td>Palustrine Unconsolidated Bottom (wetlands)</td>
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*Coalfields Expressway*
<table>
<thead>
<tr>
<th>Abbr</th>
<th>Description</th>
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<tbody>
<tr>
<td>RCRIS</td>
<td>Resources Conservation and Recovery Information System</td>
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<tr>
<td>SHPO</td>
<td>State Historic Preservation Officer</td>
</tr>
<tr>
<td>TEA 21</td>
<td>Transportation Efficiency Act for the Twenty First Century</td>
</tr>
<tr>
<td>TNM</td>
<td>Traffic Noise Model</td>
</tr>
<tr>
<td>TSM</td>
<td>Transportation System Management</td>
</tr>
<tr>
<td>TVA</td>
<td>Tennessee Valley Authority</td>
</tr>
<tr>
<td>USDOT</td>
<td>United States Department of Transportation</td>
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<tr>
<td>USGS</td>
<td>United States Geological Survey</td>
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<tr>
<td>UST</td>
<td>Underground Storage Tanks</td>
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<tr>
<td>VCEDA</td>
<td>Virginia Coalfields Economic Development Authority</td>
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<td>VDOT</td>
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</tr>
<tr>
<td>VEC</td>
<td>Virginia Employment Commission</td>
</tr>
<tr>
<td>VRP</td>
<td>Virginia Voluntary Remediation Program</td>
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<tr>
<td>WVDOT</td>
<td>West Virginia Department of Transportation</td>
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Glossary of Commonly Used Terms

**Alternative:** General term that refers to possible approaches to meeting the transportation deficiencies identified in the purpose and need statement.

**Attainment:** Status of the various pollutants described in the National Ambient Air Quality Standards.

**Benthic:** Located on the bottom of a body of water or in the bottom sediments, or pertaining to bottom-dwelling organisms.

**Carbon Monoxide (CO):** A colorless, odorless, poisonous gas that is formed as a product of the incomplete combustion of carbon and is emitted directly by automobiles and trucks.

**Community Cohesion:** The connections between and within communities that are essential for serving the needs of the residents.

**Cumulative Impact:** An impact on the environment which results from the incremental impact of the action when added to past, present and reasonable foreseeable future actions.

**Environmental Justice:** Presidential Executive Order 12898 requires federal agencies to insure their actions (or actions they oversee) do not disproportionately (impact) discriminate against minority populations and low-income populations.

**Floodplain:** The portion of a river or stream valley, adjacent to the channel, which is covered with water when the river or stream overflows its banks at flood stage.

**Floodway:** A large-capacity channel constructed to divert floodwaters safely through or around population areas.

**Hibernacula:** Sheltered places (habitat niches) where overwintering animals rest, or a den where snakes hibernate.

**Level of Service (LOS):** Operating conditions within a stream of traffic describing safety, traffic interruptions, speed, freedom to maneuver, comfort and convenience. Six levels of service are defined, designated A through F, with A representing the best conditions and F the worst.
Low-income Population: A population whose household income is below the Department of Health and Human Services poverty guidelines.

Non-attainment: A condition where a pollutant exceeds the National Ambient Air Quality Standards for two or more times during a year.

Ozone: Unstable blue gas with a pungent odor formed principally in secondary reactions involving volatile organic compounds, nitrogen oxides, and sunlight.

Palustrine Emergent Wetland: Wetlands which are characterized by erect, herbaceous vegetation present for most of the growing season (i.e. marshes, wet meadows, fens, sloughs, or potholes).

Palustrine Forested Wetland: Wetlands which are characterized by woody vegetation over 6 meters (20 feet) in height (i.e. swamps or bottomlands).

Palustrine Unconsolidated Bottom: Wetlands which include all wetland and deepwater habitats with at least 25% cover of particles smaller than stones, and less than 30% vegetative cover creating a lack of large stable surfaces for plant and animal attachment.

Physiographic Province: A region which is generally consistent in geologic structure climate and which has had a unified geomorphic history.

Riparian: Pertaining to anything connected with or immediately adjacent to the banks of a stream.

Secondary Impact: An impact on the environment resulting from the primary impact of the action.

Viewshed: All land seen from one static point.

Watershed: A specific geographic area drained by a major stream or river.

Wetland: Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.
SUMMARY
EXECUTIVE SUMMARY

S-1 PROJECT DESCRIPTION

The Virginia Department of Transportation (VDOT), in conjunction with the Federal Highway Administration (FHWA), is proposing to construct the Coalfields Expressway from Route 23 near Pound, Virginia to the West Virginia State line east of Slate, Virginia. The proposed highway would connect with West Virginia’s portion of the Coalfields Expressway, which would extend from the Virginia State line east to Beckley, West Virginia. The study area is approximately 96 kilometers (60 miles) in length and up to 16 kilometers (10 miles) wide (see Exhibit S-1).

The Coalfields Expressway would be designed as a four-lane, limited access facility. This facility would greatly improve access into and through Buchanan, Dickenson and Wise Counties, an area of Southwest Virginia historically known for its coal mining.

S-2 PURPOSE AND NEED

Through various actions, the U.S. Congress and the Virginia General Assembly have created a legislative purpose and need for the development of the project. In 1995, Congress designated the Coalfields Expressway in Virginia as a Congressional High Priority Corridor and included it in the National Highway System. The 1999 Virginia General Assembly passed three resolutions supporting the project. Also, local governing bodies overwhelmingly support the Expressway.

The project also has transportation-related purposes and needs. The study area does not currently have a four-lane divided highway. US Route 83, the study area’s only major east-west roadway, is a predominately two-lane rural facility. Steep slopes, geometric constraints, and heavy truck traffic characterize this roadway. Traffic studies indicate that several sections of Route 83 and Route 460 are approaching capacity and that corridor-wide accident, injury, and fatality rates on Route 83 were slightly above the state average. Also, conditions caused by existing development and land use patterns interrupt traffic flow and reduce corridor mobility. To address these problems, the project’s transportation purposes include improving system linkage, intermodal connection, roadway deficiencies, corridor mobility, safety, and capacity.
By providing these transportation improvements, the project would greatly improve the ability of local economic development officials to attract new industry and tourism. These officials cite the lack of safe and efficient access to the region's highway network as a major impediment to their recruitment efforts. This issue has tremendous importance due to an ongoing economic decline in the area, caused mainly by employment reductions in the coal mining industry. Despite this industry's job cutbacks due to increased mechanization and production decreases, it remains the region's largest employer. However, a recently completed study estimates that all of Virginia's coal reserves worth mining will be depleted by 2026, and that efforts to find more coal in central Appalachia will probably prove unsuccessful. The projected demise of Virginia's coal industry could be further hastened by increased competition from the western United States and foreign coal producers.

S-3 OTHER MAJOR ACTIONS

S-3.1 Levisa Fork Basin/Haysi Dam Project

The US Army Corp of Engineers (COE) is currently proposing a flood control and dam project that would extend from the confluence of Indian Creek and Russell Fork in Dickenson County to the confluence of the Russell Fork and Levisa Fork in Millard, Kentucky. In February 1997, a Draft Environmental Impact Statement (DEIS) was completed for this project; this document contained several structural and non-structural alternatives. The alternatives presented would involve wet or dry dam construction, non-structural measures of floodproofing, and relocations for 3,600-4,730 structures. This project is not yet funded and all relocations would be voluntary.

S-3.2 Grundy Flood Damage Reduction/Highway Upgrade Project

In April 1977, the region's highest flood on record devastated the Town of Grundy, causing $11.3 million in damages and three fatalities. In May 1984, flooding again damaged Grundy. In response to these and other major flood events that severely damaged the town, the COE has proposed the Grundy Flood Damage Reduction/Highway Upgrade Project.

This project would rely mostly on non-structural means to reduce flood damages, such as acquisition and demolition of buildings, as well as voluntary building improvements. In short, the town will be moved from the floodplain to a newly prepared development site located on the opposite side of the Levisa Fork. As part of the project, VDOT will upgrade and relocate Route 460/83 in...
Grundy. The roadway profile will be elevated above the 100-year floodplain for a portion of the project and above the 50-year floodplain for the remainder and the fill slope/retaining walls of Route 460 used as a levee to control the flooding of the Levisa Fork River. The project has completed the environmental process and is proceeding with final design.

S-3.3 The Coalfields Expressways in West Virginia

In 1991, the US Congress defined West Virginia’s portion of the Coalfields Expressway as extending from the Virginia State line east to Beckley, West Virginia, and appropriated $50 million for the road’s design and construction. The West Virginia Department of Transportation subsequently conducted a corridor location study, an alternative analysis, public hearings, and prepared a DEIS. FHWA signed the DEIS in February 1999 and the Final Environmental Impact Statement (FEIS) in November 1999. The West Virginia FHWA issued a Record of Decision (ROD) for the project on January 12, 2000. Exhibit 1.2 shows the approximate location of West Virginia’s Selected Alternative.

The termini for West Virginia’s portion of the Expressway are the State line east of Slate, Virginia and, in the east, Interstates 77 and 64 near Beckley, West Virginia. The Expressway, which passes through the West Virginia counties of McDowell, Raleigh and Wyoming, would be a four-lane, limited access, divided highway. It would have a desired design speed of 110 kilometers-per-hour (kph) (70 miles-per-hour [mph]) and a posted speed limit of 102 kph (65 mph). Project construction began on August 8, 2000. Three segments of the West Virginia portion of the Coalfields Expressway are currently under construction. One section, near Welch in McDowell County, is expected to be completed in November 2001; two in the Sophia area of Raleigh County are expected to be completed in May and October 2002.

S-3.4 US Route 460 Connector

VDOT, in conjunction with the FHWA, is proposing to construct the Route 460 Connector in Buchanan County, Virginia. The proposed highway would be a four-lane, median divided highway on new alignment. A proposed interchange would provide a connection with the Coalfields Expressway southwest of Harman. The Route 460 Connector would then extend northwest approximately 4.9 kilometers (3.1 miles) and link with the eastern terminus of Kentucky’s Route 460 project at Route 631 in Virginia (see Exhibit S-2). Kentucky’s Route 460 project would extend to northwest 27 kilometers (17 miles) to terminate at US Route 23/119 near Yeager, Kentucky. The project will improve access from the Coalfields Expressway to Breaks Interstate Park and, in combination with
the proposed Route 460 project in Kentucky, will provide a regional transportation link between Yeager, Kentucky and southwestern Virginia as well as points beyond.

FHWA issued a Finding of No Significant Impact (FONSI) for the Kentucky project in January 1999 and final design is currently underway. VDOT is currently preparing a Draft Environmental Assessment for its section.

S-4 ALTERNATIVES

Selecting project alternatives for detailed study in the DEIS involved a two-step, deductive process. The first step evaluated the preliminary alternatives' ability to meet the project's purpose and need, as presented in Chapter One. Alternatives meeting the purpose and need advanced to the second step, or intermediate step, for further study. Over the course of the project, nine project alternatives were established for consideration: the No-Build Alternative; the Transportation Systems Management (TSM) Alternative; the Mass Transit Alternative; and six Build Alternatives. During Step I, an Improve Existing Facility Alternative (included as one of the build alternatives), the TSM Alternative, and the Mass Transit Alternative were eliminated from further consideration. The DEIS included the No-Build Alternative and five remaining Build Alternatives for further study, representing a reasonable range of alternatives. On August 17, 2000, the Commonwealth Transportation Board (CTB) endorsed Alternative (F1), which consisted of a combination of segments from the different build alternatives. The CTB Approved Alternative F1, extending from Route 23 near Pound, Virginia to the West Virginia State line east of Slate, Virginia includes the Buchanan County Industrial Access Connector (BCIAC), which would provide access to a proposed regional airport and land planned for industrial use. The FEIS evaluates impacts to the No-Build Alternative, the five build alternatives in the DEIS, the CTB Approved Alternative F1, and Alternative F2. Alternative F2 (Alternative F1 without the BCIAC) is also included in this document for comparison purposes to demonstrate the differences in impacts with and without the BCIAC.

The intermediate step of the selection process defined and refined potential locations for build alternatives. Build alternatives selection began by establishing the design criteria and a typical section for the new facility. VDOT determined that the facility would be a four-lane, divided, rural principal arterial with a design speed of 80 kilometers (50 miles) per hour. A maximum grade of 7% was established. These design standards meet American Association of State Highway Transportation Officials (AASHTO) guidelines for areas having
mountainous terrain. Since the Expressway would be a limited access facility, the study identified potential connections to existing roads to serve local traffic and to link the facility to important traffic generators such as towns. Most of these proposed two-lane connectors are roads on new location, although some alignments follow existing roads that could be upgraded. Each connector road is considered part of the build alternative to which it would connect.

Next, evaluation criteria were developed that reflect project objectives such as impact avoidance and minimization, conformance with design criteria, and minimization of construction costs. These criteria were grouped into the following categories: Engineering; Traffic and Transportation; Land Use and Economic Development; Right-of-Way and Displacements; and Environmental.

Next, project engineers mapped all feasible locations for a highway, including both new locations and existing roadways. Rather than identifying complete and continuous alternative locations between the project's termini, this study mapped segments or portions that, when combined, comprise complete build alternatives. A total of 105 Trial Segments were configured and numbered for identification. The Trial Segments were evaluated and eliminated using the evaluation criteria that could logically be applied at this early stage of study. This analysis produced 85 remaining segments, designated Concept Segments.

The Concept Segment Evaluation involved revising retained Trial Segments as well as creating new segments. At this point in the process, more-detailed information was used to study and eliminate Concept Segments. The remaining 49 segments, designated Candidate Segments, make up the build alternatives shown on Exhibit S-2. Table S-1 lists the sequence of segments that make up each of the build alternatives; Exhibit 4.1 shows segment locations.

This FEIS evaluates the seven build alternatives in relation to the No-Build Alternative. Under the No-Build Alternative, the proposed project would not be implemented. This alternative would include all currently adopted and planned transportation improvements, such as those projects listed in VDOT's Transportation Development Plan. Despite minor improvements planned for Route 83, the No-Build Alternative would not adequately improve existing roadway deficiencies, safety, capacity, system linkage, or the area's ability to attract economic development. Although it does not meet the project purpose and need, it has been retained for comparison purposes.
S-5 SUMMARY OF BENEFICIAL AND ADVERSE IMPACTS

Table S-2 summarizes the potential beneficial and adverse impacts of each of the seven Build Alternatives and the No-Build Alternative. Comparing impacts of each build alternative, the table shows that no alternative stands out in terms of having considerably greater or fewer impacts than other build alternatives. Alternative F1 has the highest estimated capital cost ($1,350 million), while Alternative C has the lowest ($991 million).

Alternative C would cause the most relocations, a total of 144 families, community facilities, and businesses.

No properties would experience noise levels approaching or exceeding the Noise Abatement Criteria (NAC). However, Alternatives C, F1, and F2 would have two residences that would have a substantial increase in noise.

Wetlands are not common in the study area’s mountainous terrain; therefore, wetland impacts are minor for a project of this scale. Alternative D would impact the most wetlands at 2.5 hectares (6.2 acres), whereas Alternative B has the least amount of total impacts (0.6 hectares [1.5 acres]). The project would impact considerably more waters of the US. Alternative D has the highest...
## Table S-2
Impact Summary Matrix

<table>
<thead>
<tr>
<th>Issue</th>
<th>Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No-Build</td>
</tr>
<tr>
<td>Length: Kilometers (miles)</td>
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</tr>
<tr>
<td>Estimated Capital Cost ( Millions of Dollars)</td>
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</tr>
<tr>
<td>Year 2020 Travel Times (minutes)</td>
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</tr>
<tr>
<td>Improve System Linkage, Intermodal Connection, and Corridor Mobility;</td>
<td>No</td>
</tr>
<tr>
<td>Improve Roadway Deficiencies, Safety, and Capacity</td>
<td>No</td>
</tr>
<tr>
<td>Improve Economic Development and Tourism Potential</td>
<td>No</td>
</tr>
<tr>
<td>Land Use Plan Consistency</td>
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</tr>
<tr>
<td>Farmlands Impacts: Hectares (Acres)</td>
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</tr>
<tr>
<td>Relocations</td>
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</tr>
<tr>
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<td>0</td>
</tr>
<tr>
<td># of Businesses</td>
<td>0</td>
</tr>
<tr>
<td># of Non-Profit/Community Facilities</td>
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</tr>
<tr>
<td>Total</td>
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<tr>
<td>Cultural Resources</td>
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<tr>
<td>&quot;Total # &quot;Adverse Effect&quot;</td>
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### Table S-2
#### Impact Summary Matrix

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<thead>
<tr>
<th>Issue</th>
<th>Alternatives</th>
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<td>Improve System Linkage, Intermodal Connection, and Corridor Mobility;</td>
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<td>Farmlands Impacts: Hectares (Acres)</td>
<td>0</td>
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<td></td>
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<tr>
<td>Relocations</td>
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<td>• # of Families</td>
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<tr>
<td>• # of Non-Profit/Community Facilities</td>
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<tr>
<td>• Total</td>
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<tr>
<td>Cultural Resources</td>
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<tr>
<td>• # NRHD Considered Eligible Historic District</td>
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<td>• &quot;Total # &quot;No Effect&quot;</td>
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<tr>
<td>• &quot;Total # &quot;Effect&quot;</td>
<td>0</td>
</tr>
<tr>
<td>• &quot;Total # &quot;Adverse Effect&quot;</td>
<td>0</td>
</tr>
</tbody>
</table>
amount of estimated waters impacts, with 15.51 linear kilometers (LK) or 9.64 linear miles (LM) of impacts. Alternative E has the lowest amount with 7.48 LK (4.65 LM) of total impacts. Due to the extreme topography in the area, many of the stream crossings would require the use of bridges, which will significantly reduce the project’s impacts to waters of the US.

Other findings include:

- None of the alternatives would use publicly owned parks, recreation areas, wildlife or waterfowl refuges (Section 4 (f) resources);
- The CTB Approved Alternative F1 would impact the greatest amount of forested lands at 584 hectares (1443 acres). Alternative E would impact the least at 471 hectares (1164 acres).
- None of the alternatives would cause violations of the NAAQS (National Ambient Air Quality Standards) for Carbon Monoxide (CO).
- Alternatives A, C, and D would each impact 0.4 hectare (1.0 acre) of FEMA-regulated floodplains; Alternatives B, E, F1, and F2 would have no floodplain impacts.
- The project would not adversely affect any federally threatened or endangered species. VDOT does assume the Indiana bat is present within the study area however, time-of-year restrictions will insure the project would not adversely affect the species.

**S-6 OTHER FEDERAL ACTIONS AND PERMITS REQUIRED**

Federal and state laws require various environmental permits prior to or at the beginning of project related construction activities. The following environmental permits will be required:

- Section 404 permits (Clean Water Act) from the US Army Corp of Engineers;
- Section 401 permit (Clean Water Act) from the Commonwealth of Virginia, Department of Environmental Quality;
- Section 402 permit (Clean Water Act) from the Commonwealth of Virginia, Department of Environmental Quality; and
- Subaqueous Bed Permit (Virginia Water Law) from the Virginia Marine Resources Commission.
The CTB Approved Alternative crossed federally owned land associated with the John W. Flannagan Reservoir property. The Corps of Engineers will need to authorize and comply with NEPA (National Environmental Policy Act) in the conversion of federal lands to highway use.
CHAPTER ONE
PURPOSE OF AND
NEED FOR ACTION
1. PURPOSE OF AND NEED FOR ACTION

The Virginia Department of Transportation (VDOT), in conjunction with the Federal Highway Administration (FHWA), is proposing to construct the Coalfields Expressway from Route 23 near Pound, Virginia to the West Virginia State line east of Slate, Virginia. The proposed highway would connect with West Virginia's portion of the Coalfields Expressway, which would extend from the Virginia State line east to Beckley, West Virginia. The study area is approximately 96 kilometers (60 miles) in length and up to 16 kilometers (10 miles) wide. Exhibit 1.1 shows the project vicinity and the study area limits.

The Coalfields Expressway would be designed as a four-lane, limited access facility. The highway would improve access into and through Wise, Dickenson, and Buchanan counties, a region that does not currently have an east-west, multi-lane, limited access facility.

This chapter addresses the purpose and need for the proposed action. First, the project status and history are discussed. Next, the chapter presents the project's various purposes and needs, within the context of transportation and economic development categories. In sum, the purposes of the project would be to:

- Comply with congressional mandates;
- Improve system linkage and intermodal connection;
- Improve roadway deficiencies and corridor mobility;
- Improve safety;
- Improve capacity;
- Support local coal mining and other industries; and
- Enhance the localities' ability to attract industry and tourism.

1.1 PROJECT HISTORY AND STATUS

In 1991, the US Congress defined West Virginia's portion of the Coalfields Expressway as extending from the Virginia State line east to Beckley, West Virginia, and appropriated $50 million for the road's design and construction. The West Virginia Department of Transportation subsequently conducted a corridor location study, an alternative analysis, public hearings, and prepared a Draft Environmental Impact Statement (DEIS). FHWA signed the DEIS in February 1999, the Final Environmental Impact Statement (FEIS) in November 1999, and issued the Record of Decision on January 12, 2000. Exhibit 1.2
shows the approximate location of West Virginia's Selected Alternative.

Virginia included its portion of the Coalfields Expressway in its Six-Year Improvement Program for Fiscal Year 1994-95. In so doing, the Virginia Commonwealth Transportation Board (CTB) allocated $3.5 million in state funds to prepare a location study for Virginia's portion of the highway. The project has since been included in each new Six-Year Improvement Program, and is included in the Virginia Transportation Development Plan for Fiscal Year 2000-01. The FHWA approved the DEIS for Virginia's portion of the Expressway in March 2000.

The CTB passed a resolution in August 2000 endorsing Alternative F1 (see Section 2.4.6) as the approved alternative. Alternative F1 includes the Buchanan County Industrial Access Connector (BCIAC), which is comprised of segments evaluated in the DEIS. The BCIAC is intended to improve access to a planned airport and land slated for industrial use. The CTB further resolved that the Coalfields Expressway be added to the state Primary System of Highways and designated as US Route 121.

1.2 LEGISLATIVE PURPOSE AND NEED

In December 1991, the US Congress enacted the Intermodal Surface Transportation Efficiency Act (ISTEA) identifying the Coalfields Expressway in West Virginia as a congestion relief project. In November 1995, the National Highway System Designation Act of 1995 was signed into law. This legislation designated the Coalfields Expressway in Virginia as a Congressional High Priority Corridor and included it in the National Highway System. The act extended the highway from the West Virginia State line to Route 23 near Pound, Virginia, generally following the Route 83 corridor. In 1998, Congress approved the Transportation Efficiency Act for the Twenty-First Century (TEA 21), which appropriated an additional $1 million for planning and design of the Coalfields Expressway in Virginia.

The project also has the support of the Virginia legislature and local governing bodies. During its 1999 session, the Virginia General Assembly passed three resolutions supporting the project. The project is also supported by the Boards of Supervisors for the three counties in the study area, elected representatives from the area's towns, Planning Commissions, Chambers of Commerce, and Planning District Commissions (see Chapter 8).
1.3 TRANSPORTATION PURPOSE AND NEED

The proposed project would provide needed improvements to the study area’s transportation infrastructure and would respond to the congressional mandate discussed above. The following subsections discuss these transportation needs.

1.3.1 System Linkage and Intermodal Connection

Need: The communities in the study area lack efficient access to the region’s highway network. The considerable travel time required to reach the regional highway network hinders local economic development efforts, adding shipping costs to local industries and travel time to potential tourists. It also inconveniences local residents, who experience longer travel times when driving to points outside of the study area.

Purpose: The Coalfields Expressway would greatly improve access to and through the study area and serve as an important component of the regional network. Via US Route 23, an improved east-west facility would greatly improve connection to I-81 and US Route 58. It will also complement a proposed realignment of Route 460 in Kentucky and Virginia. When combined with West Virginia’s portion, the proposed facility would link the study area with I-77 and I-64 near Beckley, West Virginia. In West Virginia, it would also connect with I-73, a proposed interstate that would link Charleston, South Carolina and Detroit, Michigan. Improved access to the highway network would also improve the access to the air and rail facilities discussed in Section 3.2.6. Exhibit 1.2 shows the regional system linkage the expressway would provide.

The study area is located within a day’s drive of several major cities. Improved system linkage will reduce travel times to these and other cities, thereby improving the area’s economic development and tourism potential (see Section 1.4.2).

1.3.2 Roadway Deficiencies and Corridor Mobility

Need: Route 83, the study area’s only major east-west roadway, is a predominately two-lane rural facility. The roadway has a wide variation of design speeds, shoulder widths, clear zone widths, and curve warning signage. This variation, largely attributed to the severe topography of the area, results in frequent changes in driving conditions and impedes corridor mobility.
The study area's major highways are also characterized by steep grades. For example, in Wise County, Routes 23 and 58 Alternate both have several sections with eight-percent grades. Fifteen kilometers (nine miles) of Route 83 in Dickenson County have grades that exceed eight percent. Also in Dickenson County, Route 63 has several five kilometer (three mile) stretches with greater than 10% grades. Six kilometers (four miles) of Route 72 exceed 11% grades. A three to four mile stretch of Route 80 has grades in excess of 13%. In Buchanan County, grades on several sections of Route 83, near the West Virginia State line, vary between seven and nine percent. For comparison purposes, the AASHTO maximum grade for a new facility with a 50 mph design speed in mountainous terrain is seven percent.

Due to the many horizontal curves, Route 83 has a high percentage of no passing zones that restrict traffic flow. The corridor's many steep grades, combined with its high percentages of truck traffic, exacerbate this problem (see Section 1.3.4). The AASHTO Highway Capacity Manual states that a 607 meter (2000 foot) long roadway with a four-percent grade will reduce the speed of a truck traveling 88 kilometers per hour (kph), or 55 miles per hour (mph), to approximately 63 kph (39 mph). An eight-percent grade will further reduce truck speed to about 30 kph (19 mph) (AASHTO, 1994). A different problem occurs on downgrades, where faster travelling trucks sometimes tailgate cars and create an unsafe situation.

Conditions caused by existing development and land use patterns also interrupt traffic flow and reduce corridor mobility. These conditions include:

- reduced speed limits and increased pedestrian activity within the towns along Route 83, stemming from commercial, residential, and institutional land uses;
- high numbers of turning vehicles from the considerable strip or roadside development along the Route 83 corridor; and
- reduced speed zones and increased pedestrian activity from school zones.

Evidence of reduced corridor mobility is found in the project's traffic studies. Estimated travel speeds along Route 83 range from 54 kph (34 mph) to 68 kph (43 mph). These estimates result in a weighted average speed of 59 kph (37 mph) for the entire 60 mile corridor between Pound and the West Virginia State line.

Purpose: An Improve Existing Alternative that would upgrade Route 83 was studied, but eliminated from consideration (see Section 2.2.1). A build
alternative would greatly improve traffic flow and improve corridor mobility, for several reasons. First, it would provide a roadway having few, if any, geometric deficiencies. It would be a four-lane facility with a design speed of 80 kilometers (50 miles) per hour, a posted speed of 73 kilometers (45 miles) per hour, and a maximum grade of seven percent (see Section 2.3.1). A facility designed to these standards would improve on the traffic flow problems discussed in the previous paragraphs. Section 4.4.3 provides information on estimated improvements to accessibility and corridor mobility from the build alternatives.

1.3.3 Safety

Need: The Existing Conditions Report (1997) prepared for this project shows that safety problems exist along the existing roadway network. Table 1.1 contains accident data listed by location and type of accident, and Exhibit 1.3 shows the corresponding high accident sections. The data was collected during the period between April 1994 and March 1997.

Using historical data, accident rates estimate the probability that a person traveling on a particular road segment will have an accident. Calculating accident rates involves consideration of the length of road or road segment, the Average Daily Traffic (ADT), and the number of reported accidents. The rate is a probability, based on empirical data, for the number of accidents that will occur along the roadway for every 100 million vehicle miles. The corridor-wide accident rate for Route 83 was 153 accidents per 100 million vehicle miles, which is 13% higher than the state average. The 1996 statewide accident rate for primary roadways was 135 accidents per 100 million vehicle miles.

In evaluating high accident sections along the roadway, the study used an accident rate of 250. This criterion was set at about 165% of the corridor average to identify sections where the number of reported accidents was not likely due to transient statistical variation. The analysis typically used one-mile long sections, unless changing highway geometry or traffic volume led to use of a different length.

Route 83 had 11 high accident sections comprising over 16% of the corridor (see Exhibit 1.3). If compared to all primary highways in the state, accident rates for these 11 sections would rank in the top 10%.

Other conclusions from the accident data include:
- Corridor-wide accident, injury, and fatality rates were slightly above the state average.
### Table 1.1

Route 83: High Accident Sections

<table>
<thead>
<tr>
<th>Section</th>
<th>Location</th>
<th>Number of Accidents</th>
<th>Accident Rate*</th>
<th>Injury Acc. (Persons injured)</th>
<th>Number of Trucks</th>
<th>Rear-end</th>
<th>Angle</th>
<th>Off-road</th>
<th>Side-swipe &amp; Head-on</th>
<th>All Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Route 23 Business east 1.05 km</td>
<td>19</td>
<td>476</td>
<td>6 (13)</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>State Route 649 1.69 km east</td>
<td>15</td>
<td>334</td>
<td>9 (12)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>3</td>
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<tr>
<td>3</td>
<td>.8 km west of State Route 680 to 0.3 km east of State Route 680</td>
<td>7</td>
<td>326</td>
<td>1 (1)</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>2</td>
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<td>4</td>
<td>1.05 km west of State Route 656 to .4 km east of State Route 656</td>
<td>7</td>
<td>252</td>
<td>3 (3)</td>
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<td>2</td>
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<td>4</td>
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<td>1</td>
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<td>5</td>
<td>.08 km west of State Route 604 to .08 km west of State Route 707</td>
<td>11</td>
<td>393</td>
<td>5 (15)</td>
<td>0</td>
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<tr>
<td>6</td>
<td>.24 km west of State Route 718 to 1.0 km east of State Route 718</td>
<td>11</td>
<td>335</td>
<td>6 (7)</td>
<td>4**</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>US Route 460/State Route 83 north 1.61 km</td>
<td>41</td>
<td>267</td>
<td>21 (43)</td>
<td>3</td>
<td>24</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>.24 km west of State Route 586 east 1.61 km</td>
<td>16</td>
<td>313</td>
<td>9 (12)</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>1.0 km west of State Route 728 to .4 km east of State Route 728</td>
<td>17</td>
<td>392</td>
<td>11 (17)</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>.64 km west of State Route 674 to .16 km west of State Route 716</td>
<td>16</td>
<td>359</td>
<td>8 (12)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>12</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>.32 km west of State Route 640 to 1.53 km east of State Route 640</td>
<td>14</td>
<td>264</td>
<td>7 (10)</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td><strong>174</strong></td>
<td><strong>86 (143)</strong></td>
<td></td>
<td><strong>14</strong></td>
<td>46</td>
<td>31</td>
<td><strong>58</strong></td>
<td>19</td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

Notes:  *Accidents per 100 million vehicle miles
**Four trucks involved in 3 collisions.
• Eight of the 11 high-accident sections of Route 83 were located in the eastern part of the corridor in Buchanan County.
• Nine of the 11 sections had higher than normal proportions of off-road and other loss-of-control incidents.

Purpose: The project would be constructed to meet requirements relating to design concerns such as degrees of curvature and stopping sight distances (see Table 2.2). Adherence to these requirements would ensure that the expressway would be constructed as a safer facility than existing Route 83. Currently, some portions of Route 83 are substandard, and most of Route 83 would not meet the preliminary design requirements established for the expressway.

By attracting truck and other vehicular traffic from Route 83, the project should reduce accident rates along this corridor. Since the Coalfields Expressway would be a four-lane, divided facility, it would eliminate the safety hazards caused by passing vehicles and greatly reduce the risk of head-on collisions.

1.3.4 Capacity

Need: Traffic studies indicate that several sections of Route 83 and Route 460 are currently near capacity. These capacity analyses were conducted in the 1994 Highway Capacity Manual. Capacity is described by Level of Service (LOS) designations that indicate the operating characteristics of a road segment or intersection. LOS serves as a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The Highway Capacity Manual defines six levels of service, LOS A through F, with A being the best and F the worst. Exhibit 1.4 illustrates the differences between these levels of service designations.

Exhibit 1.5 shows average weekday traffic for Route 83. The portion of Route 83 between the Towns of Pound and Clintwood has an ADT of 5,500. ADT for Route 460/83 between Vansant and Grundy is 14,000. The least amount of traffic along Route 83 occurs between Haysi and Vansant, where ADT is 2,800.

Using the traffic data collected, traffic operations analyses were performed to determine levels of service. Results include the following:

• Two sections of the Route 83 corridor and one section of the Route 460 corridor currently operate at LOS E during the peak hour;
• Route 23 Business, south of the Route 83 intersection, currently operates at LOS D; and
All intersections studied currently operate at LOS A or B.

Another capacity issue relates to the large amount of truck traffic along Route 83. Exhibit 1.6 shows percentages of truck traffic for different segments of the corridor. Between Fremont and Haysi, the highway has 12% truck traffic. The lowest proportion of truck traffic (three percent) occurs west of Matney near the West Virginia State line. Since Route 83 is mostly only a two-lane facility, this truck traffic, when combined with the steep grades and geometric constraints, hinders traffic flow considerably.

Traffic studies also projected future traffic volumes assuming No-Build and Build scenarios. Traffic data for the Year 2020 was derived using projections contained in the Coalfields Expressway Economic Development Overview (VDOT, 1999).

Year 2020 projections for the No-Build Alternative indicate traffic is projected to increase over existing levels. The amount of traffic volume growth varies depending on location within the study area. In general, growth rates in the Pound, Clintwood and Grundy areas are greater than expected increases near the study area's central portion. This is due to the influence of external traffic on the study area, such as projected increases in through trips and trips into and out of the study area. Also, households are projected to increase in the study area which, when combined with projected declines in employment, results in trips with destinations outside of the study area.

Exhibit 1.7 shows No-Build ADT for the Year 2020. The greatest increases would occur near the Town of Clintwood, where projected ADT equals 14,600. Capacity analyses indicate that, by the Year 2020, the three roadway sections that currently operate at LOS E would remain at LOS E. Route 83 Business-South would also operate at LOS E in 2020.

Purpose: The project would improve roadway capacity in the study area. Each build alternative is projected to function at LOS A during the year 2020. By attracting vehicles, including truck traffic, from Route 83's high capacity sections, it would improve LOS on that roadway.
1.4 ECONOMIC DEVELOPMENT NEED

The proposed project is expected to enable the area's localities to improve their economic development potential, thereby stemming an economic decline caused largely by employment reductions in the coal industry. Demographic information and economic indicators included in Chapter Three evidence this decline (see Sections 3.2 and 3.4). The Coalfields Expressway Economic Development Overview contains more statistical information and discusses in greater detail these issues (VDOT, 1999). Some of the region's troubling trends include the following:

- Wise, Dickenson, and Buchanan counties suffered from 1997 unemployment rates of 12.3%, 14.6%, and 16.8%, respectively, while the state of Virginia had an overall unemployment rate of 4.0%.

- Per-capita incomes in the region trail those in the rest of the state, and census figures indicate that this disparity is growing. In 1990, per-capita incomes in the three-county region ranged from $13,530 to $13,944 compared to $18,979 for Virginia.

- The study area has a relatively large number of persons below the poverty level. In 1989, Dickenson County had the highest poverty level (25.0%), while Buchanan and Wise had poverty levels of 22.8% and 23.1% respectively. At the same time, Virginia had a poverty level of 12.1%.

This section discusses the economic development issues or constraints that have contributed to the depressed local economy. These constraints directly relate to the region's need for the Coalfields Expressway. For each project need, a corresponding purpose for the project is presented.

1.4.1 Replacement of Coal Mining Employment

Need: For the past 50 years, the region has depended on coal mining for its livelihood. However, coal-mining employment has steadily decreased over the past several decades, due to increased mechanization, development of energy alternatives, and stricter environmental regulation of the coal mining industry. In 1978, coal mining accounted for 64% and 68% of total employment in Dickenson and Buchanan counties, respectively. By 1997, mining employment in Dickenson and Buchanan counties had decreased to 18% and 31% of total employment, respectively, representing a loss of 4,386 jobs (Virginia Employment Commission [VEC], 1999). Textile industries, another major employment source, have also recently downsized their operations. In 1997 alone, 740 jobs were lost in the closings of one mining operation and three
textile facilities.

Since 1989, Virginia’s annual coal production has dropped from 43 million tons to 34 million tons (Truman, 1999). Both production and employment are projected to continue declining as accessible coal reserves are depleted. The question over how long these reserves will last stirs some debate. The U.S. Department of Energy estimates that 1.609 million tons of recoverable reserves currently exist in Virginia. Based on the Static Reserve Index (reserves less current annual production), the reserves would be depleted in 36 years. The Virginia Center for Coal and Energy Research, however, predicts reserves could last up to 50 years. The Virginia Division of Mineral Resources estimates recoverable reserves would last from 44 to 98 years. A just-completed study by Hill & Associates, a consulting group in Annapolis, Maryland, presents the bleakest outlook for coal miners. The study projects that all of Virginia’s “proven and probable” coal reserves worth mining will be depleted by 2026 (25 years), and that efforts to find more coal in central Appalachia will probably prove unsuccessful. Despite these differences, it is widely accepted that coal reserves, and therefore coal mining, have a foreseeable end in Virginia.

According to the project’s Economic Development Overview, the demise of Virginia’s coal industry could be hastened by increased competition, since the western United States and other countries have mines with large, easy to reach seams of high quality coal. The current road system does not help local companies with this global competition. The West Virginia Department of Transportation (WVDOT), in its Coalfields Expressway Purpose and Need Study, documented the results of a telephone survey it conducted with West Virginia coal companies near the study area (1994). Comments received include the following:

- “The trucking of coal is restricted to a moderate or great extent due to roadway constraints.”
- “There is a need for safer and more efficient access to destinations and highway systems located outside this region.”
- “Workers are exposed to long response times for emergency medical services in an industry that is more hazardous than many others.”

Purpose: This project would enhance economic development efforts to replace the loss of coal mining jobs by improving system linkage, safety, capacity, and corridor mobility. As a secondary purpose, it would increase the local coal industry’s competitiveness by improving vehicular access to and from the mines. In so doing, it would help support the local coal industry which, despite its
projected demise, is projected to remain one of the largest components of the local economy for decades.

1.4.2 Industry Recruitment and Economic Diversification

Need: To improve the local economy, Wise, Dickenson, and Buchanan counties are continually trying to recruit new industry into the area. The counties have developed the institutional framework and many of the incentives necessary to successfully attract economic development. For example, each county now has full-time economic development personnel. Also, the Virginia Coalfield Economic Development Authority (VCEDA), a regional entity, has administered an economic development fund capitalized by 25% of the seven coal-producing counties' Coal and Tax Fund receipts. Despite the shortage of developable land, the counties have developed industrial parks, some with shell buildings. Many of these sites and buildings currently lie vacant.

These and other efforts have increased recruitment and led to new industry or expansion announcements. However, these successes have not been enough to supplant recent layoffs and plant closings in the mining and other industries. The lack of sufficient roadway access continues to hinder industrial recruitment efforts.

Due to its reliance on the coal mining industry, the local economy has remained extremely vulnerable to economic downturns in that industry. Local economic development officials have therefore sought to diversify the local economic base. To that end, tourism is widely seen as having considerable potential to diversify and improve the local economy.

In 1994, Economic Research Associates (ERA) conducted a comprehensive evaluation of tourism growth potential in Buchanan and Dickenson counties. Their findings indicate that the counties have considerable potential to increase regional visitation. The assessment was based on the quality of the area's natural resources, potential for outdoor recreation, and availability of potential visitors in the regional marketing area. This regional market, also referred to as the resident market, is defined as the area within a 161 kilometer (100 mile) radius of the two-county region, or roughly a two to two-and-a-half hour drive. ERA estimated that the 1993 resident market contained almost 2.8 million people. Looking at a slightly larger region revealed that a 241 kilometers (150 miles) area encompasses the Tri-Cities of Tennessee and Virginia; Lexington, Kentucky; Huntington and Charleston, West Virginia; Roanoke, Virginia; Asheville, North Carolina and portions of the Knoxville, Tennessee metropolitan
area. The proximity of urban areas is important, since their residents, due to their lifestyles and income, tend to have a greater interest in making day and overnight trips to rural areas offering scenery and recreational activities (ERA, 1994). Table 1.2 shows approximate distances and travel times to various urban areas that could serve as markets for tourism. Distances are measured to the Town of Haysi in Dickenson County, since Haysi is located near the center of the study area. Also, Haysi is proximate to the Breaks Interstate Park and Flannagan Reservoir, the two most popular recreational destinations in the study area.

Table 1.2
Distances and Travel Times from Major Cities to Haysi, Virginia

<table>
<thead>
<tr>
<th>City/State</th>
<th>kms*</th>
<th>miles</th>
<th>Travel Time</th>
<th>City/State</th>
<th>kms</th>
<th>miles</th>
<th>Travel Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bristol, VA/TN</td>
<td>101</td>
<td>63</td>
<td>1.5 hrs.</td>
<td>Lexington, KY</td>
<td>251</td>
<td>156</td>
<td>2.75 hrs.</td>
</tr>
<tr>
<td>Blacksburg, VA</td>
<td>221</td>
<td>138</td>
<td>2.75 hrs.</td>
<td>Atlanta, GA</td>
<td>621</td>
<td>386</td>
<td>6.5 hrs.</td>
</tr>
<tr>
<td>Knoxville, TN</td>
<td>274</td>
<td>170</td>
<td>3 hrs.</td>
<td>Richmond, VA</td>
<td>580</td>
<td>361</td>
<td>6 hrs.</td>
</tr>
<tr>
<td>Roanoke, VA</td>
<td>289</td>
<td>180</td>
<td>3.25 hrs.</td>
<td>Pittsburgh, PA</td>
<td>619</td>
<td>385</td>
<td>6.5 hrs.</td>
</tr>
<tr>
<td>Cincinnati, OH</td>
<td>378</td>
<td>235</td>
<td>4 hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*kilometers

The ERA study also considered proposed improvements contained in the report entitled Evaluation of Development Proposals for the Breaks Interstate Park (Tennessee Valley Authority [TVA], 1993). Development proposals studied include a chairlift to the gorge bottom and a tram that would span the gorge. ERA determined that either proposal would be very marketable and attract greater numbers of general visitors, and open the area to new market segments such as tour buses and railroad excursions.

The ERA study also determined that visitation to the Breaks Interstate Park is well below visitation to other regional parks having similar sized markets. For example, Jenny Wiley State Park in Kentucky attracts twice the visitors as the Breaks Park, while serving a smaller 0-80 kilometer (0-50 mile) market and a similar-sized 0-241 kilometer (0-150 mile) market. Likewise, Pipestem Resort State Park and Canaan Valley State Park in West Virginia serve smaller 0-80 kilometer (0-50 mile) markets and only slightly larger 0-241 kilometer (0-150 mile) markets. Therefore, the study concluded that the Breaks Park has the potential to significantly increase its visitation.
ERA estimated the two-county area's total visitation potential ranges from 870,000 to 1,050,000 visitors annually for the two counties. This increased visitorship would build on the base of some 635,000 annual visitors, most of whom are local. The increases would come from non-local visitors--most of them bound for the Breaks Interstate Park or John W. Flannagan Reservoir. However, the report identified the area's lack of regional access as the primary impediment to increasing tourism. It stated the area could not realize its full tourism potential without greatly improved access.

Lack of developable land also hinders local economic development efforts. The study area suffers from physical constraints that limit the amount of land available for economic development. Due to steep slopes, most development has occurred in relatively level valley bottoms, often in floodprone areas. As development continued and land in valley bottoms became scarcer, development began to occur on mountaintops or ridges. Presently, much of the relatively level land having road access has been developed. Other development constraints include poor soil conditions, mineral land under development, land subject to subsidence from surface and underground mining, national forest land, and other public and private land unavailable for development.

Purpose: By addressing the transportation needs discussed in Section 1.3, the project would enhance the area's tourism potential and the localities' ability to attract new and diverse industries. The extent to which new highways attract economic development has often been debated. Several studies prepared for the Appalachian Regional Commission (ARC) support the importance and economic feasibility of providing road systems through economically depressed areas similar to the Coalfields Expressway study area.

In 1965, Congress established the ARC to help bring economic development to the previously isolated Appalachian Region. ARC officials stated that "the Interstate System largely bypassed the Appalachian Region going through or around the Region's rugged terrain as cost-effectively as possible." Recognizing the need to provide better vehicular access, the Appalachian Development Highway System (ADHS) was created to supplement the Interstate system for this region of the country. Subsequently, 26 corridors were approved within a 3,440-mile network of highways. The 1999 Virginia General Assembly passed a resolution urging Congress to include the Coalfields Expressway in the ADHS. Congress may or may not include the Coalfields Expressway in the ADHS.

In 1987, an ARC job survey report found that 81% of the job growth in Appalachia occurred in those counties served by an interstate and/or ADHS corridor. In addition, a 1995 study by Professor Andrew Isserman of West...
Virginia University found “that Appalachia counties with ADHS corridors grew 69% faster in income, 6% in population and 49% in earnings than those equivalent counties without such corridors.” The most comprehensive ARC-sponsored study of this issue, entitled the Appalachian Development Highways Economic Impact Studies (1998), recently evaluated Appalachian counties through which 12 largely-completed ADHS corridors passed. The study determined that each dollar invested in an ADHS road produced $1.32 in economic development benefits. It also estimated that Appalachia counties with these corridors would realize a net gain in jobs of over 42,000 by the year 2015. According to the report, ADHS investments made counties with these corridors “more competitive, it increased roadside industry and had a great effect on tourism.”

The project would also increase the amount of land available to local governments for industrial development. Most of the alignments for the proposed build alternatives are located along or near ridgelines, where relatively level land exists. The project would create convenient access to these areas and, therefore, would open up land to development.
**LOS "A"** describes a condition of free flow. Drivers are able to drive at a desired speed.

**LOS "B"** is in the zone of stable flow. Drivers have reasonable freedom to select their speed.

**LOS "C"** is still in the zone of stable flow. Most of the drivers are restricted in their freedom to select their own speed.

**LOS "D"** approaches unstable flow. Drivers have little freedom to maneuver and comfort and convenience are low.

**LOS "E"** represents operations at or near the capacity of the highway. Traffic flow is unstable and driver frustration is high.

**LOS "F"** represents heavily congested flow. Traffic demand exceeds capacity and driver frustration is very high.

**Coalfields Expressway Location Study**

**Level of Service**

Source:
Highway Capacity Manual Special Report 209

Exhibit 1.4
Note: Values represent the percentage of total trucks (medium and heavy) as a proportion of the average daily traffic.
CHAPTER TWO
ALTERNATIVES
2. ALTERNATIVES

Federal guidance states that the EIS should present and evaluate a representative number of reasonable project alternatives. This chapter describes the process used to develop these alternatives. Information on the locations of the final build alternatives is also provided.

The FEIS includes the CTB endorsed alternative chosen based on a range of concerns.

2.1 OVERVIEW OF ALTERNATIVES SELECTION PROCESS

Selecting project alternatives for detailed study in the DEIS involved a two-step, deductive process (see Exhibit 2.1). The first step evaluated the preliminary alternative's ability to meet the project's purpose and need, as presented in Chapter One. Alternatives meeting the purpose and need advanced to the second step, or intermediate step, for further study. This intermediate stage of the process evaluated the alternatives based on environmental, engineering, transportation, economic development, and right-of-way considerations.

Over the course of the project, eleven preliminary alternatives were developed for consideration: the No-Build Alternative; the Transportation Systems Management (TSM) Alternative; the Mass Transit Alternative; and eight Build Alternatives. An Improve Existing Facility Alternative, included as one of the build alternatives, was eliminated from further consideration (see Section 2.2.1). The No-Build Alternative and five remaining Build Alternatives (A-E) were retained for further study in the DEIS. On August 17 2000, the CTB endorsed an alternative (F1), which consisted of a combination of segments from the different build alternatives. Alternative F1 includes the BCIAC (see Section 2.4.6). This FEIS evaluates the impacts of seven Build Alternatives—Build Alternatives A through E, the CTB Approved Alternative F1, and Alternative F2 (Alternative F1 without the BCIAC).

2.2 STEP I—PRELIMINARY ALTERNATIVES SELECTION

The Preliminary Alternatives Selection process evaluated whether the proposed alternatives met the project's purpose and need. Table 2.1 summarizes the results of this analysis; the following sections review the alternatives eliminated and retained for further study.
2.2.1 Alternatives Eliminated

Alternatives eliminated during the preliminary alternatives selection include the following:

- Transportation Systems Management (TSM) Alternative

The TSM Alternative uses limited construction activities to maximize the utility and energy efficiency of the present transportation system. Since Route 83 is the only major east-west highway serving the study area, TSM improvements would be focused on this facility. Possible TSM improvements within this route would include adding turning lanes at intersections experiencing substantial delay, improved signing, and traffic signal optimization.

The type of minor improvements associated with this alternative would not adequately improve Route 83's geometric deficiencies or access into the study area. Safety and capacity could improve, but changes would be modest compared to those associated with a build alternative. In addition, this alternative would not improve system linkage or the localities' ability to attract economic development. In its 1987 Technical Advisory, FHWA states that the limited construction alternatives associated with this alternative is usually relevant only for major projects proposed in urbanized areas having populations
over 200,000. The area that Route 83 serves does not adhere to this guideline, and has been eliminated from further study.

- Mass Transit Alternative

This alternative would introduce mass transit service in the study area. Similar to most rural areas, the area does not have mass transit service available to the public. Some limited car and van pooling services exist that cater to handicapped and elderly persons.

In 1993, the Federal Transit Authority (FTA) published studies that concluded that public mass transit systems are only economically viable in areas with sufficient population densities and employment rates. The studies established standards-based criteria to evaluate an area’s potential for mass transit. One standard is to have at least 17 dwelling units per hectare (7 dwelling units per acre) linked to a Central Business District with an employment base of at least 10,000 and a density of 50 employees per hectare (20 employees per acre). In the project’s study area, over 90% of the population resides outside of incorporated towns and population density is approximately 60 persons per square mile (US Census, 1990). Average persons per household are 2.49, 2.71, and 2.83 for Wise, Dickenson, and Buchanan counties, respectively (US Census, 1990). Therefore, dwelling densities are well below the FTA standard. Employment bases in the study area’s small communities also would not meet the Central Business District standard.

The area’s relatively low, widely-dispersed population precludes consideration of public transportation as a cost-feasible solution. More importantly, this alternative would not improve existing roadway deficiencies, safety, or system linkage or the area’s ability to attract economic development. Since it does not meet the purpose or need for this project, this alternative has been eliminated from further study.

- Improve Existing Facility Alternative

To address the roadway inadequacies discussed in Chapter One, the Improve Existing Facility Alternative, involving the complete reconstruction of Route 83, was investigated. Due to the amount of existing roadside development in the towns and urban areas; and proximity to major waterways and railroad facilities to Route 83; reconstruction of the entire length of Route 83 would cause considerable residential and business relocations and substantial natural resource impacts. Due to the absence of alternate routes, impacts would be exacerbated during construction due to the maintenance of traffic and
construction sequencing required. This section describes the potential impacts for each of three counties in the study area.

**Wise County**
Existing Route 83 was built along the existing road networks and watercourses when practical to ease construction and minimize the costs. Widening of Route 83 from Pound to the Dickenson County Line would involve numerous impacts. Within the Town of Pound, both businesses and homes adjacent to the existing facility would need to be relocated to provide for a widened facility. Due to the location of businesses and proximity of the Pound River, the reconstruction of the intersection of Route 83 with Route 23 Business would also cause considerable impacts. Moving east towards Georges Fork Gap, Route 83 parallels both Mill Creek and Meade Fork. Improving the existing roadway in this area would result in stream and wetland impacts. A cemetery and church along Route 83 in this area would also likely be impacted through widening.

**Dickenson County**
The terrain changes very little after crossing into Dickenson County. Route 83 parallels Georges Fork and its tributaries and, due to the existing topography, impacts to Georges Fork would be likely. Improving existing Route 83 between the county line and Clintwood would require relocation of numerous homes and potentially impact a church and the Georges Fork School.

Existing Route 83 travels through the center of the Town of Clintwood, a densely developed community. Improving the existing facility though Clintwood would impact many homes and businesses, as well as schools, churches, and municipal buildings. Reconstruction of major intersections such as Routes 631 and 607 would cause additional impacts.

East towards Fremont, Route 83 parallels Long Branch, Cranes Nest River, and Camp Creek. The Clinchfield Railroad also parallels the same section of Camp Creek. Along the Cranes Nest River, substantial impacts to residences and streams would be likely. Due to severe topography and the location of the existing Clinchfield Railroad tunnel, widening existing Route 83 along its existing alignment would likely result in conflicts or major reconstruction of the tunnel.

From Fremont to Haysi, Route 83 is adjacent to and parallel with the McClure River on one side and the Clinchfield Railroad on the other. The Improve Existing Alternative would result in impacts to one or both of these features. The Short Branch, Rinehart, and Perkins tunnels along the Clinchfield Railroad complicate this location. Also, impacts along Route 83 to the homes and
businesses within the Clinchco community are likely due to their proximity to Route 83.

Through the Town of Haysi Route 83 and Route 80 share the alignment. Through this dual designated section, the alignment parallels the Russell Fork, Russell Prater Creek, and the Clinchfield Railroad. Businesses and homes are located on both sides of Route 83 and impacts to these would be inevitable. Several tributaries connect to Russell Prater Creek and several secondary routes intersect in close proximity to each other along this section of Route 83. Connection to the secondary routes would have the potential for additional impacts to residences and the water courses.

**Buchanan County**

From the Dickenson/Buchanan County line, Route 83 travels through similar terrain along Russell Prater Creek, War Fork, Big Lick Branch, and Big Prater on its way to Vansant. Several small communities exist along the way; potential impacts to these communities would include homes, schools, churches, and cemeteries.

At Vansant north to Grundy, Route 83 is dual designated with U.S. Route 460 and parallels the Levisa Fork and the Norfolk and Western Railroad. This section travels through the most heavily populated section of Route 83 within the study area. The towns of Vansant, Tookland, Royal City, and Grundy are all located within this area. Impacts to homes, businesses, churches, and municipal buildings along this alignment would be unavoidable.

As Route 83 diverges from the alignment of Route 460, it is located along Slate Creek. Similar to the portion west of Vansant, several small communities are adjacent to the alignment of Route 83 that would be impacted if this route were widened. Also, several tributaries' convergence with Slate Creek is located along this section. Potential problems include impacts to streams, communities, homes, schools, churches, and cemeteries.

Due to the potential impacts discussed above, the Improve Existing Alternative has been eliminated from consideration. However, several portions of the Route 83 corridor were deemed suitable for further study and help comprise the build alternatives. Segments 106 and 158, and parts of Segments 109 and 150, follow the existing Route 83 alignment. In total, approximately 13 kilometers (8 miles) of Route 83 are included in the build alternatives.
2.2.2 Alternatives Retained

- No-Build Alternative

Under the No-Build Alternative, the proposed project would not be implemented. This alternative would include all currently adopted and planned transportation improvements, such as those projects listed in VDOT's Transportation Development Plan. The Transportation Development Plan currently contains four projects to improve Route 83. These projects would add a third lane for 1.4 km (0.9 miles), construct a climbing lane, construct a left turn lane, and improve and signalize an intersection.

Despite these minor improvements, the No-Build Alternative would not adequately improve existing roadway deficiencies, safety, capacity, system linkage, or the area's ability to attract economic development. Highway access is an extremely important consideration when locating corporate, industrial, and distribution facilities. Improved access provides: reduced travel times; lower transportation costs; reduced accident frequency; more reliable movement of raw materials and finished goods; and better access to labor and markets. These benefits translate into greater business efficiencies, higher productivity, and better competitiveness. Collateral economic benefits include expansion of job opportunities and local tax bases, greater variety of shopping choices, and greater cultural activity.

The No-Build Alternative would not provide the improved access needed to realize these benefits. Although it does not meet the project purpose and need, this alternative has been retained to serve as a baseline for comparison, in accordance with FHWA and CEQ regulations (23 CFR 771.123(c) and 40 CFR 1502.14, respectively).

- Build Alternatives

Exact locations for the build alternatives were not determined in Step 1. Instead, the analysis considered build alternatives conceptually. It was determined that a new facility between Pound, VA and the West Virginia State line would improve safety, capacity, system linkage, and the area's economic development potential. Since any build alternative connecting the project termini would meet the purpose and need, all were retained for further study.
conditions permit design features to take precedence. Maximum degree of curvature, or the sharpest roadway curve allowed, is 7° 30’.

Table 2.2
Proposed Design Criteria for Coalfields Expressway

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification</td>
<td>Rural Principal Arterial (Other than Freeway)</td>
</tr>
<tr>
<td>Design Year</td>
<td>2020</td>
</tr>
<tr>
<td>Terrain</td>
<td>Mountainous</td>
</tr>
<tr>
<td>Design Speed</td>
<td>80 kilometers (50 miles) per hour</td>
</tr>
<tr>
<td>Posted Speed</td>
<td>72 kilometers (45 miles) per hour</td>
</tr>
<tr>
<td>Maximum Degree of Curvature</td>
<td>7° 30’</td>
</tr>
<tr>
<td>Maximum Grade</td>
<td>7%</td>
</tr>
<tr>
<td>Stopping Sight Distance</td>
<td>Desirable -145 meters (475 feet)</td>
</tr>
<tr>
<td></td>
<td>Minimum -122 meters (400 feet)</td>
</tr>
<tr>
<td>Bridge Width</td>
<td>1.8 meters (8 feet) + Pavement width + 3.0 meters (10 feet)</td>
</tr>
</tbody>
</table>

As Exhibit 2.2 shows, the typical section for the expressway consists of a four lane, divided highway having two 3.6 meter (12 foot) lanes in each direction. Inside shoulders 2.4 meter (8 foot) wide with open medians with variable widths would separate the directional lanes. On cut and fill slopes, outside shoulders would be approximately 3.0 meters (10 feet) wide and 4.0 meters (13 feet) wide, respectively.

The typical section for the connector roads consists of a two-lane highway having a 3.6 meter (12 foot) lane in each direction. On cut and fill slopes, outside shoulders would be approximately 2.1 meters (7 feet) and 1.2 meters (4 feet) wide, respectively. This typical section reflects a worst-case scenario to ensure all potential impacts are addressed. During final design, each connector would be designed to account for site-specific considerations.

2.3.2 Develop Evaluation Criteria

Evaluation criteria were developed that reflect project objectives such as impact avoidance and minimization, conformance with design criteria, and minimization of construction costs. As Table 2.3 shows, these criteria were grouped into the following categories: Engineering; Traffic and Transportation; Land Use and Economic Development; Right-of-Way and Displacements; and Environmental.
Table 2.3
Preliminary Evaluation Criteria

<table>
<thead>
<tr>
<th>Engineering</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Standards</td>
<td>Conformance with desirable design standards.</td>
</tr>
<tr>
<td>Constructability</td>
<td>Potential to be constructed in useful traffic carrying segments (projects) over an extended period.</td>
</tr>
<tr>
<td>Construction Costs</td>
<td>Anticipated relative construction cost (minimize).</td>
</tr>
<tr>
<td>Geotechnical/Site Issues</td>
<td>Desirable conditions for construction, slope stability and minimal maintenance. Potential to avoid areas of past or current mining or other activities that might involve special problems.</td>
</tr>
<tr>
<td>Hydraulic/Hydrologic</td>
<td>Potential to avoid or minimize impacts to floodplains; minimize number and size of major stream crossings and stormwater management facilities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Traffic/Transportation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Traffic</td>
<td>Provide a desirable level of service to local traffic.</td>
</tr>
<tr>
<td>Through Traffic</td>
<td>Provide a desirable level of service to through traffic.</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Provide access to traffic generators such as developed areas, industrial parks, tourist attractions, schools, etc.</td>
</tr>
<tr>
<td>Transportation Network Compatibility</td>
<td>Conformance with existing and planned highway facilities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Use and Economic Development</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals Compatibility</td>
<td>Reinforce regional, and state local goals and objectives.</td>
</tr>
<tr>
<td>Community Interaction</td>
<td>Minimize impact on neighborhood character and stability, including impact on minority or other specific groups.</td>
</tr>
<tr>
<td>Economic Consistency</td>
<td>Minimize impact on business and commercial activities, and enhance economic structure and activity.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Right of Way/Displacements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right of Way</td>
<td>Minimize new right of way requirements and impacts to parcels, including division of large parcels.</td>
</tr>
<tr>
<td>Displacements</td>
<td>Minimize displacement of people and businesses.</td>
</tr>
<tr>
<td>Public Facilities and Services</td>
<td>Minimize interference with and impact on existing patterns of community service and on religious, health, and educational facilities and public utilities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Ecology/Water Quality</td>
<td>Minimize impacts to water supply and aquatic habitats.</td>
</tr>
<tr>
<td>Terrestrial Ecology</td>
<td>Relative impact to agricultural and forested land.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>Potential to avoid or minimize impacts.</td>
</tr>
<tr>
<td>Endangered Species</td>
<td>Potential to avoid known populations.</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>Potential to avoid historic and archaeological resources.</td>
</tr>
<tr>
<td>Hazardous Waste Sites</td>
<td>Relative ability to avoid potentially hazardous sites.</td>
</tr>
</tbody>
</table>
2.3.3 Develop Trial Segments

Based on the termini established by Congress, a general study area was established. Next, project engineers mapped all feasible locations for a highway, including both new locations and existing roadways. A total of 105 Trial Segments were configured and numbered for identification (see Exhibit 2.3). Since over 90% of the study area has slopes exceeding 20%, topography served as a major consideration when determining potential segment locations.

2.3.4 Evaluate Trial Segments

Trial Segments were evaluated and compared using the evaluation criteria that could logically be applied at this early stage of study. The study team eliminated segments not comparing favorably with the criteria, and retained those having better potential to meet project objectives. The 85 retained segments were designated as Concept Segments. Appendix A contains the results of the Trial Segment Evaluation.

This process led to the elimination of Trial Segments 104, 119, 120, 122, 123, 124, 125, 126, 130, 131, 138, 139, 140, 141, 142, 202, 211, 213, 226, 307, 304, 305, 306, 309, and 312. Reasons for elimination include steep slopes, difficult river crossings, and right-of-way impacts.

2.3.5 Evaluate Concept Segments

The Concept Segment Evaluation involved revising retained Trial Segments as well as creating new segments. At this point in the process, more-detailed information was used to study the Concept Segments. For example, using digital mapping technology, an environmental constraints map was prepared for the study area to evaluate concept segments. The map used digital spatial data from the US Geologic Service and the Virginia Department of Mines, Minerals, and Energy as a basis. Additional items that were superimposed on the base mapping included:

- National Wetland Inventory (NWI) wetlands;
- regulated floodplain boundaries;
- community facilities;
- cemeteries;
- parks, including properties purchased with Land and Water Conservation Funds; water resources, including public wells; and proposed US Army Corps of Engineers flood control project areas.
Also, at this stage of the study, occurrence locations for federally protected species were used to evaluate concept segments (see Section 4.16.2). Table 2.4 shows the eliminated Concept Segments. The remaining segments, designated Candidate Segments, make up the seven build alternatives shown on Exhibit 2.4. (Exhibit 4.1 also shows the Candidate Segments).

Table 2.4  
Concept Segments Eliminated

<table>
<thead>
<tr>
<th>Segment(s)</th>
<th>Reason for Elimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>101, 201, 300, 301</td>
<td>Impacts to Indiana Bat community; Segments would not serve local traffic or transportation needs of Route 83 corridor; Encroaches on Jefferson National Forest.</td>
</tr>
<tr>
<td>102</td>
<td>Encroaches on Jefferson National Forest and Flannagan Reservoir property; Impacts to jurisdictional areas and regulated floodplain; Lack of service to local and through traffic.</td>
</tr>
<tr>
<td>103</td>
<td>Lack of service to local and through traffic; Impacts to regulated floodplains; Impacts to Flannagan Reservoir.</td>
</tr>
<tr>
<td>232</td>
<td>Impacts to Flannagan Reservoir and regulated floodplains; Lack of service to local and through traffic.</td>
</tr>
<tr>
<td>105</td>
<td>Impacts to Flannagan Reservoir and regulated floodplains; Lack of service to local and through traffic.</td>
</tr>
<tr>
<td>113</td>
<td>Impacts to development, including a school.</td>
</tr>
<tr>
<td>127, 227</td>
<td>Multiple crossings of the McClure River; Impact to potential historic district.</td>
</tr>
<tr>
<td>116, 220</td>
<td>Impacts to existing development along Route 637; Potential Section 4(f) property use; Impacts to jurisdictional areas and regulated floodplains.</td>
</tr>
<tr>
<td>111</td>
<td>Unnecessary short connecting segment.</td>
</tr>
<tr>
<td>128, 135, 136, 137, 132, 133, 134</td>
<td>Impacts to development along existing routes; Lack of service to local traffic, including Town of Clintwood and Dickenson County Technology Park; Potential regulated floodplain impacts. Potential for considerable stream impacts.</td>
</tr>
<tr>
<td>223</td>
<td>Lacks service to local traffic associated with Towns of Haysi and Grundy.</td>
</tr>
<tr>
<td>224</td>
<td>Lacks service to local and through traffic including that oriented to the Town of Haysi; Impact to potential archaeological sites and many jurisdictional areas; Encroaches on proposed reservoir takings area for Levisa Fork Flood Control Project.</td>
</tr>
<tr>
<td>225, 333</td>
<td>Unnecessary without Segment 224.</td>
</tr>
</tbody>
</table>
Table 2.4 (Continued)

Concept Segments Eliminated

<table>
<thead>
<tr>
<th>Segment(s)</th>
<th>Reason for Elimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>228</td>
<td>Impacts to potential historic district.</td>
</tr>
<tr>
<td>230</td>
<td>Impacts to existing development along Route 83, including community facilities; Potential for considerable stream impacts.</td>
</tr>
<tr>
<td>330</td>
<td>Impacts to existing development along Route 83 including community facilities; Impacts to jurisdictional areas.</td>
</tr>
<tr>
<td>215</td>
<td>Traverses rugged sidehill terrain; Impacts to jurisdictional areas.</td>
</tr>
<tr>
<td>231, 216, 217</td>
<td>Traverses rugged sidehill terrain without significant advantage. Impacts to jurisdictional areas.</td>
</tr>
<tr>
<td>210, 212, 323</td>
<td>Replaced by added segment (336) that reduced impacts to existing development along Route 460 and Town of Grundy.</td>
</tr>
<tr>
<td>322</td>
<td>Impacts to development along Route 460.</td>
</tr>
<tr>
<td>324, 331</td>
<td>Impacts to development along Route 83/460, including community facilities.</td>
</tr>
<tr>
<td>332</td>
<td>Impacts to development along Route 460, including community facilities.</td>
</tr>
<tr>
<td>308, 310, 311</td>
<td>Impacts to development in vicinity of Town of Grundy; Rugged sidehill terrain; Impacts to jurisdictional areas.</td>
</tr>
<tr>
<td>325</td>
<td>Replaced by added segment (336) having fewer impacts; Impacts to jurisdictional areas.</td>
</tr>
<tr>
<td>319, 320, 321</td>
<td>Segments not offering advantages over others under study; Impacts to jurisdictional areas.</td>
</tr>
<tr>
<td>315, 316, 317</td>
<td>Segments from southern alignment connecting to West Virginia State line. West Virginia's eliminated its segments that connect at this point, opting for a connection at Paynesville.</td>
</tr>
</tbody>
</table>

2.4 SUMMARY OF ALIGNMENT SHIFTS

To avoid and minimize impacts, alignment shifts were made to four segments included in the DEIS. Table 2.5 compares impacts from the original and revised alignments. Prior to the alignment shifts, Segments 154, 206, and 207 would have impacted 12, 67, and 27 potential low-income families, respectively. Changes in the preliminary design reduced these impacts to zero, five, and 15, respectively. Segment 154 was shifted to the north near Lockhart Flats to avoid a manufactured home park. Segment 206 was shifted to the south to avoid Centennial Heights, a Section 8 housing complex located west of Haysi.
Segment 207 was shifted to the north near Harman and to the south near Maxie to reduce low-income family impacts. This alignment shift would also help avoid impacting the Harman Mine Company Office, a historic resource. Other types of environmental impacts associated with these segments were minor when compared to the impacts of the alternatives as a whole (see Table 2.5).

Segment 204 was shifted approximately 919 meters (2800 feet) to the west to allow an interchange with the proposed US Route 460 Connector. Environmental impacts associated with this shift are minor when compared to the alternatives as a whole (see Table 2.5).

Table 2.5
Comparison of Selected Impacts from Alignment Shifts

<table>
<thead>
<tr>
<th>Segment</th>
<th>Relocation</th>
<th>Noise</th>
<th>Forest</th>
<th>Wetlands</th>
<th>Waters of the US</th>
</tr>
</thead>
<tbody>
<tr>
<td>154 before</td>
<td>26 (12LI)</td>
<td>1</td>
<td>29.6</td>
<td>73.3</td>
<td>0</td>
</tr>
<tr>
<td>154 after</td>
<td>12</td>
<td>1</td>
<td>29.9</td>
<td>73.9</td>
<td>0</td>
</tr>
<tr>
<td>204A before</td>
<td>0</td>
<td>0</td>
<td>24.7</td>
<td>61.0</td>
<td>.114</td>
</tr>
<tr>
<td>204F1 after</td>
<td>0</td>
<td>0</td>
<td>34.2</td>
<td>84.6</td>
<td>0.207</td>
</tr>
<tr>
<td>206 before</td>
<td>76 (67LI)</td>
<td>1</td>
<td>92.1</td>
<td>227.6</td>
<td>0.015</td>
</tr>
<tr>
<td>206 after</td>
<td>6 (5LI)</td>
<td>1</td>
<td>91.2</td>
<td>225.4</td>
<td>0</td>
</tr>
<tr>
<td>207 before</td>
<td>49 (27LI)</td>
<td>0</td>
<td>77.9</td>
<td>192.4</td>
<td>0</td>
</tr>
<tr>
<td>207 after</td>
<td>17 (15LI)</td>
<td>0</td>
<td>78</td>
<td>192.7</td>
<td>0</td>
</tr>
</tbody>
</table>

2.5 DESCRIPTIONS OF BUILD ALTERNATIVES

Although the Candidate Segments may be combined in many ways, the study team combined segments to form five complete locations believed to have sufficiently differing features and characteristics to be evaluated and compared with each other in the DEIS. A combination of segments forming a complete location was identified as an "alternative" and given a letter designation. Alternatives F1 and F2, which consist of a combination of different segments from the original five alternatives, were formed after the location public hearings in response to comments received from local government officials and citizen
groups (see Section 2.5.6). Throughout the process, new information led to revisions of some segments to minimize impacts or construction costs. This section describes the routes taken by Alternatives A through F2 (see Exhibit 2.4).

Since the Expressway would be a limited access facility, the study identified potential connections to existing roads to serve local traffic and to link the facility to important traffic generators such as towns. Most of these proposed connectors are roads on new location, although some alignments follow existing roads that could be upgraded.

### 2.5.1 Alternative A

**Segments:** 159-150-106-158-107-114A-115-214-203  
**Length:** 88.7 kilometers (55.1 miles)

Alternative A begins at Route 23 north of the intersection between Route 23 and Business Route 23/Route 83 in the Town of Pound. It then proceeds southeast to a point on Route 83 near the eastern limits of Pound. Next, it follows the general alignment of existing Route 83 for approximately 10 kilometers (six miles) to a point west of Clintwood, where it turns north for about two kilometers (one mile) on new location. It then proceeds generally easterly, continuing on a new location, bypassing Clintwood to the north. Connections to Route 631 and Route 607 would provide access to Clintwood.

Continuing generally easterly, Alternative A crosses the Cranes Nest River and then turns in a more northerly direction. It crosses the Russell Fork about five kilometers (three miles) downstream (north) of the Town of Haysi near the confluence with the Pound River. East of the Cranes Nest River, access is provided by connections at Route 637, Route 63 at two locations, and Route 614 near its intersection with Route 63. Before crossing the Russell Fork, Alternative A turns in an easterly direction, continuing on new location and intersecting with Route 80 about four kilometers (two miles) south of the entrance to Breaks Interstate Park.

Crossing into Buchanan County, the location turns southeasterly and continues for approximately 11 kilometers (7 miles) before changing to a more easterly direction. It passes near the Grundy Airport with a connection to Route 718. Continuing easterly, it crosses the Levisa Fork and Route 83/460 on a high bridge. Since it is on high ground, a direct connection to Route 83/460 near Grundy is not feasible. Access is provided by a connector road that runs...
generally along Watkins Branch for over 6 kilometers (4 miles) to Route 83/460 about 2.4 kilometers (1.5 miles) south of downtown Grundy.

East of Grundy, Alternative A continues on a new location about a mile to the south of Route 83, generally along ridges. Connections are provided at Route 728 and Route 641. It roughly parallels the Route 83 corridor to the Virginia/West Virginia State line and will connect to a location for the Coalfields Expressway in West Virginia.

2.5.2 Alternative B

Segments: 159-118A-160A-156A-114A-115
214-205-206-207-238A-303A-302
Length: 81.9 kilometers (50.9 miles)

Alternative B connects with Route 23 in the Town of Pound at the same location as Alternative A. Alternative B continues easterly on a new location, traversing higher ground north of Route 83 and passing north of Clintwood. Connections are provided at Route 631 and Route 624 in Wise County, and Routes 631 and Route 607 near Clintwood. After crossing the Cranes Neck River, Alternative B swings in a more northerly direction and has two connections with Route 63 before turning in a more easterly direction. It connects with Route 63 again before crossing the Russell Fork about two kilometers (one mile) north of the Town of Haysi.

Alternative B continues northerly on new location and passes about two kilometers (one mile) farther south of Breaks Interstate Park than Alternative A. A connection to Route 80 south of the Park is provided. Alternative B continues in a northerly direction into Buchanan County and follows the Route 609 corridor near the Levisa Fork. It then roughly parallels the Levisa Fork for about three kilometers (two miles) before crossing the river and Route 460. A connection about one kilometer (0.5 miles) long provides access to Route 460 north of the Town of Grundy.

Alternative B follows the Route 656 corridor for almost six kilometers (four miles). It then turns in a more easterly direction, continuing on new location and traversing higher ground well north of Route 83. A connection at Route 643 would provide access to Route 83. Alternative B ends near Route 83 at the Virginia/West Virginia State line and could connect to a location for the Coalfields Expressway in West Virginia.
2.5.3 Alternative C

Length: 82.1 kilometers (51.0 miles)

Alternative C begins at Route 23 in the Town of Pound at the same location as Alternatives A and B. Like Alternative A, it proceeds easterly to Route 83 and then follows the general alignment of Route 83 to a point west of the Town of Clintwood. It then turns south of Clintwood on new location. Near the east town limits of Clintwood, it turns in a northerly direction then continues easterly. Connections that would serve the Clintwood area are provided at Route 72 west of Clintwood, Route 83 to the south, and at Route 672 to the east.

Continuing easterly, Alternative C crosses the Cranes Nest River and then turns in a northerly direction before turning easterly again and running just north of the McClure River. It crosses Russell Fork just north of the northern town limits of Haysi. East of the Cranes Nest River to Russell Fork, connections are provided at Route 637, at two points on Route 63, and at Route 680 along Wolfpen Branch to Route 83.

Alternative C continues easterly on new location and generally traverses higher ground to a crossing of Levisa Fork and Route 83/460 within the town limits of Grundy. At this location, a direct connection to Route 83/460 is not feasible. A connection is provided at Route 615 west of Grundy and another east of Grundy. This latter connection runs generally along Watkins Branch for a distance of about five kilometers (three miles) to intersect with Route 83/460 south of downtown Grundy. East of Grundy, the Alternative C location is the same as Alternative A.

2.5.4 Alternative D

Length: 88.1 kilometers (54.8 miles)

Alternative D begins at an intersection with Route 23 just south of the southern town limits of Pound. It proceeds in a northerly direction, roughly paralleling Route 23 Business and then swings east to the Route 83 corridor. Like Alternative C, it follows the general alignment of Route 83 and then traverses south of Clintwood on new location. Like Alternative C, Alternative D has connections at Route 72 east of Clintwood and Route 83 to the south.
Alternative D engages the Route 83 corridor again southeast of Clintwood and follows the general alignment of Route 83, crossing the Cranes Nest River and the McClure River. After crossing the McClure River, Alternative D turns in a northerly direction and, on higher ground, roughly parallels the Route 83/McClure River corridor. It crosses Russell Fork south of the Town of Haysi. Between Clintwood and Haysi, connections are provided at Route 637, Route 666 near Clinchco, and Route 652 near Haysi.

East of the Russell Fork crossing near Haysi, Alternative D turns northerly and then easterly again, remaining on new location and generally traversing the higher ground for a distance of about 13 kilometers (8 miles). It then turns southeasterly for a distance of about five kilometers (three miles) and then easterly, following the same alignment as Alternative A. From west of Grundy to the Virginia/West Virginia State line, Alternative D is on the same location and has the same features as Alternative A.

2.5.5 Alternative E

Length: 86.7 kilometers (53.9 miles)

Alternative E begins at an intersection with Route 23 just south of the southern town limits of Pound. It proceeds in a northerly direction, roughly paralleling Route 23 Business. It then turns in a northeasterly direction and continues on new location for about three kilometers (two miles) before changing to an easterly direction on the same alignment as Alternative B. A connection is provided to Route 631. It then turns southeasterly to the Route 83 corridor and then, like Alternatives C and D, generally follows the Route 83 alignment to a point west of the town of Clintwood. It then turns south of Clintwood on new location. The location and connections at Route 72 and Route 83 in the Clintwood area are the same as for Alternatives C and D.

South of Clintwood, Alternative E continues on new location turning southeasterly and then easterly. It roughly parallels, but remaining well south of, the Route 83 corridor. It crosses the Cranes Nest and McClure rivers and then turns in a northerly direction, following the same alignment (roughly paralleling the Route 83/McClure River corridor) as Alternative D. Alternative E crosses the Levisa Fork south of Haysi. Like Alternative D, connections are provided at Route 666 near Clinchco and Route 652 near Haysi.
East of Haysi, Alternative E continues easterly on the same alignment as Alternative D, then shares the same alignment as Alternatives D and C to a point about six kilometers (four miles) west of the Town of Grundy. It then turns to the north and then easterly, continuing on new location, to cross Levisa Fork and Route 460 north of the Town of Grundy at the same location as Alternative B. Alternative E then follows the same location, and has the same features, as Alternative B to the Virginia/West Virginia State line.

### 2.5.6 CTB Approved Alternative F1

**Segments:** 159-118A-160A-153A-158-108A-161A-154-115

**Length:** 95.4 kilometers (59.3 miles)

Alternative F1, a combination of segments from different build alternatives studied in the DEIS, was formed after the location public hearings in response to comments received from local government officials and citizen groups. This following narrative describes its location and provides reasons why it was selected by the CTB.

Alternative F1 begins at Route 23 north of the intersection between Route 23 and Business Route 23/Route 83 in the Town of Pound. The Town of Pound desired the alignment located to the north to minimize impacts to the town and to provide access to developable land. The alignment then continues easterly on a new location, traversing higher ground north of Route 83. The northern alignment was preferred to minimize impacts to development located along Route 83. It then turns southeasterly to the Route 83 corridor and follows the general alignment of Route 83 to a point west of the Town of Clintwood. It then turns south of Clintwood on new location. Near the east town limits of Clintwood, it turns in a northerly direction then continues easterly. The Town of Clintwood preferred this alignment since it would provide access to the Dickenson County Technology Park located east of the Town. Connections that would serve the Clintwood area are provided at Route 72 west of Clintwood, Route 83 to the south, and Route 672 to the east.

Continuing easterly, Alternative F1 crosses the Cranes Nest River and then turns in a northerly direction and has two connections with Route 63 before turning in a more easterly direction. It connects with Route 63 again before crossing the Russell Fork about two kilometers (one mile) north of the Town of Haysi, providing a direct connection to the town and land cited for development potential.
Alternative F1 continues northerly on new location and passes about six kilometers (three miles) south of the entrance to Breaks Interstate Park. This location is about two kilometers (one mile) farther south of the Park than Alternative A (Segment 203). Local officials believed this location would provide good access to the Breaks Interstate Park via Route 80. At the same time, representatives from the Breaks Interstate Park preferred this alignment because of Alternative A’s potential for visual impacts.

Alternative F1 then continues in a northerly direction into Buchanan County and follows the Route 609 corridor. Near Bull Gap, the alignment for Segment 204 was shifted to the west to fit better with the proposed US Route 460 Connector project (see Section S-6). The original alignment for Segment 204 remains part of Alternative A and is now referred to as Segment 204A. The revised segment is referred to as Segment 204F1. Segments 204F1, 239, and 237 are collectively referred to as the BCIAC. The BCIAC, comprised of segments studied in the DEIS, is included in the CTB Selected Alternative F1 to provide access to a proposed regional airport and land intended for industrial development. (Since definitive locations for the airport and industrial development have not yet been determined, this access is based on information available at this time). It runs southeasterly for approximately 5 kilometers (3 miles) before shifting east. It continues in an easterly direction, crossing Route 614 before changing to a more northeasterly direction. Continuing northeasterly, the BCIAC connects back with the CTB Approved Alternative F1 just east of Route 604.

Continuing east, Alternative F1 roughly parallels the Levisa Fork for about three kilometers (two miles) before crossing the river and Route 460. A connection about one kilometer (0.6 miles) long provides access to Route 460 north of the Town of Grundy. This northern alignment would minimize impacts to the Town of Grundy and communities to the south.

Alternative F1 follows the Route 656 corridor for almost six kilometers (four miles). It then turns in a more easterly direction, continuing on new location and traversing higher ground well north of Route 83. A connection at Route 643 would provide access to Route 83. It terminates near Route 83 at the Virginia/West Virginia State line and would connect to a location for the Coalfields Expressway in West Virginia.

Based on public comment and support from the Coalfields Coalition, a non-profit advocacy group supporting the Coalfields Expressway, Alternative F1 was the alignment choice of the overall region. This alternative was determined to satisfy the project’s purpose and need while providing a reasonable balance of
the many environmental, social, economic, and engineering issues involved, as demonstrated in Chapter 4.

2.5.7 Alternative F2

214-205-206-207-238A-303A-302  
*Length:* 82.2 kilometers (51.1 miles)

Alternative F2 is identical to the CTB Approved Alternative F1, but does not include the BCIAC. Alternative F2 has been included for comparison purposes; to demonstrate the impacts associated with the BCIAC.
**State Project No.**
R000-961-101, PE-100

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**Preliminary Alternatives**

**Step I: Preliminary Alternatives Selection**

**Purpose and Need Met?**

- Yes → **Build Alternatives**

**Step II: Intermediate Alternatives Selection**

**Environmental Impacts Minimized?**

- No → **No-Build Alternative**
  - TSM Alternative
  - Mass Transit Alternative
  - Eliminated Trial Segments
  - Eliminated Concept Segments

- Yes → **Other Criteria Met?**
  - Engineering
  - Transportation
  - Land Use and Economic Development
  - Right of Way/Displacements

- No → **Eliminated Trial Segments**
- Yes → **Build Alternatives A, B, C, D, & E**

**No-Build Alternative (Retained for Baseline Comparison)**

**Step III: DEIS**

**Public Hearings**
- CTB Action
- Alternatives F1 & F2

**Step IV: FEIS**

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**Coalfields Expressway Location Study**

Exhibit 2.1

**Alternatives Selection Process**
Expressway Typical Section

Connector Roads Typical Section

Coalfields Expressway Location Study

Exhibit 2.2
CHAPTER THREE
AFFECTED ENVIRONMENT
3. AFFECTED ENVIRONMENT

This chapter describes the existing social, economic, and natural environments of the area affected by the proposed alternatives. The descriptions are general in nature and address the entire project area rather than describing each of the specific areas affected by the build alternatives. This information helps identify sensitive areas the project should avoid and serves as a basis from which to assess project impacts. The efforts to identify historic properties were carried out in accordance with the National Historic Preservation Act (Section 106), 36 CFR Part 800, the Secretary of the Interiors Standards and Guidelines, the Virginia Department of Historic Resources (DHR) survey guidelines, and the 1999 Programmatic Agreement between VDOT and DHR.

3.1 PHYSIOGRAPHY AND GEOLOGY

3.1.1 Physiography

The study area is located in the physiographic region of the Appalachian Plateaus Province (also referred to as the Cumberland Plateau). The Plateau is comprised mainly of Paleozoic sedimentary rocks (deposited by wind or running water) that have remained essentially horizontal. The mountainous landscape evolved as watercourses thoroughly and deeply incised the plateau surface. These streams and creeks, never more than a few miles apart, are typically 152 to 305 (500 to 1000 feet) meters below the plateau surface. Consequently, the study area is characterized by irregular ridges (former plateau surfaces) steep slopes, V-shaped valleys, and narrow floodplains. Elevations in the study area vary from 294 meters (966 feet) above mean sea level (MSL) near Harmon Junction to 750 meters (2460 feet) above MSL near the West Virginia State line.

Approximately 90% of Wise County's land area has slopes over 20%. Based on existing mapping and visual reconnaissance, neighboring Dickenson and Buchanan counties have, at least, a similar percentage of steep slopes. Floodplains and ridges usually contain the study area's only level to moderately sloping land, and most development has occurred in these areas.

3.1.2 Geology

In the Appalachian Plateaus, conglomerates, sandstones, and shales with interbedded coal predominate. Limestones are rare. The study area's important formations belong to the Pennsylvanian series and include the Norton,
Gladeville, and the Wise. The Norton Formation is the most significant formation since it contains many coal beds and is exposed in Russell, Buchanan, Dickenson and eastern Wise counties. The Wise Formation extends from Lee County, across Wise and Dickenson, and along the top of Buchanan County. The Gladeville sandstone lies just below the Wise Formation and just above the Norton Formation.

The most abundant mineral resource in Buchanan, Dickenson, and Wise Counties is coal. These three counties also serve as Virginia’s largest natural gas producers.

The study area contains a fault line that has caused problems to nearby development. The Russell Fork fault, located in Buchanan and Dickenson counties, extends along the Russell Fork River. Along the fault, evidence of vertical movement is apparent and has caused instability in structures, especially around Haysi.

Surface and deep mining of coal reserves has increased the risk of subsidence within the study area. Other potential development problems include landslides-prone areas and areas prone to land disturbances. Due to land disturbances, heavy construction is not recommended in Buchanan and Dickenson Counties along the Russell Fork fault.

3.1.3 Soils

Detailed soils information is not available for the entire study area, since Buchanan and Dickenson counties do not have completed soil surveys. The soil survey for Buchanan County is currently being developed, but will not be available from the Natural Resources Conservation Service (NRCS) in the near future. The Tennessee Valley Authority (TVA) completed a soil survey for Wise County in 1940. The limited information available focuses on soils having development potential, and only includes general description of the area’s soil associations. Similarly, the soils information that exists for Dickenson and Buchanan only describes the counties’ soil associations.

Several soil associations dominate Wise County. These include the Jefferson, Hartsells, Muskingum, Coeburn and the Atkins. The Jefferson soils are found in colluvial lands. Colluvium refers to soil material and/or rock fragments moved by local creep, slide or local wash and deposited at the base of side slopes. Jefferson soils contain many soft sandstone and shale fragments that can interfere with cultivation. The Hartsells and Muskingum, upland soils that
cover most of Wise County, have developed mainly from weathered sandstone or from sandstone and shale interbedded. (Uplands are areas having higher elevations than lowlands near streams and rivers). Muskingum soils have less development potential than Hartsells. The Coeburn soils, also located in upland areas, develop from material weathered from micaeous shale. Silt loam to heavy silt loam make up the surface soils of the Coeburn. The subsoil consists of moderately friable silty clays. The Atkins soils are bottomland soils that consist of heavy and moderately plastic fine sandy clay or silty clay.

According to the Dickenson County Comprehensive Plan, the county’s flatter ridge tops offer two associations of soils suitable for development. The Hartsells develop in sandstone and the Enders in micaeous shale. The Coeburn, which is associated with the Enders, also is present on ridge tops but its depth is not suitable for development.

Colluvial soils, located at the mouths of valleys, form from materials accumulated from adjacent upland slopes. The two most prevalent soils are the Leadvale and the Jefferson, which form from areas of Coeburn soils. These soils are usually thicker than the upland soils, but receive considerable seepage from high lying areas.

According to the Buchanan County Comprehensive Plan, the soil associations that underlie most of the county include the Grigsby, Marrowbone, Pineville, and Dekalb. The Grigsby soils are well drained, prime farmland soils with a 0–2% slope range. According to the NRCS and preliminary Buchanan Soil Survey information, Grigsby soils are located along Slate Creek, Dismal Creek and the Russell Fork. (Currently, mapping for the Grigsby soil locations is unavailable.) Marrowbone soils form in sandstone and consist of more sand than silt and clay. They are moderately deep to rock and are located on higher landscapes of shoulders and summits. A natural colluvial soil, Pineville soils formed in sandstone and shale. It runs from the upper parts of mountains sides to floodplains. The Dekalb soils are moderately deep to shallow, and are formed on mine benches in regolith from surface mining operations.

3.2 SOCIAL ENVIRONMENT

3.2.1 Land Use

Due to the extreme topography, the study area has remained rural, consisting mostly of undeveloped forested land. Strip or surface mined areas are prevalent
throughout the project area and are generally located near or on mountaintops. Urban lands include residential, commercial, industrial, and public uses.

Development Patterns
The extreme topography has influenced development patterns more than any other factor, with most development occurring in relatively level valley bottoms. As developable land in valley bottoms became more scarce, development began to occur on mountaintops or ridges.

In the late nineteenth century, railroads were introduced in the area to take advantage of the considerable coal and lumber resources. The locations of these railroads, and the mining operations that followed them, also greatly influenced development patterns. Mining companies often provided housing to its employees near the mine entrances. The communities of Fremont, McClure, Haysi, and Clinchco developed as a result of the coming of the railroad and the coal mining industry.

Future Land Use
Land use regulation is considerably less stringent in the study area than in other parts of the state. In fact, only Wise County and the Towns of Pound, Clintwood, and Grundy have zoning ordinances. Private market decisions, therefore, have guided development rather than public sector land use plans or requirements. However, Wise, Dickenson, and Buchanan Counties, have approved comprehensive plans. These plans were approved in 1998, 1994, and 1994, respectively. Exhibit 3.1 shows future land use designations based on comprehensive plans for each of the counties. Although these counties used different planning horizons for their future land use determinations, the exhibit provides a general snapshot of intended or expected development patterns. These plans were developed without the benefit of knowing potential locations for the Coalfields Expressway.

The future land use map calls for continued commercial and industrial development in valley bottoms containing major routes. Strip residential development would continue to occur in valleys and along state secondary roads that travel along ridgelines. Since most of the study area is not zoned, most of these future land use designations do not have the legal signification they would in Virginia localities that have zoning.
3.2.2 Demographics

Population

Until this century, the study area remained sparsely populated. The early twentieth century brought tremendous change to the area, as job growth in the coal mining, iron ore mining and lumber industries led to marked population increases. The vibrant economy made Wise, Dickenson, and Buchanan counties some of the most populous and affluent localities in Virginia at that time. In recent decades, however, the region's economy has waned, largely due to mechanization and downsizing in the coal industry.

The worsening local economy has led to general population loss in the study area. Table 3-1 shows past census data and population projections to the year 2010. Population grew in the study area during the seventies, but decreased during the eighties. Buchanan County experienced the greatest population loss between 1980 and 1990 (approximately 17%), while Dickenson and Wise counties had population losses of roughly 11% and 10%, respectively. Meanwhile, Virginia's statewide population increased by almost 16%. Most of this growth occurred in the so-called Urban Crescent that stretches from Northern Virginia to Richmond and Hampton Roads.

Table 3.1
Population Data, Estimates, and Projections

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wise</td>
<td>43,863</td>
<td>39,573</td>
<td>39,288</td>
<td>37,754</td>
<td>36,316</td>
</tr>
<tr>
<td>Dickenson</td>
<td>19,806</td>
<td>17,620</td>
<td>17,195</td>
<td>16,397</td>
<td>15,702</td>
</tr>
<tr>
<td>Buchanan</td>
<td>37,989</td>
<td>31,333</td>
<td>29,361</td>
<td>28,000</td>
<td>26,000</td>
</tr>
<tr>
<td>Virginia (000)</td>
<td>5,347</td>
<td>6,187</td>
<td>6,617</td>
<td>6,897</td>
<td>7,451</td>
</tr>
</tbody>
</table>

Sources: 1980 & 1990 Data—U.S. Bureau of the Census
7/1/97 Estimate—U.S. Bureau of the Census
2000 & 2010 Projections—Virginia Employment Commission

Virginia's population is expected to continue to increase. Meanwhile, the US Census has forecasted the population of the study area counties, collectively, will decrease from three to seven percent between the years 2000 and 2010.

Income

The study area's weakened economy has led to low incomes for many of its residents. Table 3-2 shows income data for the three study area counties and the state of Virginia. In 1989, median household incomes were $16,292 for Dickenson County, $19,594 for Wise County, and $19,851 for Buchanan
County. These income figures trail the state of Virginia's 1989 median household income by an average of approximately 79%. However, 1995 estimates indicate this income disparity is declining.

Table 3.2

<table>
<thead>
<tr>
<th>Year</th>
<th>Wise</th>
<th>Dickenson</th>
<th>Buchanan</th>
<th>Virginia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>$19,594</td>
<td>$16,292</td>
<td>$19,851</td>
<td>$33,328</td>
</tr>
<tr>
<td>1995</td>
<td>$25,565</td>
<td>$21,806</td>
<td>$23,873</td>
<td>$36,367</td>
</tr>
</tbody>
</table>


In preparing the Relocation Report for the project, right-of-way agents collected individual income information from the Commissioners of Revenue for the three counties. Broad annual income ranges are:

- Wise: $10,500 to $190,000
- Dickenson: $10,000 to $175,000
- Buchanan: $10,800 to $200,000

Race
The following table contains the composition of the study area counties' population according to race. The US Census divides population into five categories: American Indian/Eskimo/Aleut, Asian/Pacific Islander, Black, Other, and White. All of these categories except White constitute minority populations.

Table 3.3
1990 Population Count by Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Wise</th>
<th>Dickenson</th>
<th>Buchanan</th>
<th>Virginia</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>38,651</td>
<td>17,521</td>
<td>31,113</td>
<td>4,793,278</td>
</tr>
<tr>
<td>Black</td>
<td>679</td>
<td>94</td>
<td>61</td>
<td>1,163,068</td>
</tr>
<tr>
<td>American Indian, Eskimo, or Aleut</td>
<td>52</td>
<td>32</td>
<td>33</td>
<td>16,391</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>162</td>
<td>16</td>
<td>31</td>
<td>158,808</td>
</tr>
<tr>
<td>Other race</td>
<td>29</td>
<td>0</td>
<td>95</td>
<td>55,813</td>
</tr>
<tr>
<td>Total</td>
<td>39,573</td>
<td>17,663</td>
<td>31,333</td>
<td>6,187,358</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of the Census

Whites account for approximately 98.6% of the combined 1990 population for the three counties. African Americans comprise the largest minority group, but
comprise less than 1% of total population. This area contains few minorities compared to the state as a whole.

**Poverty**
The poverty level is determined through use of a formula that considers average costs for basic needs such as food, clothing, housing, and utilities. In 1989, the poverty threshold for a family of four was $12,674. Table 3.4 shows 1989 poverty levels for the three study area counties and Virginia.

<table>
<thead>
<tr>
<th>County</th>
<th>Persons w/Income below Poverty Level</th>
<th>% of Persons with Income below Poverty Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wise</td>
<td>8439</td>
<td>22</td>
</tr>
<tr>
<td>Dickenson</td>
<td>4518</td>
<td>26</td>
</tr>
<tr>
<td>Buchanan</td>
<td>6770</td>
<td>22</td>
</tr>
<tr>
<td>Virginia</td>
<td>611,611</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of the Census

As Table 3.4 shows, the study area's troubled economy led to a relatively large number of persons being below the poverty level in 1989. Dickenson County has the highest percentage (26%). Meanwhile, only 10% of Virginia's 1989 population fell below the poverty level.

**3.2.3 Communities**
The study area contains the many small, incorporated towns and unincorporated communities listed in Table 3.5. These communities have relatively low populations; Grundy is the most populous with a 1990 population of 1,305. These communities and the services they contain are connected by the state roadway network; some are also linked by railroads.

**3.2.4 Community Facilities**

**Schools**
Wise County currently operates 16 schools, two of which are located in the project area. James Woodrow Adams Elementary and Pound High. Of the nine
Table 3.5

Communities

<table>
<thead>
<tr>
<th></th>
<th>Incorporated</th>
<th>Unincorporated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wise County</td>
<td>Pound</td>
<td>Horse Gap</td>
</tr>
<tr>
<td>Dickenson County</td>
<td>Clintwood*</td>
<td>Fremont</td>
</tr>
<tr>
<td></td>
<td>Clinchco</td>
<td>Lockhart Flats</td>
</tr>
<tr>
<td></td>
<td>Haysi</td>
<td>Flemingtown</td>
</tr>
<tr>
<td>Buchanan County</td>
<td>Grundy*</td>
<td>Home Creek</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Harmon Junction</td>
</tr>
<tr>
<td></td>
<td>Vansant</td>
<td>Matney</td>
</tr>
<tr>
<td></td>
<td>Tookland</td>
<td>Slate</td>
</tr>
<tr>
<td></td>
<td>Oakwood</td>
<td>Stacy</td>
</tr>
<tr>
<td></td>
<td>Harmon</td>
<td></td>
</tr>
</tbody>
</table>

*County seat

schools in Dickenson County, Long Fork Elementary, Sandlick Elementary, Clintwood Elementary, Clinchco Elementary, Clintwood High, Haysi High and Dickenson County Vocational are located within the study area. Buchanan County contains 16 public schools. Seven schools are located within the project area, including Harman Elementary, J.M. Blevins Elementary, Russell Prater Elementary, Vansant Elementary, Garden Elementary, Grundy Senior High, Garden High, and Buchanan County Vocational School. The new Appalachian School of Law in Grundy, Southwest Community College in Richlands, Mountain Empire Community College in Big Stone Gap, and Clinch Valley College in Wise are all secondary education facilities accessible to the study area. Exhibit 3.2 shows school facilities located in the study area.

Emergency Facilities
Sheriffs' offices for the three counties, along with State troopers and officers from the town governments, provide law enforcement in the study area. The area's Virginia State Police Headquarters is located in Vansant. Volunteer fire departments provide fire protection to local residents.

Rescue services are located throughout the area with staff trained in general emergency service and many industrial accident situations. Dickenson County has a 50-bed hospital located in Clintwood. Buchanan General Hospital is located on Route 83 in Slate Creek, and Wise County contains several hospitals located in Norton. Community Hospital, St. Mary's Hospital, and Wise Appalachian Regional Hospital are also available.
Parks and Recreational Areas

Several major recreation facilities near the study area attract both residents and tourists. The Breaks Interstate Park is located atop the longest and deepest gorge east of the Mississippi. In 1954, Virginia and Kentucky established the Breaks Interstate Park overlooking the physically dramatic gorge (known as "The Breaks") where it remains one of only two interstate parks in the country.

Built by the U.S. Army Corps of Engineers, the John W. Flannagan Reservoir is a deep, 1,143-acre flood-control and drinking water reservoir located on the Pound River. It also serves as a major boating and fishing amenity, attracting an estimated 400,000 visitors in 1998. Approximately 8000 acres of federal land containing many recreational areas surround the lake and its major tributaries.

County parks and school facilities also provide recreational opportunities in the study area. Poplar Gap Park, located in Buchanan County, offers baseball fields and a pony riding stable. Proposed development includes such uses as a miniauity racetrack, picnic shelters, fair grounds, motorcross trails, and a miniature golf course. Another Buchanan County park is Enochs Branch Park, located on Route 642 near Slate Creek.

In 1998, a non-profit group in Dickenson County applied for and received a $250,000 federal grant for a pedestrian and bicycle trail from Haysi to the Garden Hole area of the Breaks Interstate Park. As proposed, the trail would parallel the Russell Fork, and mostly be located within CSX Railroad right-of-way.

In January 2000, the Town of Clintwood applied for, but did not receive, federal funding for a similar recreational trail. The proposed trail would begin near the Route 83 crossing of the Cranes Nest River and extend north to the Flannagan Reservoir. It would then travel along the reservoir before terminating at a marina. In 2001, the Town did not reapply for funding for the trail.

Other Community Facilities

The study area's many churches provide spiritual and other services to residents. Examples of other groups providing community or non-profit facilities include Ruritan groups, Veterans of Foreign Wars chapters, and YMCAs.
3.2.5 Public Utilities

Public Water
Coal mining operations have damaged groundwater supplies in the area, and lack of reliable and safe drinking water remains a problem for residents in outlying and remote areas. Local governments in the study area, therefore, have worked to provide public water service to residents.

In Wise County, the Pound Sanitary District provides water service to the Town of Pound. Producing approximately 300,000 gallons a day, the district uses the North Fork Reservoir, located just west of the project area on the North Fork of the Pound River, as its principal water supply. Planned expansions in the study area include areas along State Routes 671, 632, 633, and 638.

The Wise County Public Service Authority (PSA) provides water service to parts of the study area along Routes 640 and 641 near the community of Hurricane. The Authority provides this service from its recently constructed two million gallons a day (MGD) plant at Carfax on the Clinch River.

Most of the developed areas and major roadway corridors in the Dickenson County portion of the study area are served by public water. Five different water authorities provide this service: the Big Caney PSA, the Dickenson County PSA, the Buchanan County PSA, the Wise County PSA, and the Town of Clintwood. The John Flannagan Water Authority provides most of the water to these authorities from its plant located along the John Flannagan Reservoir. The plant is authorized to withdraw 2.75 MGD.

The Buchanan County Public Service Authority also uses the Flannagan Reservoir for its public water, distributing approximately 1,569,000 gallons daily. The Route 83 corridor, from the Dickenson County line to several miles east of Grundy, has public water. Expansions are planned along the remainder of Route 83 to serve the communities of Stacy and Slate.

Public Sewer
Soils in the study area are generally unsuitable for septic drainfields. Therefore, local governments have prioritized providing public sewer service to residents, focusing on more-developed areas. Nonetheless, most of the study area lacks public sewer service. These areas dispose of wastewater through septic tank drain field systems, pit privies, home package treatment plants, sand filters, and, in remote cases, direct discharge to area streams.
The Town of Pound has a 175,000 gallon per day treatment plant that serves a small area within the town limits. Proposed service areas include Route 23 north to Almira and along Route 83 to its intersection with Route 631.

In Dickenson County, the Town of Clintwood Sewage Treatment Facility has a treatment capacity of 500,000 gallons per day with average daily use of 240,000 gallons per day. This plant, which currently only serves areas within the town limits, has capacity to expand to 1,000,000 gallons per day. The Dickenson County PSA has a sewage treatment facility that serves the Haysi community and the Route 83 corridor immediately west of Haysi. The plant has a capacity of 100,000 gallons per day, with daily use averaging approximately 30,000 gallons per day. The Clinchco community also has limited public sewer service. The Buchanan County PSA provides public sewer service using a treatment plant with a 1,250,000 gallons per day capacity. The plant treats approximately 578,000 gallons per day. Most of the county’s portion of the Route 460 corridor receives sewer service, as well as the Route 83 corridor from Vansant to several miles east of Grundy.

Solid Waste
In 1988, Wise County began operation of a new landfill at Blackwood. The facility, with appropriate upgrades, is expected to meet the county’s solid waste needs for 30-40 years.

Neither Buchanan nor Dickenson counties currently have their own sanitary solid waste landfill. Both counties have taken a regional approach to solid waste management and, along with Russell County, have established the Cumberland Plateau Regional Waste Management Authority. The authority has contracted with BFI, Inc. to ship solid waste to a landfill in Tennessee. A transfer facility is located in both Buchanan and Dickenson counties for this purpose. Buchanan County’s transfer facility is located near King Mountain, whereas Dickenson’s facility is located in Freemont, between St. Paul and Clintwood. Neither county plans to build a sanitary landfill.

3.2.6 Transportation Facilities

Railroads
Rail transportation is the primary means for hauling coal to a variety of widely distributed coal powered industries. Norfolk Southern Railroad provides Buchanan County and a small portion of Dickenson County with rail transportation. The majority of Dickenson County is served by CSX
Transportation. Piggyback service, where truck trailers can be loaded directly onto rail cars, is available in Bluefield, West Virginia and Kingsport, Tennessee.

Airports
Nearby airports include Grundy Municipal Airport, Tazewell County Airport, Lonesome Pine Airport, and the Tri-City Regional Airport. The Grundy Municipal Airport and the Tazewell County Airport are suitable for small aircraft only. Most general aviation aircraft, including small jet powered aircraft, can access the Lonesome Pine Airport in Wise County. The Tri-City Regional Airport located in Blountville, Tennessee provides commercial air transportation.

Bus Service
Public transportation in the area is limited to Mountain Empire Transit (MET). MET provides ambulatory and wheelchair passengers fixed-route and paratransit service, Medicaid and aging services, human service transportation and general public transit at nominal fares.

3.3 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act of 1966 as amended requires that federal agencies consider the effects of their actions on significant historic properties included in or eligible for the National Register of Historic Places (NRHP). Per this requirement, identifying historic properties and determining potential effects is done in consultation with the State Historic Preservation Officer (SHPO). In Virginia, the Director of DHR serves as the SHPO.

Historic properties and archaeological sites listed or eligible for listing in the NRHP have been identified in accordance with 36 CFR 800.4. Two sites in the study area are listed on the National Register: Buchanan County Courthouse (1905-1906) and Dickenson County Courthouse (1915) (see Exhibit 4.3).

3.3.1 Archaeological Sites

To assess the potential for archaeological sites listed or eligible for listing on the NRHP in the study area, background research was conducted at the DHR and the Virginia State Library (see Cultural Resources Overview: Coalfields Expressway Location Study [VDOT, 1998]). Virtually no archaeological research had been conducted in Southwest Virginia. Besides one 1955 ceramics study, most of the archaeological work in Southwest Virginia was done by amateurs. As
of 1970, two archeological sites were recorded in Dickenson County, three in Wise County, and none in Buchanan County. Of these, only the two sites recorded in Dickenson County, which consist of lithic scatters, are located in the study area. More recent surveys have added to the current number of recorded archeological sites in the study area. Twelve of these newly recorded sites are located in Wise County, 16 in Dickenson County, and 58 sites in Buchanan County. Most of these sites consist of lithic scatters, burial areas and cemeteries, foundation remains, or rockshelters. Archeological surveys performed for this project may encounter sites that consist of surface scatters of nondiagnostic lithic material. Significant archeological sites are likely to occur in rockshelters and on larger, level landforms and broader floodplains than on other types of terrain.

3.3.2 Architectural Resources

Before build alternative locations were defined, an evaluation of the study area’s architectural resources was conducted by reviewing DHR records and performing an architectural reconnaissance survey (see Cultural Resources Overview: Coalfields Expressway Location Study [VDOT, 1998]). The study mentions that, since the area was sparsely settled until the late nineteenth century, the early to mid-nineteenth century is not well represented architecturally. Although intensive architectural surveys in the study area are limited, most buildings dating before 1880 have been recorded. Although few of these buildings have had National Register significance determined, the scarcity of architecture in the counties increases their potential eligibility for the National Register.

In the early twentieth century, the development of coal-company towns had a tremendous impact on the built environment. The towns of Clintwood, Clinchco, Haysi, and Grundy all represent this important episode of the study area’s history. Clinchco has been determined to be potentially eligible for inclusion in the National Register.

Development of the areas outside of the towns can also be linked to the coal and lumber industries. These areas experienced their greatest development boom when the coal and lumber industries reached their peak. Most houses from this period are modest front or side-gable buildings, or minimally detailed bungalows. However, a few higher style Queen Anne and I-Houses exist. Most of these higher style houses, although surveyed, have not had potential significance determined.
3.4 ECONOMIC ENVIRONMENT

3.4.1 Structure

Coal mining has long-served as the cornerstone of this region's economy. However, coal mining employment has steadily decreased over the course of the century, due mainly to increased mechanization. Development of coal energy alternatives and stricter environmental regulation of the coal mining industry have also reduced coal demand. Table 3.6 shows that the area's mining employment has decreased by roughly 50% over the past decade.

Table 3.6
Employment by Industry

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Study Area*</th>
<th>Virginia</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>32</td>
<td>0.1</td>
<td>108</td>
</tr>
<tr>
<td>Mining</td>
<td>10710</td>
<td>38.6</td>
<td>5872</td>
</tr>
<tr>
<td>Construction</td>
<td>885</td>
<td>3.2</td>
<td>1183</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1081</td>
<td>3.9</td>
<td>1230</td>
</tr>
<tr>
<td>Trans., Utilities</td>
<td>837</td>
<td>3.0</td>
<td>1567</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>959</td>
<td>3.5</td>
<td>840</td>
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<tr>
<td>Retail Trade</td>
<td>4368</td>
<td>15.7</td>
<td>4768</td>
</tr>
<tr>
<td>Financial, Real Estate &amp; Insur.</td>
<td>743</td>
<td>2.7</td>
<td>638</td>
</tr>
<tr>
<td>Services</td>
<td>3234</td>
<td>11.6</td>
<td>4223</td>
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<td>Government</td>
<td>4882</td>
<td>17.6</td>
<td>5504</td>
</tr>
<tr>
<td>Nonclassifiable</td>
<td>44</td>
<td>0.2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>27775</td>
<td>100</td>
<td>25928</td>
</tr>
</tbody>
</table>

Source: Virginia Employment Commission
*Wise, Dickenson, and Buchanan counties

According to the latest employment data, despite the coal-mining industry's continuing decline, it remains the region's largest employer, accounting for 22.6% of total employment. Government is the second largest employer (21.2%). From 1987 to 1997, total employment in the study area decreased by 6.6%, while, the state of Virginia experienced a 20.7% increase in employment.
Because of its dependence on a single industry, the area’s economy lacks diversity and remains vulnerable to downturns in the larger regional, national, and global economies. Also, high wage coal jobs are not being replaced by comparable paying positions. The newly created jobs in the manufacturing and trade industries typically pay less than mining jobs.

3.4.2 Unemployment

For reasons discussed above, the three counties in the study area have high unemployment. As Figure 3.1 shows, each county suffers from double-digit unemployment rates, while the state of Virginia generally had a 1998 unemployment rate of 3.1%. Dickenson County had the highest 1998 unemployment rate (16.6%) of the three counties. In general, unemployment in the study area has gradually increased during this decade. However, recent job growth in the mining, services, retail trade, and government sectors has led to the unemployment rate dropping in the past two years.

Figure 3.1

Source: Virginia Employment Commission
*1998 rates are estimates based on 12-month totals.

3.4.3 Personal Income

Per capita income represents the sum total of personal income of an area divided by the area’s population. Table 3.7 contains per capita income data for the study area’s localities and Virginia.
The data show that per-capital incomes in the region trail those of the state in general. This disparity increased between 1979 and 1989, when per capita incomes in Virginia increased by 123.7%. However, 1994 estimates indicate personal incomes in the study area are increasing at greater rates than the entire state.

### PHYSICAL ENVIRONMENT

#### Air Quality

The Clean Air Act of 1970 and 1977 as amended directed the United States Environmental Protection Agency (EPA) to develop national air quality standards to protect public health and welfare. The EPA created the National Ambient Air Quality Standards (NAAQS) for six atmospheric pollutants: Carbon Monoxide (CO), Ozone (O₃), Nitrogen Dioxide, Sulfur Dioxide, Particulate Matter, and Lead. The NAAQS represent the levels of these pollutants and exposure periods that pose no significant threat to human health or welfare. Virginia adheres to these standards as well as a state standard for total suspended particles. Air quality is monitored in various locations of Virginia for the NAAQS pollutants.

The only NAAQS pollutants that are normally associated with impacts from highway mobile source emissions are CO and O₃. The NAAQS only refer to particulate matter, in the form of fugitive dust, for construction impacts.

Based on historical air quality monitoring data, EPA has designated the study area as an attainment area for CO and O₃. The term attainment refers to the status of the NAAQS pollutants in a particular area. If the pollutants do not exceed the standard more than once per year, then the pollutants are considered in attainment for the area. However, if the pollutant exceeds the standard two

### Table 3.7

**Per-Capita Income**

<table>
<thead>
<tr>
<th></th>
<th>1979</th>
<th>1989</th>
<th>% Change</th>
<th>1994</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wise &amp; Norton</td>
<td>7,699</td>
<td>13,458</td>
<td>74.8</td>
<td>17,376</td>
<td>29.1</td>
</tr>
<tr>
<td>Dickenson</td>
<td>7,060</td>
<td>11,138</td>
<td>57.8</td>
<td>14,353</td>
<td>28.9</td>
</tr>
<tr>
<td>Buchanan</td>
<td>7,171</td>
<td>10,887</td>
<td>51.8</td>
<td>13,574</td>
<td>24.7</td>
</tr>
<tr>
<td>Virginia</td>
<td>8,483</td>
<td>18,979</td>
<td>123.7</td>
<td>22,493</td>
<td>18.5</td>
</tr>
</tbody>
</table>

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis
or more times in a year, then the area is considered in non-attainment of the standard.

The NAAQS for CO in an 8 hour period is 9ppm, and 35ppm for 1 hour. The air quality analysis conducted for this project selected two “worst case” sites for each of the five build alternatives. At these 10 analysis sites, 1997 CO concentrations ranged from 3.2ppm to 3.9ppm for the 8 hour period, and 6.3ppm to 7.3ppm for 1 hour. These results do not exceed the one or eight hour standards for CO.

3.5.2 Noise

Noise is often defined as unwanted sound. It can be emitted from such sources as highway vehicles, airplanes, factories, railroad cars, and power plants. Highway sound is a composite of engine exhaust, drive train, and tire-roadway interaction. Degrees of disturbance or annoyance of unwanted sounds largely depend on three considerations: the amount and nature of the intruding noise; the relationship between the background noise and the intruding noise; and the type of activity occurring where the noise is heard. Time also enters into an individual’s noise judgment. For example, a car horn is more annoying at 2 a.m. than 2 p.m., even though the car horn has the same decibel level at both times. Activity interference can also occur, depending on what the person is doing. At certain sound levels, normal conversation may be possible but sleep may be difficult. Work that involves a high degree of concentration may be affected by noise, while manual labor may not be interrupted by the same sound.

Noise Sensitive Areas

An area’s land use determines its sensitivity to noise, with residential areas typically being the most sensitive. Land uses that are less sensitive to noise include open land, wooded areas, commercial properties, and agricultural areas. The study area consists of a wide range of land uses, mostly located within the valleys or on ridgetops.

Ambient Noise Levels

VDOT prepared its Coalfields Expressway Noise Study (1999) in accordance with FHWA guidelines published in Part 772 of the Federal Aid Policy Guide (FAPG). This analysis required measuring ambient or existing noise levels. To help estimate ambient levels, noise monitoring was performed at 27 locations in the study area. Ambient noise levels ranged from 51 to 67 dB(a). Section 4.9 discusses the noise study conducted for this project in detail. Exhibit 4.4 shows
locations of ambient noise level analysis locations, and Table 4.9 contains ambient level results.

### 3.5.3 Hazardous Materials

Several federal laws regulate the handling of hazardous materials and wastes. These include the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation, and Liability Act (or Superfund), including the Superfund Amendments and Reauthorization Act, Toxic Substances Control Act, and Hazardous and Solid Waste Amendments of 1984.

The United States Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (DEQ) regulate businesses and individuals that handle hazardous materials and wastes in Virginia. Both agencies maintain lists of the different types of regulated sites or facilities. Database searches were performed for each of the five build alternatives (see Section 4.10). The database searches identified a relatively small number of sites for a project of this scale, with a large number of unmappable sites. The low number of mappable sites was mostly due to the limited address information for the project area. Counties in the study area have not developed Enhanced 911 systems and therefore do not have an addressing system that allows for physical location of a site based on street name and number. (The counties primarily use post office box numbers and rural route numbers for addresses.) Also, database information for unmapped sites did not include latitude and longitude. Database information for hazardous materials sites in more urban or developed areas would typically include these coordinates. Of the sites identified in the database searches, most were on the Underground Storage Tank (UST) and Leaking Underground Storage Tank (LUST) databases.

### 3.5.4 Visual Quality

The study area’s visual environment is defined by its viewshed, which is the surface area visible from the highway and from which the highway can be seen. The viewshed’s underlying landform consists of mountainous areas separated by narrow valleys. Rivers, streams, and creeks typically form these valleys, although several reservoirs and impoundments exist. Deciduous woods cover most of the study area; the remainder is covered by strip mined areas, reclaimed lands, and urban land uses. The rugged terrain and deep, winding, valleys often obstruct views and reduce the number of vistas.
Final Environmental Impact Statement

Route 23 in the study area has been designated as a Virginia Byway. Virginia Byways are roads having relatively high aesthetic or cultural value, leading to or within areas of historical, natural, or recreational significance. Route 611 near the Flannagan Reservoir and Route 80 from Haysi to the Kentucky State line are proposed Virginia byways. Unlike Scenic highways, which are federally owned and protected, Virginia byways do not have federal or state protection. None of Virginia’s four Scenic highways are located within the study area.

3.6 WILDLIFE AND VEGETATION

3.6.1 Natural Communities

Forests
The project area is located in the Mixed Mesophytic Forest of the Eastern Deciduous Forest Province (Terwilliger, 1991). More than twenty species are considered to share dominance in the mixed mesophytic forest including: various pines (Pinus spp.), American beech (Fagus grandifolia), sugar maple (Acer saccharum), eastern hemlock (Tsuga canadensis), white oak (Quercus alba), red oak (Quercus rubra), white basswood (Tilia americana), tulip tree (Liriodendron tulipifera), sweet and yellow buckeye (Aesculus octandra), various hickories (Carya spp.), ashes (Fraxinus spp.), and magnolias (Magnolia spp.).

The Development Plan for the Levisa Fork Basin/Haysi Dam Project lists specific forest habitat types found in the study area. These habitats include the following:

- Pine
- Pine-Oak
- Pine-Mixed Hardwood
- Beech-Oak-Maple
- Hemlock-Beech-Poplar
- Riparian Hardwood
- Yellow Poplar-Oak-Beech
- Cove Hardwood
- Oak-Hickory-Maple

Agricultural, Cleared, and Developed Lands
The roughness of the land surface and steepness of slopes within the project area precludes extensive planting and cultivation of tilled crops. Pastureland comprises most of the farmland. However, some crops are grown, including orchard fruit, corn, hay, and garden vegetables.

Many non-cultivated plants grow within barnyards, gardens, crop fields, and pastures. These include sedges (Cyperus spp.), docks (Rumex spp.), sheep sorrel (Rumex acetosella), smartweed (Polygonum caespitosum), lamb’s quarters.
(Chenopodium album), burdock (Arctium minus), ragweed (Ambrosia artemisiifolia), and many others. Brushland occupies a small portion of the region and includes some old timbered or strip-mined areas. Native grasses, such as broomsedge and wild oat grasses, and naturalized weeds are commonly found along roadside and field margins, railroad tracks, and previously disturbed land such as mine spoils. Previously strip-mined areas are also often covered with plant species used in reclamation efforts, such as loblolly pine (Pinus taeda) and black locust (Robinia pseudoacacia), as well as Lespedeza spp. These areas often remain arrested in an early stage of forest succession.

Representatives from Virginia Department of Mines, Minerals and Energy (DMME) attribute this problem to several cause and effect relationships. Surface mining operations grade down to a bedrock layer, thereby removing much of the soil. This lack of soil, coupled with continuing erosion, inhibits new growth of many plant species. Also, some plant species used in reclamation efforts several decades ago (e.g. lespedeza sp.) have grown so successfully they have precluded growth of other competing species. Despite these problems, some surface mined areas in the study area have been successfully reforested.

### 3.6.2 Terrestrial Wildlife

The study area's forested areas contain a wide range of terrestrial wildlife. Wildlife resources include a variety of game, non-game, and furbearing mammals, game birds, non-game birds, raptors, reptiles, and amphibians. The staff of the US Forest Service—Jefferson District compiled a list of species that have been previously located in the Big Sandy Drainage Subbasin, which includes the entire study area. This inventory contains 51 mammals, 25 amphibians, 24 reptiles, and 150 birds. These species rely on a variety of land covers for habitat. For the mammals deciduous forest, reclaimed surface mines, agricultural fields, and waterways all provide important habitat. Similarly, avian species use forested areas as well as reclaimed surface mines. Most amphibian and reptile species are associated with deciduous forest communities. However, reclaimed surface mine sediment ponds also provide valuable breeding areas for many frog, salamander, and turtle species.

Principle game species in the drainage include bobwhite quail (Colinus virginianus), ruffed grouse (Bonasa umbellus), wild turkey (Meleagris gallopavo) cottontail rabbit (Sylvilagus floridanus), fox squirrel (Sciurus niger), gray squirrel (Sciurus carolinensis), raccoon (Procyon lotor), various migratory species, and white-tailed deer (Odocoileus virginianus). Buchanan and Dickenson counties have low deer populations. Buchanan County has been closed to deer hunting since 1947, with the exception of a three-year period in the early 1970's, during
which no deer were killed. Little agricultural land and very rugged terrain are primary reasons for the low population. Until recently, Dickenson County also did not have a deer season, due to the animal’s scarcity. Currently, the county has a two-week deer season in the fall for hunting bucks. The northern part of the county hosts this season, due to the amount of white-tailed deer that have returned to the area.

3.7 AQUATIC RESOURCES

3.7.1 Water Resources And Water Quality

The project area is located entirely within the Big Sandy River Subbasin, a drainage located in Virginia’s southwestern corner. The Big Sandy River, formed by the junction of the Levisa and Tug Forks in Kentucky, flows north to its confluence with the Ohio River and drains roughly 2,613 square kilometers (1,009 square miles). The western fork of the Big Sandy River, known as the Russell Fork, splits the study area before passing through a deep gorge known as “The Breaks.”

Surface Waters and Watersheds

Drainage is usually restricted to the many incised creeks and streams that traverse the study area. Other surface waters include lakes, reservoirs, and ponds. Ten major drainage basins drain the study area (see Exhibit 3.3). Table 3.8 provides information on these watersheds, and lists the build alternatives that would cross each watershed.

Groundwater

Coal mining has greatly depleted groundwater aquifers in the study area. The groundwater that remains usually has limited public utility because of water quality problems. Groundwater relatively close to ground level often contains relatively high amounts of iron and sulfur, causing drinking water wells to be cased at greater depths. However, water from depths between 30 and 60 meters (100 and 200 feet) is often moderately hard and sometimes acidic. Although additional stores of groundwater often exist at greater depths, seepage through coal seams causes much of this deeper groundwater to be very acidic with iron deposits. Due to the poor groundwater supply, local governments in the study area have worked to increase public water service to residents.
### Table 3.8
Watersheds

<table>
<thead>
<tr>
<th>Watershed (Alternatives)</th>
<th>Major Tributaries</th>
<th>Predominant Land Uses</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cranes Nest River (A, B, C, D, E, F1, F2)</td>
<td>Tarpon Branch, Long Branch; Honeycamp Branch.</td>
<td>65% forested, 20% strip mining, 15% urban development and agriculture;</td>
<td>Includes the Town of Clintwood; US Corps of Engineers (COE) owns much of the undeveloped land closer to the reservoir.</td>
</tr>
<tr>
<td>Pound River (A, B, C, D, E, F1, F2)</td>
<td>Cane Creek, Bearpen Branch, Georges Fork and Camp Creek.</td>
<td>65% forested; 20% strip mining, 15% urban development and agricultural.</td>
<td>Includes the Town of Pound and most of John W. Flannigan Reservoir, the main drinking water source for Dickenson and Buchanan counties.</td>
</tr>
<tr>
<td>McClure River/Caney Creek (C, D, E)</td>
<td>Road Branch, Mill Creek, and Big Branch</td>
<td>70% forested, 15% urban development and agricultural, and 15% strip mining.</td>
<td>Development is mostly located adjacent to watercourses in valley bottoms and ridges—much of it within the communities of Haysi, McClure, and Clinchco.</td>
</tr>
<tr>
<td>Russell Fork/Russell Prater Creek (A, B, C, D, E, F1, F2)</td>
<td>Bart Lick Creek, and War Fork.</td>
<td>85% forested, 10% strip mining, and 5% urban development and agricultural.</td>
<td>Russell Fork flows north to Kentucky via the Breaks. Much of this land is within the Jefferson National Forest.</td>
</tr>
<tr>
<td>Russell Fork/Lick Creek/Fryingpan Creek (D, E)</td>
<td>Tilda Anderson Branch and Crooked Branch.</td>
<td>85% forested, 10% strip mining, and 5% urban development and agricultural.</td>
<td>Includes Haysi and Birchleaf; The Russell Fork flows north into Haysi to its confluence with the McClure River and Russell Prater Creek.</td>
</tr>
<tr>
<td>Levisa Fork/Prater Creek Watershed (A, C, D)</td>
<td>Dry Fork, Trace Fork Branch and Cripple Creek.</td>
<td>80% forested, 15% urban development and agricultural, and 5% strip mining.</td>
<td>Includes the Levisa Fork/Route 460 urban corridor, which contains the communities of Grundy, Vansant, Tolland, and Deel.</td>
</tr>
<tr>
<td>Levisa Fork/Home Creek/Bull Creek (Q08) (A, B, C, D, E, F1, F2)</td>
<td>Belcher Branch, Connaway Creek and Lynn Camp Creek.</td>
<td>70% forested, 20% strip mining and 10% urban development and agricultural.</td>
<td>Development is almost exclusively located adjacent to water courses in valley bottoms—much of it within the communities of Harman, Maxie, and Harman Junction.</td>
</tr>
<tr>
<td>Slate Creek (Q07) (A, B, C, D, E, F1, F2)</td>
<td>Elkins Branch, Upper Mill Branch, Nighway Branch,</td>
<td>75% forested, 15% strip mining, and 10% urban development and agricultural.</td>
<td>Urban development is generally located in the Town of Grundy and along the Route 83 corridor east of Grundy, which roughly parallels Slate Creek.</td>
</tr>
<tr>
<td>Dismal Creek (Q05) (A, C, D)</td>
<td>Grapevine Branch, Lower Big Branch, Long Branch, Hale Creek, Spruce Pine Creek, and Linn Camp Branch.</td>
<td>80% forested, 10% urban development and agricultural, and 10% strip mining.</td>
<td>Development is almost exclusively located adjacent to watercourses in valley bottoms—much of it within the Oakwood community.</td>
</tr>
<tr>
<td>Knox Creek (Q03) (B, E, F1, F2)</td>
<td>Lester Fork, Straight Fork, Charles Fork, Blackey Fork.</td>
<td>80% forested, 15% strip mining and 5% urban development and agricultural.</td>
<td>Development is almost exclusively located adjacent to watercourses—much of it within small valley communities.</td>
</tr>
</tbody>
</table>

*Land uses referred to as strip mining include some areas that were surface mined decades ago and are now vegetated (see Section 3.7.1)*
Water Quality
The Virginia Department of Environmental Quality (DEQ) and the Virginia Department of Conservation and Recreation (DCR) regularly rate the state’s water bodies based on their ability to “support” designated uses of the water by human or aquatic life. Impaired waters are designated as partially supporting or not supporting any of the five designated uses: aquatic life; fish consumption; shellfishing; swimming; and drinking water. A stream designated as impaired for aquatic life has a certain number of samples not consistently meeting standards for conventional pollutant parameters such as dissolved oxygen, pH, or temperature. The impaired for swimming use designation typically relates to high fecal coliform readings.

Exhibit 3.4 shows stream segments designated impaired or partially impaired, as well as the 21 stream monitoring stations located in or near the study area. Table 3.9 provides summary information for each impaired stream segment. This information includes the Clean Water Act (CWA) goal the stream does not meet, and its priority as listed by DEQ and DCR. For more information, refer to the Coalfields Expressway Natural Resources Technical Report (VDOT, 1999).

If interpretive statements can be made regarding a stream segment’s water quality based on water quality data from a nearby monitoring station, it is considered monitored. In the entire Big Sandy River Basin, DEQ has designated approximately 3,643 kilometers (2,264 miles), or 45%, of the basin’s streams as “monitored.” Of the 21 monitoring stations located at or near the study area, data from 11 stations have led to impairment designations along their respective stream reaches. In Virginia, impaired streams comprise approximately 14% of all assessed streams and rivers. Therefore, the area’s water quality does not compare favorably to overall water quality in the state.

DEQ and DCR attribute much of the water quality problems in the study area to coal mining and untreated sewage discharges. Coal mining can adversely affect water quality in several ways. First, strip mining often results in severe erosion and sedimentation. Sediment entering water bodies is responsible for reduced storage capacity, habitat destruction, reduced biological oxygen demand, and pollutant transport. Also, runoff from surface coal mines, deep shaft mines, and coal storage heaps is highly acidic. Water reacts with the sulfur in the coal to produce sulfuric acid which, when it enters drainage systems, acidifies streams beyond the point at which many forms of life can exist.
### Table 3.9

<table>
<thead>
<tr>
<th>Stream Segment</th>
<th>CWA Goal &amp; Use Support:</th>
<th>Priority</th>
<th>Initial Listing</th>
<th>Impairment Cause:</th>
<th>Impairment Source:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. South Fork-Pound River</td>
<td>Aquatic Life Use—Not Supporting</td>
<td>Medium</td>
<td>1994</td>
<td>General Standard (Benthic)</td>
<td>Resource Extraction</td>
</tr>
<tr>
<td>4. Russell Prater Creek</td>
<td>Aquatic Life Use—Partially Supporting</td>
<td>Low</td>
<td>1996</td>
<td>General Standard (Benthic)</td>
<td>Resource Extraction</td>
</tr>
<tr>
<td>6. Slate Creek</td>
<td>Aquatic Life Use—Partially Supporting</td>
<td>Low</td>
<td>1994</td>
<td>General Standard (Benthic) Fecal Coliform</td>
<td>Urban NPS</td>
</tr>
</tbody>
</table>

### 3.7.2 Floodplains

Floodplains provide a range of environmental, ecological, and social benefits. Floodplains provide floodwater storage, decrease floodwater velocities, improve water quality, and provide habitat for plants and animals. Archaeological and historical resources are often located on floodplains, since these areas attracted Native American settlement and farming. Protection of floodplains is required by: Executive Order 11988 Floodplain Management; FHPM 6-7-3-2, Location and Hydraulic Design for Encroachments on Floodplains; and 23 CFR Part 650 Subpart A, Location Hydraulics Study. The intent of these regulations is to avoid or minimize highway encroachments within floodplains, where practicable, and to avoid supporting land use development that is incompatible with floodplains. Where encroachment is unavoidable, the regulations require taking appropriate measures to minimize harm.

### Proposed Flood Control Projects

The US Army Corps of Engineers (COE) studies and implements flood control projects in the region. Currently, the COE is proposing two flood control
projects in the study area. The Levisa Fork Basin/Haysi Dam Project would extend from the confluence of Indian Creek and Russell Fork in Dickenson County to the confluence of the Russell Fork and Levisa Fork at Millard, Kentucky. It would also extend from Grundy on the Levisa Fork to Louisa, Kentucky. The project's DEIS, completed in February 1997, outlines several structural and non-structural alternatives. Three of the four alternatives would involve wet or dry dam construction, nonstructural measures of floodproofing, and permanent relocation for 3,661 downstream structures (e.g. residences, businesses, etc.). Dam construction would require impoundment of 17.0 kilometers (10.6 miles) of the Russell Fork. The other alternative would involve only non-structural measures and would propose relocation of 4,723 structures. All relocations for this project (which has not been funded) would be voluntary.

Farther east, the COE has proposed the Grundy Flood Damage Reduction/Highway Upgrade Project. In April 1977, the region's highest flood on record devastated the Town of Grundy, causing $11.3 million in damages and three fatalities. In May 1984, flooding again damaged Grundy. The project is being proposed in response to these and other major flood events that severely damaged the town.

This project would rely mostly on non-structural means to reduce flood damages, such as acquisition and demolition of buildings, as well as voluntary building improvements. In short, the town will be moved from the floodplain to a newly prepared development site located on the opposite side of the Levisa Fork. As part of the project, VDOT will upgrade and relocate Route 460/83 in Grundy. The roadway profile will be elevated above the 100-year floodplain for a portion of the project and above the 50-year floodplain for the remainder. The fill slope/retaining walls of Route 460 will act as a levee to control the flooding of the Levisa Fork River. The project has completed the environmental process and proceeding with final design.

3.7.3 Aquatic Ecology

The aquatic ecology of the project area reflects the existing physical and chemical conditions of its watersheds. Much of the study area has marginal water quality thus generally limiting aquatic populations to the more pollution tolerant species.

In 1985, as part of the Levisa Fork Basin/Haysi Dam study, R.T. Bay and D.B. Winford conducted a mussel survey at 18 sites along the Levisa Fork within the study area. Nineteen species of mussels were collected, none of which are federal or state protected species.
Also for the Levisa Fork project, J. M. Morton and C.R. Armali conducted a
study in May and September 1991 that found 51 invertebrate families in 13
streams, many of which are located in the study area. Some streams had
moderately high species richness, while others had low species richness, which
often indicates heavy sedimentation in streams. Sediment deposits fill
interstitial spaces, thus limiting the requisite habitat for larger species of
benthic macroinvertebrates. Also, sediment fills crevices in the substrate used
for fish spawning. These conditions are found throughout the watersheds in the
project area and are caused by the impact of development and extractive
industries on highly erodible soils.

Fish distribution within the study area is determined by physical and chemical
factors such as substrate type and complexity, water velocity, temperature,
streambank characteristics, seasonal drainage patterns, turbidity and water
quality. The study area offers a wide variety of habitats from whitewater boulder
and gravel creeks to sluggish, sand and silt rivers. In the study area, rivers and
their tributaries are generally considered warm water streams. Sport fish in the
Big Sandy Drainage include: spotted bass (Micropterus punctulatus); smallmouth
bass (Micropterus dolomieu); channel catfish (Lctalurus punctatus); flathead
catfish (Pylodictis olivaris); rock bass (Ambloplites rupestris); bluegill (Lepomis
macrochirus); long ear sunfish (Lepomis megalottis); and green sunfish (Lepomis
cyanehtus). The Flannagan Reservoir has a good walleye (Stizostedion vitreum)
population. An inventory compiled by US Forest Service-Jefferson District staff
indicates 68 fish species have been previously located in the Big Sandy drainage
basin.

Streams and rivers in Virginia are classified as Class IV, Mountainous Zone
Waters; Class V, Put and Take Trout Waters; or Class VI, Natural Trout Waters.
According to the Virginia Department of Game and Inland Fisheries (DGIF), the
study area contains four Class V Put and Take Trout Streams: the Pound River,
Fryingpan Creek, the Cranes Nest River, and the Russell Fork. As of January
1999, DGIF has designated the 1.6 kilometer (one mile) portion of the Pound
River between the Flannagan Reservoir and the Russell Fork confluence as a
Special Regulation Trophy Trout stream. Subject to delayed harvest
requirements, this designation is used for high quality streams that could serve
as habitat for trophy-sized trout.

Also, for the past 10 years, DGIF has stocked the reservoir with McConaunghy
rainbow trout and Crawford brown trout. The lake contains deepwater that
could potentially provide year-round trout habitat. DGIF has stocked in hopes
of engendering natural trout reproduction. Since spawning has not occurred, a
DGIF representative said the agency will probably discontinue stocking trout in the reservoir.

3.7.4 Wild And Scenic Rivers

Federal Wild and Scenic Rivers
A federal Wild and Scenic River is free flowing or segmented with outstanding scenic, recreational, geologic, fish and wildlife, historic, archaeological, or other values that has been designated by act of Congress or the Secretary of the Interior as a part of the National Wild and Scenic Rivers System (Public Law 90-542). Three classifications of Wild and Scenic Rivers exist; these are discussed below.

Wild River Areas are free of impoundments, generally inaccessible except by trail, and have watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic River Areas are free of impoundments, have shorelines or watersheds still largely primitive and shorelines largely undeveloped, but are accessible in places by roads.

Recreational River Areas are readily accessible by road or railroad, may have some development along their shorelines, and may have undergone some impoundment or diversion in the past.

The evaluation for Wild and Scenic River classification consists of a three step process.

Step 1: Determination of Eligibility
For a stream to be eligible, one or more of the following resource values within the stream area must be determined to be “outstandingly remarkable”.

- Scenic
- Recreational
- Geological
- Fish and Wildlife
- Historical
- Cultural
- Other Values, including Ecological

A determination that a river area contains outstandingly remarkable values is based on the professional judgement of a study team assembled by the Federal agency initiating the study (e.g. National Park Service, US Forest Service).
Step 2: Determination of a Potential Classification
The classification selection is based on the conditions of the river and the adjacent land use at the time of the evaluation. Potential classifications include Wild, Scenic, and Recreational river areas.

Step 3: Determination of Suitability
A suitability study is made on streams found eligible in Steps 1 and 2. This study provides the basis for the decision to recommend designation or non-designation of the river. If a river is recommended for designation as a Wild and Scenic River, final designation would require legislative approval after review by the appropriate Federal agency.

The Nationwide River Inventory (NRI) serves as one of the means to identify rivers for study as potential Wild and Scenic Rivers. Although the Coalfields Expressway study area does not contain any Wild and Scenic Rivers, the NRI lists two separate sections of the Russell Fork for study for potential inclusion in the system. The first section stretches 24 miles, from Haysi upstream to the headwater of the Russell Fork. The other section is a seven-mile segment that extends from the Kentucky border in the Breaks Interstate Park to the White Branch confluence (see Exhibit 3.5).

US Forest Service staff evaluated the second segment for federal Wild and Scenic eligibility as part of its revision to the Jefferson National Forest Land and Resource Management Plan. In its evaluation, it included, along with the seven-mile segment, a one-mile portion of the Pound River that extends from its confluence with the Russell Fork to the Flannagan Dam, and a 0.7 mile section of the Russell Fork from the Kentucky border to the railroad bridge above Elkhorn City, Kentucky. The staff determined these portions of the Russell Fork and Pound River are eligible for designation under the National Wild and Scenic Rivers Act (Step 1) and classified them as a Recreational River (Step 2). Scenic, wildlife, and botanical/ecological values are rated outstandingly remarkable, nationally significant. Recreational, heritage/cultural, and geological values are rated regionally significant. Recreational River Areas are readily accessible by road or railroad, may have some development along their shorelines, and may have undergone some impoundment or diversion in the past. Outstanding remarkable recreation values with national significance provide recreational opportunities that are, or have the potential to be, unique enough to attract visitors from well outside of the physiographic province and be known at a national level. According to eligibility criteria, significant numbers of visitors would be willing to travel long distances, generally at least a 24-hour trip if by motor vehicle, to use the river resources for recreational purposes.
State Scenic Rivers

DCR, in its scoping response of October 21, 1997, determined the study area contains no State Scenic Rivers. The portion of the Russell Fork within the Breaks Interstate Park, which is north of the study area, is listed as a Potential State Scenic River (see Exhibit 3.5).

3.7.5 Wetlands

Section 404 of the Federal Water Pollution Control Act, more commonly known as the Clean Water Act, provides protection for waters of the US, including wetlands. Wetlands provide valuable habitat for fish and wildlife, improve water quality, regulate storm flow, and may support rare and endangered species.

Other waters of the US not meeting wetland criteria (e.g. streams, creeks, etc.) are discussed in Section 4.15.

The COE 1987 Wetlands Delineation Manual contains the definition of wetlands used in this study. The manual defines wetlands as:

Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.

The study area contains few wetland areas compared to other parts of Virginia. Many wetlands that once existed in floodplain areas have been impacted by urban development. Among other adverse affects, the disturbance of floodplain wetlands has reduced storm flow retention and has increased the area's susceptibility to flooding.

Field reviews were conducted to verify the existence of potential wetlands and to identify dominant vegetation. Wetlands investigations revealed the existence of 73 wetland systems located within the 229 meter (750 foot) wide corridors established for each proposed segment. Of these, 35 wetland systems are located within their respective segment's construction limits.

Wetlands found in the study area include palustrine, unconsolidated-bottom (PUB), palustrine emergent (PEM), and palustrine forested (PFO) systems. PUB wetlands are the most common, accounting for 23 of the total 35 systems within proposed construction limits. These human-induced systems are often farm ponds—the others usually come from previous mining operations. Wetlands located in former strip mine areas typically differ based on when they were
created. In 1977, Congress passed legislation that created stricter mine reclamation regulations. Prior to the act, strip mining operations sometimes inadvertently created poorly-drained areas on benches located at bases of cut slopes. Many of these areas eventually became PUB or PEM wetlands.

The reclamation regulations now require treatment of mining runoff with sediment basins. The mined areas are therefore graded with good drainage as a priority, which has reduced the amount of incidental wetland creation. However, sediment basins that are abandoned often begin to exhibit wetland characteristics and sometimes evolve into PUB or PEM wetlands. These wetlands typically provide moderate to high capacity for pollutant removal, reflecting their past use as strip mine sediment ponds. However, they provide limited aquatic and wildlife habitat due to their small size and lack of open water. Dominant plant species found in PUB wetlands include broad-leaved cattail (*Typha latifolia*), sedges (*Carex spp.*), and common rush (*Juncus effusus*).

PEM are the second most common type of wetland. Dominant plant species found in PEM wetlands include: black willow (*Salix nigra*); red maple (*Acer rubrum*); broad-leaved cattail (*Typha latifolia*); sedges (*Carex spp.*); and common rush (*Juncus effusus*).

Only five of the 35 systems within the proposed construction limits constitute PFO systems. Most of these are relatively narrow and are located in steep valley or ravine bottoms—the side slopes of which are usually densely populated with rosebay rhododendron (*Rhododendron maximum*), purple laurel (*Rhododendron catawbiense*), and mountain laurel (*Kalmia latifolia*). Also, these systems seem more likely to exist in valley bottoms having relatively low channel slopes. Wetlands functions likely include pollutant removal, floodflow alteration, and wildlife/aquatic species habitat. Dominant plant species found in PFO wetlands include: red maple (*Acer rubrum*); sycamore (*Platanus occidentalis*); black gum (*Nyssa sylvatica*); black willow (*Salix nigra*); spicebush (*Lindera benzoin*); jewelweed (*Impatiens capensis*); and false nettle (*Boehmeria cylindrica*).

### 3.8 PROTECTED SPECIES

Under the Endangered Species Act (ESA) of 1973, any federal action that would likely result in a negative impact to federally protected plants or animals is subject to review by the Fish and Wildlife Service (FWS). Even in the absence of federal actions, the FWS has the power, through the provisions of Section 9 of the ESA, to exercise jurisdiction on behalf of a protected plant or animal. The FWS and other wildlife resource agencies also exercise jurisdiction in accordance
with the Fish and Wildlife Coordination Act (48 Statute 401, as amended: 16 U.S.C. 661 et seq.).

The Commonwealth of Virginia also designates plant and animal species deemed threatened and endangered within the state. Based solely on statewide populations, these designations do not consider total populations of these species throughout its geographic range.

### 3.8.1 Protected Species Research

Early in the planning process, VDOT began coordinating with agencies involved with federal and state listed species. The following agencies received scoping letters requesting their comments on the project:

- US Fish and Wildlife Service (FWS);
- Virginia Department of Conservation and Recreation (DCR);
- Virginia Department of Game and Inland Fisheries (DGIF); and
- Virginia Department of Agriculture and Consumer Services (DACS).

Scoping responses from the agencies served as a basis for further work. This work included database searches, further agency coordination, review of mapping resources, and collection and research of Nature Conservancy recovery plans. (See Table 3.10 resources for more information on research methods used.)

Table 3.10 lists federal and state threatened and endangered species identified through agency coordination. These species are listed by county, however, and may not occur within the study area. Information on each of the federally listed species is provided below.
Table 3.10
Federal and State Status of Species
Identified through Agency Coordination (by County)

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<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal</th>
<th>State</th>
<th>County</th>
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</thead>
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<td>Endangered</td>
<td>None</td>
<td>Wise</td>
</tr>
<tr>
<td>Peregrine falcon</td>
<td>Falco peregrinus</td>
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<td>None</td>
<td>Wise</td>
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<tr>
<td>Indiana bat</td>
<td>Myotis sodalis</td>
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<td>Endangered</td>
<td>Dickenson</td>
</tr>
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<td>Spiraea Virginiana</td>
<td>Threatened</td>
<td>Endangered</td>
<td>Dickenson, Wise</td>
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<td>Fusconaia cor</td>
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<td>Endangered</td>
<td>Wise</td>
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<tr>
<td>Fine-rayed pigtoe</td>
<td>Fusconaia cuneolus</td>
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<td>Endangered</td>
<td>Wise</td>
</tr>
<tr>
<td>Birdwing pearl mussel</td>
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<td>Thryomanes bewickii altus</td>
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<td>Endangered</td>
<td>Dickenson</td>
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<tr>
<td>Brown supercoil</td>
<td>Paravitrea septadens</td>
<td>None</td>
<td>Endangered</td>
<td>Dickenson</td>
</tr>
<tr>
<td>Small whorled pogonia</td>
<td>Isotria medeoloides</td>
<td>Threatened</td>
<td>Endangered</td>
<td>Wise</td>
</tr>
</tbody>
</table>

1DCR January 13, 1998 correspondence.
2DCR October 21, 1997 scoping response
3FWS February 10, 1998 scoping response
4DGIF February 2, 1998 database search
5DCR Interagency Coordination Meeting Response

Resources
In its October 21, 1997 scoping response, the Natural Heritage Division of DCR searched its Biological and Conservation Data System for occurrences of natural heritage resources for the study area. The agency notes that an absence of data may indicate the project area has not been surveyed, rather than confirm the area lacks natural heritage resources.

In order to evaluate concept alternatives, VDOT requested DCR to provide more detailed information on occurrence locations for natural heritage resources. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations. DCR obtains information on documented resource locations through field inventory, review of pertinent scientific literature, review of museum and herbarium collections, and contributions from private individuals engaged in similar inventory work.
DCR provided locations of two Virginia spiraea communities and one Indiana bat community. It also provided locations and descriptions of ten conservation sites (see Section 4.16). This term refers to a natural area that includes one or more occurrence of natural heritage resources, and is notable for its diversity.

In its February 10, 1998 scoping response, FWS provided a listing of federally protected species in Wise, Dickenson, and Buchanan counties.

As part of an information sharing agreement, VDOT has access to the DGIF database for endangered and threatened species The database search, which included both federal and state species (excluding insects), was done by USGS quadrangle. The search included the fifteen quadrangles covering the study area, as well as adjacent quadrangles (32 total). VDOT's correspondence of February 2, 1998 contains the search results.

In its Interagency Coordination Meeting on October 20, 1998, VDOT solicited comments from agencies regarding the project. In comments it provided later, DCR provided information on species added to the Biological and Conservation Data System since the October 21, 1997 scoping response.

3.8.2 Federally Protected Species

Virginia spiraea (Spiraea virginiana)

*Spiraea virginiana* is currently distributed in isolated populations in Georgia, Tennessee, North Carolina, Virginia, West Virginia and Kentucky. Virginia spiraea is a large perennial shrub (1 - 3 m) that is characterized by narrow elliptic leaves that are remotely toothed and glaucous beneath. Virginia spiraea is a deciduous shrub with yellowish/greenish petals that flowers in late May to late June. Virginia spiraea can be distinguished from common associates by profuse branching patterns, flower color, and inflorescence.

Virginia spiraea spreads clonally and forms dense clumps, which spread in rock crevices and ground boulders. The root system and vegetative characteristics allow it to thrive under appropriate disturbance regimes, such as along rocky, flood-scoured riverbanks in gorges or canyons. This plant is noted as a disturbance-adapted shrub that can tolerate flooding, inundation, erosion, scouring, deposition, and human interventions.

Virginia spiraea grows vigorously in full sun on sandstone substrates and acidic moist soils along the banks of second and third order streams or on depositional point bars. Periodic flooding and scouring of the area is essential to this plant's survival because it eliminates arboreal competitors, herbaceous vegetation, and
creates riverwash deposits. Frequent inundation of the area allows dispersal of seeds to colonize new sites.

A Virginia spiraea community has been discovered near the Russell Fork River near Breaks Gorge and another near the Pound River downstream of John W. Flannagan Dam. Since the study area contains areas that match the habitat requirements described above, a field survey was conducted to determine potential project impacts to the Virginia spiraea (see Section 4.16).

**Indiana bat (Myotis sodalis)**

*Myotis sodalis* is medium sized with a forearm length of 35-41 mm and a head and a body length of 41-49 mm. Weights range from 6 to 9 grams. The pelage (the hairy or furry covering) is fine and fluffy; the upper parts are a dull, grayish chestnut. This species closely resembles the little brown bat (*Myotis lucifugus*). This species occupies much of the eastern half of the United States. Populations and individual records have been reported in Virginia. This bat is known to be found in state owned or managed lands throughout its entire range.

*Myotis sodalis* is very uncommon in Virginia, found in only eight caves in five counties, including Wise County. As recently as 1995, one community was documented in the north-central portion of the study area.

**Small whorled pogonia (Isotria medeoloides)**

*Isotria medeoloides* is currently distributed in isolated populations in 15 states. Flowering plants are 4 – 10 inches high and the vegetative plants are shorter. The stems are robust, hollow, smooth, pale green and glaucous. The leaves are pale green, glaucous, and borne in a single whorl of 5 or 6 at the top of the stem. One or two flowers form in the center of the whorl.

In Virginia, the small whorled pogonia has been documented from eight counties on the Piedmont and Coastal Plain and from Lee County in southwest Virginia. The plant occurs in very ordinary looking third growth upland forests on terrain that is almost level or gently to moderately sloping in northerly or easterly directions. The understory is distinctly open. Many of the colonies occur on land that has been previously cultivated. Soils are acidic sandy loams with low to very low nutrient contents by agricultural standards.

Flowering typically occurs in late-April to mid-May. Flowering is so synchronized that the total flowering period within a colony occurs within two and one-half weeks. Some colonies are composed of mostly vegetative plants, others mostly of flowering plants. Small whorled pogonia is self-pollinated and rarely produces more than one stem per plant.
Populations of small whorled pogonia in Virginia are particularly threatened by the development of housing subdivisions. Large deer populations also are a threat because the plant usually does not reappear the next year when its whorl is grazed early in the season. Some colonies have survived selected timbering, but clearcutting and other practices resulting in drastic changes in light factors or significant increase in interspecific competition would likely cause a colony to decline.

The FWS listed *Isotria medeoides* for Wise County in its scoping response. However, as Exhibit 1.1 shows, the study area only comprises a small portion of Wise County. This portion lies in a different drainage than the rest of the county, and shares physical characteristics of neighboring Dickenson and Buchanan counties more than the rest of Wise County. The more specific research conducted by DCR indicated that the study area contains no known communities of small whorled pogonia. VDOT conducted a survey to determine potential impacts of the CTB Approved Alternative F1 on this species (See Section 4.16).

**Gray bat (*Myotis grisescens*)**

In 1978, numbers of *Myotis grisescens* were estimated at 1000 to 2000. Subsequent exploration of caves, supported by DGIF, has resulted in discovery of new colonies and in a new estimate of 4000 to 8000 individuals.

FWS listed this species for Wise County in its scoping response. The more specific research DCR conducted for the study area did not indicate the presence of gray bat communities in the study area.

**American peregrine falcon (*Falco peregrinus anatum*)**

The DGIF database search listed *Falco peregrinus anatum*, a migratory species that can occur anywhere in Virginia. The project area contains no known nesting sites for this species.

**Birdwing pearly mussel, Shiny pigtoe mussel, Fine-rayed pigtoe mussel (*Lemiox rimosus, Fusconaia cor, and Fusconaia cuneolus*)**

FWS listed *Lemiox rimosus, Fusconaia cor* and *Fusconaia cuneolus* for Wise County in its scoping response. Although these mussel species are located in Wise County, they are not found in the Big Sandy Drainage Basin. A 1985 mussel survey conducted at 18 sites along the Levisa Fork did not find any of these species (see Section 3.7.3).
Coalfields Expressway Location Study

Legend

- ELIGIBLE FEDERAL WILD & SCENIC RIVER
- POTENTIAL STATE SCENIC RIVER

Potential Wild and Scenic Rivers

Exhibit 3.5
CHAPTER FOUR
CONSEQUENCES
4 ENVIRONMENTAL CONSEQUENCES

This section addresses the probable environmental effects that would result from implementation of the proposed action and describes measures proposed to mitigate these impacts. Impacts to the social, economic, physical, and natural environments are considered.

As discussed in Chapter 2, several project alternatives were eliminated from consideration and not evaluated in detail in the DEIS. This chapter estimates impacts for alternatives that were retained for further study in the DEIS, the No-Build Alternative and Build Alternatives A through E, as well as Alternatives F1 and F2. Since each build alternative is over 80 kilometers (50 miles) long and comprised of many different segments, impact information is typically presented by build alternative and segment. For reference purposes, Exhibit 4.1 shows the segments that comprise the build alternatives.

Impacts from connector roads were added to the total impacts for the particular segment and alternative associated with the connector road. Forest and farmland impacts from connector roads were not assessed, since the lack of land cover mapping for the study area made determining impacts for these two resources problematic. The connector roads would not have added greatly to the total forest and farmland impacts for the alternatives.

This chapter considers both direct and indirect impacts. Examples of direct impacts include right of way acquisitions, displacements, and wetland impacts from highway construction. Indirect impacts include any secondary and cumulative effects that the project may engender (see Section 4.20).

4.1 LAND USE IMPACTS

Assessing land use impacts for the build alternatives involved the collection of comprehensive plans, land use mapping, and coordination with local and regional planning officials.

Construction of a build alternative would help the study area localities achieve many of the economic development and transportation objectives outlined in the policy sections of their comprehensive plans. Many of these objectives reference the project explicitly. The comprehensive plan for Wise County states that the county should “strongly encourage the construction of the Coalfields Expressway.” Similarly, in its plan, Buchanan County affirms that it will “encourage development of the Coalfields Expressway.” Dickenson County’s
plan, adopted in 1994, provides implicit support, calling for construction of transportation facilities to improve circulation, traffic flow, and access to industrial facilities.

The build alternatives would directly impact existing land use by converting forested, previously strip-mined, urban development, and other land uses to highway right of way. Impacts to forested and strip-mined areas are documented in Section 4.12. Sections 4.2 and 4.5 discuss farmland and urban land use impacts, respectively.

The future land use plans for these counties do not show a potential location for the Coalfields Expressway. As Exhibit 3.1 shows, the build alternatives are mostly located in undeveloped areas not designated for particular land uses. However, the local land use plans for these counties differ from many other plans in that areas not designated for specific types of development are not assumed to be no-growth areas. The study area localities are continually trying to attract development and, consequently, have generally decided not to preclude areas from development through land use regulation. This approach, reflected in their flexible land use policies, creates a situation where almost no future development would be considered incompatible. Therefore, none of the build alternatives would adversely affect local land use planning efforts.

Chapter 6 documents local government support of the project. Since local comprehensive plans support the project, the No-Build Alternative would constitute an adverse impact on local land use planning goals.

4.2 FARMLAND IMPACTS

The Farmland Protection Policy Act, as revised in 1998, requires that federal actions identify and consider adverse affects on the protection of farmland. According to FHWA's Technical Advisory T6640.8A, protected farmland includes prime soils, unique soils, soils other than prime or unique that are of statewide importance, and soils other than prime or unique that are of local importance.

4.2.1 Methods

VDOT has coordinated with the Natural Resource Conservation Service (NRCS) District Conservationist to determine protected farmland impacts from the project. However, as discussed in Section 3.1.3, soils information for the study area is very limited. Due to this limitation, NRCS did not complete Form CPA-106, the vehicle used to determine the Farmland Conversion Impact Rating, but did review the study area to determine protected farmland impacts.
NRCS also assisted VDOT in estimating impacts to existing farmland areas from each build alternative. Consistent with the definition of prime farmland in the Farmland Protection Policy Act, grazing or forage land was considered farmland for the study. NRCS staff superimposed 1:24,000 scale mapping showing proposed segments onto 1983 infrared orthophotographs of the same scale. Although dated, NRCS believed this orthophotography provides a reasonably accurate representation of existing farmland in the study area. Impacts were estimated assuming an average clearing width of 91 meters (300 feet).

4.2.2 Impacts

NRCS reviewed the study area and determined that it did not contain prime farmland. Therefore, neither the Build Alternatives nor the No-Build Alternative would impact prime farmland.

Table 4.1 displays estimated impacts to existing farmlands for each build alternative in hectares and acres. Build Alternative A would impact the most farmland, with a total of 40.1 hectares (99.2 acres) of impacts. Alternatives F1 and F2 have the next largest amount with 39.8 hectares (98.5 acres) followed by Alternative C impacting 38.2 hectares (94.4 acres). Alternatives B and E have comparable totals for direct impacts to farmlands. Alternative D would impact the least amount at 20.3 impacted hectares (50.3 acres). The No-Build Alternative would not impact existing farmland.

The western half of the study area contains more farmland and, therefore, would have the most farmland impacts. Segment 112a, located in Dickenson County near Fremont, would impact considerably more farmland than any other segment, with an estimated 15.1 hectares (37.2 acres) of impacts. Many of the segments located in rural Buchanan County, east of Grundy, would not impact any farmland.

The type of farmland impact would vary. Part of the farmland within the estimated limits of clearing would be converted to highway right-of-way; most of the remainder would be temporarily cleared for construction purposes. Some cut and fill slopes may not be acquired as part of the future highway right-of-way. Farmland only cleared for construction purposes could revert to farmland use.

There are no Agricultural or Forestal Districts located in the study area. Therefore, neither the Build Alternatives nor the No-Build Alternative would impact any of these districts.
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<td>40.1</td>
<td>99.2</td>
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<td>86.8</td>
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<td>39.8</td>
<td>99.5</td>
<td>39.8</td>
<td>98.5</td>
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4.3 SECTION 4(F) AND SECTION 6(F) IMPACTS

None of the build alternatives would use property protected by the Land and Water Conservation Fund Act of 1965 or Section 49 USC 303 (formerly Section 4(f)). Section 4(f) applies to publicly owned parks, recreation areas, wildlife and waterfowl refuges, as well as cultural resources listed or eligible for the National Register of Historic Places (NHRP). Furthermore, the No-Build Alternative would not impact Section 6(f) or 4(f) resources.

The CTB Approved Alternative F1 would cross property associated with the John W. Flannagan Dam and Reservoir, discussed in Section 3.2.4. FHWA determined that the impacted land use does not qualify as a 4(f) resource. Alternative F1 would impact a portion of the property designated as Wildlife Management/Reserve Forest. The COE currently leases this area to DGIF for fish and wildlife management. Hunting and fishing are allowed in the designated Wildlife Management/Reserve Forest areas, except near areas designated for intensive recreation use. Consistent with the FHWA Section 4(f) Policy Paper, the impacted area does not qualify as a 4(f) resource because it does not primarily function for the protection of species. The areas designated for intense recreation use will not be impacted.

Alternative F1 also crosses the proposed Haysi to Garden Hole Trail, discussed in Section 3.2.4. VDOT considers the trail a planned facility within the context of Section 4(f). However, Alternative F1 would bridge the trail and not result in a use of this resource. Piers for this bridge would not be placed within the proposed trail easement.

In some instances, Section 4(f) impacts can occur even when a property is not directly impacted or used. FHWA's 4(f) Policy Paper states that if land from a 4(f) site is not acquired, it could still be considered an impact if the 4(f) resource's vital functions are substantially impaired by the proximity of the transportation project. The bridge would not substantially impair the Haysi to Garden Hole Trail's ability to function as a recreational trail and, therefore, would not result in a Section 4(f) impact.

4.4 SOCIAL IMPACTS

4.4.1 Nonprofit Facility Impacts

Impacts involving relocation of nonprofit facilities would constitute direct impacts. Indirect impacts might include loss of access to a place of worship or
reduced service delivery due to impaired access to a neighborhood (see Section 4.20.2).

Exhibit 3.2 shows nonprofit facility locations in the study area. Except for recreational areas, these facilities are generally located within the towns and along major roads, particularly along Routes 83 and 460. The build alternatives bypass these towns. The only proposed segments that share the existing Route 83 alignment are located in areas where relatively few community facilities exist. Therefore, for a project of this scale, the build alternatives would only require relocation of a few nonprofit facilities. Table 4.2 shows these impacts, denoted with a bullet symbol.

### Table 4.2
**Nonprofit Facility Impacts**

<table>
<thead>
<tr>
<th>Community Facility</th>
<th>Segment</th>
<th>Build Alternatives</th>
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<tbody>
<tr>
<td></td>
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<td>A</td>
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<tr>
<td>Cane Patch Primitive Baptist Church</td>
<td>106</td>
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<tr>
<td>Poplar Creek Pentecostal Church of God</td>
<td>237</td>
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<tr>
<td><strong>Total Impacts</strong></td>
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Source: Coalfields Expressway Right of Way and Relocation Technical Memorandum (VDOT, 1999).

The No-Build Alternative would not impact any nonprofit facilities. Build Alternatives A, C, and D (Segment 106) would impact the Cane Patch Primitive Baptist Church, while Alternatives E and F1 (Segment 237) would impact the Poplar Creek Pentecostal Church of God. No other impacts to nonprofit facilities are anticipated. VDOT’s relocation agent would be available to assist displaced nonprofit organizations in any way and to relocate them into replacement facilities with minimal disruption.

In final design, VDOT would make every attempt to avoid closing state roads. No state road closings are currently anticipated; locations where build alternatives cross existing state roads would be managed through at-grade intersections or grade separations. Therefore, the project is not expected to eliminate or impair access to public safety facilities, recreation areas, public or human service facilities, churches, or other community or nonprofit facilities. None of the build alternatives would affect school districts.
The build alternatives would benefit nonprofit facilities through improved access. Access issues are becoming increasingly important because of the ongoing centralization and consolidation of public services, particularly schools. Better accessibility into and through the area would reduce response times for police, fire, and ambulance services.

### 4.4.2 Neighborhood and Community Cohesion

The US Department of Transportation (USDOT) defines community cohesion as the connections between and within communities that are essential for serving the needs of the residents. Highway facilities can have beneficial or adverse impacts to community cohesion.

In rural Appalachian areas, the roadway network provides connections between communities; railroads are used only for shipping of freight and equipment. Each of the build alternatives would greatly enhance the connections between the communities. Despite a few exceptions, the build alternatives would bypass the established communities, and therefore not adversely affect cohesion within these communities (see Section 4.4.1). In outlying areas, residential development has generally occurred along state secondary roads, and not within internal-road subdivisions or neighborhoods. Due to the linear and dispersed nature of this development, none of the build alternatives would split or isolate existing neighborhoods. The No-Build Alternative would not affect neighborhood or community cohesion.

In several areas, the build alternatives would cause localized impacts to communities that would impair community cohesion. Section 4.5.2 discusses displacement impacts to the Harmon and Maxie communities and a neighborhood located along Watkins Branch. The numbers of displacements in each of these areas are high enough to assume that, even with successful relocation plans, the ability of the communities to function as they had previously would be disrupted.

No state roads are anticipated to be closed. Therefore, except for the areas with localized impacts, the build alternatives would only benefit community cohesion through improved access between communities and to community services.

### 4.4.3 Accessibility and Travel Patterns

Any build alternative would positively affect accessibility through the region by improving west-east access and by linking with the West Virginia portion of the Coalfields Expressway.
Coalfields Expressway. Chapter One discusses how the project would improve system linkage and corridor mobility.

Any build alternative would affect travel patterns by diverting through traffic from Route 83 and the communities along Route 83. Since state-road closings are not anticipated, any build alternative would improve access for trips between residences, workplaces, retail establishments, and community facilities. The No-Build Alternative would not affect current accessibility and travel patterns.

Table 4.3 shows improved travel times between the project’s termini and several of the major towns. Under the 2020 No-Build condition, a trip between the western project terminus at Route 23 near Pound to the eastern terminus at the West Virginia State line would take an estimated 124 minutes. Assuming conservative travel speeds of either 64 kph (40 mph) or 72 kph (45 mph) (depending on the section of roadway), proposed Build Alternative C would reduce this trip the most, to an estimated 78 minutes. Alternative B would reduce the trip to 83 minutes, while Alternatives A, D, and E have estimated travel times of 84 minutes followed by Alternatives F1 and F2 with an estimated travel time of 86 minutes. Between the towns of Grundy and Haysi, Alternatives F1 and F2 would reduce travel times by as much as 12 minutes, and as much as 9 minutes between Haysi and Pound (see Chapter Two for alternatives information).

4.4.4 Environmental Justice

Executive Order 12898 requires that Federal agencies identify and address disproportionately high and adverse effects from its activities on minority populations and/or low-income populations. Environmental justice is a phrase that embodies public policy efforts to ensure adverse human health or
environmental effects of governmental activities do not fall disproportionately on these populations. Executive Order 12898 supplements Title VI of the Civil Rights Act of 1964, as amended in 1968. Title VI states that no person, on the ground of race, color, or national origin, is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal financial assistance.

Methods
The USDOT's final order on environmental justice defines "adverse effect" to minority and/or low-income populations as "the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects." The impact analyses contained in this chapter indicate that the only significant adverse effects on the human environment would come from relocation and displacement. Other types of environmental effects studied (e.g. air quality, noise, community service provision, economic, etc.) are not expected to significantly impact social groups. Since displacements are the only type of impact that could potentially cause disproportionate impacts, the environmental justice impact analysis focuses on relocation impacts.

In its discussion paper entitled Addressing Environmental Justice in the Project Development /NEPA Process, FHWA outlined its approach for evaluating disproportionate impacts. The paper states that the analyst must "evaluate the impacts on the minority and/or low-income populations with respect to impacts on the overall population". Therefore, an initial attempt was made to identify minority or low-income populations in the project area. Section 3.2.2 provides census information regarding the social make-up of the study area. The environmental justice study, however, required the collection of more detailed census information relating to minority status and income level. As explained below, this census data supplemented information collected as part of the project's Right of Way Report.

The US Census divides population into five categories: American Indian/Eskimo/Aleut; Asian/Pacific Islander; Black; Other; and White. All of these categories except White constitute the minority population. The US Department of Transportation (USDOT) defines low-income groups as people "whose household income is below the Department of Health and Human Services poverty guidelines." In 1989, the average poverty threshold in the US for a family of four was $12,674. Since the 1990 Census provided the latest poverty status data (from 1989), the 1989 standard was used to determine low-income areas.
For the census research, census tracts did not provide sufficiently detailed information for the study. Therefore, block groups, the smallest geographic unit for which income and minority status data is available, was used. Table 4.4 contains data for census block groups within or near the study area. It shows the number of persons in minority groups, persons with income below the poverty level, and the percentages these populations comprise within their respective block group. Exhibit 4.2 illustrates this information.

Each of the 41 block groups shown, except for 9906-5 and 9906-3, has a higher percentage of low-income persons than the percentage for the state of Virginia (10.2%). Some of the block groups exceed the statewide percentage by as much as 400%. Due to the low populations in the study area, the block groups are relatively large and do not provide very localized information. However, the information shows that low-income persons in the study area are pervasive and therefore cannot be avoided. Indeed, helping the localities improve economic opportunities for these low-income populations is one of the purposes of the project. As Exhibit 4.2 shows, minorities comprise a very small portion of the study area population—less than one percent in most block groups. In 1990, minorities constituted approximately 23% of the total population of Virginia.

The right of way report prepared for the project estimates the number of families, businesses, and non-profit organizations the proposed build alternatives would displace (see Section 4.4). Special attention was given to the minority or low-income status of potential displacees in determining these estimates. However, since right-of-way agents did not make direct contact with potentially displaced persons, information regarding minority status was difficult to determine. Using 1990 census data as a starting point, a deductive approach was used to determine project impacts on minorities. The data indicate that only four block groups crossed by the build alternatives have minority populations of three percent or greater. Assuming that the only sizeable impacts to minority populations could occur in these block groups, information was obtained from local representatives regarding minority population locations (see below).

Low-income status was estimated based on field observations, with consideration given to the type of structure and its condition, the property where the structure was located, and vehicles and their condition. The right of way team also consulted with the study area counties to determine if particular manufactured home parks were government subsidized. If the parks were subsidized, each displaced family was assumed to be low-income. The team also consulted the Buchanan County Chamber of Commerce and Southwest Virginia Community College Planning and Development Department before beginning
Table 4.4
Persons by Minority Group (1990) and Poverty Level Status (1989)

<table>
<thead>
<tr>
<th>Block Group</th>
<th>Persons</th>
<th>Persons in Minority Groups (%)</th>
<th>Persons w/Income Below Poverty Level (%)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wise County</td>
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<tr>
<td>9907-1</td>
<td>1832</td>
<td>0</td>
<td>317 (17%)</td>
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<tr>
<td>9907-2</td>
<td>951</td>
<td>0</td>
<td>193 (20%)</td>
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<tr>
<td>9908-1</td>
<td>1574</td>
<td>0</td>
<td>355 (23%)</td>
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<td></td>
<td>Dickenson County</td>
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<tr>
<td>9901-3</td>
<td>1191</td>
<td>0</td>
<td>348 (29%)</td>
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<tr>
<td>9901-4</td>
<td>1147</td>
<td>30 (3%)</td>
<td>315 (28%)</td>
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<tr>
<td>9901-5</td>
<td>1382</td>
<td>8 (&lt;1%)</td>
<td>247 (19%)</td>
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<tr>
<td>9901-6</td>
<td>1085</td>
<td>0</td>
<td>311 (29%)</td>
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<tr>
<td>9902-2</td>
<td>946</td>
<td>0</td>
<td>137 (15%)</td>
</tr>
<tr>
<td>9902-3</td>
<td>1388</td>
<td>6 (&lt;1%)</td>
<td>329 (24%)</td>
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<tr>
<td>9902-4</td>
<td>739</td>
<td>2 (&lt;1%)</td>
<td>181 (25%)</td>
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<tr>
<td>9903-4</td>
<td>1429</td>
<td>43 (3%)</td>
<td>388 (27%)</td>
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<tr>
<td>9903-5</td>
<td>1166</td>
<td>2 (&lt;1%)</td>
<td>264 (23%)</td>
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<td>9903-6</td>
<td>1099</td>
<td>1 (&lt;1%)</td>
<td>175 (16%)</td>
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<td>9903-7</td>
<td>493</td>
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<td>148 (30%)</td>
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<td>9903-8</td>
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<td>0</td>
<td>311 (27%)</td>
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<td>772</td>
<td>0</td>
<td>339 (44%)</td>
</tr>
<tr>
<td>9904-3</td>
<td>675</td>
<td>0</td>
<td>129 (19%)</td>
</tr>
<tr>
<td>9904-4</td>
<td>930</td>
<td>0</td>
<td>350 (38%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Buchanan County</td>
</tr>
<tr>
<td>9901-2</td>
<td>1169</td>
<td>0</td>
<td>585 (50%)</td>
</tr>
<tr>
<td>9901-3</td>
<td>1373</td>
<td>0</td>
<td>256 (19%)</td>
</tr>
<tr>
<td>9901-4</td>
<td>849</td>
<td>0</td>
<td>263 (31%)</td>
</tr>
<tr>
<td>9901-5</td>
<td>1112</td>
<td>31 (3%)</td>
<td>310 (26%)</td>
</tr>
<tr>
<td>9901-6</td>
<td>985</td>
<td>0</td>
<td>147 (15%)</td>
</tr>
<tr>
<td>9901-7</td>
<td>1164</td>
<td>142 (12%)</td>
<td>221 (24%)</td>
</tr>
<tr>
<td>9902-3</td>
<td>1441</td>
<td>0</td>
<td>341 (24%)</td>
</tr>
<tr>
<td>9902-5</td>
<td>846</td>
<td>0</td>
<td>98 (12%)</td>
</tr>
<tr>
<td>9903-2</td>
<td>739</td>
<td>0</td>
<td>184 (25%)</td>
</tr>
<tr>
<td>9903-3</td>
<td>1376</td>
<td>0</td>
<td>307 (22%)</td>
</tr>
</tbody>
</table>
Table 4.4 (Continued)
Persons by Minority Group (1990) and Poverty Level Status (1989)

<table>
<thead>
<tr>
<th>Block Group</th>
<th>Persons</th>
<th>Persons in Minority Groups (%)</th>
<th>Persons w/Income Below Poverty Level (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9903-4</td>
<td>1667</td>
<td>7 (&lt;1%)</td>
<td>315 (19%)</td>
</tr>
<tr>
<td>9903-5</td>
<td>542</td>
<td>0</td>
<td>71 (13%)</td>
</tr>
<tr>
<td>9904-2</td>
<td>1562</td>
<td>0</td>
<td>316 (21%)</td>
</tr>
<tr>
<td>9904-3</td>
<td>893</td>
<td>7 (&lt;1%)</td>
<td>166 (19%)</td>
</tr>
<tr>
<td>9904-4</td>
<td>697</td>
<td>4 (&lt;1%)</td>
<td>102 (15%)</td>
</tr>
<tr>
<td>9905-2</td>
<td>1141</td>
<td>0</td>
<td>159 (14%)</td>
</tr>
<tr>
<td>9906-3</td>
<td>1034</td>
<td>0</td>
<td>62 (6%)</td>
</tr>
<tr>
<td>9906-4</td>
<td>513</td>
<td>0</td>
<td>136 (32%)</td>
</tr>
<tr>
<td>9906-5</td>
<td>601</td>
<td>0</td>
<td>28 (5%)</td>
</tr>
<tr>
<td>9906-6</td>
<td>550</td>
<td>0</td>
<td>85 (16%)</td>
</tr>
<tr>
<td>9906-7</td>
<td>656</td>
<td>13 (2%)</td>
<td>88 (13%)</td>
</tr>
<tr>
<td>9907-2</td>
<td>1114</td>
<td>0</td>
<td>261 (24%)</td>
</tr>
<tr>
<td>9907-3</td>
<td>1176</td>
<td>0</td>
<td>331 (28%)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>43138</strong></td>
<td><strong>296 (&lt;1%)</strong></td>
<td><strong>9669 (22%)</strong></td>
</tr>
</tbody>
</table>

Source: US Bureau of the Census

Note: Census blocks in italics are located in study area, but not crossed by build alternatives.

Fieldwork (see Coalfields Expressway Right of Way and Relocation Technical Memorandum [VDOT, 1999]).

Minority Population Impacts
As discussed above, the following four block groups have 1990 minority populations equal to or greater than three percent. The No-Build Alternative would not impact minority populations.

**Block Group 9903-4 (Dickenson County)**
1990 Minority Composition: 43 minority persons (3%)
Location: Roughly bounded by the Cranes Nest River to the west, Route 83 west of Freemont to the south, Routes 661, 664, and 63 to the southeast and east. Includes part of Clinchco.

Segments 115, 214, 221, 222, and 229A are located within the block group but, as Table 4.5 indicates, would cause few displacements. A small portion of Segment 203 crosses the block group, but would result in few of the 29...
displacements associated with that segment. Information received from the Dickenson County Economic Development Director indicates that the county's only minority population is located within the Town of Clinchco. It stands to reason, therefore, that most of the 43 minority persons located within this block group live in Clinchco. None of the build alternatives would impact the Clinchco community.

**Block Group 9901-4 (Dickenson County)**

1990 Minority Composition: 30 minority persons (3%)

Location: R roughly bounded by the McClure River to the southeast, Route 63 to the west, Flannagan Reservoir to the northwest, and Route 63 to the northeast.

Route 205 and a portion of Segment 203 would cross the block group. Impacts would occur along Route 63 near Puckett Gap and Big Ridge Church, and along Route 614 near Mount Olive Church. According to the county's Economic Development Director, few, if any, minority families live in these areas.

**Block Group 9901-5 (Buchanan County)**

1990 Minority Composition: 31 minority persons (3%)

Location: Route 656 along Looney Creek makes up northern boundary. Route 674 is eastern boundary, Route 83 makes up southern boundary.

Segments 303 and 302 cross the block group. Segment 302 would displace eight families, all located outside of the block group. Segment 303 would displace 16 families, most along Looney Creek. According to the Buchanan County Planner, very few, if any, minorities are located along Route 656.

**Block Group 9901-7 (Buchanan County)**

1990 Minority Composition: 142 minority persons (12%)

Location: Route 83 within the Town of Grundy limits makes up the southeastern boundary, the southwestern boundary is located along Route 604. Block Group extends north to Route 460 near Harman Junction.

According to information from the Buchanan County Planning Office, this block group's relatively high minority count is attributable to the minority students who attend and reside at Mountain Mission School in the Town of Grundy. A representative from the school reaffirmed this information. This school would not be impacted.
Low Income Population Impact Avoidance
Alignment shifts were made on three segments to reduce potential impacts to low-income families. A shift in Segment 154 near Lockhart Flats to avoid a manufactured home park reduced the number of potential low-income displacements from 12 to zero. Segment 206 was shifted to avoid Centennial Heights, a Section 8 housing complex located west of Haysi, lowering low-income impacts from 67 to five families. Also, a design shift in Segment 207 reduced low-income impacts in the Harmon and Maxie communities from 27 to 15 families.

Potential Low Income Population Impacts
Table 4.5, shown in Section 4.5.2, summarizes residential displacement estimates from the right of way report. For each segment, the number of low income or minority displaced families is shown.

Due to the area's severe topography, development tends to be concentrated along state roads and waterways. It follows that, where build alternatives cross these features, localized relocation impacts would occur. Given the high number of low-income families in the study area, several of these localized impact areas would be low-income. Segment 207 of Alternatives B, F1, and F2 would displace 15 low-income families located throughout the Harmon and Maxie communities. Segment 112A (Alternative E) would impact a manufactured home park located on Route 637 near its intersection with Route 83, causing displacement of 14 families. Segment 237, part of Alternatives E and F1, would impact twelve low-income families located along Route 604.

As discussed above, FHWA guidance states that project impacts on minority and/or low-income populations should be assessed with respect to impacts on the overall population. Table 4.4 shows that low-income persons comprise approximately 22% of the study area population. In terms of percentage of low-income family impacts in relation to total alternative impacts, Alternative B would have the greatest proportion of low-income family impacts at approximately 43%. Next, Alternative F1 would have 36%, followed by Alternative E (34%), Alternative F2 (31%), Alternative D (15%), Alternative C (12%), and Alternative A (10%). The No-Build Alternative would not affect low-income populations.

Consistent with FHWA guidance, determinations regarding disproportionately high and adverse effects should consider potential offsetting benefits to the affected populations. In the opinion of local representatives, most of the study area's low-income persons are unemployed. The low federal poverty standard (used to determine low-income populations) and the study area's high
percentage of unemployed persons support this assertion. As discussed in Chapter One, a primary purpose of the project would be to help localities in their efforts to provide jobs to these unemployed persons.

The impacts to low-income families from the build alternatives do not constitute disproportionate impacts since:

- the project would provide offsetting economic and social benefits to the affected populations;
- avoidance measures have been taken to reduce impacts as much as possible at this design stage (see Low Income Population Impact Avoidance); and
- environmental justice applies to minority or low-income populations. A population (as defined by FHWA guidance) “live in geographic proximity” with each other. The vast majority of the families do not live within close proximity to each other.

As the project progresses, more detailed designs may further reduce impacts to low-income families.

**Public Participation**

Environmental justice requirements call for establishment or expansion of “meaningful opportunities for public involvement by members of minority populations and low-income populations during the planning and development” of projects. A comprehensive and ongoing public participation program has been established for this project to allow affected parties to review the proposed project concepts and provide comments (see Chapter 7).

### 4.5 RELOCATION IMPACTS

#### 4.5.1 Methods

The Coalfields Expressway Right of Way and Relocation Technical Memorandum (VDOT, 1999) was prepared to meet the requirements of the Federal Uniform Relocation Assistance Act of 1970 and Title VI of the Civil Rights Act of 1964, as amended in 1968. Procedures used to collect the data in this report also meet the guidelines of the VDOT Manual of Instructions, Right of Way Division, Volume 1, Section 404.

The right of way report estimates the number of families, businesses, and non-profit organizations the proposed build alternatives would displace. Attention was given to the minority or low-income status of potential displacees in
determining these estimates. (Section 4.4.4 discusses methods used for estimating minority or income status of displacees).

Estimating relocation impacts first involved obtaining property boundaries from local courthouse records rooms. The property boundaries were digitized and superimposed on aerial photography prepared for the project. Next, estimated limits of construction from the preliminary engineering studies were superimposed on the aerials. This mapping served as the basis for right-of-way impact estimates.

For each proposed segment and connector road, right of way agents with many years of experience in the study area performed field inspections. The agents did not make contact with local citizens to determine such factors as persons per household, minority status, owner/renter status, or income.

Sales records for areas within the project corridors, obtained from either courthouse records or from local realtors, helped in determining suitable values for land, buildings, and improvements. The agents also contacted local builders for assistance in appraising structures. Property values were estimated considering this information in light of the property’s current land use and location. It was found that residences, mostly three bedroom homes, ranged in estimated price from $10,000 to $150,000. A property’s estimated condemnation cost was assumed to be 30% of the sum of the land, building, improvements, and damages value. Incidental costs were assumed to be $1,500 per parcel of land included in the estimate.

Right of way agents also questioned local realtors regarding the availability of decent, safe, and sanitary replacement housing within the study area. They determined that each of the three counties contains ample numbers of replacement businesses and homes, both owner and tenant. The average relocation cost allocation would cover any incidental costs incurred in providing adequate replacement housing.

Estimating relocation expenses involved evaluating the various components that make up the relocation estimate. Factors such as moving costs, replacement housing payments, and housing of last resort were considered. Many relocation payments would consist of moving costs only; others would be considerably higher, especially housing of last resort. After considering the above factors, a relocation-expense estimate of $50,000 for each site-built home was made. Manufactured home relocation costs averaged $5,000 per manufactured home for moving and reestablishment.
4.5.2 Impacts

The No-Build Alternative would not require any relocations. Displacements from the build alternatives are discussed below.

Residential Displacements
Table 4.5 shows the estimated number of families being displaced by alternative and segment. The right of way report assumes persons per household to be either 2.71 or 2.85. These figures are from the 1990 Census and represent the persons per household in owner occupied dwellings for Wise (2.71), Dickenson (2.71), and Buchanan (2.85) counties.

Displacements vary considerably by alternative and segment. Alternative C would have the highest number with 136 family displacements, followed by Alternative A and Alternative F1 with 120 and 121 displacements, respectively. Build Alternative E would have the fewest number, with 85 impacted families.

A connector road that serves Segments 328 and 336 (Alternatives A, C, and D) would displace over 30 homes at Watkins Branch, south of Grundy. Segment 203 (Alternative A) would displace 29 homes, mostly near Routes 63, 616, and 614 west of Haysi. Although it is not residential displacement, Alternatives B, F1, and F2 (Segment 206) would also impact a cemetery and require relocation of 125 graves. Design modifications and features such as alignment shifts, retaining walls, and steepening of slope sides would help avoid or minimize these impacts. These design issues will be considered prior to construction.

Business Displacements
Table 4.6 shows potential business displacements by alternative and segment. The number of employees associated with each displaced facility is shown in parentheses.

Table 4.6 shows that Alternative A would have the greatest number of business displacements (nine), followed by Alternatives C and D (seven), Alternatives F1 and F2 (six), and Alternative E (four). Build Alternative B would have the fewest impacts, displacing only three businesses. The number of employees displaced varies considerably by alternative. Alternative C would displace the highest number (38), while Alternative B would only displace five employees.
### Table 4.5
Families Displaced by Alternative

<table>
<thead>
<tr>
<th>Segment</th>
<th>Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>106</td>
<td>17 (2 LI)</td>
</tr>
<tr>
<td>107</td>
<td></td>
</tr>
<tr>
<td>108A</td>
<td></td>
</tr>
<tr>
<td>109</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td></td>
</tr>
<tr>
<td>112A</td>
<td></td>
</tr>
<tr>
<td>114A</td>
<td>11 (0 LI)</td>
</tr>
<tr>
<td>115</td>
<td>6(1 LI)</td>
</tr>
<tr>
<td>117A</td>
<td></td>
</tr>
<tr>
<td>118A</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>2 (0 LI)</td>
</tr>
<tr>
<td>153A</td>
<td></td>
</tr>
<tr>
<td>154</td>
<td></td>
</tr>
<tr>
<td>155A</td>
<td></td>
</tr>
<tr>
<td>156A</td>
<td></td>
</tr>
<tr>
<td>157A</td>
<td></td>
</tr>
<tr>
<td>158</td>
<td>1 (0 LI)</td>
</tr>
<tr>
<td>159</td>
<td>2 (0 LI)</td>
</tr>
<tr>
<td>160A</td>
<td></td>
</tr>
<tr>
<td>161A</td>
<td></td>
</tr>
<tr>
<td>203</td>
<td></td>
</tr>
<tr>
<td>204A</td>
<td></td>
</tr>
<tr>
<td>204F1</td>
<td></td>
</tr>
<tr>
<td>205</td>
<td>16 (1 LI)</td>
</tr>
<tr>
<td>206</td>
<td></td>
</tr>
<tr>
<td>207</td>
<td></td>
</tr>
<tr>
<td>208</td>
<td></td>
</tr>
<tr>
<td>209</td>
<td></td>
</tr>
<tr>
<td>214</td>
<td>4 (3 LI)</td>
</tr>
<tr>
<td>218A</td>
<td></td>
</tr>
<tr>
<td>219A</td>
<td>7 (2 LI)</td>
</tr>
<tr>
<td>221</td>
<td></td>
</tr>
<tr>
<td>222</td>
<td></td>
</tr>
<tr>
<td>229A</td>
<td></td>
</tr>
<tr>
<td>236A</td>
<td></td>
</tr>
<tr>
<td>237</td>
<td></td>
</tr>
<tr>
<td>238A</td>
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<td>239</td>
<td></td>
</tr>
<tr>
<td>240A</td>
<td></td>
</tr>
<tr>
<td>302</td>
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</tr>
<tr>
<td>303A</td>
<td></td>
</tr>
<tr>
<td>313</td>
<td></td>
</tr>
<tr>
<td>314</td>
<td></td>
</tr>
<tr>
<td>315</td>
<td></td>
</tr>
<tr>
<td>318</td>
<td>8 (0 LI)</td>
</tr>
<tr>
<td>326</td>
<td></td>
</tr>
<tr>
<td>327</td>
<td></td>
</tr>
<tr>
<td>328</td>
<td>32 (4 LI)</td>
</tr>
<tr>
<td>336A</td>
<td></td>
</tr>
</tbody>
</table>

*LI = Low Income

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Coalfiels Expressway

4-18
4.5.3 Relocation Assistance

The Coalfields Expressway Right of Way and Relocation Technical Memorandum (VDOT, 1999) states that there are sites available for purchase or lease for the displaced businesses. The business displacements for each Build Alternative would not deny the community of essential or irreplaceable services. Also, none of the displaced businesses are minority owned or operated.

VDOT’s relocation agent would be available to assist displaced families, businesses, and nonprofit facilities in any way and to relocate them into replacement facilities with minimal disruption. Some residential displacees may require “last resort” housing payments due to lack of decent housing within their financial means. If so, VDOT will not hesitate to use this method if necessary to provide satisfactory replacement housing. VDOT assures that
adequate decent, safe, and sanitary housing would be either available or provided.

Each person would have sufficient time to negotiate for and obtain replacement housing or business space. All housing would be fair housing and available to all persons regardless of race, color, religion, sex, or national origin. VDOT would announce, through all forms of news media in the project area, the project’s initiation date for negotiations, a project location description, and ways to contact VDOT to learn of possible relocation benefits. The Stage I Relocation Assistance Report, available through VDOT, would explain relocation impacts for each alternative, including residential and commercial property availability. The acquisition and relocation program would be conducted in accordance with the Uniform Relocation Assistance and Property Acquisition Policies Act of 1970, as amended. An orderly and satisfactory relocation program can be implemented for all persons.

**ECONOMIC IMPACTS**

The project would provide a positive economic impact to the study area through the increase in employment from construction of a build alternative. This benefit would extend over a long period of time and would have the indirect effect of stimulating economic activity in the study area (see Section 4.20).

Based on an FHWA procedure for estimating construction related employment, each one million dollars of construction expense creates an average of 9.75 temporary, on-site construction jobs and 12.7 temporary, off-site jobs. Off-site employment would include support services (construction supplies, food and beverage service, etc.) to construction services. This procedure assumes that local workers would provide the needed labor for the project. Considering the available labor pool created by the area’s high unemployment, this seems a reasonable assumption. Presumably, these workers could then find new, permanent positions created from local economic development efforts discussed in Sections 1.4 and 4.19.

Table 4.7 provides an example of the potential temporary employment creation due to construction. Construction of the project would likely occur in phases, although the sequencing of the phases has not yet been determined. This analysis uses the portion of the expressway from Pound to just east of Clintwood as an example. Mileage lengths were measured from the alternatives’ terminus near the Town of Pound to connector roads near Clintwood.
Based on the estimated construction costs of the proposed facility, Build Alternative B would possibly create the most construction-related jobs, a total of 5,987. Build Alternative C would create the least, with a total of 4,584 jobs. The No-Build Alternative would not create any employment.

Table 4.7
Potential Employment Increases from Phased Project Construction
Pound, VA to Clintwood, VA

<table>
<thead>
<tr>
<th>Build Alternatives</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dollars/Mile</td>
<td>23.23</td>
<td>23.19</td>
<td>19.43</td>
<td>23.46</td>
<td>23.27</td>
<td>23.79</td>
<td>22.44</td>
</tr>
<tr>
<td>(in millions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Miles</td>
<td>10.8</td>
<td>11.5</td>
<td>10.51</td>
<td>10.39</td>
<td>11.19</td>
<td>11.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$250.88</td>
<td>$266.69</td>
<td>$204.21</td>
<td>$243.75</td>
<td>$260.39</td>
<td>$261.69</td>
<td>$246.84</td>
</tr>
<tr>
<td>(in millions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-site jobs</td>
<td>2,446</td>
<td>2,600</td>
<td>1,991</td>
<td>2,377</td>
<td>2,539</td>
<td>2,551</td>
<td>2,407</td>
</tr>
<tr>
<td>Off-site jobs</td>
<td>3,186</td>
<td>3,387</td>
<td>2,593</td>
<td>3,096</td>
<td>3,307</td>
<td>3,323</td>
<td>3,135</td>
</tr>
<tr>
<td>Total Jobs</td>
<td>5,632</td>
<td>5,987</td>
<td>4,584</td>
<td>5,473</td>
<td>5,846</td>
<td>5,874</td>
<td>5,542</td>
</tr>
</tbody>
</table>

4.7 CULTURAL RESOURCE IMPACTS

The impacts of the project to cultural resources potentially eligible for listing in the NRHP were assessed in accordance with the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended. According to 36 CFR Part 800.9(a), an effect/impact occurs when a project “may alter characteristics of the property that may qualify the property for inclusion in the National Register.” An adverse effect occurs “when the effect on a historic property may diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling or association” (36CFR 800.9[b]). If a project is found to affect a National Register-eligible cultural resource, the Section 106 process requires that the FHWA afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The Section 106 process is considered complete when the ACHP concurs with an effect determination through correspondence or by signing a Memorandum of Agreement (MOA).

As part of the NEPA and Section 106 processes, VDOT has coordinated with DHR throughout the development of this project. Before the location study began, VDOT discussed, and DHR approved, the approach to conducting the Phase I and Phase II surveys for architectural and archaeological resources.
Also, DHR has reviewed and approved the architectural and archaeological surveys conducted for the project (see below).

4.7.1 Archaeological

Research of previous archaeological work indicated that only seven archaeological sites have been recorded within the boundaries of the build alternatives. During a 1983 survey, personnel from DHR recorded these sites, which are clustered less than eight kilometers (five miles) from the Town of Grundy within Segment 313 (see Exhibit 4.3). Site 44BU19 consisted of the remains of a nineteenth-to-twentieth century still that has since been destroyed by strip mining. Sites 44BU20, 44BU21, and 44BU23 have also been destroyed, but originally consisted of the remains of a house (44BU20), a barn (44BU22), and a fenced orchard reported to have been part of a planned community dating to circa 1840. Sites 44BU21 and 44BU39 are nineteenth and twentieth century cemeteries. Site 44BU24 is the only prehistoric site previously recorded in the current project area. At this location, workers installing a transmission line reportedly disturbed several aboriginal burials.

Methods

For this project, an assessment was prepared that evaluated each alternative's potential to affect important archaeological resources (see Archaeological Assessment: Coalfields Expressway Location Study [VDOT, 1999]). This assessment included identification of archaeological and non-archaeological sites that might be affected and that may be valued chiefly for preservation in place. Such sites may include, but not be limited to, battlefields, mounds/burial caves, shipwrecks, resources containing substantial quantity of human burials, and petroglyphs/pictographs.

Since the area's geology has largely influenced settlement patterns, the geotechnical report prepared for the project and other geologic maps of the area served as the primary sources of information. These maps contained details of the location and extent of mined areas. The geologic maps were also used to attempt to define the areas of the corridors with the potential for rockshelters and level lands, conditions defined as preferable for habitation.

Each segment and build alternative was assessed based on its potential (i.e. high, medium, low, etc) to contain rockshelter sites, sites on elevated high ground, and floodplain sites. (For information on a particular segment, refer to Archaeological Assessment: Coalfields Expressway Location Study [VDOT, 1999]). To compare the different build alternatives, a sum-of-weighted-factors system was used, which involved the following steps:

Coalfields Expressway
1. Assign a numerical value on a scale from one to six, with no potential ranked zero, low potential ranked one, low/moderate potential ranked two, etc.
2. Calculate the proportionate size of each segment within each build alternative.
3. Multiply this proportion by the numerical potential for each type of site within each segment. For example, Segment 5 of Alternative A comprises 2.6 percent of the total area encompassed by this corridor. This segment appears to have a low potential for encountering rock shelter sites, so 0.026 was multiplied by one to produce a numerical value representing the potential for rock shelter sites in this segment).
4. Add the weighted potentials for a particular type of site for all the segments in a build alternative to arrive at a numerical value for the corridor's overall potential.
5. Reassign these numerical values their descriptive equivalents to produce the information provided in Table 4.8.

Table 4.8 contains the results of the archaeological assessment for the seven Build Alternatives. The primary factor governing the potential for archaeological sites involves the degree to which surface mining activities has disturbed each corridor. For example, although Alternative B has a slightly greater potential for containing rockshelter and floodplain sites than the other build alternatives, it is also more disturbed than most of the alternatives. Based on the percentages of each alternative corridor that has been disturbed by mining, the potential for the alternatives to contain archaeological sites can be ranked, from high to low, as follows:

   1. Alternative C   4. Alternatives F1 and F2
   2. Alternative A   5. Alternative B
   3. Alternative D   6. Alternative E

Upon selection of the preferred alternative, a Phase I archaeological survey was conducted. The survey involved systematic shovel testing of the entire project corridor of Alternative F1 in accordance with DHR practices. Areas with obvious recent disturbance were not surveyed. In particular, large sections of the project area that had been extensively disturbed by strip mining were eliminated from further consideration. Undisturbed areas that were low and wet or extremely sloped were briefly examined but also not surveyed. Exceptions to this rule were made in areas where resources such as Native American rockshelters or industrial mine entrances could be encountered.
Table 4.8
Summary of the Potential for Archaeological Sites by Alternative

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Size (Hect. Ac.)</th>
<th>Percent Destroyed by Mining</th>
<th>Potential for Rockshelter Sites</th>
<th>Potential for Sites on Elevated, Level Ground</th>
<th>Potential for Floodplain Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1723 4258</td>
<td>17</td>
<td>Low</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>B</td>
<td>1590 3929</td>
<td>23</td>
<td>Moderate</td>
<td>High</td>
<td>Mod./high</td>
</tr>
<tr>
<td>C</td>
<td>1587 3923</td>
<td>12</td>
<td>Low/mod.</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>D</td>
<td>1709 4224</td>
<td>18</td>
<td>Low</td>
<td>High</td>
<td>Low/mod.</td>
</tr>
<tr>
<td>E</td>
<td>1638 4048</td>
<td>27</td>
<td>Low</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>F1</td>
<td>1760 4348</td>
<td>21</td>
<td>Moderate</td>
<td>Mod./High</td>
<td>Low/mod.</td>
</tr>
<tr>
<td>F2</td>
<td>1572 3883</td>
<td>21</td>
<td>Low/mod.</td>
<td>Mod./High</td>
<td>Low/mod.</td>
</tr>
</tbody>
</table>

Source: Archaeological Assessment: Coalfields Expressway Location Study (VDOT, 1999).

Impacts
The No-Build Alternative would not impact any archaeological resources. During the archaeological survey conducted on the CTB Approved Alternative, twenty-one sites and four artifact locations were recorded in the project area. These include cemeteries over 50 years old, domestic sites, lithic scatters, and rockshelters. Of these, only four sites were recommended for Phase II work.

Sites 44DK23 and 44DK24 are rockshelters that produced artifacts from shovel tests beyond the shelter overhang drip line. Sites 44DK27 and 44BU77 are rockshelters requiring further investigation for verification of occupation and to determine the resources’ eligibility for listing.

Further evaluation of the four sites found one site (site 44DK24) potentially eligible for the NRHP. Shovel tests at this site revealed intact deposits, suggesting information is preserved having the potential to yield additional information on the prehistoric occupation of rockshelters in southwestern Virginia. Therefore, the site was considered to be eligible for the NRHP. A field survey provided detailed information on the site location and surrounding topography. Design engineers then determined that the site could be avoided during the final design stage.

Site 44DK23 had an occurrence of bedrock and rock fall, a low density of artifacts, and lacked evidence for intact features. Shovel tests conducted at sites 44DK27 and 44BU77 failed to yield cultural material. Therefore, these three sites were not recommended as eligible for the NRHP. DHR concurred with these eligibility determinations in its correspondence of July 18, 2001.
If alignment modifications are made during the design phase, additional Phase I archaeological surveys will be undertaken before project construction to examine these areas for resources.

## 4.7.2 Historic Architecture

### Methods

Once build alternatives locations had been determined, a Phase I architectural survey was conducted to determine potential impacts. The study identified buildings, structures, and districts to determine if any of these resources on, or eligible for, the NRHP were located within the Area of Potential Effect (APE). The architectural survey adhered to the practices of DHR in terms of data acquisition, completion of inventory records, and reporting. One hundred and forty-five resources were recorded or revisited. The report, entitled *Architectural Identification Survey: Coalfields Expressway Location Study* (VDOT, 1998) provides locations and information on these resources.

These survey efforts and ongoing coordination with DHR led to seven of these 145 resources being recommended for Phase II evaluation (see *Architectural Evaluation: Coalfields Expressway Location Study* [VDOT, 1999]). Phase II studies are necessary to conclusively determine the eligibility of identified cultural resources for listing in the NHRP.

### Impacts

The No-Build Alternative would not impact any architectural resource. Based on the Phase II results, four of the seven resources were determined to constitute historic properties eligible for listing in the National Register. These resources are: Freemont Station (025-0010), the Harmon Mine Company Office (013-5010), the Maxie School (013-5012), and Barn on Route 83 (025-5001) (see Exhibit 4.3). Two of the remaining resources were deemed ineligible for listing on the NHRP. Changes in alignment of a build alternative led to exclusion of the final resource, the Clinchco Mill Village Mill Houses (025-5051), from the project's APE. Table 4.9 shows the four eligible resources and their location relative to the preliminary construction limits and the 227 meter (750 foot) corridor originally established for the project. None of the build alternatives would impact and/or require right-of-way from the properties containing these resources.
4.7.3 Determination of Effect

The following list summarizes the effect determinations that VDOT prepared for each eligible resource discussed above.

Fremont Station (025-0010) is located along Alternatives E, while the Barn on Route 83 (025-5001) is located along Alternatives A, C, and D. Since these resources do not lie on the CTB-Approved Alternative F1, the proposed project would have no effect on the structures.

Both the Harmon Mine Office (013-5010) and Maxie School (013-5033) are located along Alternatives B, F1, and F2 and within the project’s APE. The Harmon Mine Company Office originally lay within the preliminary construction limits of Segment 207. To minimize impacts to these historic structures, the alignment was shifted north of the Harmon Mine Office and south of Maxie School. The CTB Approved Alternative would run along a ridge top to the north of the Harmon Mine Company, approximately 76 meters (250 feet) away, and 24 meters (80 feet) below, the edge of the proposed construction limits. The Harmon Mine Office fronts Route 609 and backs into a thickly-vegetated ridge which rises steeply behind the building. Due to the topography and dense foliage on the ridge behind the Harmon Mine Company, the Approved Alternative may not even be visible from the Harmon Mine Office.

The proposed project would not change the Harmon Mine Office’s location, design, related landscape, setting, or associated natural or manmade features. The materials and workmanship of the building would not change. Finally, the feeling and association of the building and its surrounding features will not change due to the construction. The construction of the CTB Approved Alternative F1 would have no effect to the Harmon Mine Office.

The Maxie School, located at the intersection of Routes 609 and 601, fronts Route 609 with an elevated railroad line in the back of the property. The 228 meter (750 feet) project corridor is located approximately 76 meters (250 feet) away from the Maxie School. When looking from the school toward the alternative, the bridge and road would be visible but will be shielded by the railroad and a thick stand of trees.

The school was found potentially eligible for the NRHP under Criteria A for being the oldest brick school in Buchanan County and its contribution to the history of education in the county. The physical surroundings of the school do not contribute to the building’s eligibility. None of the physical boundary features of the property would change from project construction. Furthermore, the
location, design, material, and workmanship of the Maxie School would not change. The educational setting, feeling, and association would not be changed due to the construction; the school would still feel and have the appearance of an educational facility. The construction of the highway south would have no effect to this potentially historic property.

Site 44DK24, a potentially eligible resource discussed in Section 4.7.1, can be avoided during the final design stage. Therefore, the construction of the project would have no effect to this archaeological site. If alignment modifications are made during the design phase, additional Phase I archaeological surveys will be undertaken before project construction to examine these areas for resources.

The No-Build Alternative would not impact any historic resources. Similarly, based on the results discussed above, the CTB Approved Alternative would have no effect on resources eligible for or on the National Register. VDOT will report these determinations to the SHPO in accordance with the 1999 Programmatic Agreement between VDOT and DHR.

<table>
<thead>
<tr>
<th>Architectural Resource</th>
<th>Alternative(s)</th>
<th>Segment</th>
<th>Within 750' Corridor</th>
<th>Within Preliminary Construction Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barn on Route 83</td>
<td>A,C,D</td>
<td>106</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freemont Station</td>
<td>E</td>
<td>112</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmon Mine Company Office</td>
<td>B,F1,F2</td>
<td>207</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maxie School</td>
<td>B,F1,F2</td>
<td>207</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Architectural Evaluation: Coalfields Expressway Location Study (VDOT, 1999).

4.8 AIR QUALITY IMPACTS

An air quality analysis was performed in accordance with the VDOT Guidelines for Preparation of Air Quality Impact Assessments. Carbon Monoxide (CO) concentrations at sensitive sites were compared to the National Ambient Air Quality Standards (NAAQS) to determine potential impacts from the proposed project.
4.8.1 Methods

Since the proposed project is not expected to be a major source of air pollution, a detailed technical air analysis was not deemed necessary. VACAL5A, a simplified microcomputer procedure, was used to estimate CO concentrations. VDOT developed this model, which it uses for air quality attainment areas, from the FHWA’s MOBILE 3/CALINE 3 Graphic Assessment Program (revised to include the March 26, 1993 MOBILE 5.0A emission factors).

For the air analysis, the following worst-case conditions were assumed to exist:

- peak hour traffic volumes;
- an ambient temperature of -2 Celsius (30° F);
- a wind speed of one meter (0.33 feet) per second;
- an atmospheric stability rating of ‘D’; and
- wind directions nearly parallel to all roadways considered in the analyses.

Two potential worst-case location sites for each of the original five build alternatives were selected for analysis. Two of these sites are located along Alternatives F1 and F2. Although this project would not involve any direct improvements to Route 460, it was included in the assessment since the project would affect traffic volumes on Route 460. Each build alternative had one monitoring site located adjacent to it, and another located along Route 460 near its crossing of that highway. Decisions regarding site locations considered anticipated traffic volumes, operating conditions, and proximity of sensitive receptors to the proposed improvements. Table 4.10 describes the site locations, shown on Exhibit 4.4.
Table 4.10
Air Quality Analysis Sites

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Location</th>
<th>Distance to Center of Pavement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Build</td>
</tr>
<tr>
<td>A</td>
<td>A. West of Georges Fork</td>
<td>50/115 ft.*</td>
</tr>
<tr>
<td></td>
<td>AA. North of Vansant</td>
<td>50 ft.</td>
</tr>
<tr>
<td>B</td>
<td>B. North of Clintwood</td>
<td>50/115 ft.*</td>
</tr>
<tr>
<td></td>
<td>BB. East of Harman Junction</td>
<td>50 ft.</td>
</tr>
<tr>
<td>C</td>
<td>C. West of Georges Fork</td>
<td>50/115 ft.*</td>
</tr>
<tr>
<td></td>
<td>CC. South of Grundy</td>
<td>50 ft.</td>
</tr>
<tr>
<td>D</td>
<td>D. West of Georges Fork</td>
<td>50/115 ft.*</td>
</tr>
<tr>
<td></td>
<td>DD. South of Grundy</td>
<td>50 ft.</td>
</tr>
<tr>
<td>E</td>
<td>E. West of Georges Fork</td>
<td>50/115 ft.*</td>
</tr>
<tr>
<td></td>
<td>EE. East of Harman Junction</td>
<td>50 ft.</td>
</tr>
<tr>
<td>F1</td>
<td>A,C,D,E. West of Georges Fork</td>
<td>50/115 ft.*</td>
</tr>
<tr>
<td></td>
<td>BB,EE. East of Harman Junction</td>
<td>50 ft.</td>
</tr>
<tr>
<td>F2</td>
<td>A,C,D,E. West of Georges Fork</td>
<td>50/115 ft.*</td>
</tr>
<tr>
<td></td>
<td>BB,EE. East of Harman Junction</td>
<td>50 ft.</td>
</tr>
</tbody>
</table>

*Because of the wide median, the roadway had to be split by direction.

4.8.2 Impacts

Table 4.11 summarizes analysis results for the build alternatives, the no-build alternative, and the base (existing) condition. For the ten analysis sites, it presents the peak one-hour and average eight-hour CO concentrations for the base year (1997), interim year (2005), and design year (2020). All estimates are in parts per million (ppm). The results include background concentrations of ppm and 3 ppm for the one-hour and eight-hour concentrations, respectively.

For the one-hour and eight-hour periods, the NAAQS for CO are 9 ppm and 35 ppm, respectively. The results show that no violations of these standards are expected for the seven build alternatives. Therefore, this project is in compliance with the Virginia State Implementation Plan and is not expected to interfere with the attainment or maintenance of the NAAQS.
Table 4.11
Estimated Worst Case CO Concentrations
(1 Hour / 8 Hour in ppm)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6.3 / 3.2</td>
<td>6.3 / 3.2</td>
<td>6.3 / 3.2</td>
<td>6.4 / 3.2</td>
<td>6.4 / 3.2</td>
</tr>
<tr>
<td>AA</td>
<td>7.2 / 3.8</td>
<td>7.0 / 3.6</td>
<td>7.1 / 3.7</td>
<td>7.3 / 3.8</td>
<td>7.4 / 3.9</td>
</tr>
<tr>
<td>B</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>6.1 / 3.1</td>
<td>6.2 / 3.1</td>
</tr>
<tr>
<td>BB</td>
<td>7.2 / 3.8</td>
<td>7.0 / 3.6</td>
<td>7.1 / 3.7</td>
<td>6.8 / 3.5</td>
<td>6.9 / 3.6</td>
</tr>
<tr>
<td>C</td>
<td>6.3 / 3.2</td>
<td>6.3 / 3.2</td>
<td>6.3 / 3.2</td>
<td>6.4 / 3.2</td>
<td>6.4 / 3.2</td>
</tr>
<tr>
<td>CC</td>
<td>7.2 / 3.8</td>
<td>7.0 / 3.6</td>
<td>7.1 / 3.7</td>
<td>7.5 / 4.0</td>
<td>7.6 / 4.0</td>
</tr>
<tr>
<td>D</td>
<td>6.3 / 3.2</td>
<td>6.3 / 3.2</td>
<td>6.3 / 3.2</td>
<td>6.4 / 3.3</td>
<td>6.4 / 3.3</td>
</tr>
<tr>
<td>DD</td>
<td>7.2 / 3.8</td>
<td>7.0 / 3.6</td>
<td>7.1 / 3.7</td>
<td>7.3 / 3.8</td>
<td>7.4 / 3.9</td>
</tr>
<tr>
<td>E</td>
<td>6.3 / 3.2</td>
<td>6.3 / 3.2</td>
<td>6.3 / 3.2</td>
<td>6.3 / 3.2</td>
<td>6.4 / 3.2</td>
</tr>
<tr>
<td>EE</td>
<td>7.3 / 3.9</td>
<td>7.0 / 3.6</td>
<td>7.1 / 3.7</td>
<td>6.9 / 3.6</td>
<td>6.9 / 3.6</td>
</tr>
</tbody>
</table>

4.9 NOISE IMPACTS

4.9.1 Methods

Noise Abatement Criteria
The noise impacts for the build alternatives have been assessed in accordance with Federal Highway Administration (FHWA) guidelines published in Part 772 of the Federal Aid Policy Guide (FAPG). Determining impacts of highway traffic noise on human activity requires use of the Noise Abatement Criteria (NAC) established by FAPG Part 772. The NAC, listed in Table 4.12 for various land uses, represent the upper limit of acceptable traffic noise conditions. These criteria, which apply to areas having regular human use and where lowered noise levels are desired, are presented in terms of Leq (equivalent sound level). Leq is the level of constant sounds which, in a given situation and time period, has the same energy as does time-varying sound. In other words, the fluctuating sound levels of traffic noise are represented in terms of a steady noise level with the same energy content.
Table 4.12

FHWA Noise Abatement Criteria

<table>
<thead>
<tr>
<th>Activity Category</th>
<th>Leq(h) dB(A)</th>
<th>Description of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>57 (Exterior)</td>
<td>Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.</td>
</tr>
<tr>
<td>B</td>
<td>67 (Exterior)</td>
<td>Picnic areas, recreational areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.</td>
</tr>
<tr>
<td>C</td>
<td>72 (Exterior)</td>
<td>Developed land, properties or activities not included in Categories A or B above.</td>
</tr>
<tr>
<td>D</td>
<td>---</td>
<td>Undeveloped lands.</td>
</tr>
<tr>
<td>E</td>
<td>52 (Interior)</td>
<td>Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.</td>
</tr>
</tbody>
</table>

For a given activity, if 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 Commonwealth of Virginia has defined approach as one decibel less than the NAC. The Federal guidelines provide a second criterion for assessing impact. At some locations, a project may impose a large increase in noise levels over existing levels, even though the levels may not reach the NAC. Virginia’s policy defines an increase of 10 dB(A) or more as a “substantial increase” that justifies consideration of noise abatement measures. The final decision to recommend abatement measures would consider the design feasibility and the construction-cost-per-protected-receptor weighed against the environmental benefit.

The noise analysis initially identified approximately 1700 noise sensitive properties within a 607 meter (2000 foot) wide corridor along all seven build alternatives. Assuming a worst case scenario, preliminary noise modeling showed no impacts would occur outside a corridor 229 meter (750 feet) wide, which reduced the number of noise sensitive properties to 445. These 445 properties are scattered along the build alternatives, with denser areas located along Route 83.

Next, impact assessments were performed on the 445 potentially impacted properties. Of these properties, 441 are residences, three are churches, and one is a school. Exhibit 4.5 shows approximate locations of the noise receptor sites. Noise levels in these areas have been determined for the existing conditions, the
design year (2020) no-build conditions, and the design year (2020) build conditions.

To establish baseline or ambient noise levels, traffic data is used as one of the inputs in the noise model (see below). However, due to the small amount of traffic on roadways located away from Route 83 and the traffic's sporadic nature, traffic data was not determined for these rural areas. Determining existing and no-build levels for rural areas involved conducting monitoring at 27 locations along the seven proposed alternatives (see Exhibit 4.5). The equipment used to measure the ambient noise levels was a Quest Electronics M-39 Logging Noise Analyzer, Precision Type 1, with an eight millimeter PZT ceramic microphone. Table 4.13 contains the ambient noise measurement results.

Monitoring results from sites in rural areas, where traffic was not the major source of sound energy, were averaged to develop a background level applicable to properties located in other remote areas. This average background noise level was determined to be 51 dB(A). Properties located along more traveled roadways, excluding Route 83, were assigned levels based on nearby monitored sites. As Table 4.13 shows, ambient measurements in developed areas ranged from 50 to 67 dB(A). To approximate noise levels for the No-Build Alternative, this analysis used monitored values for existing conditions, since no major industrial, commercial, or residential development is expected away from Route 83 due to the topography and lack of access.

At sites along Route 83 where traffic significantly contributes to the ambient noise level, FHWA Traffic Noise Model (TNM) was used to determine the traffic generated noise. TNM is an FHWA-approved highway noise prediction computer model released in 1998 to replace the Stamina/Optima model. The TNM model accounts for such factors as terrain, atmospheric absorption, ground absorption, intervening barriers, roadway geometry, receptor distance, vehicle volumes and speeds, and volumes of medium trucks (vehicles with 2 axles/6 tires) and heavy trucks (3 axles or more).

Using the TNM model, noise levels were predicted for that hour of the day when vehicle volume, operating speed, and number of heavy trucks combine to produce the worst traffic noise conditions. Combining these results with the 51 dB(A) base background noise level established the ambient noise levels at these sites. This approach was also used to predict the design year noise levels for the build and no-build conditions where traffic is anticipated to be the major noise generator.

The final step in assessing noise impacts requires comparing:
Table 4.13
Ambient Noise Measurements: Existing Leq's

<table>
<thead>
<tr>
<th>Site</th>
<th>Description</th>
<th>Ambient (dB(A))</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>First Presbyterian Church</td>
<td>65</td>
</tr>
<tr>
<td>B</td>
<td>Pound High School</td>
<td>52</td>
</tr>
<tr>
<td>D</td>
<td>Hamilton Chapel</td>
<td>62</td>
</tr>
<tr>
<td>E</td>
<td>Calvary Baptist</td>
<td>66</td>
</tr>
<tr>
<td>F</td>
<td>Church/Living God/Piller, Ground of Truth</td>
<td>67</td>
</tr>
<tr>
<td>G</td>
<td>Residence</td>
<td>58</td>
</tr>
<tr>
<td>J</td>
<td>Haysi High School</td>
<td>50</td>
</tr>
<tr>
<td>N</td>
<td>Residence</td>
<td>56</td>
</tr>
<tr>
<td>O</td>
<td>Residence</td>
<td>55</td>
</tr>
<tr>
<td>P</td>
<td>Penecostal Church</td>
<td>62</td>
</tr>
<tr>
<td>Q</td>
<td>Harman Elementary</td>
<td>55</td>
</tr>
<tr>
<td>R</td>
<td>Residence</td>
<td>60</td>
</tr>
<tr>
<td>S</td>
<td>Residence</td>
<td>57</td>
</tr>
<tr>
<td>X</td>
<td>Residence</td>
<td>52</td>
</tr>
<tr>
<td>Y</td>
<td>Residence</td>
<td>51</td>
</tr>
<tr>
<td>AA</td>
<td>Coon Hunters Association</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td><strong>Logarithmic Average</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>

Undeveloped Sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Description</th>
<th>Ambient (dB(A))</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Francis Pine Chapel</td>
<td>48</td>
</tr>
<tr>
<td>H</td>
<td>Residence</td>
<td>44</td>
</tr>
<tr>
<td>I</td>
<td>Faith Bible Church</td>
<td>46</td>
</tr>
<tr>
<td>K</td>
<td>Mount Olive Regular Baptist Church</td>
<td>52</td>
</tr>
<tr>
<td>L</td>
<td>Residence</td>
<td>55</td>
</tr>
<tr>
<td>M</td>
<td>Residence</td>
<td>51</td>
</tr>
<tr>
<td>T</td>
<td>Residence</td>
<td>54</td>
</tr>
<tr>
<td>U</td>
<td>Residence</td>
<td>45</td>
</tr>
<tr>
<td>V</td>
<td>East Project Terminus</td>
<td>47</td>
</tr>
<tr>
<td>W</td>
<td>East Project Terminus</td>
<td>53</td>
</tr>
<tr>
<td>Z</td>
<td>Park</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td><strong>Logarithmic Average</strong></td>
<td><strong>51</strong></td>
</tr>
</tbody>
</table>

**NOTE:** Non-traffic related ambient background noise levels = 51 dB(A); determined by averaging the measured ambient undeveloped sites.
- Noise levels under existing conditions to noise levels under build conditions, to show changes between the present time and the design year if the project is built;

- Noise levels under design year no-build conditions to noise levels under build conditions, to show the change attributable to the proposed project; and

- Noise levels under build conditions to the applicable NAC, to determine the compatibility of noise levels under build conditions to present land use.

4.9.2 Impacts

The No-Build Alternative would not have any noise impacts. The analysis results indicate that the proposed improvements will have a varying effect on noise levels for noise sensitive properties. Generally, noise levels can be expected to remain near existing year levels for the design year (2020) no-build condition due to the lack of any projected increase in traffic or development. The design year no-build noise levels are not expected to increase by more than 3 dB(A) at any of the study site locations. For reference purposes, an increase of 3 decibels is considered barely perceptible, whereas an increase of 10 decibels is considered to double the loudness.

Comparison of Design Year Build with Existing Conditions

This comparison indicates a wide range in noise level differences. Alternatives B, C, F1, and F2 would cause the largest increase of the build alternatives (a 12 dB(A) variance). For most sites, Alternatives A and D would have an average increase of 3 dB(A); Alternatives B, C, E, F1, and F2 would have an average increase of 4 dB(A). Alternatives C, F1, and F2 have two properties experiencing a substantial increase in noise level while Alternative B has one property experiencing a substantial increase in noise level (see Table 4.12).

Comparison of Design Year Build with No-Build

Since very little development is expected under the No-Build condition, the results of this comparison are similar to those presented above. Alternatives C would have the greatest difference from No-Build noise levels—12 and 11 dB(A) higher at two locations. Next, Alternatives F1 and F2 would have noise levels 12 and 10 dB(A) higher at two locations. One location along Alternative B would experience noise levels 10 dB(A) higher than No-Build Conditions. The largest difference for the other alternatives would be 9 dB(A). For most sites, increases
for Alternatives A and D would average 3 dB(A), and 4 dB(A) for Alternatives B, C, E, F1, and F2.

**Comparison of Design Year Build with NAC**
This comparison reveals that no properties will experience noise levels from any of the build alternatives that will approach or exceed the NAC.

**Impact Assessment Summary**
Table 4.14 summarizes the impact assessment for the build alternatives. As stated previously, no properties would experience noise levels approaching or exceeding the NAC. However, two properties would have a substantial increase in noise. Receiver 623, located adjacent to Alternatives C, F1, and F2, is a residence located in a remote area east of Clintwood. The site has an existing noise level of 51 dB(A) but would experience projected build levels of 63 dB(A)—an increase of 12 dB(A). Receiver 927 is a residence in a remote area northeast of Clinchco. It is located between Segment 206 (Alternatives B, F1, and F2) and Segment 236 (Alternative C) and has an existing noise level of 51 dB(A). Under Alternatives B, F1, and F2, the site would experience a projected build noise level of 61 dB(A). For Alternative C, it would have a projected build level of 63 dB(A). This represents an increase of 10 and 12 dB(A), respectively. Exhibit 4.6 shows the general location of the properties, and Exhibits 4.7 and 4.8 show details of the areas.

<table>
<thead>
<tr>
<th>Table 4.14</th>
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<tr>
<td>Impact Summary</td>
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<table>
<thead>
<tr>
<th>Build Alternatives</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F1</th>
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<td>269</td>
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<td>2</td>
<td>0</td>
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<td>2</td>
<td>2</td>
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Typically, a project of this size that skirts several communities would result in noise impacts to several nearby properties. However, the analysis indicates noise levels at only two locations would not meet noise criteria. Two conditions exist that have led to the low number of impacted properties. First, due to the
area’s rugged terrain, cut and fill sections would require considerable right of way. This needed right of way would result in acquisition of most of the properties close enough to a build alternative to be in violation of VDOT noise level criteria. The second reason involves the low projected traffic volumes on the Coalfields Expressway.

4.9.3 Mitigation

The Federal Aid Policy Guide (FAPG), Part 772 identifies certain noise abatement measures that may be incorporated in the project design to reduce traffic noise impacts. These abatement measures, detailed in VDOT’s Coalfields Expressway Noise Study (1999), include traffic management, alteration of vertical and/or horizontal alignments, and the construction of sound barriers. Of these, construction of a sound barrier has been deemed as the only appropriate noise abatement measure to consider for the impacted residences. Upon completion of the location study phase and after more detailed plans are prepared, a more detailed noise analysis would further study the need for noise abatement.

Sound barriers are only effective when no openings exist for pedestrian or vehicular access—the barrier must be continuous along the roadway adjacent to the impacted site or sites. VDOT bases the reasonableness of a sound barrier on its $30,000 per protected residential property criterion. This criterion assumes the sound barrier will cost $174 per square meter ($16 per square foot) and only includes barrier materials and installation costs. To comply with the State Noise Abatement Policy, an effective barrier must eliminate or reduce the noise impact, and provide a minimum of 5 dB(A) reduction in build traffic levels.

A provision exists that allows for third party funding of noise barriers. When a noise barrier would exceed the $30,000 per impacted residential property cost criteria, the affected community has the opportunity to contribute the difference between the estimated cost and the amount VDOT pays based on the cost criteria. If a third party makes a fiscal commitment, VDOT will design an effective traffic sound barrier.

Site 623 is located nearby an opening for vehicular access. Therefore, this site would not allow for a continuous barrier along the proposed roadway and was dropped from further consideration.

Site 927, adjacent to Alternative C, is in a location that would allow for a continuous barrier. A twenty-foot high, 800 feet long barrier would provide a five dB(A) reduction in noise level at this property (See Exhibit 4.8). The estimated cost of this barrier is $256,000. It is not considered to be cost
effective, and will receive further consideration only if third party funding is committed.

Between where Alternatives B, F1, and F2 would pass by Site 927, a barrier was deemed not to be feasible. Due to terrain conditions, a minimum insertion loss of five dB(A) could not be attained and was therefore dropped from further consideration.

4.10 POTENTIAL HAZARDOUS MATERIALS SITES

4.10.1 Methods

As part of this project, a preliminary assessment of potential hazardous materials sites was performed. Investigating and locating these sites involved conducting database searches, aerial reviews, and field surveys. Once this information was gathered and cross-referenced, 22 potential contamination sites were determined within the corridors of the build alternatives. Specific site information such as property owners, property boundaries, and agency file information was located if available.

Database Search

United States Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (DEQ) databases were searched for potential contamination sites. Corridor searches were performed for each of the seven alternates. Databases searched include:

**DEQ**
- VA WASTE (Solid Waste Sites)
- UST (Underground Storage Tank-registered)
- LUST/LAST (Leaking Underground Storage Tank)
- VRP SITES (Virginia Voluntary Remediation Program)
- PREP (Pollution Complaints)

**EPA**
- NPL (National Priority List-Superfund Sites)
- CERCLIS (Comprehensive Environmental Response Compensation and Liability Information System-Potential Superfund Sites)
- RCRIS (Resource Conservation and Recovery Information System)
- ERNS (Emergency Response Notification System)
- EDD (Enforcement Decision Document)
As discussed in Section 3.5.3, the database searches identified a relatively small number of sites for a project of this scale. There were 212 potential sites identified within the study area, but only 19 could be mapped. Only five of the 19 mapped sites were located within the corridors established for each proposed segment.

**Past Land Use Research**

Historic aerial photos were reviewed to help determine potential hazardous materials site locations. These aerials, reviewed at the VDOT Central Office, were from the years 1969 (Dickenson County), 1971 (Buchanan County) and 1977 (Wise County). The scale of the aerials did not allow for the determination of most types of commercial or industrial land uses. However, the historic aerials did allow for comparison with recent aerials (1997) to locate areas that may have been previously developed but are now vegetated. These comparisons did not reveal any of these types of sites.

**Field Survey**

Field reviews provided business names, land uses, and site characteristics of properties located within the corridors of the build alternatives. Special attention was given to businesses that might handle hazardous materials or petroleum products, generate hazardous waste, or may have handled these materials in the past. These businesses may include gas stations, landfills, refineries, chemical plants, coal purification plants, battery recycling facilities, mining operations, dry cleaning firms, motor vehicle repair and maintenance operations, printing, and warehousing. Of the 22 total potential contamination sites, 17 of the sites were located during the field survey. The five sites found from the database searches were also reviewed during the field survey. As a final measure, site information from the hazardous materials survey was cross-referenced with results from the *Coalfields Expressway Right of Way and Relocation Technical Memorandum* (VDOT, 1999) to verify potential impacts.

**4.10.2 Potential Impacts**

Table 4.15 lists the 22 sites identified by the methods discussed above, and references the properties by site name and a corresponding number. Most of these facilities are automobile repair shops, gas stations with USTs, and abandoned storage tanks. The table also indicates whether the site would likely be impacted, based on the right of way report and proposed construction limits. Exhibit 4.9 shows approximate site locations. For more information, refer to the *Coalfields Expressway Potential Contamination Sites Survey* (VDOT, 1999).
Table 4.15
Potential Contamination Sites

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<th>Site Number</th>
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<th>Alternatives</th>
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</thead>
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<td>5 ASTs</td>
<td></td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>106B</td>
<td>Engine Repair Shop (closed)</td>
<td></td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>106C</td>
<td>Body Shop</td>
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<td>A B C D E F1 F2</td>
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<td>106D</td>
<td>6 Storage Tanks/Misc. Equipment</td>
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<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>106E</td>
<td>Storage Tanks</td>
<td></td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>108A</td>
<td>Sayler's Texaco</td>
<td>UST</td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>108B</td>
<td>Air Conditioning and Heating Co.</td>
<td></td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>109A</td>
<td>Auto Repair /Garage</td>
<td></td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>109B</td>
<td>Gas Station</td>
<td></td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>109C</td>
<td>Gas Station</td>
<td>UST</td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>109D</td>
<td>Auto Sales / Auto Repair</td>
<td></td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>154A*</td>
<td>Transformers</td>
<td></td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>156A*</td>
<td>Dumping Site</td>
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<td>A B C D E F1 F2</td>
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<td>156B</td>
<td>Auto Body Repair</td>
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<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>158A</td>
<td>IceKimo Wholesale Company</td>
<td>EDD</td>
<td>A B C D E F1 F2</td>
</tr>
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<td>209A</td>
<td>Buchanan County Landfill</td>
<td>VA Waste</td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>237A</td>
<td>McClanahan's Body Shop</td>
<td>RCRIS</td>
<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>238A</td>
<td>Wheel Alignment</td>
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<td>A B C D E F1 F2</td>
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<tr>
<td>238B</td>
<td>Auto Parts</td>
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<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>302A</td>
<td>No name - abandoned garage</td>
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<td>A B C D E F1 F2</td>
</tr>
<tr>
<td>336A*</td>
<td>Gas Station</td>
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<td>A B C D E F1 F2</td>
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<tr>
<td>336B</td>
<td>Body Shop</td>
<td></td>
<td>A B C D E F1 F2</td>
</tr>
</tbody>
</table>

* Sites that appear to be impacted.

**Note:**
- **Table 4.15: Potential Contamination Sites**
- **Alternatives:**
  - A: Alternative 1
  - B: Alternative 2
  - C: Alternative 3
  - D: Alternative 4
  - E: Alternative 5
  - F1: Alternative 6
  - F2: Alternative 7

**Total Impacts:**
- Within Corridor: 7 6 12 12 7 8 7
- Within Construction Limits: 1 2 2 0 0 1 1

*Coalfields Expressway* 4-39
Since the build alternatives are generally located in rural areas, each build alternative would impact a low number of potential hazardous materials sites for a project of this size. Table 4.15 shows that Build Alternative C would have the greatest number of impacts to potential hazardous materials sites, with 12 in the corridor and two in the construction limits. Alternative E would impact the fewest sites, with seven in the corridor and none in the construction limits. The No-Build Alternative would not impact any hazardous materials site.

4.10.3 Mitigation

VDOT would, in its final design, avoid impacts to potential hazardous materials sites. It would perform site assessments to the degree necessary to determine the levels of contamination present and, if necessary, to evaluate the options to remediate. If contaminated soils are encountered during construction, VDOT will coordinate the removal and disposal of the soil. If contaminated groundwater were encountered during construction, VDOT would coordinate the treatment and/or proper discharge of the water.

4.11 VISUAL IMPACTS

The introduction of a new roadway facility in an area alters the visual environment. The effect that the roadway project would have on an area depends on the activities, exposure, and sensitivity of the viewers. Visually sensitive receptors located in the project area include historic properties, parks and recreational areas, and scenic overlooks, byways and trails. This section discusses the nature and extent of potential visual impacts from the project. (See Section 3.2.4 for more information on these recreational areas.) The No-Build Alternative would not create any visual impacts.

Alternative A may visually impact the Flannagan Reservoir. At the closest point, this alternative travels within 0.8 kilometers (0.5 miles) of the reservoir. In this area, the alignment follows a ridge that overlooks a small part of the reservoir and, therefore, the proposed roadway would likely be visible. However, Route 614 is located adjacent to the reservoir in this area. Since the area has already been visually impacted from this existing roadway, the introduction of the Coalfields Expressway in this particular viewshed would not constitute a major impact. However, VDOT will avoid and reduce visual impacts in this area by:

- ensuring the final roadway design attempts to blend the new road into the existing topography and the natural landscape;
• selectively clearing trees along the right of way to minimize the loss of vegetation; and
• providing an aesthetically pleasing highway with gently-rounded, grassed shoulders to enhance views of and from the road.

Just to the north of this area, the Flannagan Reservoir Project Operations offices, Visitor Center, and Hollow Place Recreational Area are located roughly 1066 meters (3500 feet) from proposed Alternative A. These facilities are located in a hollow, and an adjacent ridge would obstruct the line-of-sight from the facilities to the proposed roadway.

The Break Interstate Park contains several scenic overlooks. The overlooks are oriented westerly to the gorge and northerly to Kentucky, while all proposed build alternatives are located south of the park. Therefore, the build alternatives will not detract from the scenery provided by the overlooks.

In a portion of the park located on the east side of Route 80, Alternative A travels to within 328 meters (1000 feet) of the southern property boundary. However, this area has not been developed for passive or active recreational use and does not contain any recreational facilities. According to the Tennessee Valley Authority's (TVA) Evaluation of Development Proposals for Breaks Interstate Park, there are no proposed trails or recreation facilities for this section of park. Therefore, visual impacts are not anticipated in this area.

Alternatives A, B, C, F2, and the CTB Approved Alternative F1 would visually impact the proposed Haysi to Garden Hole Recreational Trail. The alternatives would bridge the trail, which will parallel the Russell Fork, in different locations. Alternatives B, C, F1, and F2 would cross the trail in an area previously disturbed by construction of a road, railroad, and several residences. Alternative A would introduce a highway bridge into a much less disturbed, natural area. In these areas, VDOT would avoid and reduce impacts by minimizing vegetative clearing.

Segment 115 (Alternatives A, B, C, F1, and F2) would span the Cranes Nest River in an area owned by the Corps of Engineers as part of the Flannagan Reservoir property. This area contains two campgrounds located in low-lying areas near the river. The first is located approximately 492 meters (1500 feet) south of the segment; the second is located approximately 984 meters (3000 feet) to the north (see Exhibit 3.2). Although tree cover would likely obstruct viewlines to the proposed highway, it remains possible that Segment 115 would visually impact the campgrounds. At and near where Segment 115 crosses the
Cranes Nest River, VDOT would avoid and reduce impacts by minimizing vegetative clearing.

Alternatives A and D share an alignment that is located approximately 61 meters (200 feet) from the Poplar Gap Park boundary. Owned and operated by Buchanan County, this park's existing uses consist of baseball fields and a pony riding stable. State Route 604, which provides access to the park, is located on a ridgeline at the entrance to the park. The proposed roadway and the park would be located on opposite sides of this ridge. Therefore, Alternatives A and D would not visually impact the park.

The project would not impact any open space easements owned by the Virginia Outdoors Foundation.

### 4.12 WILDLIFE HABITAT AND VEGETATION IMPACTS

Different land covers in the study area provide habitat to different types of terrestrial wildlife (see Section 3.6.2). Forested land is probably the area's most productive habitat, although strip-mined areas that have successfully revegetated can also provide good habitat. Other habitat includes the area's limited farmland and wetlands. To estimate loss of wildlife habitat and vegetative communities, impacts to these land covers were determined.

#### 4.12.1 Methods

Recent land cover mapping was not available for the project area. However, other mapping resources allowed for estimations of farmland, strip mined areas, and urban land uses. Since the study area is forested in a natural state, areas not under these types of land cover were assumed to be forested. Estimating forested impacts therefore involved subtracting urban, surface mined, and farmed areas from total segment lengths. Section 4.2.1 describes the methods used to determine farmland impacts. Department of Mines, Minerals, and Energy (DMME) mapping provided strip mined areas. These areas were assumed not to be forested, despite evidence of successful reforestation in some reclaimed areas. Urban areas were estimated from USGS quadrangle maps and orthophotographs.

#### 4.12.2 Impacts

The No-Build Alternative would not impact wildlife habitat areas and vegetative communities. Build alternatives would impact these areas, primarily through
conversion to highway right-of-way. Primary impacts to wildlife would be the elimination of habitat and the loss of smaller, less mobile wildlife species located within the right-of-way. An expressway can sever or bisect populations of less mobile species such as small mammals, reptiles, and amphibians, resulting in isolation of certain populations and possibly a reduction in the species' genetic integrity. Further impacts may occur in the form of road kills as animals migrate or wander across the roadway in search of food, cover, and breeding grounds.

Forest Impacts

Table 4.16 shows estimated impacts to forested areas by alternative and segment, based on an estimated average clearing width of 91 meters (300 feet). For each alternative, forestland was estimated to comprise from 59% to 71% of the total corridor areas. Forested impacts vary considerably by segment, but not by alternative. Due to the additional length associated with the BCIAC, the CTB Approved Alternative F1 would impact the greatest amount of forested area, a total of 584 hectares (1443 acres). Alternative F2 (the Alternative F1 without the BCIAC) would impact 504.7 hectares (1247.3 acres) of forestland—impacts comparable to the other alternatives. Alternative E would have the fewest impacts—471 hectares (1164 acres). Impacts by segment range from no forested impacts for Segment 106, which travels along the previously-impacted Route 83 corridor, to the 104 hectares (256 acres) of impacts estimated for Segment 203. In addition to being a long segment, Segment 203 travels through a rural area that includes COE-owned Flannagan Reservoir property.

Considering the amount of forestland covering this rural area, these impacts would not greatly affect the area's forested resources. The Cumberland Plateau Planning District Commission, in a 1993 land use survey referenced in the Dickenson and Buchanan county comprehensive plans, estimated that the two counties collectively have over 475,000 acres of forestland. Therefore, any of the build alternatives would impact less than one half of one percent of total forested areas in just those two counties.

Besides the type of wildlife impacts discussed above, additional impacts would occur in the form of fragmentation of forested ecosystems. This could reduce the area's habitat value for species that require large, contiguous forested habitats. Impacts to species sensitive to human disturbance could also occur; however, this fragmentation may have beneficial impacts to species adapted to edge habitat types.
<table>
<thead>
<tr>
<th>Segment</th>
<th>A</th>
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<th>C</th>
<th>D</th>
<th>E</th>
<th>F1</th>
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<tbody>
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Table 4.16
Forest Impacts
Other Habitat Impacts
To show impacts to other types of habitat besides forestland, Table 4.17 contains impact estimates for surface mined, farmland, and wetland areas. The No-Build Alternative would not impact terrestrial wildlife.

Table 4.17
Wildlife Habitat Impacts by Alternative

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<th>Habitat Type</th>
<th>Build Alternatives</th>
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4.13 AQUATIC RESOURCES

4.13.1 Potential Water Quality Impacts
Highway projects lead to several different types of nonpoint source pollution entering streams. The term nonpoint source refers to pollutants that are diffuse in nature and not discharged from localized points such as sewage treatment plant discharges or industrial outfalls. Typical nonpoint source pollutants associated with roadways include heavy metals, asbestos, grease, and hydrocarbons. Spills from vehicles transporting hazardous materials or petroleum products could also impair water quality.

Impacts to Drinking Water Sources
Public drinking water sources can be vulnerable to the water quality threats discussed above. Degradation or contamination of drinking water sources can lead to expensive treatment upgrades or source replacement.

The No-Build Alternative would not impact the John W. Flannagan Reservoir. All seven build alternatives would cross the Pound River and Cranes Nest River watersheds (which drain into the reservoir) for similar distances. Alternatives A, B, C, F2, and the CTB Approved Alternative F1 would cross the Cranes Nest River approximately 10.3 kilometers (6.4 miles) upstream of the Flannagan Reservoir. Alternatives D and E would cross the river further upstream, roughly 13.5 kilometers (8.4 miles) upstream from the reservoir. Since Alternatives A, B,
C, F1, and F2 would all be located closer to the water intake at the reservoir, they would likely pose a greater threat to the drinking water supply. Further east, Alternative A would travel within 1.2 kilometers (0.75 miles) from the water intake located near the Flannagan Dam. However, this section of Alternative A would drain into the Upper Cane Branch subwatershed, which drains into the Pound River below the dam and intake. Both Dickenson and Buchanan counties have public safety personnel trained in hazardous spills remediation and the appropriate equipment.

Areas not served by public water rely on groundwater for drinking water. The No-Build Alternative would not impact groundwater resources. None of the build alternatives is anticipated to adversely impact groundwater.

**Aquatic Ecology Impacts**

The No-Build Alternative would not impact the study area's aquatic ecology, including trout populations. The build alternatives are not expected to further impair the area's water quality.

As discussed in Section 3.7, the marginal water quality in much of the study area has limited aquatic populations to the more hardy species. Nonetheless, the area does contain several trout streams, which the build alternatives would cross in different areas. Build Alternative D would cross the Cranes Nest River at a location designated as a put and take trout fishery. Build Alternatives A, B, C, F2, and the CTB Approved Alternative F1 would cross the Pound River downstream from the Town of Pound and the Russell Fork downstream from Haysi. As currently planned, these two streams would be bridged, greatly reducing the potential for impacts to the trout streams. During the design phase, VDOT would consider bridge designs and measures that would limit impacts. This may include placing piers outside of streams, the use of bottomless culverts, and the nonuse of weep holes—devices that allow runoff from bridges to drain directly into waterbodies.

**4.13.2 Impact Avoidance And Minimization**

VDOT would avoid and minimize project impacts to water resources through sensitive design. Where stream crossings are required, the type of structure used can greatly influence stream impacts. For example, structures that span the stream bank limits such as bridges and bottomless culverts would greatly reduce or eliminate impacts. Due to the study area’s severe topography, construction of any of the build alternates would require a number of bridges over major streams. (Section 4.15.2 further addresses stream impacts). This could involve design modifications such as minor alignment shifts to avoid
streams or the use of retaining walls. Also, measures could be taken to mitigate acid mine runoff from coal seams encountered during construction (see Section 3.7.1). VDOT has sponsored a research proposal entitled “Delineation and Management of Sulfitic Materials in Virginia Highway Corridors”. VDOT will implement the study’s recommendations to mitigate acid runoff, as necessary.

VDOT would use other design and construction measures to avoid and minimize impacts. These include:

- Countersinking culverts a minimum of 91 centimeters (6 inches) below the stream bottom elevation to facilitate the re-establishment of a natural stream bottom within the culvert and to facilitate fish passage.
- Ensuring multiple barrel culverts maintain low flow depths and high flow conveyances to avoid impairing stream hydraulics and assure fish passage during low flow periods.
- Minimizing channel losses when aligning and placing culverts.
- Conducting stream relocations in the dry as much as possible.
- Minimizing disturbance of stream bottoms and minimize turbidity when dredging or filling.
- Conducting earthwork operations and deposition of dredged or excavated materials in such a manner as to prevent erosion of the material and preclude its entry into water bodies.
- Using every reasonable precaution to prevent spills of fuels, lubricants, or other pollutants into water bodies.
- Avoiding impacts to significant riparian corridors.

Design, construction, and maintenance of the project must also comply with the Virginia Stormwater Management Regulations (see Section 4.15.3). These regulations are intended to reduce nonpoint source pollution entering waterways, usually by using Best Management Practices (BMPs). For highway projects, the most commonly used BMPs are detention or retention basins. Stormwater basins in the mid-Atlantic can remove 75 percent of the total suspended solids, 25 percent, of the nitrogen, 45 percent of the phosphorus, and 75 percent of the lead found in stormwater runoff (VDOT, 1997). VDOT commits to properly maintain its BMPs by removing accumulated sediment and performing other measures to help insure their proper functioning.

4.13.3 Floodplain Impacts

A floodplain evaluation was conducted in accordance with Executive Order 11988 Floodplain Management, and FHPM 6-7-3-2, Location and Hydraulic
**Design for Encroachments on Floodplains.** For more detailed information, refer to the Coalfields Expressway Hydrology and Hydraulics Report (VDOT, 1999).

**Methods**

Preliminary project design sought to minimize and avoid impacts to floodplains by including floodplains in the early evaluation criteria. To evaluate the initial, conceptual segments, digital constraints mapping was prepared for this project that included approximate 100-year floodplain boundaries. The boundaries were obtained from a CD-ROM produced by the Federal Emergency Management Agency (FEMA), entitled Q3 Flood Data/Virginia (September 1996). Estimated impacts to the floodplains were considered in eliminating conceptual segments.

Later in the process, determining impacts from the build alternatives involved use of National Flood Insurance Rate Maps (FIRM) prepared by FEMA. The floodplain evaluation used 14 FIRM maps to determine the limits of the 100-year floodplain and regulated floodways, and four Federal Insurance Studies to determine 100-year storm peak flows for some major stream crossings. Determining floodplain impacts involved superimposing 100-year floodplain boundaries onto digital mapping for the project showing proposed alignments and construction limits.

**Impacts**

The No-Build Alternative would not impact any floodplains. Each build alternative would cross a number of FEMA-regulated floodplains. However, due to the extreme topography in the area, almost all of these crossings would require the use of bridges. Although costly, bridging will greatly reduce the project's impacts to floodplains, as well as impacts to the rivers and streams associated with the floodplains. Comparison of the estimated floodplain impacts prepared before and after consideration of the bridge information demonstrates the degree of impacts being avoided. Initially, FEMA floodplain impacts were measured by assuming minimum opening sizes for each of the crossings based on hydraulically acceptable standards. Bridge spans were assumed to equal the width of the regulated floodway. The initial impacts by alternative ranged from 2.1 hectares (5.2 acres) to 2.5 hectares (6.3 acres). More detailed bridge information produced later in the study showed that the required height and length of many bridges would further reduce floodplain impacts.

Table 4.18 shows the revised floodplain impacts for the build alternatives. Alternatives B, E, F2, and the CTB Approved Alternative F1 would have no FEMA floodplain impacts. Due to proposed stream relocations, Alternatives A, C, and D would impact an estimated 0.4 hectares (1.0 acres) of impacts to FEMA floodplains. Exhibit 4.10 shows the impact areas. Construction of connector
roads would require relocation of Watkins Branch, located south of Grundy, and necessitate the floodplain impacts.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Alternative A</th>
<th>Alternative C</th>
<th>Alternative D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hectares</td>
<td>Acres</td>
<td>Hectares</td>
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<tr>
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<td>Total Impacts</td>
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</tr>
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*See Exhibit 4.10

Floodplain Values, Development, and Mitigation

Sections 107 and 303 of VDOT's specifications require the uses of stormwater management practices to address concerns such as post-development stormflows and downstream channel capacity. These standards require that stormwater management ponds be designed to reduce stormwater flows to pre-construction conditions for up to a 10-year storm. VDOT would adhere to its specifications to prevent an increase in flooding risks associated with the project. It is expected that backwater elevations and velocity increases at floodplain encroachments would be nonexistent or minimal. Limits within which construction could occur are restricted to that necessary for the conduct of this work.

During final design, a detailed hydraulic survey and study would evaluate the effect of the new roadway on stormwater discharge. This evaluation would help ensure that no substantial increase in downstream flooding would occur. For these reasons, the project would have negligible impacts to natural and beneficial floodplain values.

In March 1997, Buchanan County adopted a Floodplain Ordinance which allowed for its inclusion in the National Flood Insurance Program. The floodplain encroachments described above would not support floodplain development that is inconsistent with this ordinance.
The location and preliminary design of proposed segments at the floodplain encroachments were carefully addressed in order to mitigate increases in flooding risk and substantial environmental impacts.

4.13.4 Wild and Scenic Rivers Impacts

Federal Wild and Scenic Rivers Impacts
The No-Build Alternative would not impact existing Federal Wild and Scenic Rivers. However, Alternatives A, D, and E may affect the potential designation of the two segments of the Russell Fork.

As discussed in Section 3.7.4, the United States Department of Agriculture-Forest Service determined a portion of the Russell Fork and Pound River as eligible for designation as a Wild and Scenic River (see Exhibit 3.5). It was designated a Recreational River, and its scenic, wildlife, and botanical/ecological values rated as outstandingly remarkable, nationally significant.

The Forest Service cited trout fishing and whitewater rafting as two important reasons for their eligibility designation. Alternative A would cross the Russell Fork approximately 1500 feet above the confluence of the Russell Fork and Pound River (see Exhibit 3.5). Although the proposed bridge would not cross the whitewater-rafting route, which starts on the Pound River below the dam and travels through the Breaks, it would be visible from the confluence of the Pound River and Russell Fork.

The bridge crossing would be located at a point where the Russell Fork is designated as a Class V Put and Take Trout Stream. Although water quality impacts are not anticipated, the bridge would negatively impact the scenery offered trout fisherman. It would not impact the portion of the Pound River designated as a Special Regulation Trophy Trout stream (see Section 4.13.1). In sum, impacts from Alternative A would be visual in nature and not detract from the recreation potential that led to the rivers' eligibility designation.

Build Alternatives D and E would bridge the Russell Fork below Haysi, in an area the National Rivers Inventory lists for study for potential inclusion in the Wild and Scenic River system. The Forest Service did not conduct an eligibility determination on this stream section. Route 80 and several residences are located along the Russell Fork in this area. Since the area's scenic quality has been altered by urban development, the introduction of a new highway bridge would not impact this section's eligibility for inclusion in the system.
The No-Build Alternative would not impact the potential Wild and Scenic River designation for either river segment.

**State Scenic Rivers Impacts**
There are no State Scenic River in the project area. Therefore, neither the build alternatives nor the No-Build Alternative would impact any existing or eligible State Scenic Rivers.

**American Heritage Rivers Impacts**
The No-Build Alternative would not impact any existing or future American Heritage River. The Upper Levisa River was nominated for designation as an American Heritage River, but did not receive this designation. The build alternatives would not adversely affect any future American Heritage designation since the river would be spanned with a high bridge.

4.14 **WETLAND IMPACTS**

**4.14.1 Wetland Determination Methods**

Wetland scientists identified potential wetland areas by reviewing several mapping resources and conducting field investigations. Mapping resources include the following:

- 1:3600 scale orthophotos prepared for the project;
- 1:24,000 scale, orthophoto quadrangle maps from the US Geological Survey;
- National Wetland Inventory Mapping (NWI) from the US Fish and Wildlife Service (FWS); and
- Flood Insurance Rate Mapping from the Federal Emergency Management Agency.

Field reviews were conducted to verify the existence of potential wetlands and to identify dominant vegetation. To classify wetlands, this report uses an abbreviated version of the classification system used by the FWS for its NWI mapping. (For more information, refer to *Wetlands and Deepwater Habitat of the United States* [Cowardin, et al., 1977]).

Wetland investigations revealed the existence of 70 wetland systems located within the 750’ corridors established for each proposed segment. Of these, 38 wetland systems are located within their respective segment’s construction limits (see Exhibit 4.11).
4.14.2 Impact Avoidance and Minimization

The preliminary engineering design of the build alternatives prioritized wetland avoidance and minimization. To allow for this, information on wetland locations was provided to designers early in the process. However, due to the scale of the study area, the linear nature of its drainage systems, and the linear nature of all highway alignments, this project will result in unavoidable wetland impacts. When possible, linear wetland systems were crossed at perpendicular or near perpendicular angles to minimize impacts.

4.14.3 Impacts

The No-Build Alternative would not impact wetlands. Table 4.19 shows estimated wetland impacts in hectares and acres. For each wetland site, the corresponding wetland type, station number, and impact by build alternative is provided. Appendix B contains site maps for those wetlands having potential impacts based on estimated construction limits from the preliminary design. Although these limits will likely change during more-detailed design stages, the preliminary construction limits provide a means to compare wetland impacts for the different build alternatives. For more detailed information, refer to the Coalfields Expressway Natural Resources Technical Report (VDOT, 1999).

Table 4.19 indicates that Build Alternative D would impact the most wetlands, with 2.5 hectares (6.2 acres) of impacts. Build Alternative A would have the next highest amount (2.1 hectares [5.1 acres]), followed by Build Alternative E (1.9 hectares [4.7 acres]), Alternative C (1.9 hectares [4.7 acres]), Alternative F1 (1.3 hectares [3.3 acres]), and Alternative F2 (1.1 hectares [2.8 acres]). Alternative B would impact the least, having 0.6 hectares (1.5 acres) of associated impacts.

4.14.4 Compensation

VDOT may be required to provide wetland compensation for unavoidable and necessary wetland impacts from the project. Wetland compensation can take several forms, ranging from construction of new wetlands to enhancement of existing wetlands. Due to the characteristics of many of the study area’s wetlands, considerable opportunities may exist for wetlands enhancement and/or restoration. As discussed in Section 3.7.5, most of the wetlands are human-induced systems. Some of these systems, such as former sediment basins from a strip mining operation, could be enhanced through plantings of indigenous hydrophytic species. Grading a basin’s side slopes to create gentler side slopes would increase the wetland area and improve slope stability.
### Table 4.19

**Wetland Impacts by Alternative**

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<th>Wetland Site</th>
<th>Wetland Type</th>
<th>Station Number</th>
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<th>Alternative C hectares</th>
<th>Alternative D hectares</th>
<th>Alternative E hectares</th>
<th>Alternative F1 hectares</th>
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<td></td>
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<td><strong>5.140</strong></td>
<td><strong>0.890</strong></td>
<td><strong>1.457</strong></td>
<td><strong>1.854</strong></td>
<td><strong>4.581</strong></td>
<td><strong>2.513</strong></td>
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</table>

**Coalfields Expressway**
Although wetland restoration and other compensation options may be viable, it might still be necessary to create or construct new wetlands. For created wetlands compensation, this report assumes the following compensation ratios:

- Palustrine Forested (PFO) 2:1
- Palustrine Emergent (PEM) 1:1
- Palustrine Unconsolidated Bottom (PUB) 1:1

These ratios are typically used for VDOT projects. However, the COE approves compensation plans on a case-by-case basis, and compensation requirements (including ratios) may vary. Compensation ratios for PFO, PEM, and PUB wetlands are based on the inherent risk in wetlands compensation and the time lag between the loss of existing habitat and the replacement of that habitat value in the compensated wetland.

Tables 4.20 and 4.21 show wetland compensation estimates for each alternative in hectares and acres, respectively. Because of Alternative A’s relatively high amount of PFO impacts, it has the greatest compensation estimate at 2.75 hectares (6.80 acres). Alternative B has the smallest compensation estimate—0.88 hectares (2.18 acres). Compensation estimates for the seven alternatives average 1.96 hectares (4.91 acres).

**4.15 WATERS OF THE US IMPACTS**

**4.15.1 Methods**

Wetland scientists identified jurisdictional waters of the US by reviewing 1:3600 scale orthophotos prepared for the project and 1:24,000 scale orthophoto quadrangle maps from the USGS. Field investigations were conducted on many sites in conjunction with wetlands surveys. Due to the scale of the project, however, each potential waters location was not visited. This report assumes each perennial and intermittent stream shown on USGS quadrangle maps meets the COE criteria for jurisdictional waters. Wetland scientists base this assumption on their knowledge of the area and field observations.

For each proposed segment, waters of the US impact estimates were determined by alternative. Estimates include impacts from proposed connector roads that would link the Coalfields Expressway with nearby state roads. Also, according
### TABLE 4.20
Created Wetland Compensation Estimates by Alternative

<table>
<thead>
<tr>
<th>(Hectares)</th>
<th>Alternative A</th>
<th>Alternative B</th>
<th>Alternative C</th>
<th>Alternative D</th>
<th>Alternative E</th>
<th>Alternative F1*</th>
<th>Alternative F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL PEM IMPACTS</td>
<td>0.408</td>
<td>0.285</td>
<td>0.514</td>
<td>0.374</td>
<td>0.359</td>
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<tr>
<td>TOTAL PFO IMPACTS</td>
<td>0.673</td>
<td>0.292</td>
<td>0.333</td>
<td>0.041</td>
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<td>0.443</td>
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<tr>
<td>PFO MULTIPLIER</td>
<td>2</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>PFO COMPENSATION ESTIMATE</td>
<td>1.346</td>
<td>0.584</td>
<td>0.665</td>
<td>0.082</td>
<td>0</td>
<td>0.885309</td>
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<tr>
<td>TOTAL PUB IMPACTS</td>
<td>1.000</td>
<td>0.013</td>
<td>1.066</td>
<td>2.099</td>
<td>1.700</td>
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</tr>
<tr>
<td>TOTAL IMPACTS</td>
<td>2.080</td>
<td>0.590</td>
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<td>2.513</td>
<td>2.059</td>
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<td>TOTAL COMPENSATION</td>
<td>2.753</td>
<td>0.881</td>
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<td>2.554</td>
<td>2.059</td>
<td>1.786</td>
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### TABLE 4.21
Created Wetland Compensation Estimates by Alternative

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</thead>
<tbody>
<tr>
<td>TOTAL PEM IMPACTS</td>
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<td>0.705</td>
<td>1.270</td>
<td>0.923</td>
<td>0.886</td>
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<td>TOTAL PFO IMPACTS</td>
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<td>0.721</td>
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<td>2</td>
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<td>PFO COMPENSATION ESTIMATE</td>
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<td>TOTAL PUB IMPACTS</td>
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<td>6.311</td>
<td>5.087</td>
<td>4.956</td>
<td>3.512</td>
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</table>

*CTB Approved Alternative
to the Draft Hydrology/Hydraulics Report prepared for the project, the build
alternatives would require stream relocation in 13 different areas. Estimates
include these stream relocation impacts.

In total, 195 waters of the US systems are located within the construction limits
of the 47 segments that comprise the seven build alternatives. Impact estimates
consider all waters located within proposed construction limits as impacted.
This approach results in very conservative or high impact estimates, since many
of these impacts would be temporary.

4.15.2 Impacts

The No-Build Alternative would not impact waters of the US. Table 4.22 shows
waters of the US impacts from the build alternatives in linear units. Alternative
D has the highest amount of estimated impacts, with 15.5 linear kilometers (LK)
or 9.6 linear miles (LM) of impacts. Alternative A has the second highest
amount of impacts, with 14.2 LK (8.8 LM), followed by Alternative C (13.9 LK
[8.6 LM]), Alternative F1 (11.5 LK [7.0 LM]), Alternative F2 (9.6 LK [6.0 LM]) and
Alternative B (9.1 LK [5.7 LM]). Alternative E has the lowest amount with 7.5 LK
(4.7 LM) of total impacts.

Due to the extreme topography in the area, many of the stream crossings would
require the use of bridges, which will significantly reduce the project’s impacts
to waters of the US. For example, waters impacts without bridging would range
from 10.41 LK (6.47 LM) to 18.41 LK (11.44 LM). The impact estimates
presented in Table 4.22, which consider bridging, are considerably lower. These
estimates assume bridged waters would not be impacted, although bridges can
sometimes cause impacts.

4.15.3 Compensation

As discussed previously, most development has occurred in bottom areas
adjacent to streams. This practice encroaches on the streams and their
floodplains, creating unstable streams with high erosion rates, reduced habitat
and water quality, and inadequate flood conveyance. Compensation for project
impacts to waters of the US could involve various methods of enhancement or
restoration to streams and riparian areas.
### Table 4.22
Waters of the US Impacts by Alternative

<table>
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<tr>
<th>Segment</th>
<th>Alternative A</th>
<th>Alternative B</th>
<th>Alternative C</th>
<th>Alternative D</th>
<th>Alternative E</th>
<th>Alternative F1</th>
<th>Alternative F2</th>
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</tr>
</tbody>
</table>

*LK - Linear Kilometers, LM - Linear Miles*
4.16 PROTECTED SPECIES IMPACTS

4.16.1 Methods

Assessing potential impacts to protected species first involved determining locations of known communities in the study area, and identifying species that may potentially occur. Section 3.8.1 provides an overview of methods used to collect this information and the research results.

Initially, the information received from the natural resource agencies was not location specific. Since evaluation of concept alternatives required more detailed information, VDOT requested that DCR's Division of Natural Heritage (DCR) provide occurrence locations for its natural heritage resources. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations. DCR obtains information on documented resource locations through field inventory, review of pertinent scientific literature, review of museum and herbarium collections, and contributions from private individuals engaged in similar inventory work.

DCR provided locations of two Virginia spiraea communities and one Indiana bat community. It also provided locations and descriptions of ten conservation sites. This term refers to a natural area that includes one or more occurrence of natural heritage resources, and is notable for its diversity.

Once locations of the build alternatives had been determined, DCR mapped potential habitat areas for Virginia spiraea (Spiraea virginiana) and small whorled pogonia (Isotria medeoloides) to create a methodology for field surveys.

Field Surveys

The study area contains areas that match the habitat requirements of Virginia spiraea, described in Section 3.8.2. Therefore, under contract from VDOT, DCR conducted a field survey to determine potential project impacts to the Virginia spiraea from the build alternatives. In October 1998, a DCR staff botanist identified and visited 12 sites having potential to contain suitable habitat for the Virginia spiraea (see Exhibit 4.12). No Virginia spiraea or any other state or federal listed plant species were found at the survey sites, although suitable spiraea habitat did exist at several locations. Exhibit 4.12 shows these survey locations. (For more information, see the Coalfields Expressway Natural Resources Technical Report [VDOT, 1999] and the Coalfields Expressway Biological Assessment [VDOT, 2001]).
The presence of the small whorled pogonia in the project area is unlikely, and surveying for the species would require considerable time and resources. In a December 8, 1998 correspondence, FWS agreed that, due to the scope, complexity, and questionable status of the pogonia in the study area, VDOT would only need to survey the final alignment to ensure the project would not impact the pogonia. The agency stated that it understands that VDOT would be willing to make alignment shifts to the preferred alternative to avoid any pogonia populations that may have been found during the survey.

In July 2000, DCR conducted preliminary sampling for the small whorled pogonia in the study area. This initial survey focused on sites with the greatest potential for species occurrences. The goal was to determine the likelihood of encountering the species in the area since surveys had never been conducted in that region. The small whorled pogonia was not found although one area of good habitat was located and intensively surveyed. Other sites generally contained small areas of habitat of moderate potential. The majority of the land surveyed contained habitat with either low or no potential for small whorled pogonia.

In order to ensure compliance with the Endangered Species Act (ESA), VDOT contracted with DCR and George Mason University to conduct thorough small whorled pogonia surveys on the CTB Approved Alternative F1. In June and July 2001, a DCR staff botanist along with VDOT field personnel surveyed 17 sites while in June 2001, a George Mason University professor surveyed six sites having potential to contain suitable small whorled pogonia habitat. Exhibit 4.13 shows these survey locations. Despite the presence of suitable habitat, no small whorled pogonia or any other state or federal listed plant species were found at the survey sites. In a letter dated August 30, 2001, the FWS agreed that the project is not likely to affect the small whorled pogonia.

The Department of Interior, in their June 23, 2000 DEIS comment letter, recommended conducting Indiana bat surveys. Although surveys for the Indiana bat have historically focused on roosting habitat and hibernacula, the Interior Department’s FWS now has concerns with summer foraging areas. Much of the forested area within the study area is potential foraging habitat for the Indiana bat.

In order to comply with Section 7 of the ESA, the FWS, FHWA, and VDOT agreed on a survey approach for the Indiana bat. This approach required assessing potential impacts from the CTB Approved Alternative F1 on both winter and summer habitat. As part of the winter habitat assessment, VDOT collected information from state agencies on known cave and mine portal locations that
may serve as habitat for the species. Due to a lack of limestone geology in the project area, natural caves were not a concern. Information on mine portal locations was obtained from DMME. Through coordination with FWS, DCR, DMME, and DGIF, it was determined that 186 portals should be investigated on-site to determine habitat suitability. Forty-four open portals were located; nine were determined not suitable. Based on connections to the same mine system, a total of 21 sites were sampled for bats.

No federally threatened or endangered bats were captured. A total of 118 bats, representing three species, were captured at 11 of the 21 sites. Northern long-eared bats (*Myotis septentrionalis*) represented the majority (66%) of the total bat capture. Other species captured during the survey include eastern pipistrelle bats (*Pipistrellus subflavus*) and eastern small-footed bats (*Myotis leibii*). (For more information, see *A Spring Staging Survey for Endangered Bats at Mine Portals in Wise, Dickenson, and Buchanan Counties, Virginia ([ESI, 2001])*). In a letter dated July 5, 2001, the FWS agreed that the project is not likely to affect the Indiana bat.

For the summer habitat assessment, an analysis was conducted to demonstrate that sufficient suitable Indiana bat foraging and roosting habitat will remain after the project is constructed. The analysis involved estimating the amount of forestland within two miles of the CTB Approved Alternative F1 corridor. Next, the estimated forestland impact from the alternative (see Section 4.12.2) was subtracted from the amount of forestland within two miles of the corridor. The result approximates the amount of remaining forestland after project construction.

### 4.16.2 Impact Avoidance And Minimization

Early in the planning process, VDOT began studying the potential for federal and state listed species in the study area, and began coordinating with appropriate agencies. The information collected helped to evaluate project segments and to avoid impacts. This section discusses specific steps VDOT has taken to avoid and minimize impacts.

As mentioned previously, DCR provided occurrence locations of two federally listed species near the project's concept alternatives, as well as 10 conservation sites. Two Virginia spiraeas communities and one Indiana bat community were last documented within or near the study area in 1995. None of the concept alternatives would have impacted the Virginia spiraeas communities or the conservation sites. One concept alternative could have impacted the Indiana bat community, but it was eliminated from consideration for this reason.
Based on options outlined in a February 12, 2001 letter from the FWS, VDOT has assumed the presence of the Indiana bat during the non-hibernation period and will take measures to avoid the likelihood of adverse effects to the species. In lieu of conducting intensive summer surveys, no clearing of forests with potential roost trees within the project construction limits and an associated buffer area (to be defined by FWS) will occur between April 1 and November 15 of any year. However, clearing and grubbing of other vegetation (e.g. shrubs, grasses, understory trees) may occur at any time.

4.16.3 Impacts

Field surveys for Virginia spiraea and small whorled pogonia confirmed the project would not impact these species (see Section 4.16.1). The Indiana bat survey did not discover any Indiana bats. Therefore, the project would not impact the species' hibernacula. The summer habitat assessment determined that an estimated 18,981 hectares (46,907 acres) of forestland would remain within 3.2 kilometers (2.0 miles) of the CTB Approved Alternative F1 after project construction. Stated differently, the project would impact an estimated 3.1% of the forestland within 3.2 kilometers (2.0 miles) of the project corridor.

The No-Build Alternative would not impact protected species.

4.17 CONSTRUCTION IMPACTS

The No-Build Alternative would have no construction impacts. Construction impacts from the build alternatives would be temporary and include air quality, noise, water quality, and traffic flow impacts. All of the build alternatives would have similar construction impacts. The following sections describe the different types of construction impacts anticipated.

4.17.1 Air Quality Impacts

Air quality impacts from construction would be temporary and primarily consist of emissions from diesel powered construction equipment, burning of debris, and fugitive dust. Fugitive dust is particulate matter that would occur in association with excavation and earth moving; cement, asphalt, aggregate handling; heavy equipment operation; use of haul roads; and wind erosion of exposed areas and material storage piles. Air quality impacts from construction would vary based on local weather conditions, the degree of construction activity, and the nature of the construction activity.
To minimize the potential adverse air quality impacts due to construction activities, the contractor would be required to comply with the provisions of Section 107.01 of VDOT’s Road and Bridge Specifications—“Legal Relations and Responsibilities to the Public – Laws to be Observed,” and with State Air Pollution Control Law and Rules of the Air Pollution Control Board, including notifications required therein. Any burning of debris would be done in accordance with applicable local laws and ordinances. Burning would be monitored by competent watch persons and extreme care would be exercised so that burning of debris does not destroy or damage public or private property, or cause excessive air pollution.

4.17.2 Noise Impacts

Construction noise may adversely affect noise sensitive properties in the study area. To reduce construction noise impacts, VDOT has developed, and the FHWA has approved, a specification that establishes maximum construction noise limits. The contractor will be required to conform to this specification, found in VDOT’s Metric Road and Bridge Specifications, January 1997, Section 107.14 (b.3), Page 82, “Pollution, Noise.”

4.17.3 Water Quality Impacts

Project construction would likely result in short-term impacts to nearby water resources from sedimentation. Sediment entering waterways degrades water quality and damages aquatic life and habitat. Water quality impacts from erosion and sedimentation, as well as from pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage, and other harmful waste would be controlled according to Sections 107 and 303 of VDOT’s Specifications. The contractor would be responsible for exercising every reasonable precaution necessary during construction to prevent pollution of rivers, streams and impoundments. This would include adequately filtering any construction discharge to meet Virginia requirements prior to discharge into any waters. In the event the contractor dumps, discharges, or spills any contaminant that may affect water quality, he or she would immediately notify all appropriate local, state, and federal agencies and would take immediate action to contain and remove the contaminant.
4.17.4 Earthwork

The term earthwork refers to the land or soil moving that occurs during construction. Due to the study area’s rugged terrain, project construction will require more earthwork than typically needed for a project of this scale.

Approximate earthwork volumes were computed for the Build Alternatives using VDOT’s AASHTO IGrds design system and digital terrain models (DTMs). The DTMs, developed from project aerial photography (September 1997) and USGS Quadrangle Maps, established the existing grades. Typical sections were developed and input into the IGrds software and earthwork computations were completed. Earthwork-cut volumes were reduced by twenty percent, assuming that benching will be used during construction to reduce necessary earthwork. Table 4.23 shows estimated earthwork volumes.

Preliminary estimates indicate Build Alternative F1 would require the most earthwork, closely followed by Alternative E. Alternative C would have the least, followed by Alternative F2. In final design, the earthwork volumes could be reduced significantly due to the potential for vertical cuts with benched rock. In addition, coal seams could reduce the amount of usable fill material.

<table>
<thead>
<tr>
<th>Build Alternatives</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(in Millions of Cubic Meters &amp; Yards)</td>
<td>m³</td>
<td>m³</td>
<td>m³</td>
<td>m³</td>
<td>m³</td>
<td>m³</td>
<td>m³</td>
</tr>
<tr>
<td>Cut</td>
<td>72.8</td>
<td>95.1</td>
<td>67.8</td>
<td>88.6</td>
<td>57.8</td>
<td>75.5</td>
<td>76.2</td>
</tr>
<tr>
<td>Fill</td>
<td>40.8</td>
<td>53.3</td>
<td>36.2</td>
<td>47.3</td>
<td>44.8</td>
<td>58.6</td>
<td>45.1</td>
</tr>
</tbody>
</table>

Source: Coalfields Expressway Location Study Report (VDOT, 2000)

The resulting volumes of regular excavation were converted to dollars using a per cubic yard rate of $4.08, as determined by the VDOT cost estimating system. Table S-2 shows estimated capital costs.

4.17.5 Traffic Maintenance and Control

Maintenance of the current flow of traffic on the existing roadway network would be planned and scheduled to minimize traffic delay throughout the project. In
construction areas, traffic control measures using the standard practices would be used, as defined in the Manual of Uniform Traffic Control Devices and Virginia's Work Area Protection Manual. In addition to these standards, VDOT would prepare news releases and schedules of construction activities, and make them available to the public.

Except for the segments along Route 83, each of the build alternatives would be on new alignment. Therefore, construction activities would mostly impact traffic on the existing roadway network at crossing locations; disturbances would be localized and occur in short roadway segments.

**4.17.7 Health and Safety**

Contractors would be required to comply with all federal, state, and local laws governing safety, health, and sanitation during the course of construction. All reasonable safety considerations and safeguards necessary to protect the life and health of employees on the job, the safety of the public, and the protection of property in connection with roadway construction, would be taken.

**4.18 RELATIONSHIP BETWEEN SHORT-TERM USES OF HUMAN ENVIRONMENT AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

The seven build alternates would have similar impacts on the local, short-term uses of resources. The project would have temporary air quality, noise, water quality impacts from construction (see Section 4.17). These short-term impacts have been identified and mitigation measures proposed.

The Coalfields Expressway would serve as a long-term productive facility. This project, with its desirable design characteristics, provides for safe and efficient vehicle operation for present, as well as future, traffic volumes. The benefits such as reduced operating costs, reduced travel time, increased safety, and general economic enhancement of the area offered by the long-term productivity of this project should offset the short-term inconvenience and adverse effects on the human environment.
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Implementation of the proposed project involves the commitment of the range of natural, physical, human, and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will be necessary or desirable.

The No-Build Alternative would not cause an irreversible and irretrievable commitment of resources. VDOT discussed the issue of irreversible loss of coal reserves with local coal companies. Company representatives stated that, as long as access shafts could be dug at least 30 meters (100 feet) below the proposed highway, they could access their coal reserves on either side. At this point, VDOT does not oppose this practice and, therefore, the loss of coal reserves would only occur directly underneath the proposed right-of-way.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous materials are expended. Additionally, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials. These materials are generally not retrievable. They are not in short supply and their use does not have an adverse effect upon continued availability of these resources. Any construction would also require a substantial one-time expenditure of state funds that are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, region, and state benefit by the improved quality of the transportation system. These benefits consist of improved quality, accessibility and safety, savings in time, and greater availability of quality services that are anticipated to outweigh the commitment of these resources.

SECONDARY AND CUMULATIVE IMPACTS

For federal projects, NEPA requires examination of secondary and cumulative project effects. Council on Environmental Quality (CEQ) guidelines broadly define both secondary and cumulative impacts. Secondary impacts are those effects that are "caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40 CFR 1508.8). Generally, these
impacts are induced by the initial action, and comprise a wide variety of secondary effects such as changes in land use, water quality, economic vitality, and population density. Cumulative impacts are impacts that result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions (40 CFR 1508.7).

An examination of secondary and cumulative consequences should focus on the functional relationships of resources with larger systems (FHWA, 1992). For example, impacts to wetland resources should be considered within the context of the larger natural environment through consideration of the wetland impacts' effects on drinking water quality, aquatic and wildlife habitat, etc. One way to describe the relationship between a specific resource and a larger system is a cause and effect relationship. FHWA states that the confidence in predicting the secondary and cumulative consequences of a project should be based on what is known about these relationships. Secondly, this confidence level should also define the effort required to address secondary and cumulative impacts during environmental analysis. When relationships are largely undefined, a more general coverage of secondary or cumulative consequences is appropriate.

4.20.1 Methods

In 1992, FHWA completed an Environmental Position Paper entitled Secondary and Cumulative Impact Assessment in the Highway Project Development Process. The methods used for the Coalfields Expressway assessment of secondary and cumulative impacts (also referred to as indirect impacts) closely follow procedures and concepts recommended in this FHWA guidance. Also, representatives from FHWA, EPA, and VDOT met on September 9, 1998 to establish guidelines for estimating indirect impacts for the Coalfields Expressway and other projects of a similar scale. An EPA representative provided a recommended outline and this outline, along with decisions made during this meeting, were also considered.

Assessing indirect impacts first requires establishing time and geographic boundaries for the study. Consistent with EPA recommendations, the assessment used the project design year, the year 2020, as the planning horizon. Indirect impacts were estimated based on the project study area, except for potential traffic and economic development impacts, which were considered within a larger, regional context.

As discussed in Chapter One, an important purpose of this project is to enable the study area localities to attract industrial development. The Coalfields Expressway Economic Development Overview estimates that each build
alternative would create an estimated 4000 basic jobs and 6000 non-basic jobs by the year 2020 (VDOT, 1999). Basic activities produce goods and services for outside markets, whereas non-basic activities provide support services and rely almost entirely on local trade. Localities attempt to promote basic industry development since it greatly spurs non-basic job creation.

The absence of future land use planning in the study area provides little guidance on where the development associated with this job creation might occur. Therefore, an initial and integral component of this analysis was identifying potential growth areas.

**Industrial Growth Areas**

The Virginia Coalfield Economic Development Authority (VCEDA) coordinated the process to identify potential industrial development areas. The authority's project coordinator contacted and received input from the county representatives listed in Table 4.24. The local government representatives and VCEDA, with technical support from VDOT, reviewed areas along each proposed build alternative. This review considered the following criteria:

- topography (i.e. absence of steep slopes, floodplains, etc.)
- potential and existing access to population and employment centers;
- proximity to existing or proposed water and sewer service areas; and
- designation on future land use maps.

### Table 4.24

<table>
<thead>
<tr>
<th>Title</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>County Administrator</td>
<td>Buchanan</td>
</tr>
<tr>
<td>Economic Development Director</td>
<td>Buchanan</td>
</tr>
<tr>
<td>County Planner</td>
<td>Buchanan</td>
</tr>
<tr>
<td>Economic Development Director</td>
<td>Dickenson</td>
</tr>
<tr>
<td>Economic Development Director</td>
<td>Wise</td>
</tr>
</tbody>
</table>

This process identified 37 total sites, ranging in size from 8 hectares (25 acres) to 539 hectares (1770 acres). Since the total acreage identified exceeded the amount that would reasonably be developed by 2020, each site was reviewed again based on the criteria listed above to determine its feasibility. This process led to the selection of 13 final sites (see Exhibit 4.14). The local government representatives reviewed and approved the final 13 sites.
Table 4.25 provides information on the 13 industrial growth areas, and Exhibit 4.14 shows their location. Each alternative gives a reasonable distribution to each county for growth in economic development.

**Commercial Development Areas**

According to the *Coalfields Expressway Economic Development Overview* (VDOT, 1999), the projected industrial growth is anticipated to induce the creation of 6,000 service-related jobs. Most of this job growth would occur in different commercial sectors. Again, due to the lack of land use planning, it is difficult to estimate where this commercial development may occur. For localities that have conducted little land use planning, past history can sometimes serve as the best indicator of future development patterns (FHWA, 1992). Commercial development has traditionally occurred within the communities and, to a lesser extent, along the area's major roadways. These trends are expected to continue.

The study area's economic downturn and consequent population decrease left many commercial properties vacant, particularly within the established communities (see Section 3.2 and 3.4). According to local government representatives, the Towns of Pound, Clintwood, and Haysi have a considerable number of commercial sites available. In Dickenson and Buchanan counties, this analysis assumes that infill and redevelopment in these towns will account for most of the projected commercial development. This is a reasonable assumption considering the area's development constraints, and the availability within the towns of public utilities and vacant structures that can be reused.

To the east, the Levisa Fork/Route 460 Flood Control Project will provide the Town of Grundy with much more land for commercial development than it currently has. According to the Town Mayor, the town currently occupies roughly 2.4 hectares (6 acres). The town will move to a 5.3 hectare (13 acre) redevelopment area, will likely acquire another 3.6 hectare (9 acre) site, and could attain several smaller properties. In Buchanan County, it is assumed that most of the commercial development would occur in these redevelopment areas.

This analysis assumes that some large-site commercial development would occur, and would be located within the industrial growth areas. It is reasonable to assume the growth areas could accommodate some commercial uses, since a very conservative standard (8 industrial jobs per acre, per the *Trip Generation Manual, Sixth Edition*) was used to determine the amount of land needed for the anticipated job growth.
<table>
<thead>
<tr>
<th>Impact Area</th>
<th>Segment</th>
<th>Description</th>
<th>Acres</th>
<th>Hectares</th>
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</thead>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>107</td>
<td>Route 83, West of Clintwood</td>
<td>127</td>
<td>51</td>
</tr>
<tr>
<td>F</td>
<td>114A</td>
<td>Route 607, At Flemingtown</td>
<td>68</td>
<td>28</td>
</tr>
<tr>
<td>J</td>
<td>218A</td>
<td>Route 604 near Poplar Gap Park</td>
<td>202</td>
<td>82</td>
</tr>
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<td>A</td>
<td>159</td>
<td>Route 23 N</td>
<td>115</td>
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<tr>
<td><strong>Total Impacts</strong></td>
<td></td>
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<td>512</td>
<td>208</td>
</tr>
<tr>
<td><strong>Alternative B</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>114A</td>
<td>Route 607, At Flemingtown</td>
<td>68</td>
<td>28</td>
</tr>
<tr>
<td>H</td>
<td>206</td>
<td>Route 613, North of Haysi</td>
<td>103</td>
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<td>A</td>
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<td>Route 23 N</td>
<td>115</td>
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</tr>
<tr>
<td>N</td>
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<td>Near Stacey</td>
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<td>217</td>
</tr>
<tr>
<td><strong>Alternative C</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>158</td>
<td>Route 83, West of Clintwood</td>
<td>98</td>
<td>40</td>
</tr>
<tr>
<td>K</td>
<td>209</td>
<td>Route 615, At Hoot Owl Gap</td>
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<td>M</td>
<td>336A</td>
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<td>A</td>
<td>159</td>
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</tr>
<tr>
<td>E</td>
<td>154</td>
<td>Route 672, East of Clintwood</td>
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<td>66</td>
</tr>
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<td><strong>Total Impacts</strong></td>
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<td></td>
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</tr>
<tr>
<td><strong>Alternative D</strong></td>
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<tr>
<td>D</td>
<td>158</td>
<td>Route 83, West of Clintwood</td>
<td>98</td>
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<tr>
<td>B</td>
<td>117A</td>
<td>Route 23 S</td>
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<td>42</td>
</tr>
<tr>
<td>G</td>
<td>229A</td>
<td>Route 83, South of Clinchco</td>
<td>73</td>
<td>30</td>
</tr>
<tr>
<td>I</td>
<td>240A</td>
<td>Haysi</td>
<td>37</td>
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<td><strong>Total Impacts</strong></td>
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<td></td>
<td>515</td>
<td>209</td>
</tr>
<tr>
<td><strong>Alternative E</strong></td>
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<tr>
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<td>158</td>
<td>Route 83, West of Clintwood</td>
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<tr>
<td>B</td>
<td>117A</td>
<td>Route 23 S</td>
<td>105</td>
<td>42</td>
</tr>
<tr>
<td>G</td>
<td>229A</td>
<td>Route 83, South of Clinchco</td>
<td>73</td>
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<tr>
<td>I</td>
<td>240A</td>
<td>Haysi</td>
<td>37</td>
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<tr>
<td><strong>Total Impacts</strong></td>
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<td>158</td>
<td>Route 83, West of Clintwood</td>
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<tr>
<td>E</td>
<td>154</td>
<td>Route 672, East of Clintwood</td>
<td>164</td>
<td>66</td>
</tr>
<tr>
<td>H</td>
<td>206</td>
<td>Route 613, North of Haysi</td>
<td>153</td>
<td>66</td>
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<tr>
<td>N</td>
<td>302</td>
<td>Near Stacey</td>
<td>187</td>
<td>76</td>
</tr>
<tr>
<td><strong>Total Impacts</strong></td>
<td></td>
<td></td>
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<td>295</td>
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<td><strong>Alternative F2</strong></td>
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<td>D</td>
<td>158</td>
<td>Route 83, West of Clintwood</td>
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<td>206</td>
<td>Route 613, North of Haysi</td>
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<tr>
<td>N</td>
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<td>Near Stacey</td>
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<td>76</td>
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<tr>
<td><strong>Total Impacts</strong></td>
<td></td>
<td></td>
<td>727</td>
<td>295</td>
</tr>
</tbody>
</table>
Residential Development Areas

Accounting for indirect impacts from future residential development first required estimating the number of new residences that could be expected by the year 2020. An approach was derived that involved applying the following equations:

1. \( \text{Number of Jobs Anticipated} - \text{Number of Employable Persons} = \text{Number of Persons Requiring Housing} \)

The study area currently has a large number of unemployed persons. In 1998, the Virginia Employment Commission (VEC) estimated that Wise, Dickenson, and Buchanan counties had approximately 1641, 1011, and 1391 unemployed persons, respectively. It is assumed that many of the unemployed would fill the newly created positions, lowering the area's unemployment levels to match the state of Virginia's 1998 unemployment rate (3.1%). Due to Wise County's location, the analysis uses only one-half of the county's unemployed totals in its calculations. Subtracting this figure from the 10,000 total projected jobs provides the Number of Persons Requiring Housing.

2. \( \text{Number of Persons Requiring Housing} \times \text{Proportions for One, Two, and Three Worker Families} = \text{Numbers of Persons Living in One, Two, and Three Worker Families} \)
3. \( \text{The Sum of} (\text{Numbers of Persons Living in One, Two, and Three Worker Families} + \text{One, Two, and Three}) = \text{Number of Required Housing Units} \)

Estimating the number of new housing units required involved consideration of the numbers of workers that housing units accommodate. Using 1990 census figures for the state, the proportions of one, two, and three or more workers per family were determined. Each of these proportions were multiplied by the Number of Persons Requiring Housing. Dividing these numbers by the number of workers in the family (1,2, and 3, respectively), and then summing these three numbers provided the Number of Required Housing Units.

4. \( \text{Number of Vacant Housing Units} - \text{Average Number of Project Relocations} = \text{Number of Available Housing Units} \)

The study area has a considerable amount of vacant residential properties due to population loss. In 1990, the census tracts for the study area contained 2027 vacant housing units. Although some of these are substandard, it is assumed that, considering the lack of building sites, substandard houses would either be razed or improved and that the home site would be used. VDOT would use much of the vacant housing for the project's residential displacements. The
Average Number of Project Relocations for the seven build alternatives equals 143. Subtracting this figure from the Number of Vacant Housing Units provides the Number of Available Housing Units that would help house new workers.

5. \[ \text{Number of Required Housing Units} - \text{Number of Available Housing Units} = \text{Number of New Housing Units} \]

6. \[ \text{Number of New Housing Units} \times \text{Average Lot Size} = \text{Residential Development Area} \]

Due to its steep slopes, the study area has small housing sites for a rural area. An Average Lot Size of 0.13 hectare (0.25 acre) is assumed. Multiplying this figure by the Number of New Housing Units provides the total area that would be developed for residential use by the Year 2020. This provides a conservative estimate since it does not account for multi-family housing.

Results from this process indicate that an estimated 4693 new housing units would be required, amounting to approximately 475 hectares (1173 acres) of residential development. Estimating where this development might occur involved consideration of past land use trends. The study area’s residential development patterns resemble the commercial patterns, but more residential development has occurred in outlying areas along state secondary roads. Internal-road subdivisions or neighborhoods are not common.

Since the counties’ subdivision ordinances do not regulate or attempt to curtail state-road frontage subdivisions, it is assumed that this trend will continue. However, this analysis does not delineate projected residential areas since this task is more difficult than determining locations for industrial growth. Acquisition and development of industrial properties usually involves some degree of local government involvement and support. Local government officials participated in the process to identify potential industrial areas. Also, the study area has only a limited number of viable industrial sites; residences can be built almost anywhere with proper engineering. For these reasons, there is a higher degree of certainty associated with industrial land use projections than residential projections.

Although locations cannot be determined, residential growth is generally expected to occur along state secondary roads along ridges, near existing communities, and near projected industrial development areas. Some of this development will occur in the Grundy redevelopment areas, since much of that area is slated for housing.
Assessing Impacts
For the industrial growth areas, fieldwork was not conducted for wetlands and waters determinations. Forest, wetland, and waters impacts were assessed using the following mapping resources:

- 1:3600 scale orthophotos prepared for the project;
- 1:24,000 scale, orthophoto quadrangle maps from the US Geological Survey;
- NWI maps from FWS.

Since residential development is expected to occur along ridgelines and mountaintops, impacts to waters of the US and floodplains are not expected. If residential development did occur near rivers, all three counties now have adopted floodplain ordinances that would restrict the type of floodplain development that has historically occurred in the area. Due to the small amount of wetlands in the area, wetland impacts are not considered. Based on general land cover estimates shown in Table 3.8, the analysis assumes that 80% of residential areas are forested. Applying this percentage to the 475 hectares (1173 acres) estimate derived for new residential growth provides a general forested impact estimate for each build alternative.

To provide these levels of detail for other types of indirect impacts is not feasible under current capabilities. Where possible, these impacts are discussed in a general context.

The No-Build Alternative would not have any secondary or cumulative impacts.

4.20.2 Impacts

Socioeconomic Impacts
Each build alternative is assumed to have similar indirect socioeconomic impacts. Therefore, this section's discussion of projected impacts applies to each build alternative.

The previous section discusses projected changes in future land use. Any indirect impacts from the project on local land use planning efforts would be beneficial. Chapter 8 documents the local government support of the project.

The project would generally improve service delivery and access to community facilities. In so doing, it would reduce response times for public safety and emergency services. No state road closings are currently anticipated. However, if more detailed design indicates the need to close existing state roads, the project might impair or eliminate access to some community facilities. VDOT
will work with all affected parties to minimize adverse effects of the project from impaired access.

The project would change travel patterns in and through the study area. Through traffic would use the Coalfields Expressway instead of Route 83. Any changes to traffic patterns outside of the study area from the project are not expected to adversely affect communities, businesses, or traffic safety.

The improved highway access from the project would improve the study area localities' ability to attract economic development. Highway access consistently has been found to be one of the top considerations for locating corporate, industrial, and distribution facilities. Improved access provides: reduced travel times; lower transportation costs; reduced accident frequency; more reliable movement of raw materials and finished goods; and better access to labor and markets. These benefits translate into greater business efficiencies, higher productivity, and better competitiveness. Collateral economic benefits include expansion of job opportunities and local tax bases, greater variety of shopping choices, and greater cultural activity.

Natural Resource Impacts
The project may induce secondary and cumulative impacts to natural resources. Table 4.26 shows estimated impacts from industrial development. Each of the types of resources shown in Table 4.26 play important and different roles in the area's larger natural environment. According to NWI mapping, the build alternatives would have indirect wetland impacts within growth areas ranging from 0.1 hectares (0.3 acres) to 0.7 hectares (1.6 acres). The impacted wetlands are all human-induced, PUB systems. Alternatives D and E show considerably more waters impacts than the other alternatives, since Indian Creek runs through Growth Area B. Impacts to forestland range from 102 hectares (252 acres) for Alternative A to 194 hectares (478 acres) for Alternatives F1 and F2. Projected forest impacts from residential growth is 378 hectares (938 acres) for each build alternative.

After construction, urban development may contribute to water quantity and quality problems. Urbanization covers land surfaces with impervious, paved surfaces that do not allow for infiltration of rainwater. Unless mitigation measures are taken, this increases the rate and amount of stormflows entering waterways. The erosion and sediment control regulations contain several standards relating to stormwater management. Also, as mentioned previously, local floodplain ordinances would restrict the type of floodplain development that has historically occurred in the area. Changes in flood risk would partially depend on compliance and enforcement of these local ordinances. Furthermore,
Table 4.26
Estimated Resource Impacts from Projected Industrial Development

<table>
<thead>
<tr>
<th>Growth Areas</th>
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<td></td>
<td></td>
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<td>1.5</td>
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</tr>
</tbody>
</table>
the two flood control projects discussed in Section 3.7.2 would greatly reduce
the number of floodprone structures in the Levisa and Russell Fork watersheds.

Water quality impacts from projected development would be partially addressed
through state programs for point and nonpoint source pollution. Point source
discharges would be regulated through the Virginia Point Source Discharge
Elimination System program, administered by DEQ. Sources of urban nonpoint
source pollution include atmospheric deposition, street litter deposition, road
traffic, fertilizer use, and pesticide use. Stormwater management facilities
required by local erosion and sediment control ordinances would help reduce
nonpoint source pollution loadings into waterways.

The expected location of the development would influence the extent of potential
water quality impacts. Since industrial, residential, and some commercial
development is expected to occur on mountaintops, the distance and contact
time between the pollution source and the water resource would be high. This
would allow for increased dilution of pollutants, deposition of sediment-borne
pollutants, and dissipation of volatile organic compounds.

If pollutants reach the rivers and streams, the degree of impact would depend on
existing, baseline conditions in the waterways and the related carrying
capacities of the various aquatic resources. As discussed in Section 3.7.1, the
study area generally does not have good water quality. These conditions have
limited species diversity in many waterways, which generally contain more
pollution-tolerant species. Due to past impacts from mining, urban
development, logging, and other activities, indirect impacts to water resources
are not expected to be substantial.

In coming years, loss of terrestrial habitat would continue through conversion of
forestland by strip mining and timbering operations. A Virginia Department of
Forestry representative stated that timbering has and will continue to increase
in the area, regardless of whether the project is constructed. The Regional
Forester did not believe the project would necessarily result in more timbering in
the area. However, a build alternative might increase the “hauling radius” for
cost-feasible timbering and, therefore, moderately increase the rate of timbering.
In March 1999, construction of a $3 million chip mill began in western
Dickenson County that would process an estimated 200,000 tons annually. The
Regional Forester does not believe the study area would attract more chip mills.

Indirect impacts to wildlife might occur from fragmenting previously intact
forested tracts. Increased forest fragmentation can reduce breeding success for
some birds by increasing rates of parasitism and nest predation. Bluejays,
crows, raccoons, and feral cats, in particular, are major predators in fragmented landscapes. These species thrive within agricultural or urban landscapes where abundant supplies of food (e.g. grain, corn, garbage) support large populations of these predators (VDOT, 1997).

Development is not expected to occur near rivers and major streams that could provide habitat for the Virginia spiraea. Therefore, no impacts to spiraea communities are anticipated. As discussed in previous sections, extensive surveys have not revealed the presence of the small whorled pogonia. It is unlikely that the species exists in the study area and, therefore, indirect impacts are not anticipated.

After project construction, the possibility exists for vehicles to collide with bats. Studies documenting the effects of interstate highways on wildlife suggest that the effects of highways on small, medium, and large mammal populations have been limited to immediate loss of habitat. It was also found that highway-related mortality of wildlife is density dependent (Adams and Geis, 1981, Michael, 1975). Adams and Geis (1981) surveyed 756 kilometers (470 miles) of roadway within the range of the Indiana bat. During that survey, five of the approximately 775 road wildlife mortalities were bats, with none being Indiana bats. As discussed in Section 6.4, an estimated 1,840 Indiana bats exist within five of Virginia’s counties, representing approximately 0.5 percent of the entire known population. Considering this low density, and the fact that the survey conducted for this project did not discover Indiana bats, one can assume that road wildlife mortality from the Coalfields Expressway would not have an adverse effect on Indiana bat populations.

Highway construction in forested areas would produce a forest edge habitat. Indiana bats have been documented foraging in both forested and open areas, and adverse indirect effects from forest fragmentation are not expected. Additionally, since this rural area is covered by a large amount of forestland, impacts would not greatly affect the area’s forested resources and, therefore, Indiana bat foraging and roosting habitat.
Coalfields Expressway Location Study

Exhibit 4.2

U.S. Census Block Groups
STATE PROJECT NO. R000-961-101, PE-100

Coalfields Expressway Location Study
Exhibit 4.3

Cultural Resources
Coalfields Expressway Location Study
Exhibit 4.5

Ambient Noise Measurement Sites
Coalfields Expressway Location Study

Exhibit 4.9

Potential Hazardous Materials Sites
Coalfields Expressway Location Study

Virginia Spiraea Survey Locations

Exhibit 4.12
Coalfields Expressway Location Study
Exhibit 4.13

Small Whorled Pogonia Survey Locations
Exhibit 4.14

Coalfields Expressway Location Study

Potential Industrial Development Areas
Potential Industrial Development Areas

Coalfields Expressway Location Study

Exhibit 4.14
CHAPTER FIVE
LIST OF PREPARERS
5. LIST OF PREPARERS

The Virginia Department of Transportation and the Federal Highway Administration prepared this document with assistance from Hayes, Seay, Mattern, & Mattern, Inc., H.W. Lochner Inc., and Coastal Carolina Research.

**Virginia Department of Transportation**

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Experience/Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patricia Napier</td>
<td>Transportation Engineer Senior</td>
<td>30 years experience in location corridor studies</td>
</tr>
<tr>
<td>Angel Deem</td>
<td>Environmental Planner</td>
<td>B.S. in Biology with 6 years experience in environmental document preparation.</td>
</tr>
<tr>
<td>Michelle Fall</td>
<td>Environmental Program Analyst</td>
<td>M.S. in Environmental Engineering, B.S. in Biology with 7 years experience in environmental analysis and document preparation.</td>
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**Federal Highway Administration**

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Experience/Qualifications</th>
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<tbody>
<tr>
<td>Edward S. Sundra</td>
<td>Environmental Engineer</td>
<td>B.S. degree in Civil Engineering with 13 years experience in environmental issues.</td>
</tr>
<tr>
<td>Barbara A. Middleton</td>
<td>Transportation Specialist</td>
<td>B.A. in Sociology with 26 years experience in right-of-way and environmental issues.</td>
</tr>
<tr>
<td>John Simkins</td>
<td>Environmental Protection Specialist</td>
<td>M.S. degree in Environmental Sciences; B.S. degree in Biology with six years experience in environmental issues and document preparation.</td>
</tr>
<tr>
<td>Timothy J. Lewis, P.E.</td>
<td>Senior Field Operations Engineer</td>
<td>B.S. degrees in Civil Engineering and Geological Sciences with 16 years experience in highway engineering and environmental issues.</td>
</tr>
</tbody>
</table>

**Hayes, Seay, Mattern, & Mattern, Inc.**

<table>
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<tr>
<th>Name</th>
<th>Role</th>
<th>Experience/Qualifications</th>
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<tbody>
<tr>
<td>Robert J. Humphrey, PE</td>
<td>Project Manager</td>
<td>B.S. degree in Civil Engineering with 44 years of experience in highway and bridge design and transportation studies.</td>
</tr>
<tr>
<td>J. Scott Hodge, PE</td>
<td>Deputy Project Manager</td>
<td>B.S. degree in Civil Engineering with 20 years of experience in highway and bridge design and transportation studies.</td>
</tr>
<tr>
<td>Paul P. Anderson, PE</td>
<td>Deputy Project Manager</td>
<td>B.S. &amp; M.S. degrees in Civil Engineering with 13 years of experience in highway design and transportation studies.</td>
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</table>
### Donald M. Cassaras
Highway Designer

38 years experience in highway design and transportation studies.

### H.W. Lochner, Inc.

<table>
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<tr>
<td>Karl R. Kratzer</td>
<td>B.S. degree in Biology with 15 years experience in environmental analysis, threatened and endangered species surveys, wetland delineation, and document preparation.</td>
</tr>
<tr>
<td>James O. Clarke, AICP</td>
<td>M.U.R.P. (Masters of Urban and Regional Planning) and B.A. degrees with 10 years experience in environmental analysis, planning, wetland delineation, and document preparation.</td>
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<tr>
<td>Kelly S. Coleman</td>
<td>B.S. degree in Environmental Science with 3 years experience in environmental analysis and document preparation.</td>
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<tr>
<td>James M. Beers</td>
<td>A.A. degree in design with 13 years experience in transportation planning and graphic design.</td>
</tr>
<tr>
<td>Bryan D. Kluchar</td>
<td>B.S. degree in civil engineering with 8 years experience in engineering and document preparation.</td>
</tr>
<tr>
<td>David F. Zawada, P.E.</td>
<td>M.S. and B.S. degrees in civil engineering with 27 years experience in noise and air analysis and document preparation.</td>
</tr>
<tr>
<td>Dave Shannon, P.E.</td>
<td>B.S. degree in civil engineering with 8 years experience in engineering and document preparation.</td>
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### Coastal Carolina Research

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<tr>
<td>Loretta Lautzenheiser</td>
<td>M.A. and B.S. degrees in Anthropology, 20 years experience as an archaeologist and cultural resources manager, and 11 years as president of CCR.</td>
</tr>
<tr>
<td>Joanna Carter Jones</td>
<td>M.A. in historic preservation, B.A. in Anthropology. Six years experience in architectural history.</td>
</tr>
<tr>
<td>M. Ruth Little</td>
<td>Ph.D., M.A., in art history, B.A. in English. 16 years experience in architectural history.</td>
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CHAPTER SIX
LIST OF DEIS RECIPIENTS
6. LIST OF DEIS RECIPIENTS

The following agencies and organizations received Draft Environmental Impact Statements for review and comment. These comments were incorporated into the Final Environmental Impact Statement.

Federal Agencies

- Advisory Council on Historic Preservation
- Council on Environmental Quality
- US Department of Agriculture–Natural Resources Conservation Service
- US Department of Agriculture–Office of the Secretary
- US Department of Energy
- US Department of the Army–Huntington District, Corps of Engineers
- US Department of the Army–Norfolk District, Corps of Engineers
- US Department of the Army–John W. Flannagan Reservoir, Corps of Engineers
- US Department of Health and Human Services–Public Health Service
- US Department of Housing and Urban Development–Region III Headquarters
- US Department of Housing and Urban Development–Regional Environmental Officer
- US Department of Interior–Fish and Wildlife Service, Regional Director
- US Department of Interior–National Park Service, Northeast Region
- US Department of Interior–Office of Environmental Policy and Compliance
- US Department of Interior–Office of Environmental Project Review
- US Department of Transportation–Federal Transit Administration
- US Environmental Protection Agency–EIS and Wetland Review, Region III
- US Environmental Protection Agency–NEPA Compliance Section, Region III
- Federal Railroad Administration–Administrator
- National Marine Fisheries Services–Habitat Conservation Branch
- National Oceanic and Atmospheric Administration–Office of the Chief Scientist
State Agencies

- Virginia Department of Agriculture and Consumer Services
- Virginia Department of Aviation
- Virginia Department of Conservation and Recreation
- Virginia Department of Conservation and Recreation—Division of Soil and Water Conservation
- Virginia Department of Conservation and Recreation—Division of Natural Heritage
- Virginia Department of Environmental Quality—Air Division
- Virginia Department of Environmental Quality—Waste Division
- Virginia Department of Environmental Quality—Water Division
- Virginia Department of Environmental Quality—Division on Intergovernmental Coordination
- Virginia Department of Forestry
- Virginia Department of Game and Inland Fisheries
- Virginia Department of Health—Water Programs
- Virginia Department of Health—Buchanan County Health Department
- Virginia Department of Health—Dickenson County Health Department
- Virginia Department of Health—Wise County Health Department
- Virginia Department of Historic Resources
- Virginia Department of Housing and Community Development
- Virginia Institute of Marine Science
- Virginia Department of Mines, Minerals and Energy
- Virginia Department of Rail and Public Transportation
- Virginia Marine Resources Commission
- Virginia Museum of Natural History
- Virginia Outdoors Foundation

Local Agencies and Governments

- Cumberland Plateau Planning District Commission
- Lenowisco Planning District Commission
- Buchanan County—County Administrator
- Buchanan County School Board
- Dickenson County—County Administrator
- Dickenson County Public Service Authority
- Dickenson County School Board
- Wise County—County Administrator
- Wise County Public Service Authority
- Wise County School Board

Coalfields Expressway
Final Environmental Impact Statement

- Town of Clinchco–Mayor
- Town of Clintwood–Mayor
- Town of Grundy–Mayor
- Town of Haysi–Mayor
- Town of Pound–Mayor

Other Groups and Organizations
- Virginia Coalfield Economic Development Authority
CHAPTER SEVEN
COMMENTS AND COORDINATION
7. COMMENTS AND COORDINATION

As part of this project, VDOT has developed and implemented a public involvement program to provide information and solicit comment. This program has helped ensure open communication throughout the planning stage. This section describes the public involvement program, public agency coordination efforts, and includes specific public agency comments.

7.1 FEDERAL, STATE, AND LOCAL AGENCY COORDINATION

7.1.1 Scoping Activities

Scoping Letters
Scoping letters were distributed in October 1997 to inform the agencies of the project and solicit comments and relevant information. This section lists the agencies that received letters. Table 7.1 includes those agencies that responded to the scoping letter and their comments.

- US Department of Agriculture, Natural Resources Conservation Service
- US Army Corps of Engineers
- US Army Corps of Engineers, John W. Flannagan Dam
- US Department of Housing and Urban Development
- US Department of the Interior – Fish and Wildlife Service
- US Department of the Interior – National Park Service
- US Department of Interior, Office of Environmental Project Review
- US Department of Transportation – Federal Transit Administration
- US Environmental Protection Agency – EIS and Wetland Review
- National Marine Fisheries Services
- National Oceanic and Atmospheric Administration
- Council on Environmental Quality
- American Canal Society
- The Advisory Council on Historic Preservation
- Tennessee Valley Authority
- Virginia Department of Agriculture and Consumer Services
- Virginia Department of Aviation
- Virginia Department of Conservation and Recreation
- Virginia Department of Environmental Quality – Air Division
- Virginia Department of Environmental Quality – Water Division
- Virginia Department of Forestry
• Virginia Department of Game and Inland Fisheries
• Virginia Department of Health
• Virginia Department of Health, Water Programs
• Virginia Department of Historic Resources
• Virginia Institute of Marine Science
• Virginia Department of Mines, Minerals and Energy
• Virginia Museum of Natural History
• Virginia Marine Resources Commission
• Virginia Outdoors Foundation
• Cumberland Plateau Planning District Commission
• Lenowisco Planning District Commission
• Buchanan County Administrator
• Buchanan County Roads Committee
• Buchanan County Department of Health
• Buchanan County School Board
• Dickenson County Administrator
• Dickenson County Public Service Authority
• Dickenson County Health Department
• Dickenson County School Board
• Wise County Administrator
• Wise County Public Service Authority
• Wise County Health Department
• Wise County School Board
• Town of Clinchco – Mayor
• Town of Clintwood – Mayor
• Town of Grundy – Mayor
• Town of Haysi – Mayor
• Town of Pound – Mayor

Agency coordination has continued throughout the process, as discussed below in the Interagency Coordination Meeting (IACM) and partnering processes.

Interagency Coordination Meeting

Each month, VDOT holds an Interagency Coordination Meeting (IACM) with federal and state agencies to present and discuss projects. On October 20, 1998, the Coalfields Expressway project was presented at the IACM to provide general information on project status, purpose and need, alternatives selection, and to solicit additional comments. The IACM Committee consists of the following agencies:

• US Army Corps of Engineers
• US Fish and Wildlife Service
• US Environmental Protection Agency
• US Coast Guard
• National Marine Fisheries Service
• Virginia Department of Environmental Quality
• Virginia Department of Conservation and Recreation
• Virginia Institute of Marine Sciences
• Virginia State Health Department
• Virginia Department of Game and Inland Fisheries
• Virginia Department of Historic Resources
• Virginia Marine Resources Commission

Partnering
In early 1999, VDOT, in cooperation with the COE, EPA, and FWS, began a new partnering process. The process is intended to provide the participating agencies with greater opportunity to participate in the development of complex projects. The Coalfields Expressway project was presented to the partnering committee on March 16, 1999.

7.1.2 Agency Comments

Table 7.1 lists comments received from the agencies prior to the completion of the DEIS. Copies of the correspondence are included in Appendix A.

Table 7.1
Coordination Comments (Prior to DEIS Completion)

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<tr>
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<th>Coordination</th>
<th>Comment</th>
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<tr>
<td>US Fish and Wildlife Service</td>
<td>Scoping</td>
<td>Due to the current size of the study corridor, it is difficult to provide specific information at this time. FWS may recommend surveys for species. Wetland impacts should be avoided, minimized, and mitigated. FWS will advise further as project plans progress.</td>
</tr>
<tr>
<td>Advisory Council on Historic Preservation</td>
<td>Scoping</td>
<td>Once historic properties are determined, the Council should be notified and given the opportunity to participate in further consultation to consider means to avoid or minimize impacts.</td>
</tr>
<tr>
<td>Virginia Department of Mines, Minerals and Energy</td>
<td>Scoping</td>
<td>Geologic maps are available for the entire study area; mined-out data is available from the Division of Mined Land Reclamation.</td>
</tr>
<tr>
<td>Virginia Department of Aviation</td>
<td>Scoping</td>
<td>Any planning work for the Coalfields Expressway should consider the possible future multi-modal aspects needed to provide ground access to these airports.</td>
</tr>
</tbody>
</table>
Table 7.1 (Continued)
Coordination Comments

<table>
<thead>
<tr>
<th>Agency</th>
<th>Coordination</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia Department of Conservation and Recreation</td>
<td>Scoping</td>
<td>Div. of Natural Heritage - provided species listing Div. of Soil and Water - VDOT must adhere to state erosion and sediment control and storm water management requirements. Div. of Planning and Recreation Resources - Interstate Bike Route along Route 80 in Dickenson County, a major reservoir is being considered on the Russell Fork near Haysi, Route 80 and 61 are identified as potential byways, Russell Fork is listed as a potential State Scenic River, a commercial rafting company runs trips through the gorge when water is available.</td>
</tr>
<tr>
<td>Lenawesco Planning District Commission</td>
<td>Scoping</td>
<td>No problems related to environment are anticipated.</td>
</tr>
<tr>
<td>US Corps of Engineers</td>
<td>IACM</td>
<td>Will forward comments at a later date once finished reviewing information and coordination with Huntington District.</td>
</tr>
<tr>
<td>US Fish and Wildlife Service</td>
<td>IACM</td>
<td>FWS requests that VDOT provide mapping. FWS will attempt to streamline surveys for the small whorled pogonia (Isotria medeoloides).</td>
</tr>
<tr>
<td>Virginia Department of Environmental Quality</td>
<td>IACM</td>
<td>Avoid, minimize and compensate.</td>
</tr>
<tr>
<td>Virginia Department of Conservation and Recreation</td>
<td>IACM</td>
<td>Several state-listed species have been added to data since Scoping. Species include the funnel supercoil and the brown supercoil.</td>
</tr>
<tr>
<td>Natural Resources Conservation Service</td>
<td>Other</td>
<td>The AD-1006 Form/Prime and Unique Farmlands Determination should be for the preferred alternative only. NRCS does not have the manpower to conduct a field survey for all five alternatives and soil surveys are not available for portions of the project area.</td>
</tr>
<tr>
<td>Army Corps of Engineers (John W. Flannagan Reservoir)</td>
<td>Other</td>
<td>The Corps owns 8,000 acres fee-simple; the project operations area is 400 acres. Restrictions regarding road construction within the project operations area would be determined on a case by case basis.</td>
</tr>
<tr>
<td>Army Corps of Engineers (John W. Flannagan Reservoir)</td>
<td>Other</td>
<td>Corps-owned fee land restrictions and availability outside the 400 acre project operations area will be determined based upon designs and specifications presented. 7,874 acres are available for consideration.</td>
</tr>
<tr>
<td>Virginia Department of Conservation and Recreation</td>
<td>Other</td>
<td>No Spiraea virginiana or any other state or federally listed plant species were found at the survey sites, although suitable Spiraea habitat did exist in several locations.</td>
</tr>
</tbody>
</table>
Table 7.1 (Continued)
Coordination Comments

| US Fish and Wildlife Service | Other | FWS agrees to only survey the preferred alternative for small whorled pogonia (Isotria medeoloides) due to the questionable status of the species in the project area. |
| Virginia Department of Historic Resources | Other | Signed letter indicating concurrence with VDOT’s procedure regarding the identification of potentially significant historic properties. |
| Virginia Department of Historic Resources | Other | DHR has completed its review of the Phase I architectural identification survey. The National Register Evaluation Team recommended that Phase II Significance Evaluations be conducted for the Barn on Route 83 (025-5001), the Biase House (025-5033), and the Ratliff House (013-5033). |
| Virginia Department of Historic Resources | Other | DHR has completed its review of the Phase II architectural resources survey. The agency concurs with VDOT’s findings, except that it found the Barn on Route 83 (025-5001) to be eligible for NHRP listing. |

7.1.3 DEIS Comments and Responses

This section includes comments received on the DEIS and responses to these comments. Chapter 7 lists the agencies that received copies of the DEIS. Comments on the DEIS were also received from a private citizen and are included as well. Appendix B contains copies of the comment letters addressed below.

Advisory Council on Historic Preservation

Date received: July 13, 2000

Comment: Not the agency's role to comment on the DEIS. However, based on initial review of the DEIS, the consideration given cultural resources is inadequate to address the Section 106 process and lacks any input from the State Historic Preservation Officer (SHPO) or other parties who may have the right to participate in Section 106 consultation. Once it is determined that the project may affect historic properties, the Council should be notified by the lead Federal agency and given the opportunity to participate in further consultation to consider means to avoid or minimize those impacts. Recommend coordination with the Virginia State Historic Preservation Officer as soon as possible to take advantage of their knowledge of cultural resources in the area.

Response: The Executive Director of the Virginia Department of Historic Resources (DHR) serves as the SHPO in Virginia. VDOT has coordinated with DHR throughout this project. Before the location study began, VDOT discussed and DHR approved the approach to conducting the architectural and archeological surveys. Also, DHR reviewed and approved the Phase I and Phase II Architectural Surveys and the Archeological Assessment and were provided the combined Phase I and II archaeological report. DHR comments are included in this chapter and copies of appropriate letters are included in the Appendix. The Cultural Resource Impacts section was amended to...
reference these letters and briefly describes VDOT's coordination efforts.

Environmnetal Protection Agency

Date received: July 5, 2000

Comment: Rated the project EC-2, Environmental Concerns, Insufficient Information. --
- Project may increase the service area of the present and future wood chip mill operations in the area and increase the rate of timber harvest in the study area, which may lead to accelerated water quality impacts to the area streams and degrade the portions of Russell Fork and Pound River deemed potentially eligible for designation as a Wild and Scenic River.
- Economic development potential after construction is not clearly described in the document. Although not required, a cost benefit analysis may shed light on whether benefits of long term economic development outweigh project's capital and environmental costs.
- Not clearly stated if the environmental impacts of the connector roads have been included in the impacts for each alternative.
- Alternative B may be the least damaging overall when considering impacts to wetlands, streams, and forest land, potential effects on potentially eligible Wild and Scenic Rivers and the amount of cut and fill required. EPA would like to work with VDOT and FHWA to explore minimization and mitigation opportunities for this Alternative, or any other, if the project is funded for construction.
- Mitigation of stream impacts should be a key component of project. Recommend developing a mitigation strategy for stream impacts, to include riparian buffer planting onsite and offsite, Rosgen method stream restoration, where applicable, and putting natural structure and morphology in any straightened or moved stream segments. Recommend considering flexibility in the design standards of this road to allow for contact sensitive design. Recommend that the right-of-way limits and clearing be kept to a minimum. Urge flexibility in design, particularly on slopes and other environmentally sensitive areas to minimize impacts.
- Section 4.5 does not contain any information regarding the long term, post construction economic benefits of this road.
- Provide methodology of how future jobs were obtained.
- Include any impacts to the potential designation of portions of Russell Fork as a Wild and Scenic River in the summary table.
- Clarify discrepancy regarding whether Regional Forester believes that region would attract more chip mills.

Response: Alternative F1 crosses the Russell Fork just north of Haysi. This portion of the river has not been deemed potentially eligible for designation as a Wild and Scenic River.

- As you acknowledge, cost-benefit analyses are not required in NEPA studies. The purpose of NEPA is to document the impacts as well as the benefits of a project so that decision makers have a reasonable level of information before them upon which to base a decision.
- Impact estimates for each alternative included impacts from connector roads, except for estimates for forest and farmland impacts. Due to the lack of land cover mapping for the study area, determining impacts for these two resources was difficult. The connector roads would not add greatly to the forest and farmland impacts for the alternatives. Impacts from a connector road were added to the total impacts for the particular segment associated with the connector road. The DEIS included several references to impacts from connector roads (e.g. pages 4-15, 4-44, 4-48, 4-50). A statement was added to the
beginning of Chapter 4 that clarifies how impacts from connector roads were addressed. Through the partnering and IACM processes, EPA was provided opportunities to discuss impact avoidance and minimization. EPA will have future opportunities to do so during the permitting process.

-Alternative F2 [Alternative F1 without the Buchanan County Industrial Access Connector (BCIAC)] would impact an estimated 1247 acres of forestland. This total is below the average for Alternatives A-E and comparable to the alternative with the lowest amount of forested impacts (Alternative E with 1164 acres). For Alternative F1 (which includes the BCIAC) total forested impacts would increase to an estimated 1443 acres. Although higher than the average, the BCIAC would provide added benefit to the localities’ economic development efforts. Although the forestland impacts are not the lowest of the alternatives, Alternative F1 provides a reasonable balance of the many environmental, social, and engineering issues involved. In regards to jurisdictional-area impacts, see above response to the US Department of the Army – Norfolk District, Corps of Engineers. You indicate that Alternative B may have the least impacts of the resources you considered in your comparison. As mentioned previously, the CTB Approved Alternative F1 is comprised of a combination of different alternatives. For approximately 43 miles (73%) of its length, Alternative F1 is comprised of the same segments that comprise Alternative B.

-VDOT has strong stream assessment, restoration and mitigation capabilities. Through coordination with federal and state permit agencies, VDOT will assess the flow patterns and morphology of impacted streams to determine if enhancement or restoration is needed. As discussed in Section 4.14.1 of the DEIS, please note that stream impact estimates are very conservative since many of these impacts would be temporary. The EPA makes several statements regarding cut and fill volumes and project impacts on water quality. VDOT, in response to a request from the US Fish and Wildlife Service, has committed to retain erosion and sediment control specialists that will be devoted solely to this project during construction.

-Section 4.5 only considered immediate job creation from project construction. For temporal reasons, long-term employment growth seemed more appropriate to address in Section 4.19 in the DEIS (Section 4.20 in the FEIS).

The text on page 4-20 was amended to reflect the information in Table 4.7.

-Our response to the comments you provided on this project’s Predraft EIS was inaccurate. Our letter of February 4, 2000, stated that the Department of Forestry’s Regional Forester believed that the project would attract more chip mills. In fact, the Regional Forester stated that he did not see a market for more chip mills in the area. He also stated that, while the project may increase the rate of timbering, he did not foresee this increase as being considerable.

Federal Emergency Management Agency

Date received: June 23, 2000

Comment: Since the proposed project will impact or relocate existing streams, a Conditional Letter of Map Revision (CLOMR) must be applied for prior to construction.

Response: Comment noted.
National Oceanic and Atmospheric Association

Date received: July 5, 2000

Comment: Geodetic control information should be reviewed to identify the location and designation of any geodetic control monuments that may be affected by the proposed project. National Geodetic Survey requires no less than 90 days notification of those activities that will disturb or destroy these monuments in order to plan for their relocation. Project funding should include costs for control relocation.

Response: Comment noted.

US Department of Agriculture – Natural Resources Conservation Service

Date received: July 13, 2000

Comment: NRCS did review this project for prime farmland. Orthophoto quad overlays were used to determine that prime farmland is not present in the project area. However, there was no AD-1006 Form completed for this project.

Response: VDOT was unaware that NRCS reviewed the project area for prime farmland, and never received written correspondence to that effect. The FEIS was amended stating that NRCS reviewed the study area but determined that there was no prime farmland in the project area.

US Department of the Army – Huntington District, Corps of Engineers

Date received: May 11, 2000

Comment: Segment 115 and Segment 109 pass through areas designated for dispersed recreational use. These areas are also licensed to the Virginia Department of Game and Inland Fisheries and should be consulted at their Regional Office. These segments pass through an existing flood control project, John W. Flannagan Reservoir. A Master's thesis found the potential for isolated subspecies of three to five indigenous fish species. A portion of the Cranes Nest River, Route D, Segment 109 travels over a put and take trout fishery.

- Oral history indicates slave burials to be common along the routes in Dickenson County.
- Segment 115 runs between two recreation areas; will noise abatement be considered? No indication of Segment 115 impacting the recreational experience of visitors to that portion of the reservoir.
- The bisection of a significant wildlife corridor occurs with Routes A, B, and C. Significant in that John W. Flannagan Reservoir is virtually a continuous forest. With the exception of the Jefferson National Forest along Cumberland Mountain, very few other tracts are capable of supporting wildlife desiring this type of habitat. No mention of the elevations necessary to keep the proposed routes above specific pool elevations to prevent inundation.
- Do not understand Table 4.22; segment 115 bridges the Cranes Nest River. No impact?

Response (sent: June 5, 2000): On page 3-8 of the DEIS, the Parks and Recreational Areas section discusses the Flannagan Reservoir. In its description, it states that “approximately 8000 acres of federal land containing many recreational areas surround the lake and its major tributaries.

-The Department of Game and Inland Fisheries (DGIF) received a scoping letter at the...
onset of the project. Also, DGIF is a participating member of the Interagency Committee that reviews VDOT projects. The project was presented to this committee in October 1998. DGIF's central office is responsible for passing along project information to its regional offices, where it deems appropriate.

- The Flannagan Reservoir was not included in the Flood Control Projects section since it is an existing project. In the FEIS, VDOT will add the word “Proposed” to the section title to avoid further confusion.

- If available to you, please provide us with the abstract of the master's thesis you referenced. VDOT will then consider whether to highlight the study findings in the FEIS. The FEIS will reference the portion of the Cranes Nest River where segment 109 would cross as a put and take trout fishery.

- Your archaeological comment has been forwarded to Coastal Carolina Research, Inc., the cultural resources consultant for this project, for their consideration. They will conduct a Phase I archaeological survey on the preferred alternative if a build alternative is selected by the Commonwealth Transportation Board.

- As discussed in Sections 3.5.2 and 4.8, VDOT must adhere to federal standards in assessing noise impacts. The computer model used to assess impacts based on these standards only considers noise-sensitive receptors located within 1000' of the roadway. The closest recreational area is located approximately 2000' south of segment 115, at its closest point. (This measurement considers both vertical and horizontal distances, since the proposed alignment travels along a high ridgeline, whereas both campgrounds are located in low-lying areas near the Cranesnest River). Therefore, under federal standards, the project would not cause noise impacts to the recreational areas.

- Section 4.11 of the FEIS was amended to include discussion of the visual impacts of segment 115 upon the two campgrounds. If this segment is part of the preferred alternative, VDOT would use the mitigation measures included in this section to avoid or reduce visual impacts to these areas.

- Alternatives A, B, and C would span the Cranes Nest River with a very large bridge, measuring approximately 220 feet high and 1500 feet long. This structure would provide a sizeable passageway along the river corridor for wildlife travel. Therefore, VDOT does not believe it would bisect a wildlife corridor and would not adversely affect species with large habitat requirements. Alternatives A, B, and C would span the Cranes Nest River with a large bridge and, in other Corps-owned areas, would travel along high ridgelines. Therefore, the proposed route would be well above flood-level pool elevations.

- Without more detailed bridge design that would indicate pier locations, VDOT is unable to accurately estimate stream impacts. As discussed in Sections 4.14.2, stream impacts were estimated assuming that bridged waterways would not be impacted. This assumption was based on the fact that the proposed bridges are generally large enough, and stream widths small enough, to allow for pier locations outside of the waterways. The Cranes Nest River is approximately 20-30 feet wide where Segment 115 would cross. We estimate our piers would be located approximately 300 feet apart at this location.

Therefore, it should not be difficult to locate piers outside of the waterway.

US Department of the Army – Norfolk District, Corps of Engineers

Date received: July 10, 2000

Comment: Recommend the consideration of the alternatives having the least impact to wetlands and other waters of the United States. Other issues of particular interest are floodplains, threatened and endangered species and their habitat, and impacts to historic or archaeological sites. While giving these issues significant weight in the decision process also consider alignments that follow/incorporate existing Rt. 83. Consideration
should also be given to alignments that traverse existing developed areas, such as towns.

It would be helpful if the locations of rivers referenced in the descriptions of the various build alternatives were indicated on Exhibit 2.4. Impacts to waters of the United States, including wetlands, should be minimized by bridging and/or reducing the roadway footprint through such means as reduced fill slopes or narrower medians, wherever practicable.

-Perpendicular rather than parallel crossings of streams should be incorporated and relocation of stream channels should be avoided. Seriously consider the comments offered by Harold E. Miller Jr., Resource Manager of the John W. Flannagan Dam and Reservoir. The entire watershed of the John W. Flannagan Dam and Reservoir needs to be protected as a regional water supply. Only Alternative E completely avoids the watershed. The FEIS should address how impacts to the reservoir will be avoided and minimized.

-Section 4.13.4 of the DEIS states that the Corps of Engineers generally does not require compensatory mitigation for Palustrine Unconsolidated Bottoms. While this was true at the time of writing, the Corps' new Nationwide Permit 14 as of June 7, 2000 for road crossings now requires a compensation plan for all losses of waters of the United States.

Response: As your letter acknowledges, choosing an alternative involves consideration of many different issues and concerns, including impacts to wetlands and other waters of the U.S. Wetland impacts by build alternative range from 1.5 to 6.2 acres. The CTB Approved Alternative would impact 3.3 acres of wetlands—below the average for the build alternatives.

Similarly, the CTB Approved Alternative would impact approximately 7.0 linear miles of waters of the US. These impacts by build alternative range from 4.7 to 9.6 linear miles. Again, the impacts for the CTB Approved Alternative are below the average of the build alternatives.

Although the jurisdictional-area impacts are not the lowest of the alternatives, the CTB Approved Alternative provides a reasonable balance of the many environmental, social, and engineering issues involved.

-In determining preliminary alternatives, design engineers reviewed the existing Route 83 alignment. Portions of the corridor were deemed feasible and are included as parts of certain build alternatives. However, due to the existing development along Route 83, VDOT determined that locating the Expressway along much of this roadway would result in higher impacts to businesses and residences. A portion of the Route 83 corridor west of Clintwood comprises part of the CTB Approved Alternative.

-Exhibit 2.4 has been amended to include more of these rivers.

-Sections 4.13.2 and 4.14.2 discusses avoidance and minimization measures VDOT has already undertaken in siting the build alternatives. Many of the streams and rivers would be bridged, which has greatly reduced impact estimates. Also, the build alternatives cross almost all of the streams perpendicularly, except in some areas where it was not feasible. Additional measures to reduce impacts will be examined in later design stages.

-After several telephone conversations with Mr. Miller to discuss his concerns, we responded in writing to his letter on June 5, 2000.

-Alternative E is located in the Flannagan Reservoir watershed.

-The Corps owns over 8000 acres surrounding the Flannagan Reservoir to help protect this important drinking water resource. Section 4.12.2 in the DEIS includes measures VDOT will take to avoid and minimize pollutants from the proposed highway. These include the use of erosion and sediment control and stormwater management measures, including Best Management Practices.

-Mitigation requirements on PUB impacts that have resulted from the Nationwide permit revisions have been amended in Section 4.14.4 of the FEIS.
Project which standard. Project that mountainslope. The movement of expected economic could contribute. The DEIS acknowledges during construction. Floodplain areas is described solely in terms of the expected acreage of land to be impacted. The DEIS does not provide information on how proposed construction might affect the structure and function of the impacted wetlands. Rock core designed to test the strata for engineering characteristics should be analyzed for their acid-yielding potential. This data could then be used in plans for disposal of potentially polluting strata that are exposed during construction.

The Construction Impacts section should mention natural gas resources to be crossed. The DEIS acknowledges that the project will facilitate development in the area. This will contribute to subsequent water quality and quantity problems in the study area which were not considered in the initial selection of the highway route. Accordingly, projections of expected economic development patterns, and the related environmental problems that might arise from this development should also be identified and discussed in the DEIS. The movement of most particulate and dissolved materials associated with development on a mountaintop location would likely be accelerated as the materials move down the mountainslope. It is not clear that this latter aspect has been considered in concluding that a mountaintop location would be a positive aspect of future development in the project area.

Response: NEPA does not bind FHWA and VDOT to a feasibility and prudence standard. The purpose of NEPA is to document the impacts as well as the benefits of a project so that decision makers have a reasonable level of information before them upon which to base a decision. As stated in the DEIS, DCR conducted a survey for Virginia spiraea (Spiraea virginiana) in October 1998, but did not find the species. VDOT has coordinated with the FWS on several occasions regarding surveys for the small whorled pogonia (Isotria medeoloides) and Indiana bat (Myotis sodalis). The pogonia survey was conducted in the Year 2001 survey season. (In this area, the pogonia survey season typically begins at the beginning of June and lasts approximately four weeks. However, surveys until as late as mid-July...
have been found acceptable by FWS.) To provide decision makers with some level of information, the Department asked that DCR conduct a preliminary survey of high probability areas during the summer of 2000 for a short duration of approximately one week. DCR completed this survey, but did not find small whorled pogonias. In its letter of February 23rd, 2001, the FWS agreed with VDOT’s approach to conduct surveys for the small whorled pogonia. The small whorled pogonia survey on the CTB Approved Alternative F1 was completed in July 2001; no small whorled pogonias were found.

- VDOT has also agreed to conduct a survey for the Indiana bat using standard survey protocol. Since VDOT did not have adequate time to complete a survey during the Year 2000 survey period (from May 15 to August 15), the survey was conducted in 2001. In its letter of August 24 2000, the FWS agreed with VDOT’s decision to postpone the survey for the Indiana bat until this time. The survey for Indiana bat winter habitat was completed in May 2001. No Indiana bats were captured during this survey. Based on options provided in a February 12, 2001 letter from FWS, VDOT has assumed the presence of the Indiana bat during the non-hibernation period and will take measures to avoid the likelihood of adverse effects to the species.

- Per your request, a Biological Assessment was prepared for the project.

- The FEIS was amended to show that the peregrine falcon (Falco peregrinus) was delisted.

- In response to VDOT’s request, Mr. William Hester of the Fish and Wildlife Service (FWS) provided some recommendations regarding habitat restoration/enhancement of riparian and reclaimed mine lands. Mr. Hester referenced a mined land reclamation program in its formative stages. Once specific recommendations are available from this program, VDOT will consider these in its mitigation proposal for the project. Section 4.14.2 of the DEIS includes a commitment regarding enhancement and/or restoration of riparian areas and streams. VDOT will continue to work with Mr. Hester on this issue.

- Landslide geology, ground movement and/or subsidence potential, and mineral resources are important concerns in road construction. As discussed later, the geotechnical report prepared for the project discusses these issues. Each issue would be examined in detail during project design. At that time, VDOT will conduct extensive core drilling and soil testing along the entire alignment.

- Per your request, the following text was added to Section 3.1.2. “The most abundant mineral resource in Buchanan, Dickenson, and Wise Counties is coal. These three counties also serve as Virginia’s largest natural gas producers. Surface and deep mining of coal reserves has increased the risk of subsidence within the study area. Other potential development problems include landslide-prone areas and areas prone to land disturbances. Due to land disturbances, heavy construction is not recommended in Buchanan and Dickenson Counties along the Russell Fork fault.”

- Per the 1987 Technical Advisory T6640.8A, the Land Use Impacts section of an EIS should relate to development trends and consistency of the project with local or regional land use plans. Therefore, a discussion of geologic hazards is not appropriate in this section. VDOT acknowledges that slope stability in general will present a major challenge during and after construction. More specifically, potential landslide areas were one of several “red flags” pointed to in the geotechnical report. VDOT is aware of the geologic maps based on the USGS quadrangle maps. This information was published in 1979, and significant changes in topography likely affect the landslide-prone designations. All landslide-prone areas will be considered during the design stage.

- Debris flows as defined by Brabb are a type of slope movement that contains a significant proportion of particles larger than 2 mm and that resembles a viscous fluid. The Brabb study discusses events triggered by storms such as Hurricane Camille. In Virginia, debris flows associated with Hurricane Camille are well documented in Nelson County and adjacent only some 200 miles east of our corridor. VDOT is unaware of debris flows in southwest Virginia. The Brabb study concludes “this map provides a preliminary overview of debris flows and debris-flow susceptibility in the conterminous United States. It is not
intended for hazard evaluation or other site-specific work, and should not be used for such. It can be used to determine where debris flow processes may be a problem and where additional information and investigation are warranted. VDOT agrees that designing for slope stability will be a major challenge to this project and will require detailed analysis.

-Although rock falls are always a concern, VDOT will work to minimize this risk during the design stage. VDOT has successfully stabilized very large cuts as part of the Route 460 widening in and near Grundy.

-VDOT obtained DMME mapping showing underground mines and used this information in the geotechnical report and location study. The maps included many "subsidence-prone" areas that covered the entire study area. These sites were very dispersed, and the mapping did not point to particular areas that should be avoided. VDOT did notice that to the east of the project area, the southern build alternative appeared to have more subsidence prone areas than the northern alignment. Alternative F1 includes the latter. At the onset of the geotechnical work, VDOT reviewed information from West Virginia that related to subsidence in mined areas. This literature indicated that deep mining had a greater potential to impact construction if located within 50 ft of planned grade. Subsequently, with some additional safety factor, VDOT red-flagged areas where deep-mine mapping indicated mining within 100 ft of proposed grade.

Early in the process, the larger coal companies reviewed the build alternatives using detailed mapping of mined areas that they have compiled for their properties. The companies did not notice particular alignments that would present subsidence or similar threats. VDOT discussed the issue of loss of coal reserves with the coal companies. They stated that, as long as access shafts could be dug at least 100 feet below the proposed highway, they could access their coal reserves on either side. At this point, VDOT does not oppose this practice and, therefore, the loss of coal would occur directly underneath the proposed right-of-way. Without the coal companies' mapping, determining costs associated with these reserves would be very difficult. Furthermore, this information would likely be similar for the alternatives and, therefore, would not influence the alternative selection. Per your request, VDOT amended the Irreversible and Irretreivable Commitment of Resources section to include the loss of these mineral resources.

-As discussed in Section 4.12.2 of the DEIS, BMPs will be used to reduce nonpoint source pollution loadings from the project. Factoring in the pollutant removal of these stormwater management facilities would be problematic, since these facilities would not be designed until the design stage. Furthermore, this information would likely be similar for the alternatives and, therefore, would not influence the alternative selection.

-As discussed in the DEIS, VDOT must comply with erosion and sediment control and stormwater management requirements outlined in the Department's agreements with the Virginia Department of Conservation and Recreation. Also, in response to the FWS's request in its letter of January 12 2000, VDOT has committed to retain erosion and sediment control specialists that will be devoted solely to this project during construction.

-VDOT believes that they can best determine the effects on the structure and function of wetlands and floodplains during later design stages, for two reasons. First, impact estimates were made from preliminary construction limits. More detailed plans with more accurate construction limits will allow for more definitive determinations regarding how the project may affect these resources. Secondly, during the design stages, VDOT will again seek to avoid and minimize these resources impacts. Therefore, statements made at this stage regarding effects on the structure and function of wetlands and floodplains may change in light of impact avoidance measures. VDOT routinely addresses these types of issues during permit acquisition.

Acid drainage is a concern with this project, and is addressed in Section 4.12.2 of the DEIS. However, the field analysis was restricted to seismic testing; VDOT does not conduct borings or testing of subsurface materials at this point in project development.
These types of analyses would be conducted during the design stage.

- This project's Right of Way and Relocation Report includes cost estimates for relocation of gas wells and gas lines crossings. Therefore, these costs are included in the total capital costs for each alternative. VDOT discussed this issue with the coal companies, but they were unwilling to provide us with mapping they have prepared that shows gas field and well locations. However, VDOT collected DMME mapping at the onset of the project. This mapping shows that gas fields are ubiquitous and cannot be avoided. Based on mapping provided by DMME, our alternatives are located north of the highest concentration of wells in the existing gas fields. The build alternatives collectively impact approximately 47 gas wells. VDOT understands that a gas well impacted by the proposed highway could perhaps be relocated to a different part of the field.

- Section 4.19.2 in the DEIS (Section 4.20.2 of the PEIS) discusses the potential effect of future development on water quality and quantity, floodplains, nonpoint source pollution, etc. This section states that the severity of these impacts would largely depend on implementation and compliance with local regulations. Furthermore, due to existing water quality impairment from mining, urban development, logging, and other activities, indirect impacts are not expected to be substantial.

- Section 4.20 in the DEIS discusses projections of expected economic patterns and the related potential environmental concerns that might arise from this development.

- The particular section of the DEIS referenced in your letter discusses nonpoint source pollution from projected development. The statement "the movement of most particulate and dissolved materials...would likely be accelerated as the materials moved down the sloping mountainside" is unclear. The issue at-hand is total nonpoint source pollution loadings into surface waters. VDOT maintains that, for reasons outlined in this section, ridgeline locations for development would contribute fewer nonpoint source pollutant loadings into perennial surface waters than if the same development were to occur further down in the watershed.

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**Virginia Department of Agriculture and Consumer Services**

*Date received: June 23, 2000*

*Comment:* To date, records indicate that no threatened or endangered plant and insect species have been documented in the area outlined on the provided map. However, the absence of data does not indicate that no listed species occur in the area.

*Response:* Comment noted.

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**Virginia Department of Conservation and Recreation – Division of Natural Heritage**

*Date received: July 10, 2000*

*Comment:* Based on the survey it conducted, DCR does not anticipate the proposed project adversely impacting Virginia spiraea. As soon as the study area has been surveyed for small whorled pogonia, DCR will report the results. DCR supports the proposal to mist-net prior to construction activities to avoid or reduce the possibility of incidental takes of Indiana bats.

Virginia Department of Conservation and Recreation – Division of Planning and Recreational Resources

Date received: July 10, 2000

Comment: The proposed alternatives will not impact on the Breaks Interstate Park. Alternative B is further removed from the park and will have less potential impact than Alternative A. It is important if the road is constructed it provides access to Route 80 facilitating travel to the Interstate Park from the Bristol/Kingsport area and the community of Grundy.

- A portion of the Levisa River was nominated for designation as a National Heritage River. Although the stream was not designated as a Heritage river the reach that received the nomination should be identified in the impact statement and evaluated for any potential impacts.

- Mitigation for the crossing of the proposed Haysi to Garden Hole Recreational should also include restoration of vegetation on disturbed areas, as well as, minimizing vegetative clearing. Alignments that cross the trail in previously disturbed areas may offer a more desirable route.

Response: All of the proposed alternatives would provide a connection to Route 80. Alternative F1, which includes segment 206, crosses Route 80 further south of the park than where segment 203 (the most northern segment) crosses.

- The FEIS was amended to reference the portion of the Levisa River nominated as a National Heritage River. VDOT does not anticipate the project would adversely affect any future National Heritage designation, largely since the Levisa River would be spanned with a large bridge. Preliminary designs for Alternative F1 indicate that the bridge over the Levisa Fork would be approximately 240 feet high and have a span length of approximately 1400 feet.

- Alternative F1 crosses the Haysi to Garden Hole Recreation Trail in an area previously disturbed by construction of a road, railroad, and several residences. Restoring vegetation on all disturbed areas is standard VDOT Erosion and Sediment Control practice.

Virginia Department of Conservation and Recreation – Division of Soil and Water Conservation

Date received: July 10, 2000

Comment: All projects that involve a regulated land-disturbing activity must comply with the (1) VDOT Annual Standards and Specifications for Erosion and Sediment Control (ESC); and (2) the project-specific ESC plan. All projects that involve regulated land clearing, soil movement, or construction activity must comply with the (1) VDOT Annual Standards and Specification for Stormwater Management (SWM); and (2) the project-specific SWM plan. All work that has any floodplain impact needs to be fully documented and submitted to FEMA for a Conditional Letter of Map Revision to ensure no adverse floodplain impact. Upon completion of the project, a final Letter of Map Revision should be obtained to certify as built conditions.

Response: VDOT will comply with the Erosion & Sediment Control and Stormwater Management Annual Specifications and Plans as referenced in your letter. VDOT is aware that any floodplain impacts will need to be fully documented and submitted to FEMA for a Conditional Letter of Map Revision and a final Letter of Map Revision will need to be obtained upon completion.
Virginia Department of Historic Resources

Date received: July 31, 2000

Comment: Agree that the concepts described on p. 4-24 are appropriate ways to reduce and/or avoid adverse effects on the known historic resources. Also, agree that Phase 1 archaeological survey should be conducted if any of the Build Alternatives are selected, and if alignment modifications are made.

Response: Comments noted.

Virginia Department of Environmental Quality – Air Division

Date received: July 5, 2000

Comment: State air pollution regulations applicable to the construction of the project are: Fugitive Dust and Emission Control (9 VAC 5-50-60 et seq.) and Open Burning Restrictions (9 VAC 5-40-5600 et seq.).

Response: Comment noted.

Virginia Department of Environmental Quality – Water Division

Date received: June 23, 2000

Comment: Alternative D is the least desirable due to the large impacts on State waters. Also, Alternative A is undesirable due to the large impacts on forested wetlands. Machinery should be kept out of streams and wetlands when possible. Machinery that must be operated within wetland areas should be maintained on mats in order to prevent tire rutting. An individual Virginia Water Protection Permit is required for this project. Additionally, DEQ encourages the use of erosion and sediment control measures, adherence to stormwater management regulations, and careful construction practices. Any impacts due to grading, clearing, or excavating five or more acres of land will require a stormwater permit for construction.

Response: See US Department of the Army – Norfolk District, Corps of Engineers response regarding jurisdictional-area impacts.

You also suggest Alternative A is undesirable based on impacts to forested wetlands. Forested wetland impacts for Alternatives A-E range from 0 to 1,663 acres. The impacts for Alternative F1 are slightly above average with a forested wetland impact of 0.721 acre. Although the jurisdictional-area impacts are not the lowest of the alternatives, Alternative F1 provides a reasonable balance of the many environmental, social, and engineering issues involved.

In regards to your other concerns, the project must comply with standards outlined in VDOT’s agreement with DCR regarding the Virginia Erosion and Sediment Control and Stormwater Management regulations. VDOT also acknowledges that the project requires a Section 402 permit.

Virginia Department of Forestry

Date received: June 6, 2000

Comment: Suggests the consideration of Alternative E on the grounds that this alternative will take the fewest forest and farmland acres out of production.
Response: Alternative F2 [Alternative F1 without the Buchanan County Industrial Access Connector (BCIAC)] would impact an estimated 1247 acres of forestland. This total is below the average for Alternatives A-E and comparable to the alternative with the lowest amount of forested impacts (Alternative E with 1164 acres). For Alternative F1 (which includes the BCIAC) total forested impacts would increase to an estimated 1443 acres. Alternative F1’s estimated farmland impacts (39.8 hectares [98.5 acres]) are comparable to impacts for other alternatives. Although F1’s impacts are not the lowest of the alternatives, the BCIAC would provide added benefit to the localities’ economic development efforts. Alternative F1 provides a reasonable balance of the many environmental, social, and engineering issues involved.

Virginia Department of Mines, Minerals, and Energy

Date received: July 10, 2000

Comment: Discussion of the relationship of geology to the expressway construction needs to be expanded in both the DEIS and Geotechnical Report. Stratigraphic units in the proposed construction area show rapid lateral and vertical lithofacies changes.

-Cuts and fills on I-77 in West Virginia exhibit many examples of the instability problems associated with similar Pennsylvanian age rocks of Southwest Virginia. Also, sandstones in the project area are not quartz sandstones and highly stable, but subgraywackes and subject to feldspar conversion to clay and the loss of stability.

-Natural gas is a significant mineral resource in Southwestern Virginia and is not addressed in either the DEIS or the Geotechnical Report. There are more than seventy-five crossings of the proposed routes by natural gas pipelines. The numerous wells feeding these pipelines include coalbed methane and conventional gas wells. Many of these wells are on or very near the proposed routes. Because these wells may produce for many years and drilling continues in the area, the FEIS should address this impact on this resource. The effect of separate ownership of surface and mineral rights on overall construction cost needs to be addressed in the FEIS.

Response: The geologic setting, geologic formations, and geologic structures likely to be encountered in the Coalfields Expressway corridor are summarized on pages 2, 3, and 4 of the geotechnical study. Discussion of detailed geology, such as the rapid lateral and vertical lithofacies changes you mentioned, can be expanded on in the design stage. At that point in the process, VDOT will conduct extensive core drilling and soil testing along the entire alignment.

-The majority of slope instability cases on I-77 in West Virginia that VDOT is aware of have occurred north of Charleston. This area contains different geology than the study area; I-77 south of Princeton contains geology more similar to our study area. VDOT is unaware of major instability along I-77 south of Princeton.

-The sandstone in the project are feldspathic, but in our opinion are stable. Laboratory analyses for durable rock fills have exhibited high slake durability. In addition, performance of vertical rock cuts along highways and strip mine operations is considered good to excellent. Predominantly, little to no weathering is evident based on observations.

-See US Department of the Interior response regarding the relocation of gas wells and gas lines crossings, the loss of coal reserves, determining costs associated with these reserves, and the amendment made to the Irreversible and Irretrievable Commitment of Resources section.
Virginia Outdoors Foundation

Date received: June 21, 2000
Comment: No easement held by VOP should be affected by this project.
Response: Comment noted.

West Virginia Department of Transportation

Date received: May 18, 2000
Comment: Minor editorial changes.
Response: Comments noted.

Gerald L. Gray – Dickenson County Resident

Date received: August 15, 2000
Comment: The public record is inadequate at this time for the Commonwealth Transportation Board to select a route. Recommends that the question of the preferred route be sent back to VDOT for further studies.
- Believe the current study is deficient in several areas. The study does not have specific information about the soil profile of any of the study area. VDOT’s experience with problems resulting from soil instability in the region is well documented.
- The Town of Clintwood has applied for funds to develop a hiking and biking trail along the Cranes Nest River. Alternatives A, B, and C will disrupt the trail.
- The Natural Heritage Division of DCR acknowledges that the data it relies upon may indicate the project has not been surveyed for threatened and endangered species. Recent publications of natural resources in Buchanan, Dickenson, and Wise counties by NHD are not addressed in the DEIS. Alternatives A, B, and C are predominantly forested areas contiguous with the Jefferson National Forest. The area includes prime Indiana Bat habitat. In addition, unidentified bats fly over a pond on my property, which would be impacted by Alternates A and B. Alternate C passes directly over an underground mine, which is potential Indiana Bat habitat.
- The study claims that the Big Sand River basin does not have the rare birdwing pearly mussel, based on a study of the Levisa Fork, which is entirely within Buchanan County. The study fails to address the other rivers which are impacted by the Expressway, including the Russell Fork, Cranes Nest, McClure, and the Pound.
A population of small whorled pogonia has been discovered in Lee County and favorable habitats within the alternatives have not been adequately surveyed.
- An early narrative about the ridgetop approach to routing the Expressway suggested that a ridgetop location would impact fewer people, because most of the people lived in the valleys. This overlooks the fact that, in Dickenson County, the best land is usually on the ridgetops, and the valleys are so narrow that the houses are in floodplains.
The philosophy/policy of building roads on the best land is not in the public’s best interest in Dickenson or Buchanan County, where level land is scarce, although it is clearly in the best interests of the coal companies. One underlying assumption is that construction costs will be less if the coal companies can participate, since they can conduct mountain top removal, i.e., surface mine the coal. This approach is supported by the coal companies, because they obtain, through the state’s power of condemnation, the right to surface mine without first having to obtain the consent of the surface owners.
This is a valuable surface right which has not been addressed in the compensation.
calculations, and this constitutes a separate taking from VDOT's condemnation which needs to be addressed.

Date sent: August 23, 2000

Response: Soil type is one of many considerations relating to slope stability. Other factors include drainage, proposed slope grade, and success of erosion control practices. During the project's design phase, soil borings will be conducted and issues relating to slope stability will be examined in detail.

-In the DEIS, VDOT acknowledges the potential for impacts to this trail. Section 4.10 states the following:

Alternatives A, B, and C would visually impact the proposed Haysi to Garden Hole Recreational Trail. Each alternative would bridge the trail, which will parallel the Russell Fork, in different locations. Alternatives B and C would cross the trail in an area previously disturbed by construction of a road, railroad, and several residences. Alternative A would introduce a highway bridge into a much less disturbed, natural area. In these areas, VDOT will avoid and reduce impacts by minimizing vegetative clearing.

VDOT does not believe that Alternatives A, B, and C would "disrupt" the trail, partially because of the size of the proposed bridges.

-VDOT is unaware of any recent publications by the Division of Natural Heritage of DCR in the study area. VDOT contacted a Natural Heritage representative this week who was unaware of any recent work except for the survey conducted for this project.

-The U.S. Fish and Wildlife Service (FWS) has requested that VDOT survey the recommended alternative for the presence of Indiana Bat communities. Due to a recent shift in focus from the Indiana Bat's winter hibernaculum to its summer habitat, VDOT will conduct this survey in the summer of 2001. Survey guidelines require surveys only be conducted between May 15 and August 15. In the FEIS, VDOT will commit to taking the necessary measures to ensure compliance with the Endangered Species Act.

-The Virginia Department of Game and Inland Fisheries publication entitled Virginia's Endangered Species (Terwilliger, 1991) stated that the birdwing pearl mussel (Lemiox rimosus) has not been found in the Big Sandy Drainage. The reference to the mussel survey conducted on the Levisa Fork was included as additional information. As proposed, the project would bridge the rivers listed in your letter (the Russell Fork, Cranes Nest, McClure, and Pound), and impacts to these waterways are not expected. There are no known occurrences of federally listed mussel species within the study area. Section 4.10 states:

If a build alternative is selected as the preferred alternative, VDOT will have a field survey conducted on the final alignment to ensure the project would not impact the small whorled pogonia. If discovered, VDOT will take the necessary measures to ensure the project would not impact the pogonia.

-In July 2000, a field botanist from the Virginia Department of Conservation and Recreation's Division of Natural Heritage conducted a preliminary survey of potential small whorled pogonia (Isotria medeoloides) habitat within the project study area. No small whorled pogonia communities were located. Through coordination with the US Fish and Wildlife Service, VDOT has agreed to complete a more intensive survey on the preferred alignment next summer. Surveys for the small whorled pogonia may only be conducted between mid-May through mid-July. If the pogonia is discovered, VDOT will implement the necessary measures to ensure compliance with the Endangered Species Act.

-We are unaware of the early narrative to which you refer. However, alternative-location decisions were made based on many considerations—not only avoidance of relocations.
I

The Location Study process does not use the philosophy or policy of locating a study corridor on the best land available in an area. Many environmental studies are made on alternative alignments that include natural resources, cultural resources, archaeological, hazardous materials, noise, air quality, endangered species and right of way displacements. Contact was made with local governments, businesses and the citizens throughout the study process to gain input into the best overall alternative. Coal companies were contacted during the process, however they declined to have an active role and provided no input into the selection of an alternative. Determination of detailed right of way issues will be made during the design phases.

7.1.4 West Virginia Coordination

Since the Coalfields Expressway would serve both Virginia and West Virginia, it was important that the two states coordinate throughout their respective planning processes. Coordination has consisted of exchange of prepared documents and plans as well as meetings, official letters, telephone conversations, e-mails, and attendance at VDOT public meetings and hearing by VDOT designers.

7.2 PUBLIC INVOLVEMENT

VDOT held two sets of public meetings to inform the public on the project status and to receive input regarding locations of proposed corridors and potential impacts. The meetings were advertised in the following local newspapers: The Bristol Herald Courier; The Virginia Mountaineer; The Kingsport-Times News; The Dickenson Star; The Coalfields Progress; and The Daily Telegraph. Collectively, these newspapers have a circulation of 92,645. Also, to announce the meetings, VDOT sent press releases to all media outlets covering its twelve-county Bristol District. Throughout the process, the local media has shown great interest in the project and given the Coalfields Expressway excellent coverage.

The meetings were conducted in an informal, open house format and were well attended. An analysis of the meeting sign-in sheets from the two sets of citizen information meetings showed that the meetings attracted citizens from across the study area and beyond. In total, 54 different locations and six states were represented. Citizens overwhelmingly supported the project, citing the expressway’s importance for economic development. Information on the meetings is provided below.

- March 23 and 24, 1998
  Location: Grundy High School (23rd) and Clintwood Elementary (24th)
Citizens reviewed mapping showing the Conceptual Segments and provided input. Approximately 635 citizens attended these meetings. A total of 305 comment sheets were received, including mailed responses. Ninety six percent of the comments showed support for the Coalfields Expressway. Thirty one percent indicated a concern about potential negative impacts from development of the expressway.

- September 23 and 24, 1998
  Location: Vansant Elementary (23rd) and Clintwood Elementary (24th)
  Citizens reviewed mapping showing the Candidate Segments. Approximately 646 citizens attended these meetings. A total of 247 comment sheets were received, including mailed responses. Responses were similar to the first meetings; 28 percent of citizens ranked land use and economic development as their highest concern. Thirty percent associated a lack of economic growth with the No-Build Alternative, while another 38 percent envisioned other types of problems from the No-Build Alternative.

To allow citizens to comment on the DEIS, three location Public Hearings were held throughout the study area.

- April 25, 2000
  Location: Clintwood Elementary School
  Attendance: 495 citizens

- April 26, 2000
  Location: Sandlick Elementary School (Haysi)
  Attendance: 292 citizens

- April 27, 2000
  Location: Grundy High School
  Attendance: 352 citizens

Ninety-four percent of the respondents at these meetings, including mail-ins, supported the proposed Coalfields Expressway. Generally, the comments indicated a desire to begin construction of the Coalfields Expressway soon and that the project would improve economic prospects for Buchanan, Dickenson, and Wise counties. Comments also centered around serving a planned industrial park and airport in addition to providing access to the towns in the study area.

7.3 OTHER ACTIVITIES

VDOT used other methods to distribute project information and invite public comment.
7.3.1 Newsletters

Three issues of the News and Views Newsletter were prepared for the Coalfields Expressway Location Study. The first newsletter, dated March 1998, provided general information on the location study process and solicited the public’s opinion on potential highway locations. The March public meetings, the status of the Location Study, and the remaining segments under consideration were discussed in the second newsletter, dated August 1998. The third newsletter, dated September 1999, encourages continued input and gave a study progress update. Also, the segments were shown as continuous Build Alternatives A through E, with the No-Build Alternative also discussed. The mailing list for the newsletters has steadily grown throughout the process; in September 1999, 1720 of the newsletters were mailed. The fourth newsletter was prepared prior to the public hearings in March 2000 and provided general information regarding the project and public hearing process.

7.3.2 Website

The Coalfields Expressway Homepage was established on VDOT’s Internet Website in March 1998. The website offers broader distribution to those with interest in the Coalfields Expressway Location Study. The Homepage currently provides information on the study process, project summary, study area map, schedule information, and answers to frequently asked questions.

7.3.3 Hotline

The Coalfields Expressway Toll-free Hotline was established in August 1997. The Hotline offers the public an inexpensive, effective method of communicating directly with VDOT about the study. As of May 2001, approximately 79 calls were recorded on the hotline. Of the 79 callers, 45 requested to be added to the mailing list, 17 made statements regarding a preferred location, and 17 made general or non-specific comments.

7.3.4 Counter Top Displays

Counter top displays provided general project information and described different ways to become involved in the project. The displays helped ensure that all segments of the population, including low income or disadvantaged populations, were included in the process. Counter top displays were placed in the following locations:
### General Assembly Resolutions

During the 1999 General Assembly Session three resolutions were passed pertaining to the Coalfields Expressway. The first was House Joint Resolution 652, which acknowledged the Coalfields Expressway project and requested the Commonwealth Transportation Board and VDOT to "proceed expeditiously with construction". Stating specifically that construction should begin between the towns of Clintwood and Pound. Senate Joint Resolutions 522 and 523 also identified the project, its cost and the important relationship to the National Highway System. Senate Resolution 522 commends VDOT and their progress to date and requests VDOT to proceed expeditiously with construction. Senate Joint Resolution 523 stated that the funds for development of this project are "unpredictable and come at irregular intervals". (In 1991 and 1998, the US Congress appropriated $50 million and $22.7 million, respectively, to the Coalfields Expressway.) Therefore, the General Assembly urges Congress to include the Coalfields Expressway in the Appalachian Development Highway System to ensure consistent funding for prompt completion.
7.3.6 Elected and Appointed Representative Support (Or Letters and Resolutions of Support)

The following table displays a short summary of letters and resolutions from elected officials, appointed representatives, and local governing bodies supporting the Coalfields Expressway project.
### Letters

<table>
<thead>
<tr>
<th>Name / Title</th>
<th>Organization</th>
<th>Date</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ronald C. Flanary</td>
<td>Lenowisco Planning District Commission</td>
<td>October 8, 1998</td>
<td>Discusses a meeting with Senator Wampler and Delegates Bud Phillips and Terry Kilgore about funding for Coalfields Expressway.</td>
</tr>
<tr>
<td>Executive Director</td>
<td></td>
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<tr>
<td>Rick Boucher</td>
<td>United States Congress</td>
<td>July 30, 1998</td>
<td>New highway re-authorization created a $700 million fund for high priority corridors of the National Highway System; urges VDOT to collaborate with West Virginia DOT to file a joint application for the special funding.</td>
</tr>
<tr>
<td>Member of Congress</td>
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<tr>
<td>John Warner</td>
<td>United States Congress</td>
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<tr>
<td>United States Senator</td>
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<tr>
<td>Charles S. Robb</td>
<td>United States Senator</td>
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<td>United States Senator</td>
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<tr>
<td>Donald S. Beyer</td>
<td>Commonwealth of Virginia</td>
<td>April 4, 1996</td>
<td>Restates support for the project; Supports the ridge top corridor proposed by the Grundy Town Council.</td>
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<td>Lieutenant Governor</td>
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<tr>
<td>Charles S. Yates</td>
<td>Virginia Coalfield Economic Development Authority</td>
<td>April 3, 1996</td>
<td>Expresses the economic importance of the Coalfields Expressway to the region.</td>
</tr>
<tr>
<td>Executive Director</td>
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<td></td>
</tr>
<tr>
<td>William J. Caudill</td>
<td>Buchanan County</td>
<td>February 29,1996</td>
<td>Displaying the importance of the road to the Coalfields area; sent letters to Governor Allen from students Buchanan County Public Schools.</td>
</tr>
<tr>
<td>County Administrator</td>
<td></td>
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<tr>
<td>Patrick Owens</td>
<td>Buchanan County Planning Commission</td>
<td>February 5, 1996</td>
<td>Supporting the Coalfields Expressway as a High Priority Corridor of the National Highway System; recommends VDOT place it on the state high priority list.</td>
</tr>
<tr>
<td>Chairman of the Coalfields Expressway Committee</td>
<td>Buchanan County Planning Commission</td>
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</tr>
<tr>
<td>Rob Boucher</td>
<td>United States Congress</td>
<td>December 5, 1995</td>
<td>Requests high priority of spending of federal and state monies on this project; Discussing the positive impact on the Coalfields area economy.</td>
</tr>
<tr>
<td>Representative</td>
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</tbody>
</table>
Requests collaboration of Virginia and West Virginia Governors to agree on the location of an improved four lane Route from Kentucky to Virginia.

Emphasizes the importance of Coalfields Expressway for economic opportunity, tourism, residential, commercial and industrial development.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Date</th>
<th>Summary of Resolution</th>
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<tbody>
<tr>
<td>Breaks Interstate Park Commission</td>
<td>September 23, 1999</td>
<td>Supports and endorses the Coalfields Expressway and strongly encourages state and federal legislators to support the Expressway by seeking funding for its construction.</td>
</tr>
<tr>
<td>Lenowisco PDC</td>
<td>October 5, 1998</td>
<td>Urges VDOT and WVDOT to file a joint application for funding the Coalfields Expressway under the &quot;High Priority Corridor of the National Highway System&quot; special fund.</td>
</tr>
<tr>
<td>Buchanan County Chamber of Commerce</td>
<td>August 20, 1998</td>
<td>Encourages VDOT and other agencies to work with WVDOT and related agencies to file a joint application with the USDOT for funding for Coalfields Expressway under the &quot;High Priority Corridor&quot; fund.</td>
</tr>
<tr>
<td>Dickenson County Board of Supervisors</td>
<td>November 27, 1996</td>
<td>Requests that the Commonwealth Transportation Board complete the Route 83 Corridor Study; also requesting immediate improvements be made to Route 83 and that it be included in the upcoming Six-Year Plan along with the Coalfields Expressway as a long-term project.</td>
</tr>
<tr>
<td>Dickenson County School Board</td>
<td>March 18, 1996</td>
<td>Supports the Coalfields Expressway; urges all efforts to make the project a reality.</td>
</tr>
<tr>
<td>Dickenson Co. Industrial Development Authority</td>
<td>March 13, 1996</td>
<td>Strongly supports development of the Coalfields Expressway via Route 83 through Dickenson Co.</td>
</tr>
<tr>
<td>Buchanan County Planning Commission</td>
<td>January 29, 1996</td>
<td>Supports the Coalfields Expressway; includes a route proposal; requests development follow the ridge tops of the region; requests VDOT construct this expressway as a four-lane highway and meeting Interstate standards.</td>
</tr>
<tr>
<td>Wise County Chamber of Commerce</td>
<td>December 31, 1995</td>
<td>Supports addition of the Coalfields Expressway to the National Highway System; requests the CTB to petition the Federal Highway Administration to include it in National Highway System.</td>
</tr>
<tr>
<td>Organization</td>
<td>Date</td>
<td>Summary of Resolution</td>
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<tr>
<td>Dickenson County Board of Supervisors</td>
<td>November 25, 1995</td>
<td>Requests VDOT to begin preliminary engineering studies; also requests VDOT obligate 20% of its construction funds in the fiscal year for the Coalfields Expressway.</td>
</tr>
<tr>
<td>Bluefield Town Council</td>
<td>November 27, 1995</td>
<td>Endorses addition of the Coalfields Expressway to the National Highway System; urges the Transportation Secretary and Virginia to petition the Federal Highway Administration for its inclusion.</td>
</tr>
<tr>
<td>Haysi Town Council</td>
<td>November 14, 1995</td>
<td>Supports addition of the Coalfields Expressway to the National Highway System; urges the Transportation Secretary Virginia to petition the Federal Highway Administration for its inclusion.</td>
</tr>
<tr>
<td>Town of Clintwood</td>
<td>March 14, 1995</td>
<td>Requests the CTB to prioritize improvements to the Coalfields Expressway as its primary objective; begin preliminary engineering studies and that construction funds be allocated to the project expeditiously.</td>
</tr>
<tr>
<td>Virginia Department of Transportation</td>
<td>February 15, 1995 March 17, 1994</td>
<td>Pursue Virginia delegation about ISTEA legislation addressing the construction of the Coalfields Expressway; contact transportation authorities in West Virginia to coordinate Virginia's preferred corridor.</td>
</tr>
</tbody>
</table>
CHAPTER EIGHT
INDEX
8. INDEX

A
Accident Rates, 1-5, 1-7
Affected Environment, 3-1
Agency Coordination, 3-31, 3-32, 7-1
Air Quality, 3-16, 3-17, 4-9, 4-28, 4-29, 4-62, 4-63, 4-65
Alternatives, S-4, S-5, 1-5, 1-9, 2-1, 2-2, 2-3, 2-6, 2-7, 2-8, 2-12, 2-15, 2-17, 2-19, 3-1, 3-14, 3-17, 3-21, 3-22, 3-25, 3-32, 4-1, 4-2, 4-3, 4-6, 4-7, 4-8, 4-10, 4-12, 4-15, 4-16, 4-17, 4-21, 4-28, 4-29, 4-30, 4-31, 4-32, 4-34, 4-35, 4-36, 4-37, 4-38, 4-39, 4-40, 4-41, 4-42, 4-43, 4-45, 4-46, 4-48, 4-50, 4-51, 4-52, 4-54, 4-56, 4-58, 4-59, 4-61, 4-62, 4-64, 4-65, 7-2, 7-4, 7-19
Archaeological Sites, 2-13, 2-16, 3-12

B
Build Alternative, S-4, S-5, 1-5, 1-8, 1-14, 2-1, 2-2, 2-3, 2-6, 2-7, 2-8, 2-12, 3-1, 3-17, 3-21, 4-1, 4-2, 4-3, 4-6, 4-7, 4-8, 4-10, 4-12, 4-15, 4-16, 4-17, 4-20, 4-21, 4-28, 4-29, 4-30, 4-31, 4-34, 4-35, 4-36, 4-38, 4-39, 4-40, 4-41, 4-42, 4-43, 4-45, 4-46, 4-48, 4-50, 4-51, 4-52, 4-54, 4-56, 4-58, 4-59, 4-60, 4-62, 4-65, 7-19, 7-22

C
Coal Mining, 1-9
Community Cohesion, 4-7, 4-8
Community Services, 4-8
Construction Impacts, 3-16, 4-62
Costs, S-5, 1-3, 2-6, 2-10, 2-15, 3-7, 4-16, 4-17, 4-21, 4-36, 4-65
Cultural Resources, 2-11

D
Design Criteria, 2-8, 2-9, 4-5
Displacements, S-5, 2-10, 4-1, 4-7, 4-17, 4-19

E
Economic Activity, 4-20
Economic Development, S-2, S-5, S-6, 1-1, 1-3, 1-8, 1-9, 1-10, 1-11, 1-13, 1-14, 2-1, 2-2, 2-3, 2-4, 2-6, 2-7, 2-10, 4-1, 7-20, 7-21
Economic Impacts, 4-20
Employment, S-2, 1-8, 1-9, 1-10, 2-3, 3-5, 3-14, 3-15, 4-20, 4-21
Energy, 1-9, 1-10, 2-3, 2-12, 3-14, 3-20, 4-30, 4-32, 4-42, 7-2, 7-3
Environmental Justice, 4-9
Final Environmental Impact Statement

F
Farmlands, 4-3, 7-4
Fish and Wildlife, 3-27, 3-29, 3-31, 4-51, 7-1, 7-2, 7-3, 7-4, 7-5
Floodplains, 2-10, 2-12, 2-13, 2-16, 3-1, 3-3, 3-24, 4-48, 4-56, 4-59
Floodways, 4-48
Forest, 1-13, 2-12, 2-16, 3-19, 3-20, 3-22, 3-26, 3-27, 3-28, 4-43, 4-50
Forested Land, 2-11, 3-3

G
Geology, 3-1
Groundwater Resources, 4-46
Groundwater, 3-10, 3-21, 3-29, 4-40, 4-46

H
Hazardous Materials, 4-37, 4-38, 4-39, 4-40, 4-45
Highway Capacity, 1-7
Historic Resources, 3-1, 3-12, 7-2, 7-3

I
Income, 1-12, 1-14, 3-7, 3-15, 3-16, 4-9, 4-10, 4-11, 4-12, 4-16

L
Land Use, S-1, S-5, 1-4, 2-10, 3-3, 3-4, 3-5, 3-17, 3-18, 3-22, 3-24, 3-28, 4-2, 4-16, 4-30, 4-34, 4-38, 4-42, 4-43, 7-21
Level of Service, 1-7, 2-10

M
Mass Transit, 2-1, 2-2, 2-3
Mass Transit, 4
Mineral Resources, 1-10
mining, S-2, 1-1, 1-9, 1-10, 1-11, 1-13, 2-10, 3-3, 3-4, 3-5, 3-10, 3-14, 3-15, 3-20, 3-21, 3-22, 3-23, 3-29, 3-30, 4-38, 4-52, 4-54
Minorities, 3-7, 4-10

N
Natural Environment, 3-1, 4-1
Neighborhoods, 4-7
No-Build Alternative, S-4, S-5, S-6, 1-8, 2-1, 2-6, 2-7, 4-1, 4-2, 4-3, 4-6, 4-8, 4-29, 4-32, 4-42, 4-43, 4-45, 4-46, 4-48, 4-50, 4-51, 4-56, 4-59, 4-62, 7-21
Noise, 3-17, 4-9, 4-30, 4-31, 4-32, 4-34, 4-35, 4-36, 4-62, 4-63, 4-65, 6, 8
Nonprofit Facilities, 4-6, 4-7

Coalfields Expressway
Final Environmental Impact Statement

P

Parks, 1-11, 1-12, 2-10, 2-12, 3-9, 4-31, 4-40
Physiography, 3-1
Population, 1-14, 2-3, 2-4, 3-5, 3-6, 3-7, 3-15, 3-21, 3-26, 4-10, 4-15
Public Involvement, 4-15, 7-1
Purpose and Need, S-4, 1-1, 1-10, 2-1, 2-2, 2-7, 2-8, 7-2

R

Relocations, 3-25, 4-47, 4-48
Roadway Deficiencies, S-5, S-6, S-8, 1-1, 1-3, 2-4, 2-6

S

Safety, 1-1, 1-5, 1-7, 1-10
Safety, 2-2, 2-3, 2-4, 2-6, 2-7
Safety, 4-7, 4-46, 4-65, 4-66
Safety, 5, 6, 8
Soils, 3-2, 3-3, 3-10, 3-26, 3-33, 3-34
Soils, 4-2, 4-40
Study Area, 1, 2, 1-1, 1-2, 1-3, 1-4, 1-8, 1-9, 1-10, 1-12, 1-13, 2-3, 2-11, 2-12, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 3-12, 3-13, 3-14, 3-15, 3-16, 3-17, 3-18, 3-19, 3-20, 3-21, 3-23, 3-25, 3-26, 3-28, 3-29, 3-31, 3-32, 3-33, 3-34, 3-35, 4-1, 4-2, 4-3, 4-6, 4-9, 4-10, 4-12, 4-16, 4-17, 4-20, 4-38, 4-42, 4-46, 4-52, 4-54, 4-59, 4-60, 4-61, 4-63, 7-3, 7-22
Surface Waters, 3-21
System Linkage, S-5, S-6, S-8, 1-1, 1-3, 1-10, 2-2, 2-3, 2-4, 2-6, 2-7, 4-8

T

Threatened and Endangered Species, 3-31
Traffic and Transportation, S-5, 2-10
Traffic Volumes, 4-28, 4-36, 4-65
Transportation Systems Management, S-4, 2-1, 2-2
Typical Section, S-4, 2-8, 2-9

V

Vegetation, 3-29, 3-33, 4-41, 4-51
Visual Impacts, 4-40, 4-41

W

Water Quality, 2-11, 3-21, 3-23, 3-24, 3-25, 3-26, 3-29, 4-45, 4-46, 4-50, 4-56, 4-59, 4-62, 4-63, 4-65
Waters of the US, 4-54, 4-57, 4-59
Wetlands, 2-11, 2-12, 3-29, 3-30, 4-42, 4-51, 4-52, 4-54, 4-57, 4-59
Wild and Scenic Rivers, 3-27, 3-28, 4-50
Wildlife, 3-20, 3-27, 3-28, 3-29, 3-30, 3-31, 4-42, 4-43, 4-45, 4-50, 4-51
CHAPTER NINE
REFERENCES
9. REFERENCES


Civil Rights Act of 1964 and 1968, as amended.

Clean Air Act of 1970 and 1977, as amended.


Army Corp of Engineers, Huntington District, West Virginia. U.S. Fish and Wildlife Service, Annapolis, Maryland.


Section 107.01 (Legal Relations and Responsibility to the Public, Laws to be Observed) Commonwealth of Virginia.


West Virginia Department of Transportation, Coalfields Expressway Purpose and Need Study. 1999.


APPENDIX A
CORRESPONDENCE
United States Department of the Interior  

FISH AND WILDLIFE SERVICE  
Ecological Services  
P.O. Box 99 
6669 Short Lane  
Gloucester, Virginia 23061  

February 10, 1998  

Mr. Roberto Fonseca-Martinez  
Division Administrator  
Federal Highway Administration  
Dale Building, 1504 Santa Rosa Road  
Richmond, Virginia 23229  

Attn: Mr. Ed Sundra  

Re: Notice of Intent - Coalfields Expressway - Buchanan, Dickenson, and Wise County, Virginia (ER 98/0004)  

Dear Mr. Fonseca-Martinez:  

The U.S. Fish and Wildlife Service has reviewed the Notice of Intent to prepare a Draft Environmental Impact Statement for the proposed Coalfields Expressway to be located between U.S. Route 23 in the City of Pound, Virginia and the West Virginia state line in Buchanan, Dickenson, and Wise County, Virginia. The project would involve the construction of a two-lane facility on an ultimate four-lane design and would generally parallel the existing State Route 83. Construction could involve improvement to State Route 83, a new highway on new location, or a combination of both. This letter constitutes the scoping comments of the Service and the Department of the Interior on the proposed project and is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and the National Environmental Policy Act of 1969 (42 USC, subsections 4321-4370a, as amended).  

Endangered Species Act Comments  

We have enclosed lists of federally endangered or threatened species in Virginia for Buchanan, Dickenson, and Wise County County, that may be impacted by this project. Due to the current size of the study corridor, it is difficult to provide more specific information at this time. The Service will do so as project details are formulated. Depending on project impacts, the Service may recommend surveys for these species. We will advise you further on these listed species, as project plans progress.
If you have not already done so, we suggest that you contact the Virginia Department of Game and Inland Fisheries, Virginia Division of Natural Heritage, and the Virginia Department of Agriculture and Consumer Services at the addresses given below. These agencies may have more specific project-related information on state and federal endangered and threatened fish, wildlife, and plants.

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, VA 23230
(804) 367-1000

Division of Natural Heritage
Virginia Department of Conservation and Recreation
1500 East Main Street, Suite 312
Richmond, VA 23219
(804) 786-7951

Virginia Department of Game and Inland Fisheries
Environmental Services Section
P.O. Box 11104
Richmond, VA 23230
(804) 367-8999

Fish and Wildlife Coordination Act Comments

A primary concern of the Service is the protection of wetlands for the numerous functions and values they provide. To preserve wetlands, the Service has formulated a Mitigation Policy to guide our coordination of projects with potential wetland impacts. According to the Service's Mitigation Policy (FR Part III, Vol. 46, No. 15, Jan. 23, 1981, p. 7660) wetland impacts should be avoided or minimized to the maximum extent practicable and should be mitigated in a sequential fashion as listed below:

1. Avoiding the impact altogether by not taking a certain action or parts of an action,

2. Minimizing the impact by limiting the degree or magnitude of the action and its implementation,

3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment,

4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action,

5. Compensating for the impact by replacing or providing substitute resources or environments.
After numbers 1 through 4 above have been completed, if unavoidable wetland losses remain, we generally recommend that emergent wetland losses be compensated by creating similar emergent wetlands from low habitat value upland sites on a 1.5 to 1 areal basis and that unavoidable losses of scrub/shrub and forested wetlands be compensated in-kind on a 2 to 1 areal basis. These general recommendations incorporate more than simple areal replacement because of the inherent risk in wetland creation and the time lag between the loss of existing habitat and the replacement of that habitat value in the created wetland.

The Service makes the following generic recommendations for habitat compensation. Sediment and erosion control measures should be implemented to prevent soil movement in the adjacent wetlands and waterways. No point source discharge (i.e. stormwater outfalls) should be directed into the restored or created wetlands.

To ensure successful compensation and to provide a basis for compliance monitoring, we recommend that the applicant be required to prepare, and submit for interagency review and concurrence, a detailed compensation plan that addresses the following items:

- a detailed diagram of the compensation area boundaries and elevations;
- a description of the soil conditions to be created or restored, including required pH, organic content, and necessary soil amendments (i.e. pH adjustments, fertilizer);
- a description of the hydrologic conditions to be created or restored, including at least a description of the frequency and duration of soil saturation and/or inundation and the measures to be taken to develop this hydrologic regime;
- a description of the plant communities desired, their proposed locations and means of establishment, the source of propagules, and the timing and density of establishment;
- a detailed schedule describing when the proposed fill, dredging, planting, transplanting, or other actions will occur;
- a post-compensation monitoring plan establishing monitoring methodologies, reporting schedules, and performance standards to be used to evaluate whether the compensation effort restored or replaced the affected wetland functions, including fish and wildlife habitat, flood storage, and water quality maintenance;
- a description of actions to be taken by the applicant if the compensation measures are not successful.

All compensation should be completed prior to or concurrent with project-induced habitat impacts. Compensation plans should include a construction chronology and deadlines for completion of all habitat construction. All compensation plans should be published in the Record of Decision that is required in fulfillment of the obligations for this project under the National Environmental Policy Act.
In accordance with Executive Order 11988 (Protection of Floodplains), floodplain impacts should be mitigated to the maximum extent possible, including compensation for any unavoidable floodplain impacts. We recommend that the applicant mitigate floodplain impacts following the recommendations listed above for wetland mitigation.

The Service understands that various corridor alignments will be considered. We request that the following information be included for each alternative in the EIS:

1. maps showing location and acreage of all habitat types to be impacted including streams, wetlands, and uplands,

2. maps showing impacts within the 100-year floodplain,

3. stormwater management plans,

4. locations of soil borrow and disposal sites,

5. sequence and timing of project construction,

We request information on the potential indirect impacts to both upland and wetland habitat types predicted to result from each project alternative and the anticipated acreage to be impacted. Examples include land development for industrial facilities, travel corridors, etc., that would be facilitated as a result of this transportation project.

If this project may involve publicly-owned park property, the Service recommends that the applicant contact the National Park Service at the following address to inform them of this project:

Regional Director
National Park Service
143 South Third Street
Philadelphia, PA 19106

At the March 1991, Mid-Atlantic Region Highways and Environment Conference, the integration of the NEPA and Section 404 processes was identified as one of the highest priorities of the transportation, regulatory, and resource agencies. This led to the formation of an interagency task force to investigate ways to fully integrate NEPA and Section 404 to ensure the development of an integrated review process. In July of 1992, the document entitled, "Integrating NEPA/404 for Transportation Projects," was signed by Regional Administrators of the Environmental Protection Agency, Federal Highway Administration, U.S. Army Corps of Engineers, National Marine Fisheries Service, and U.S. Fish and Wildlife Service.
I

If you have questions, please contact William Hester at (804) 693-6694, ext. 134.

Sincerely,

Karen L. Mayne
Supervisor
Virginia Field Office

Enclosures

cc: Mr. Ken Wilkinson
    VDOT Headquarters, Richmond, VA
    Field Director,
    National Park Service, 143 South Third Street, Philadelphia, PA 19106
BUCHANAN COUNTY, VIRGINIA
Federally Listed Species

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Last Updated: February 25, 1997
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office
Dickinson County, Virginia
Federally Listed Species

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Last Updated: February 25, 1997
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office
WISE COUNTY, VIRGINIA  
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<td>Fusconaia cor</td>
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<td>Fusconaia cuneolus</td>
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<td>MAMMALS</td>
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<td>Myotis grisescens</td>
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Last Updated: February 25, 1997  
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office
Advisory Council On Historic Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #400
Washington, DC 20004

Ms. Angel Ellett
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, VA 23219

REF: Corridor Location Study
Proposed Coalfields Expressway
Pound, Virginia, to Jolo, West Virginia

Dear Ms. Ellett:

On October 8, 1997, the Council received your notification of the initiation of the corridor location study for the referenced project. While we appreciate the opportunity to participate in initial agency coordination, it is not the Council's role, nor do we have the resources to serve in that capacity. Section 106 of the National Historic Preservation Act and the Council's implementing regulations (36 CFR Part 800) set forth the steps to be taken in order to identify historic properties and assess effects associated with a proposed undertaking. Once it is determined that the project may affect historic properties, the Council should be notified and given the opportunity to participate in further consultation to consider means to avoid or minimize those impacts. We recommend that you initiate coordination with the Virginia State Historic Preservation Officer early in the scoping process and work closely with them to take advantage of their expertise in dealing with cultural resources in the area. Any further request for the Council's comments regarding this project should be initiated by the sponsoring Federal agency, and accompanied by the requisite supporting documentation specified at 36 CFR § 800.8.

Should you have questions regarding the Section 106 process, please feel free to contact me at (202) 606-8534.

Sincerely,

MaryAnn Naber
Office of Planning and Review
Ms. Angel Ellett  
VA Department of Transportation  
Environmental Division  
1401 East Broad Street  
Richmond, VA 23219

RE: Scoping Comments  
Coalfields Expressway Location Study  
Project Number: RO00-961-F01, PE-100

Dear Ms. Ellett:

Published, full-color, 1:24,000-scale geologic maps are available for the entire study area. In addition, digital vector data at 1:24,000 and 1:100,000 are available. These files have not undergone final editing.

Digital data for mined-out areas is available from the Division of Mined Land Reclamation in Big Stone Gap.

If I can be of additional assistance, you may contact me at 804-963-2310.

Sincerely,

Eugene K. Rader  
Geologist Supervisor

EKR/kh
Ms. Angel Ellett  
Virginia Department of Transportation  
Environmental Design  
1401 East Broad Street  
Richmond, VA 23219

Re: Coalfields Expressway Location Study

Dear Ms. Ellett:

We are writing in response to your solicitation for comments regarding the above referenced study.

The study area encompasses the Grundy Municipal Airport in the northern portion of the study “bubble”. Additionally, the Lonesome Pine Airport is located just outside the bubble on the southern fringe. Both of these airports are licensed public-use General Aviation facilities. In the Virginia Air Transportation System Plan, the Grundy Municipal Airport is classified as a Local Service airport, while Lonesome Pine is classified as a Regional airport.

While neither of these airports do, or are ever forecast to, receive scheduled commercial airline service, they are nonetheless important airports within the state system. As can be deduced from their classifications, the service area of Grundy is more constrained than that of Lonesome Pine.

Any planning work being done for the Coalfields Expressway should consider the multi-modal aspects pertaining to the ground access to these airports. I am enclosing an aeronautical chart with the two airports highlighted so that you and your study team may note their precise locations and the ground access routes applicable.

Please keep the undersigned informed when any major benchmarks for the study are reached, and as well I am available as a resource during the course of the work should you require our input.

Sincerely,

[Signature]

Keith F. McCrea, AICP  
Senior Aviation Planner

c: James L. Bland
M. Angel Ellett  
Virginia Department of Transportation  
Environmental Division  
1401 East Broad Street  
Richmond, Virginia 23219  

Re: Coalfields Expressway Location Study  

Dear Ms. Ellett:  

Comments are provided herein on the above referenced project.  

DIVISION OF NATURAL HERITAGE  

The Department of Conservation and Recreation (DCR) has searched its Biological and Conservation Data System (BCD) for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.  

According to the information currently in our files, several natural heritage resources have been documented within or adjacent to the indicated study area (Table 1). Please note that the Indiana bat and Virginia spirea are currently classified as threatened and/or endangered species. Due to the protected status of these species, DCR recommends coordination with the United States Fish and Wildlife Service (USEFS), the Virginia Department of Game and Inland Fisheries (VDGIF), and the Virginia Department of Agriculture and Consumer Services (VDACS) to ensure compliance with protected species legislation.  

Currently known from only three counties in Virginia, Virginia spirea is extremely rare in Virginia and throughout its range. In Virginia, this species occurs along scoured banks of high gradient streams or on meander scrolls, point bars, natural levees and braided features of lower stream reaches (Ogle, 1991). Virginia spirea may occur within the study area if suitable habitat is present.  

Male and female Indiana bats congregate in the fall to hibernate in caves and mine tunnels in dense clusters. While many males continue to use these underground roosts in the summer, females form maternity colonies under the loose bark of trees such as shagbark hickory, oaks and maples. These bats emerge in the evenings to feed on moths, flies and other insects over tree-lined streams and upland woods. Indiana bats are sensitive to flooding, pesticide poisoning, and disturbance by human beings, such as vandalism, spelunkers, cave commercialization, and research (Dalton & Handley, 1991; Harvey, 1992).  

An absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. New and updated information is continually added to BCD. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.  

DIVISION OF SOIL & WATER CONSERVATION  

The Virginia Department of Transportation is required to adhere to the state erosion and sediment control and stormwater management requirements as contained in their annual specifications, already approved by the Department of Conservation and Recreation, Division of Soil and Water Conservation.
DIVISION OF PLANNING & RECREATION RESOURCES

* The Virginia Outdoors Plan identifies the Interstate Bike Route along Route 80 through Dickenson County.
* A major reservoir is being considered on Russell Fork near Haysi. This could affect the location of the expressway.
* Route 80 and 617 are identified as potential Virginia Byways.
* Breaks Interstate Park, Flanagan Reservoir, and North Fork of Pound Reservoir are all at the edge of the study area and could be indirectly impacted by construction projects.
* Russell Fork is listed as a potential State Scenic River. A commercial rafting company runs trips through the gorge when water is available.

Depending on the alignment selected and the extent of construction related impacts, these resources may or may not be impacted.

Thank you for the opportunity to review and comment on this project.

Sincerely,

John R. Davy, Jr.
Planning Bureau Manager

cc: William Hester, USFWS
    Ray Franklin, VDGIF
    Rebecca Watia, VDGIF
    John Tate, VDACS

Literature Cited


Table 1
Natural Heritage Resources near the Coalfields Expressway Study Area

<table>
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<tr>
<th>SPECIES NAME</th>
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<td>CAYTHYSA BRACHYTHERA</td>
<td>BOX HUCKLEBERRY</td>
<td>G3</td>
<td>S2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SANGIUS TROGONISTA</td>
<td>LARGE-ROOTED SANCTIA</td>
<td>G4</td>
<td>S2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRILLIUM FLAIRIDES</td>
<td>NODDING TRILLIUM</td>
<td>G5</td>
<td>S1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
October 15, 1997

Ms. Angela Ellett
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219

Dear Ms. Ellett:

I am writing in response to your letter dated October 2, 1997, regarding your request for information pertaining to the Coalfields Expressway Corridor Location Study. I am including a copy of a USGS Topographic Map that shows the areas within our Planning District which may be affected. I do not anticipate any problems related to the environment.

Also, for your information, the Town of Pound is currently revising the Town Zoning Ordinance, but it is my opinion that nothing in this document should have any bearing on the Expressway Project. The Town of Pound is also in the process of constructing a water line extension to serve residents in the Bold Camp area, but as with the above mentioned items, no significant impact on the environment or the Expressway project is anticipated.

Sincerely,

DUANE A. MILLER
Regional Planner

Enclosure
November 13, 1998

Coordination Meeting
October 20, 1998

Mr. Karl Kratzer
H. W. Lochner, Inc.
2727 Enterprise Parkway - Suite 203
Richmond, VA 23294

Dear Mr. Kratzer:

Attached is the final comment for the project you presented at the October 20, 1998 Inter-agency Coordination Meeting.

If you have any questions, please do not hesitate to contact me at 804-786-4304.

Sincerely,

Richard C. Woody II
Environmental Program Manager

Attachment
cc: Mr. Ken Wilkinson
Final Agenda - October 20, 1998  
Interagency Coordination Meeting

I. "FAST TRACKS". The following projects had minimal impacts and were not discussed.

<table>
<thead>
<tr>
<th>Permit</th>
<th>Project</th>
<th>County</th>
<th>Stream</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>98-4154*</td>
<td>0060-003-1032-SR01</td>
<td>Alleghany</td>
<td>Dunlap Creek</td>
<td>Fault/NW14/GP</td>
</tr>
<tr>
<td>98-4155</td>
<td>0040-071-1050-S06-461</td>
<td>Pittsylvania</td>
<td>Allen Creek</td>
<td>McClain/NW14/GP</td>
</tr>
<tr>
<td>98-4144*</td>
<td>0060-003-1031-SR01</td>
<td>Alleghany</td>
<td>Dunlap Creek</td>
<td>Fault/NW14/GP</td>
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<tr>
<td>98-4145</td>
<td>0340-007-V10-C501</td>
<td>Augusta</td>
<td>Sawmill Run</td>
<td>Fault/NW14/GP</td>
</tr>
<tr>
<td>98-4146</td>
<td>0460-092-1010</td>
<td>Tazewell</td>
<td>Clinch River</td>
<td>Hilt/NW14/GP</td>
</tr>
<tr>
<td>98-4147*</td>
<td>0621-021-6010-S03-511</td>
<td>Clarke</td>
<td>Dog Run</td>
<td>Markey/NW14/GP</td>
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<tr>
<td>98-4149*</td>
<td>0664-034-5606-S00-511</td>
<td>Frederick</td>
<td>Jordan Springs</td>
<td>Markey/NW14/GP</td>
</tr>
<tr>
<td>98-4150</td>
<td>0810-002-6125-SR01</td>
<td>Albemarle</td>
<td>Moorman's River</td>
<td>Project deferred</td>
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<tr>
<td>98-4152</td>
<td>0652-083-315-C501-B635</td>
<td>Russell</td>
<td>Clinch River</td>
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<tr>
<td>98-4153</td>
<td>0274-038-1009-SR02</td>
<td>Grayson</td>
<td>Elk Creek</td>
<td>Sanders/NW14/GP</td>
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II. Federal and/or state permit projects discussed:

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<tr>
<th>Permit</th>
<th>Project</th>
<th>County</th>
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<th>Details</th>
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</thead>
<tbody>
<tr>
<td>98-4151*</td>
<td>0775-085-6120-S07</td>
<td>Shenandoah</td>
<td>Passage River</td>
<td>Markey/NW14/GP</td>
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<tr>
<td>98-4142</td>
<td>Southwestern Suffolk Bypass R000-061-101-C501 – Rt. 58</td>
<td>Suffolk</td>
<td>Lake Kilby</td>
<td>Devereaux/Pending</td>
</tr>
<tr>
<td>98-4143</td>
<td>6234-076-F12-C503-C504</td>
<td>Prince William</td>
<td>Multiple</td>
<td>Morris/Pending</td>
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<tr>
<td>98-4138</td>
<td>6197-029-325-C501</td>
<td>Fairfax</td>
<td>Sideburn Branch</td>
<td>Jabara/Pending</td>
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<tr>
<td>98-4156</td>
<td>0604-069-7810-A01</td>
<td>Page</td>
<td>Naked Creek</td>
<td>Markey/NW14/GP</td>
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</table>

III. Early coordination/scoping projects discussed:

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<thead>
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<th>Permit</th>
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<th>Stream</th>
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<tr>
<td>98-4539</td>
<td>Coalsfield Expressway – Rt. 23 R000-961-101-PE101</td>
<td>Wise, Buchanan</td>
<td>Multiple</td>
<td>EIS – Location Study</td>
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<tr>
<td>98-4540</td>
<td>U000-190-101-PE101</td>
<td>Dickenson</td>
<td>Wetlands</td>
<td>Devereaux/Early</td>
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<tr>
<td>98-4541</td>
<td>0164-064-124-F04-101</td>
<td>Accomac</td>
<td>Scotts Creek</td>
<td>Janek/Early</td>
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</table>

III. Permit extension requested. Project not discussed.

<table>
<thead>
<tr>
<th>Permit</th>
<th>Project</th>
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<tr>
<td>90-4101</td>
<td>0600-077-177-C501-B641</td>
<td>Pulaski</td>
<td>Back Creek</td>
<td>Extension/Hamlett</td>
</tr>
</tbody>
</table>

* Preconstruction Notification
October 20, 1998

FINAL AGENCY COMMENTS:

A) FEDERAL

CORPS OF ENGINEERS:
- We will forward comments later. We are reviewing the information provided and we need to coordinate with our Huntington District office as well.

FISH AND WILDLIFE SERVICE:
- The Service requests that VDOT provide us with a copy of the map displayed at the October 20 meeting. We will then review the project in an attempt to streamline surveys for the small whorled pogonia (*Isotria medeoloides*).

ENVIRONMENTAL PROTECTION AGENCY:
- No comment.

NATIONAL MARINE FISHERIES SERVICE:
- Will send comments.

UNITED STATES COAST GUARD:
- No comment.

B) STATE

DEPARTMENT OF ENVIRONMENTAL QUALITY:

AIR: No comment.
WATER: Avoid, minimize and compensate.
WASTE: No comment.

DEPARTMENT OF CONSERVATION AND RECREATION:

DPRR: No comment.
DSWC: No comment.

DNH: First, we appreciate the opportunity that we have had to work with VDOT closely on this project. We have reviewed the Build Alternatives provided in the IACM packet against the data currently in DCR files and against the data we provided to VDOT in January 1998. There are several resources that occur on the Prater and Vansant Quadrangles that have been added to our data set since January; however, none of these locations fall within the build alternatives. The funnel supercoil (*Paravitrea mira*, G2/S2/NF/NS) is a globally rare snail species known from only three locations in Virginia, two in Buchanan County and one in Dickenson County. The brown supercoil (*Paravitrea septadens*, G1/S1/NF/LE) is also a globally rare snail species known from only two locations in Virginia, both in Dickenson County. Please note that the brown supercoil is classified as endangered by the VDGIF.

VIRGINIA INSTITUTE OF MARINE SCIENCE:
- No comment.

STATE HEALTH DEPARTMENT:
- No comment.

DEPARTMENT OF GAME AND INLAND FISHERIES:
- Will send comments.

DEPARTMENT OF HISTORIC RESOURCES:
- No comments.

MARINE RESOURCES COMMISSION:
- Will send comments.

C) VIRGINIA DEPARTMENT OF TRANSPORTATION RESPONSE:
- All comments will be addressed in the location study.
Operations & Readiness Division  
John W. Flannagan Reservoir

Jim Clark  
H.W. Lochner  
1504 Santa Rosa Road  
Suite 105  
Richmond VA 23229

Mr. Clark:

Per our conversation today, enclosed is a map highlighting the project operations area at John W. Flannagan Dam & Reservoir on the Haysi quadrangle.

Corps-owned fee land restrictions and availability outside the 400 acre project operations area will be determined based upon designs and specifications presented. 7874 acres are available for consideration.

If I receive further guidance from the District Office, I will forward the information. Please call me at 540/835-9544 if I can be of further assistance.

HAROLD E. MILLER, JR.  
Resource Manager, John W. Flannagan Dam & Reservoir
Mr. Clark:

Enclosed is a photocopy of the project operations area of John W. Flannagan Dam & Reservoir with the property line drawn on the Haysi quadrangle.

We do not have a comprehensive list of restrictions associated with the project operations area. Restrictions are determined on a case by case basis. For example, use of explosives for roadway construction would be restricted. Explosives would be prohibited within a specified radius of the structures and size of explosion would be limited within the 400 acres. One exception is Trespassing. The Corps does prosecute any individual, unaccompanied by a Corps employee, who is found within these signed areas.

Activities on Corps owned lands associated with the Coalfield Expressway project, including planning phases, may require some form of Real Estate instrument. This instrument will outline the restrictions the Corps requires for the activity to proceed. As an example, surveying of the route over Corps land may require extensive removal of vegetation. The instrument will permit cutting the vegetation with the laps being no higher than 4" above the ground.

I have also enclosed a copy of Title 36, Rules and Regulations. This brochure governs public activities on Corps lands. Most activities can be excepted with "written permission of the District Engineer."

I am sorry I can't be more specific but I hope this is of some help to you. If I receive further guidance from the District Office, I will forward the information. Please call me at 540/835-9544 if I can be of further assistance.

HAROLD E. MILLER, JR.
Resource Manager, John W. Flannagan Dam & Reservoir
December 1, 1998

Ms. Angel Deem, Environmental Division
Virginia Department of Transportation
1401 E. Broad Street
Richmond, VA 23219

Re: survey for rare plant species along proposed Coalfields Expressway in Wise, Dickenson, and Buchanan Counties

Dear Ms. Deem:

In October 1998, you contracted with the Virginia Department of Conservation and Recreation’s Division of Natural Heritage (DCR-DNH) to survey proposed routes for the Coalfields Expressway to determine if this project would impact the Federally Threatened *Spiraea virginiana* (Virginia spiraea.)

On October 27 and 28, DCR-DNH Staff Botanist Stephen Killeffer visited 12 sites identified during preliminary analysis of the proposed routes as potentially containing suitable habitat for this species. No *Spiraea virginiana* nor any other state or federally listed plant species were found at the survey site, although suitable *Spiraea* habitat did occur at several locations. A brief synopsis of each site follows:

**Site 1:** Pound River
river channel 10-15 feet wide and moderately sunny but with few shoals or gravel bars and with relatively steep, forested banks. No suitable habitat.

**Site 2:** Freemont
channel wider than Site 1, some cobble shoals and islands, but moderately to heavily shaded with thick growth of the exotic plant *Polygonum cuspidatum* in many areas. Marginal habitat
Sites 3 & 4: McClure River
some open cobble bar and island habitat, but well shaded along much of this stream reach. Some isolated but thick patches of Polygonum cuspidatum and fairly extensive growth of kudzu along steep roadbank. Overall poor habitat, but some small areas which are moderately suitable.

Site 5: Haysi High School
Pool and riffle stream with few depositional areas. No suitable habitat.

Site 6 & 7: Russell Fork
Open, sunny, wide stream channel with fairly extensive gravel bars. Suitable habitat, although some kudzu along steep roadbank.

Site 8: Hills Mill Tunnel
Relatively wide channel; open and sunny with extensive gravel bars. Good habitat, particularly on island located at centerpoint of ROW.

Site 9: Cedar Grove School
Mostly deep pools with steep, shaded banks. Considerable amount of kudzu. No suitable habitat.

Site 10: Looney Creek
Some gravel bars but well shaded. Very marginal habitat.

Site 11: Grundy
Open to partially shaded, some gravel bars along banks. Some kudzu. Marginal habitat.

Site 12: Turkey Pen Branch
Wide river channel, open and sunny. Extensive gravel shoals along bank, good habitat but severe kudzu infestation along a portion of east bank.

Enclosed is an invoice in the amount of $1700.00. If you have any questions regarding the survey or the recommendations provided, please contact Stephen Killeffer at 804-225-4855.

Sincerely,

J. Christopher Ludwig,
Chief Biologist
Mr. William Hester
Fish and Wildlife Service
Mid County Center
White Marsh, VA 23183

RE: Coalfields Expressway, R000-961-101, PE100
Endangered Species Surveys
Dickenson & Wise Counties

Dear Mr. Hester:

The Department is requesting your assistance in preparing for endangered plant surveys to support the Environmental Impact Statement being developed on the above project. Preliminary database searches indicate the potential for the Small whorled pogonia (Isotria medeoloides) and Virginia spirea (Spirea virginiana). However, due to the lack of soils information for the project area, we are unable to delineate potential habitat for the presence of these two federally threatened species.

I have attached a corridor map depicting the five alternatives being considered for this project. We would appreciate your comments on how to proceed with the two surveys. As discussed, this project has not yet been early coordinated, however, we would like to begin scheduling the surveys now to take advantage of optimum growing periods.

Thank you for your assistance.

Sincerely,

[Signature]
Angel Deem
Environmental Planner

cc: Mr. Ken Wilkinson
    Mr. Cooper Wantsey
    Ms. Patsy Napier
Mr. Roberto Fonseca-Martinez
Federal Highway Administration
1504 Santa Rosa Road
Richmond, Virginia 23229

Colonel Allan B. Carroll
District Engineer
Norfolk District, Corps of Engineers
Fort Norfolk, 803 Front Street
Norfolk, Virginia 23510-1096

Attn: Ed Sundra, FHWA
Alice Allen-Grimes, Corps

December 8, 1998

Re: Coalfields Expressway - Dickenson and Wise Counties

Gentlemen:

The U.S. Fish and Wildlife Service (Service) has reviewed the letter from Ms. Angel Deem of the Virginia Department of Transportation (VDOT) dated November 2, 1998 regarding the proposed Coalfields Expressway (VDOT Project #: R000-961-101,PE101) in Dickenson and Wise Counties, Virginia. Specifically, Ms. Deem requested Service recommendations on survey design for the federally threatened small whorled pogonia (Isotria medeoloides). This letter constitutes the preliminary report of the Service and the Department of the Interior on the proposed project and is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Based on the scope, complexity, and questionable status of the smooth whorled pogonia in the proposed project area, the Service agrees with option #3 found in Ms. Deem’s November 2, 1998 letter. The Service agrees that VDOT survey the preferred alternative only. Were this project located in eastern Virginia, where pogonia populations are more abundant, we would likely recommend surveys of all alternatives.
Mr. Fonseca-Martinez and Colonel Carroll

We would also like to emphasize the statement found in Ms. Deem's letter, that if VDOT surveys the preferred alternative in a timely fashion, VDOT would have, "... the ability to make alignment shifts prior to location adoption." Since we are limiting the survey scope for this project, the Service understands that VDOT and FHWA will be willing to make alignment shifts in the preferred alternative, to avoid any pogonia populations that may be found during the survey.

The Service appreciates the progressive approach that Ms. Deem and VDOT are taking to protect federally threatened and endangered species within this corridor. If you have questions, please contact William Hester at (804) 693-6694, ext. 134.

Sincerely,

Karen L. Mayne
Supervisor
Virginia Field Office

cc: Ms. Angel Deem
VDOT Headquarters, Richmond, VA
September 14, 1999

Kalli Lucas, Archaeologist
Bristol VDOT
P. O. Box 1768
Bristol VA 24203

RE: Phase II Architectural Evaluation; Coalfields Expressway Study
Wise, Dickenson, and Buchanan Counties
Project No. R000-961-101.PB101
VDHR File No. 97-0950

Dear Ms. Lucas:

Thank you for your letter and the Phase II survey documentation for the above-mentioned project. Our Survey Coordinator has completed her review of the information and has transmitted it to the department archives for inclusion in our state-wide inventory. Project Review staff have completed the review of the eligibility of the surveyed resources and we offer the following comments:

Clinchco Mill Village Mill Houses (025-5051)—We understand that due to revisions to the project these resources are no longer within the project's area of potential effect.

Freemont Station (025-0010)—The National Register Evaluation Team concurs that despite its relocation, the station continues to be eligible for listing in the National Register of Historic Places.

Harmon Mine Company Office (013-5010)—The National Register Evaluation Team concurs that this resource is eligible for listing on the National Register of Historic Places under Criterion A for significance in the area of industry.

Maze School (013-5012)—The National Register Evaluation Team concurs that this resource is eligible for listing on the National Register of Historic Places under Criterion A for significance in the area of education.

Clevinger-Ratliff House (013-5033)—The National Register Evaluation Team concurs that this resource does not retain sufficient integrity to be considered eligible for listing in the National Register of Historic Places.

Barn on Route 83 (025-5001)—The National Register Evaluation Team, in this instance, reached a conclusion different from your own. We found the barn to be
eligible for listing on the National Register of Historic Places under Criterion C for significance in the area of architecture.

Mullins-Bise House (025-5030) — The National Register Evaluation Team concurs that this resource does not retain sufficient integrity to be considered eligible for listing in the National Register of Historic Places.

We look forward to working with you further on this project. If you have any questions concerning our review of this project please call James Hill at 804-367-2323 ext. 107.

Sincerely,

Cara H. Metz
Director, Division of Resource Services and Review

C: Antony F. Opperman, VDOT Environmental
Advisory
Council On
Historic
Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW. #909
Washington, DC 20004

JUL - 6 2000

Mr. Earl T. Robb
Virginia Department of Transportation
1401 East Broad Street
Richmond, VA 23219-2000

Ref: Coalfields Expressway
Draft Environmental Impact Statement
Buchanan, Dickenson, and Wise Counties, Virginia

Dear Mr. Robb:

On June 12, 2000, the Council received your request for our comments on the referenced environmental impact statement. While we appreciate your notification and request for our participation in this process, it is not the Council’s role, nor do we have the resources to comment on the DEIS. However, we do wish to call to your attention to the requirements of Section 106 of the National Historic Preservation Act and the Council’s implementing regulations (36 CFR Part 800). The Council’s regulations set forth the steps to be taken in order to identify historic properties and assess effects associated with a proposed Federal undertaking, and we strongly recommend that any environmental document be coordinated with the information necessary to initiate and complete the 106 process. Based on our initial review of the DEIS, the consideration given cultural resources is inadequate to address the 106 process and lacks any input from the State Historic Preservation Officer or other parties who may have the right to participate in Section 106 consultation. Once it is determined that the project may affect historic properties, the Council should be notified by the lead Federal agency and given the opportunity to participate in further consultation to consider means to avoid or minimize those impacts.

We recommend that you initiate coordination with the Virginia State Historic Preservation Officer as soon as possible and work closely with them to take advantage of their knowledge of cultural resources in the area. Any further request for the Council’s involvement regarding this project should be initiated by the sponsoring Federal agency, and accompanied by the requisite supporting documentation specified at 36 CFR § 800.11. Should you have any questions regarding the Section 106 process, you may contact MaryAnn Naber at (202) 606-8534 or by email at mnaber@achp.gov.

Sincerely,

Don J. Klima
Director
Office of Planning and Review
Federal Emergency Management Agency
Region III
One Independence Mall, Sixth Floor
615 Chestnut Street
Philadelphia, PA 19106-4404

June 21, 2000

Mr. Earl T. Robb
Commonwealth of Virginia
Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219-2000

Reference: Wise, Dickenson, and Buchanan Counties, Virginia

Dear Mr. Robb:

This letter is in regards to our review of the Draft Environmental Impact Statement for the Coalfields Expressway Location Study. To better respond, let me briefly provide some background information on the National Flood Insurance Program (NFIP). In 1968, the U.S. Congress passed the National Flood Insurance Act, which created the NFIP. The NFIP was later broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. The NFIP is designed to reduce future flood losses through local floodplain management and to provide protection for property owners against potential losses through flood insurance. As part of the agreement for making flood insurance available in a community, the NFIP requires the participating community to adopt floodplain management ordinances containing certain minimum requirements intended to reduce future flood losses.

Any project involving the development, encroachment, or modification of the 100-year floodplain, including channel relocations, must meet the requirements as stipulated by the community’s floodplain management ordinance.

In support of the NFIP, FEMA has undertaken a massive effort of flood hazard identification and mapping to produce Flood Hazard Boundary Maps (FHBM), Flood Insurance Rate Maps (FIRM), and Flood Boundary and Floodway Maps (FBFM). Since the proposed project will impact or relocate existing streams, you must apply for a Conditional Letter of Map Revision (CLOMR) prior to construction.

I have enclosed for your use all the necessary application forms required for a CLOMR. As explained in the packet, “Revisions to National Flood Insurance Program Maps”, FEMA will issue a Conditional Letter of Map Revision for proposed projects in the 100-year floodplain provided all the necessary plans and hydraulic data are submitted. FEMA will then
follow up with a physical map revision when as-built plans are submitted. The only way we can keep each community's floodplain maps up-to-date is by obtaining your cooperation in this effort.

If you have any questions concerning this letter, the map revision process or any other floodplain management issue, please feel free to contact me (215) 931-5665 or our technical hotline at (877) FEMA MAP (toll free). Additional information may be obtained by logging onto www.fema.gov/mit/tsd.

Sincerely,

Erik J. Rourke
Regional Hydrologist

Enclosure: 1. Revisions to National Flood Insurance Program Maps
June 28, 2000

Mr. Earl T. Robb
DOT, Commonwealth of Virginia
1401 East Broad Street
Richmond, Virginia 23219-2000

Dear Mr. Robb:

Enclosed are comments on the Draft Environmental Impact Statement for Coalfields Expressway Buchanan, Dickenson, and Wise Counties, Virginia. We hope our comments can assist you. Thank you for giving us an opportunity to review this document.

Sincerely,

Susan B. Fruchter
NEPA Coordinator

Enclosure
MEMORANDUM FOR: Susan B. Fruchter
Acting NEPA Coordinator

FROM: Charles W. Challstrom
Director, National Geodetic Survey

SUBJECT: DEIS-0006-03 Coalfields Expressway Buchanan, Dickenson, and Wise Counties, Virginia

The subject statement has been reviewed within the areas of the National Geodetic Survey’s (NGS) responsibility and expertise and in terms of the impact of the proposed actions on NGS activities and projects.

All available geodetic control information about horizontal and vertical geodetic control monuments in the subject area is contained on the NGS home page at the following Internet World Wide Web address: http://www.ngs.noaa.gov. After entering the NGS home page, please access the topic “Products and Services” and then access the menu item “Data Sheet.” This menu item will allow you to directly access geodetic control monument information from the NGS data base for the subject area project. This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project.

If there are any planned activities which will disturb or destroy these monuments, NGS requires not less than 90 days’ notification in advance of such activities in order to plan for their relocation. NGS recommends that funding for this project includes the cost of any relocation(s) required.

For further information about these monuments, please contact Rick Yorczyk; SSMC3 8636, NOAA, N/NGS; 1315 East West Highway; Silver Spring, Maryland 20910; telephone: 301-713-3230 x142; fax: 301-713-4175.
Mr. Earl T. Robb  
State Environmental Administrator  
Department of Transportation  
1401 East Broad Street  
Richmond, Virginia 23219-2000

Dear Mr. Robb:

RE: Coalfields Expressway

Section 4.2, Farmland Impacts: NRCS did review this project for prime farmland. It was determined that there was no prime farmland in this project area. Orthophoto quad overlays as described on Page 4-3 were used to make this determination; however, there was no AD-1006 Form completed for this project.

If you have any questions, please contact John Myers at 804-287-1668.

Sincerely,

[Signature]

M. DENISE DOETZER  
State Conservationist  

Enclosure

Cc: John Myers, Environmental Specialist, Richmond  
Jeannine Freyman, Soil Resource Specialist, Christiansburg TAST  
Glenn Graham, NRC, Clintwood Service Center

AN EQUAL OPPORTUNITY EMPLOYER
DEPARTMENT OF THE ARMY  
HUNTINGTON DISTRICT, CORPS OF ENGINEERS  
502 EIGHTH STREET  
HUNTINGTON, WEST VIRGINIA 25701-2070  
May 8, 2000

Mr. Earl T. Robb  
Department of Transportation  
1401 East Broad Street  
Richmond, VA 23219-2000

Dear Mr. Robb,

The following is a list of comments concerning the Draft Environmental Impact Statement for the Coalfields Expressway:

- I am unfamiliar with the legislation referenced defining a "park," however, Segment 115 on routes A, B, and C, and Segment 109 on route D pass through areas designated for dispersed recreational use by the Huntington District Corps of Engineers. These segments are also licensed to the Virginia Department of Game and Inland Fisheries for fish and wildlife management and should be consulted at their Regional Office in Marion, VA.

- 3.7.2 Flood Plains: Segments 115 and 109 pass through an existing flood control project, John W. Flannagan Reservoir.

- 3.7.3 Aquatic Ecology: a student at the University of Kentucky conducted a study of the Russell Fork and tributaries as a Master’s Thesis. The study found the potential for isolated sub-species of 3-5 indigenous fishes. A portion of the Cranesnest River, Route D, Segment 109 travels over a put and take trout fishery.

- 4.6.1 Archeological: Don’t overlook rock cairns. Oral history indicates slave burials to be common along the routes in Dickenson County.

- 4.8 Noise: Segment 115 runs between two recreation areas. Will noise abatement be considered?

- 4.10 Visual Impact: No indication of Segment 115 impact on the recreational experience of visitors to that portion of John W. Flannagan Reservoir.

- 4.11 Wildlife Habitat and Vegetation Impacts: The bi-section of a significant wildlife corridor occurs with Routes A, B, C. Significant in that John W. Flannagan Reservoir is virtually a continuous forest. With the exception of the Jefferson National Forest along Cumberland Mountain, very few other tracts are capable of supporting wildlife desiring this type of habitat.

- 4.12.3 Flood Plain Impacts: As indicated above, no mention of John W. Flannagan Reservoir and the elevations necessary to keep the proposed routes above specific pool elevations to prevent inundation.

- Table 4.22: I am not sure I understand your table. Segment 115 bridges the Cranesnest River. No impact?

Thank you for the opportunity to comment. If you have any questions, please feel free to contact me at 540/835-9544.

Harold E. Miller, Jr.  
Resource Manager, John W. Flannagan Dam & Reservoir

CF:  
CELRH-OR-BSA  
CELRH-OR-TS
July 10, 2000

Northern Virginia Regulatory Section
Coalfields Expressway Draft EIS

Earl T. Robb
Commonwealth of Virginia Department of Transportation
1401 East Broad Street
Richmond, Va. 23219-2000

Dear Mr. Robb:

Following are comments offered by the Norfolk District Corps of Engineers in regard to the Draft Environmental Impact Statement (DEIS) for the proposed Coalfields Expressway in the western part of Virginia.

The Corps of Engineers recommends consideration of the alternatives having the least impact to wetlands and other waters of the United States. Other issues of particular interest to us are floodplains, threatened and endangered species and their habitat, and impacts to historic or archaeological sites. However, we recognize that many issues must be considered in choosing an alternative. For example, while Alternative B seems preferable from the standpoint of the issues discussed above, it would require the highest number of relocations and represents the greatest environmental justice impacts. These are factors we consider in determining the practicability of a proposal.

We urge that the above issues be afforded significant weight while at the same considering alignments that follow/incorporate the existing Rt. 83. Improving Rt. 83 on its existing alignment would minimize the amount of undeveloped/natural land that would have to be impacted. Consideration should also be given to alignments that traverse existing developed areas, such as towns, for the same reason.

It would be helpful if the locations of rivers referenced in the descriptions of the various build alternatives were indicated on Exhibit 2.4. Only the Pound River, Russell Fork and Levisa Fork are labeled on the drawing, while the text of Chapter 2 makes reference to the Cranes Nest River, McClure River, Watkins Branch and Wolfpen Branch.

Impacts to waters of the United States, including wetlands, should be minimized by bridging and/or reducing the roadway footprint through such means as reduced fill slopes or narrower medians, wherever practicable. Perpendicular rather than parallel crossings of streams should be incorporated and relocation of stream channels should be avoided.

We urge you to seriously consider comments offered by Harold E. Miller, Jr., Resource
Manager of the John W. Flannagan Dam and Reservoir, a Corps of Engineers recreational and water supply entity located in Dickenson County. His comments were forwarded to you separately and a copy is attached to this letter. Not only the Reservoir proper, but its entire watershed, need to be protected as a regional water supply. Only Alternative E completely avoids the Flannagan Reservoir watershed. The FEIS should address how impacts to the reservoir will be avoided and minimized.

Finally, Section 4.13.4 of the DEIS states that the Corps of Engineers generally does not require compensatory mitigation for Palustrine Unconsolidated Bottoms (stream bottom impacts). It should be noted that, while this was true at the time of writing, the Corps’ new Nationwide Permit 14 for road crossings now requires a compensation plan for all losses of waters of the United States. The new Nationwide Permits went into effect on June 7, 2000. Although impacts associated with construction of the Coalfields Expressway may or may not be authorized under a Nationwide Permit, the same concept may be applied to the mitigation requirements.

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Virginia portion of the Coalfields Expressway. If you have any questions please call Nancy Bland of my staff at (757) 441-7072.

Sincerely,

[Signature]
William H. Poore, Jr.
Chief, Regulatory Branch

Copy furnished:
Harold W. Miller, Jr., Flannagan Dam and Reservoir
Mr. Roberto Fonseca-Martinez  
FHWA Division Administrator  
Room 750  
400 North 8th St.  
Richmond, Virginia 23240  

Dear Mr. Martinez:  

In accordance with the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act, The Environmental Protection Agency (EPA) offers the following comments regarding the Draft Environmental Impact Statement (DEIS) for the Coal Fields Expressway Location Study located in Wise, Dickenson and Buchanan Counties, Virginia. The Coalfields Expressway is an approximate 50 to 60-mile long expressway on new alignment located in the Appalachian Mountains of southwest Virginia.

The Virginia Department of Transportation (VDOT) has coordinated this project with the EPA on several occasions in the form of coordination meetings and they released a pre-draft EIS for our review in January 2000. This coordination has been very useful in achieving an environmental document that exceeds the level of effort previously performed by VDOT in the area of Secondary Impact Analysis.

However, after review of the DEIS we rate the project EC-2, Environmental Concerns, Insufficient Information. A complete explanation of our rating system is attached.

A project of this magnitude will have considerable impact to the human and natural environment. For example, the direct impacts will result in approximately 1300 acres of forest loss, between five and 10 miles of stream channeling, and may impact more than 6 acres of wetlands. Secondary development may result in additional impacts of between 250 and 388 acres of forest loss, and up to an additional mile of stream channeling and up to 1.6 acres of additional wetlands loss. In addition, the project may increase the service area of the present and future wood chip mill operations in the area and increase the rate of timber harvest in the study area, which may lead to accelerated water quality impacts to the area streams and degrade the portions of Russell Fork and Pound River deemed potentially eligible for designation as a Wild and Scenic River.

The document does a good job in separating out the economic development needs from the traffic needs. However, while the purpose and need describes the economic development component, the economic development potential after construction is not clearly described in the document. Although cost benefit analysis are not required in NEPA such an analysis is typically done for other public works projects and may shed light on whether the benefits of long term economic development will outweigh the capital and environmental costs of this project. In fact, the Governor’s Commission on Transportation, in a draft report, made this recommendation regarding major transportation projects. In addition it is not clearly stated in the DEIS if the

Customer Service Hotline: 1-800-438-2474
environmental impacts of the connector roads have been included in the impacts for each alternative.

Alternatives:

From the information supplied in the EIS, the EPA did a comparison of the alternatives in an attempt to determine which one has the potential to be the least damaging alternative overall. While VDOT will balance all of the impacts and costs, the EPA considered the following criteria: impacts to wetlands, streams, and forest land, potential effects on stream segments potentially eligible for Wild and Scenic Rivers (or future designation) and the amount of cut and fill required. Even with these relatively few criteria, no one alternative scores the best for each criteria. However, it appears that Alternative B may be the least damaging over all.

The EPA would like to work with VDOT and FHWA further to explore the minimization and mitigation opportunities for this Alternative, or any other, if this project is funded for construction.

Mitigation:

Mitigation of stream impacts should be a key component of this project if it is constructed. The EPA recommends that VDOT develop a mitigation strategy for the stream impacts, to include but not limited to, riparian buffer planting onsite and offsite, Rosgen method stream restoration, where applicable in the study area, and putting natural structure and morphology in any straightened or moved stream segments.

The forest impacts and cut and fill volumes are two other areas of significant impact. The EPA recommends that VDOT and FHWA consider flexibility in the design standards of this road to allow for contact sensitive design. The EPA recommends that the right-of-way limits and clearing be kept to a minimum. While the EPA has no specific design recommendations, we urge VDOT and FHWA to be flexible in design, particularly on slopes and other environmentally sensitive areas, so that a safe and efficient, but minimally impacting road can be constructed.

Please feel free to call me at 703-648-4292 if you have any questions or comments regarding this letter.

Sincerely,

Peter M. Stokely,
Virginia Field Office
Other Comments:

Environmental Consequences

4.5 Economic Impacts

This section does not contain any information regarding the long term, post construction economic benefits of this road. Section 4-19, Secondary and Cumulative Impacts provides one sentence regarding future jobs. No other details are provided. An explanation of the methodology on how this figure was obtained should be provided along with the year by which these jobs are expected to have been created.

Page 4-20:

There is a discrepancy between Table 4.7 and the text on page 4-20 regarding which alternative would create the most jobs.

Page 4-45:

The text states that Alternative A, D, and E may affect the potential designation of portions of Russell Fork as a Wild and Scenic River. This information should be included in the summary table in the summary section.

Page 4-70: In the response to the comments I provided on the pre-draft, VDOT stated that the Regional Forester believed that the region would attract more chip mills, but in the DEIS the opposite is stated. Please clarify this issue.
Environmental Impact of the Action

LO--Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO--Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1--Adequate
The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information
The draft EIS does not contain sufficient information for the EPA fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate
EPA does not believe that draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.


TOTAL P. 85
Mr. Roberto Fonseca-Martinez  
Division Administrator  
Federal Highway Administration  
400 North 8th Street, Room 750  
Richmond, Virginia 23240

Dear Mr. Fonseca-Martinez:

This is in response to your request for the Department of the Interior's comments on the Draft Environmental Impact Statement (DEIS) for the proposed Coalfields Expressway Location Study from Route 23 in Pound, Virginia, to the West Virginia State Line near Paynesville, Buchanan, Dickenson, and Wise Counties, Virginia.

SECTION 4(f) COMMENTS

At this time we can not concur that there are no prudent or feasible alternatives to the proposed project or that all possible planning has been done to mitigate harm to protected resources. Our concerns with this project as proposed are outlined in greater detail below.

ENVIRONMENTAL STATEMENT COMMENTS

Fish and Wildlife Resources

For actions considered to be a major Federal construction activity significantly affecting the quality of the human environment (i.e., one requiring an EIS under the National Environmental Policy Act), Section 7(c) of the Endangered Species Act requires that the agency prepare a Biological Assessment to determine the effects of the project on any listed species or proposed species that may occur in the impact area. To allow a thorough review by the public and a timely review by the U.S. Fish and Wildlife Service (FWS), the Federal Highway Administration and Virginia Department of Transportation, the FWS recommends that a Biological Assessment (BA) for this project be included in the final EIS. Potential impacts of this project on the federally endangered Indiana bat (Myotis sodalis), and the Small whorled pogonia (Isotria medeoloides) and the Virginia spirea (Spirea virginiana) should be included in the BA. The FWS previously provided BA guidelines in its January 12, 2000, letter to the Federal Highway Administration and Corps of Engineers.

There are two known Indiana bat hibernacula in Wise County, Virginia, that are located within approximately 15 miles of the nearest project alternative. There are no known hibernacula in Dickenson or Buchanan County. There was also a documented occurrence of a male Indiana bat in Dickenson County, Virginia in 1995, less than three miles north of one of the project alternatives.
Potential summer habitat for the Indiana bat occurs in the Virginia portion of the project area. This habitat, used for foraging and roosting, is defined as riparian, bottomland or upland forest and old fields and pastures with scattered trees. Roost habitat primarily consists of exfoliating bark with space for bats to roost between the bark and the bole of the tree. Tree cavities, crevices, or hollow portions of tree boles and limbs also provide roost sites (U.S. Fish and Wildlife Service, 1999).

Based on the 1995 finding of a male Indiana bat in Dickenson County, the presence of potential Indiana bat habitat in the study area, the presence of 2 hibernacula within approximately 15 miles of the study area, and the large acreage of forested habitat that is likely to be impacted by project construction, the FWS recommends that surveys be conducted for the Indiana bat. Surveys should be performed using standard survey protocol, between May 15 and August 15 of any year and survey results should be included in the BA.

The FWS has attached a list of individuals who are qualified to conduct surveys for the Indiana bat in Virginia. To ensure that adequate surveys are conducted, the surveyor names and proposed survey designs should be submitted to FWS before surveys are conducted. If the individuals on the enclosed list are not available or if the Federal Highway Administration or the Virginia Department of Transportation believe that the FWS has reached this conclusion in error or to file survey designs, please contact Mr. William Hester of the FWS at (804) 693-6694, ext. 134.

The FWS notes that the peregrine falcon (Falco peregrinus) was delisted on August 25, 1999, and is therefore no longer a protected species. All references in the DEIS should be changed accordingly. In Table 3.10, the peregrine falcon should not be shown as federally endangered since this is no longer the case.

Fish and Wildlife Coordination Act Comments

The FWS is concerned about the large scale impacts to forested habitat that are likely to occur if this project is constructed. Impacts to forested habitat would range from 1,245 to 1,358 acres depending upon which candidate build alternative is constructed. Such habitat destruction would have substantial negative impacts on the wildlife resources in Wise, Dickenson, and Buchanan Counties. Forested habitat in this part of Virginia serves as optimal habitat for migratory birds, and good habitat for herpetofauna, game species and other wildlife.

The FWS recommends some type of habitat restoration/enhancement to at least partially offset negative impacts to wildlife. Actions such as riparian restoration or enhancement of reclaimed mining sites are two of many options that could be considered. The FWS would be glad to work with FHWA and VDOT to explore habitat rehabilitation options for this project.

Please contact Mr. William Hester of the FWS at (804) 693-6694, ext. 134 if you have questions or would like additional information.

Geological Resources

Page 3-1, Section 3.1.2 Geology

The geology section fails to describe landslide geology, ground movement and/or subsidence potential, and mineral resources in the area.
Page 4-1, Section 4.1 Land Use Impacts

Sections are needed describing geologic hazards and the associated mitigation plans.

Landslides

Debris flows and rock falls are a serious problem in the area of the proposed highway. Metastable Pleistocene debris flows (block fields) on the steep topography capped by sandstone ledges are common in the region. In general, these areas can be identified on air photos by the large sizes of the ledges and randomly oriented blocks in the woods below them. When cut by construction projects, these metastable block fields reactivate and downslope movement commences again.

The landslide potential of the area is documented by Earl Brabb and others, William F. Outerbridge and Roger F. Thomas (see attached references). Geologic maps for all the USGS topographic 7 1/2 minute quadrangles in southwestern Virginia have been published showing the landslide hazards and could be used to map the hazards for this project.

Roadways with landslide hazards are costly to maintain as well as posing safety risks, and therefore, landslide areas should be a factor in choosing the routes of the expressway. Landslide mitigation plans need to be included for each alternative and a map of landslide hazards should be in the ENVIRONMENTAL CONSEQUENCES EXHIBITS section.

Subsidence

The routes selected will most likely traverse abandoned and active underground mines that can cause subsidence of the right-of-way. Maps of known underground mines may be obtained from the Virginia Division of Mineral Resources in Charlottesville, Virginia, and can be used to evaluate the subsidence potential for each route. In addition, these maps should be in the ENVIRONMENTAL CONSEQUENCES EXHIBITS section.

Mineral Resources

Coal reserves under the right-of-way of the highway will be removed from future production. The value of minerals along and under the proposed rights-of-way need to be determined and the resultant compensation to the landowners included in the Draft EIS. The loss of these mineral resources should also be mentioned in the Section 4.18 (page 4-59) on Irreversible and Irretrievable Commitment of Resources.

Page 4-41, Section 4.12.1 Potential Water Quality Impacts: Page 4-44, Table 4.18 FEMA Floodplain Impacts: and Page 4-48, Table 4.19 Wetland Impacts by Alternatives

Although the Draft EIS acknowledges the possibility of non-point source pollution from the highway construction activities, it contains little quantitative information for evaluating the magnitude of the pollution impacts. Furthermore, the loss of wetlands and the intrusion on floodplain areas is described solely in terms of the expected acreage of land to be impacted. The Draft EIS does not however, provide any information on how the proposed highway construction activities might affect the structure and function of the impacted wetlands and floodplain areas in the project area.
Page 4-42, Section 4.12.2 Impact Avoidance and Minimization

In the steep topography of the area, the size of the cuts and fills will be large. Because the strata are coal bearing, there is a considerable potential that sulfides will be uncovered that can contribute to acid surface water drainage (see page 3-22). Rock core designed to test the strata for engineering characteristics should be analyzed for their acid-yielding potential, just as rock samples are analyzed for surface mine permits. This data could then be used in plants developed for disposal of potentially polluting strata that are exposed during construction.

Page 4-56, Section 4.16 Construction Impacts

The proposed expressway cuts across two of the largest gas fields in Virginia, yet there is no mention of those fields, gathering lines, and gas pipelines that are certain to be there. Maps of the gas fields are available from the Virginia Division of Mineral Resources in Charlottesville, Virginia.

Page 4-69, Section 4.19.2 Impacts, Natural Resource Impacts, second paragraph

The Draft EIS acknowledges that construction of the proposed highway will facilitate urban and industrial development in the project area, thereby contributing to the economic benefit of the relatively poor region of the State. However, this enhanced development will also contribute to subsequent water quality and quantity problems in the study area as a result of increasing impervious surface areas, increased non-point source drainage, increased freshwater needs and municipal wastes, changes in floodplain areas, etc. Depending on the location of the development, the proposed highway could ultimately have significant water quantity and quality impacts in the project area over time which was not considered in the initial selection of the highway route. Accordingly, projections of expected economic development patterns, and the related potential environmental problems that might arise from this development should also be identified and discussed in the Draft EIS.

Page 4-69, Section 4.19.2 Impacts, Natural Resource Impacts, fourth paragraph

The Draft EIS does suggest that the future development is expected to occur on mountaintops, concluding that the distance and contact time between a pollution source on a mountaintop and the receiving water resource would be high, thereby allowing for increased dilution of pollutants, dispersion of sediment borne pollutants, etc. However, the movement of most particulate and dissolved materials associated with development on a mountaintop location would likely be accelerated as the materials moved down the sloping mountainside. It is not clear that this latter aspect has been considered in concluding that a mountaintop location be a positive aspect of future development in the project area. We trust that the issues and concerns expressed above will be fully addressed in the Final EIS.

We appreciate the opportunity to provide these comments.

Sincerely,

[Signature]
Willie Taylor
Director, Office of Environmental Policy and Compliance

Attachment
BATS IN VIRGINIA (SURVEY CONTACTS)

Ray Fernand
Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, VA 23230-1104
(804) 367-1000

Steve Roble
Virginia Division of Natural Heritage
217 Governor Street, 3rd Floor
Richmond, VA 23219
(804) 786-7951

Inclusion of names on this list does not constitute endorsement by the U.S. Fish and Wildlife Service or any other U.S. Government Agency.

REFERENCES (USFWS)


REFERENCES (USGS)


The map is on the web at http://geopubs.wr.usgs.gov/map-mf2329/.


June 21, 2000

Mr. Earl T. Robb  
Virginia Department of Transportation  
1401 East Broad Street  
Richmond, VA 23219-2000

RE: State Project R000-961-101, PE-101; Coalfields Expressway

Dear Mr. Robb:

This letter is in response to your request for information on listed threatened or endangered plant or insect species in the vicinity of the proposed Coalfields Expressway in the Pound area of Wise county, the Clintwood and Haysi areas of Dickenson county and the Vassant, Grundy, Keen Mountain and Patterson areas of Buchanan county. To date, Virginia Department of Agriculture and Consumer Services records indicate that no threatened or endangered plant or insect species have been documented in the area outlined on the map that you provided. The absence of data does not necessarily mean that no listed species occur in the area, but that our files do not currently contain information to document their presence.

The Virginia Department of Agriculture and Consumer Services has jurisdiction over listed plant and insect species only. The Virginia Department of Game and Inland Fisheries has jurisdiction over all other listed threatened or endangered species. Additional information on unique geologic formations, rare or critical habitat, rare and candidate species can be obtained from the Virginia Department of Conservation and Recreation, Division of Natural Heritage.

Thank you for your interest in the endangered or threatened plant and insect species in Virginia. If you have any questions or need any additional information, please contact me.

Sincerely,

Frank M. Fulgham
Program Manager

---Equal Opportunity Employer---
DATE: July 6, 2000
TO: Mr. Earl Robb, Virginia Department of Transportation
FROM: Derral Jones, Planning Bureau Manager
REFERENCE: Draft Environmental Impact Statement for the Coalfields Expressway in Wise, Dickenson, and Buchanan Counties, Virginia

Comments are provided herein on the above referenced project.

DIVISION OF NATURAL HERITAGE

The Department of Conservation and Recreation (DCR) has searched its Biological and Conservation Data System (BCD) for occurrences of natural heritage resources from the area outlined on the submitted maps. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

As noted in the Draft Environmental Impact Statement (DEIS), DCR previously indicated the potential for Virginia spirea (Spiraea virginiana, G2/S1/LE/L) and small whorled pogonia (Isotria medeoloides, G2G3/S2/LE/L) to occur within the study limits if appropriate habitat is present. In October 1998, Virginia spirea was surveyed for and, while appropriate habitat was noted at several locations, no individuals of Virginia spirea were found. Based on this information, DCR does not anticipate that the proposed project will adversely impact Virginia spirea.

DCR has been contracted by VDOT to survey the study area for small whorled pogonia. DCR will report the results of this survey as soon as they are available. Based on a review of the DEIS, DCR understands that if individuals of small whorled pogonia are located during surveys, VDOT will take the necessary measures to ensure the project will not impact small whorled pogonia. DCR recommends continued coordination with the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Agriculture and Consumer Services (VDACS) to ensure compliance with protected species legislation.

Lastly, DCR previously indicated the presence of a population of Indiana bats (Myotis sodalis, G2/S1/LE/L) near segments 101, 201, 300, and 301. Based on information contained in the DEIS, DCR understands that these segments have been eliminated from consideration. Indiana bats may occur at other locations within the study area if appropriate habitat is present. DCR supports the proposal to mist-net prior to construction activities to avoid or reduce the possibility of incidental takes. We recommend continued coordination with the United States Fish and Wildlife Service (USFWS) and the state regulatory authorities in West Virginia and Virginia.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. New and updated information is continually added.
to BCD. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

DIVISION OF SOIL AND WATER CONSERVATION

For erosion and sediment control and stormwater management issues pertaining to these projects, the Virginia Department of Transportation is reminded of the following:

(1) Erosion & Sediment Control (ESC) Annual Specifications and Project-Specific Plans: All Virginia Department of Transportation (VDOT) projects that involve a regulated land-disturbing activity must comply with the (1) VDOT Annual Standards and Specifications for Erosion and Sediment Control (ESC) reviewed and approved by the DCR’s Division of Soil and Water Conservation (DSWC) for the time period in which the project will be conducted; and (2) the project-specific ESC plan. Please note that VDOT is required to prepare an individual project-specific plan for all projects involving a regulated land-disturbance. All specifications and plans must be prepared in accordance with the Virginia Erosion & Sediment Control Handbook, Virginia Erosion & Sediment Control Law (VESCL) and Regulations (VESCR). [Ref: VESCL §10.1-560, §10.1-564; VESCR §4VAC50-30-30, VESCR §4VAC50-30-100]

(2) Stormwater Management (SWM) Annual Specifications and Project-Specific Plans: All VDOT projects that involve regulated land clearing, soil movement, or construction activity must comply with the (2) VDOT Annual Standards and Specifications for Stormwater Management (SWM) approved by DSWC for the time period in which the project will be conducted and (2) the project-specific SWM plan. As with ESC, VDOT is required to prepare an individual project-specific plan for all projects involving a regulated activity. All specifications and plans must be prepared in accordance with the Virginia Stormwater Management Law (VSWML) and Regulations (VSWMR). [Ref: VSWML §10.1-603.5; VSWMR §4VAC-3-20-210 - 245].

In addition, all work in the Virginia counties of Wise, Dickenson and Buchanan that has any floodplain impact needs to be fully documented and submitted to FEMA for a Conditional Letter of Map Revision (CLMR) to ensure no adverse floodplain impact. Upon completion of the project, a final Letter of Map Revision (LOR) should be obtained to certify as built conditions. This is warranted based on the topography and proximity of so many structures to the floodplain and floodways.

DIVISION OF PLANNING AND RECREATION RESOURCES

The proposed alternatives will not impact on Breaks Interstate Park. Alternative B is further removed from the park and will have less potential impact than alternative A. It is important that if the road is constructed it provides access to Route 80. This will facilitate travel to the Interstate Park from the Bristol/Kingsport area and the community of Gundy. A portion of the Levisa River was nominated for designation as a National Heritage River. Although the stream was not designated a Heritage river the reach that received the nomination should be identified in the impact statement and evaluated for any potential impacts. Mitigation for the crossing of the proposed Haysi to Garden Hole Recreational should also include restoration of vegetation on disturbed areas, as well as, minimizing vegetative clearing. Alignments, that cross the trail in previously disturbed areas, may offer a more desirable route.

Thank you for the opportunity to comment on this project.

Cc: Kim Marbain, USFWS
    Ray Fernald, VDGIF
    Frank Fulghum, VDACS
June 19, 2000

Mr. Earl T. Robb
Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219-2000

Subject: Draft Environmental Impact Statement – Coalfields Expressway
Wise, Dickenson, and Buchanan Counties, Virginia

Dear Mr. Robb:

The Department of Environmental Quality (DEQ) Virginia Water Protection Permit Program has reviewed the Draft Environmental Impact Statement (DEIS) for the Coalfields Expressway project. The scope of work includes the construction of a four-lane, limited access highway located in Wise, Dickenson, and Buchanan Counties, Virginia.

As reported in the DEIS, all "Build" alternatives will impact State waters, including wetlands. As noted in the DEIS, alternative locations and alignments which reduce impacts to wetlands and watercourses were considered during the design process. VDOT should attempt to select the most feasible alternative that also avoids and minimizes potential direct and indirect impacts to wetlands and streams to the greatest extent possible. Alternative D, with the largest impacts to State waters, including wetlands, would be the least desirable alternative from this perspective. Alternative A also has significant impacts, particularly to forested wetlands. As indicated in the DEIS, for the selected alternative unavoidable impacts to wetlands and State waters will require compensatory mitigation.

Many of the proposed impacts involve stream crossings that will require bridge construction. Appropriate design and construction measures should be employed to avoid and minimize impacts to State waters from these crossings. Machinery should be kept out of streams and wetlands when possible. Machinery that must be operated within wetland areas should be maintained on mats in order to prevent tire rutting.

Due to the extent of impacts to State waters, this project will require an individual Virginia Water Protection Permit, including coordination of this project with the Virginia Marine Resources Commission, the Army Corps of Engineers and the DEQ through the Joint Permit Application process.
In general, DEQ encourages the use of erosion and sediment control measures, adherence to stormwater management regulations, and careful construction practices to minimize temporary impacts to State waters during site construction activities.

Please note that any impacts due to grading, clearing, or excavating five or more acres of land will require a stormwater permit for construction. The proponent should coordinate storm water permitting issues with the DEQ Regional Office Storm Water Permitting staff at the Southwest Regional Office at 540-676-4800.

We appreciate the opportunity to comment on this project. Please contact Carolyn Browder at (804) 698-4420 with any questions or comments.

Sincerely,

Ellen Gilinsky, Ph.D.
Water Protection Permit Program Manager

cc: Silvia Gazzera – DEQ, Office of Environmental Impact Review File
July 5, 2000

Mr. Earl T. Robb
Environmental Division
Virginia Department of Transportation
1401 East Broad St.
Richmond, VA 23219-1939

RE: Draft Environmental Impact Statement for the Coalfields Expressway

Dear Mr. Robb:

Thank you for giving VDEQ's Office of Air Data Analysis the opportunity to comment on the above-referenced project. The State air pollution regulations applicable to the construction of the project are listed below.

- Fugitive Dust and Emission Control (9 VAC 5-50-60 et seq.)
- Open Burning Restrictions (9 VAC 5-40-5600 et seq.)

Please feel free to contact me at (804) 698-4405 with any further questions.

Sincerely,

[Signature]

James Ponticello
Office of Data Analysis
June 23, 2000

Earl T. Robb
State Environmental Administrator
Virginia Department of Transportation
1401 East Broad Street
Richmond, Va.  23219-2000

Re: Comments on Coalfields Expressway Project

Dear Mr. Robb:

Thank you for the opportunity to review this project. The Virginia Department of Forestry understands the need for this roadway. This road will aid our firefighting efforts by providing safe, reliable transportation for southwest Virginia. We would like to suggest the consideration of Alternative E for this project.

Our reasons for selecting Alternative E is that this alternative will take the fewest forest and farmland acres out of production in southwest Virginia. Conservation of the land base is becoming a critical issue for the Commonwealth and we need to increase our awareness of this as an issue. Alternative E is a compromise, which takes the fewest acres.

Please contact me with any questions or additional comments. Thank you again for the opportunity to comment.

Sincerely,

J. Michael Foreman, Forest Management

Mission: “We Protect and Develop Healthy, Sustainable Forest Resources for Virginians.”
MEMORANDUM

TO: Earl T. Robb

FROM: Eugene K. Rader

SUBJECT: Review of Draft Environmental Impact Statement and Geotechnical Report, Coalfields Expressway

Having reviewed the DEIS and Geotechnical Report for the Coalfields Expressway, I am presenting the following items for consideration in the preparation of the final EIS.

1. Discussion of the relationship of geology to the expressway construction needs to be expanded in both the DEIS and Geotechnical Report. The discussion in the DEIS report is very brief and the Geotechnical Report includes only two aspects of geology, dip direction and lineaments. Stratigraphic units in the proposed construction area show rapid lateral and vertical lithofacies changes. Cuts and fills on I-77 in West Virginia exhibit many examples of the instability problems associated with similar Pennsylvanian-age rocks of Southwest Virginia. Also, sandstones in the project area are not quartz sandstones and highly stable, but subgraywackes and subject to feldspar conversion to clay and the loss of stability.

2. Natural gas is a significant mineral resource in Southwestern Virginia and is not addressed in either the DEIS or the Geotechnical Report. There are more than seventy-five crossings of the proposed routes by natural gas pipelines. The numerous wells feeding these pipelines include coalbed methane and conventional gas wells. Many of these wells are on or very near the proposed routes. Because these wells may produce for many years (i.e. + 25 years) and drilling continues in the area, the final EIS should address this impact on this resource.

3. The effect of separate ownership of surface and mineral rights on overall construction cost needs to be addressed in the Final EIS.
June 9, 2000

Ms. Leslie Grayson  
Virginia Outdoors Foundation  
P.O. Box 322  
Aldie, Virginia 22001

Dear Ms. Grayson:

Please find enclosed a copy of the Draft Environmental Impact Statement for the Coalfields Expressway for your review. The proposed project will be a four-lane, limited access highway located in Wise, Dickenson, and Buchanan Counties, Virginia. Any comments on the project should be submitted to Mr. Earl T. Robb at the above address by July 10, 2000. If you have questions about the project, please feel free to contact me at (804) 371-6706.

Sincerely,

Michelle Fall  
Environmental Program Analyst

Cc: Angel Deem, VDOT  
Patsy Napier, VDOT  
Barbara Middleton, FHWA

No easement held by VOF should be affected by this project.
COMMONWEALTH of VIRGINIA

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

27 July 2000

Re: Coalfields Expressway
Wise, Dickenson, and Buchanan counties
DHR project no. 97-0950

Dear Ms. Fall:

Thank you for requesting our comments on the Draft Environmental Impact Statement for the Coalfields Expressway, prepared for the Virginia Department of Transportation and the Federal Highway Administration in February 2000. We have previously reviewed the Draft Environmental Impact Statement from the West Virginia Department of Transportation, the Coalfields Expressway Cultural Resource Appendix from WVDOT; and the Final Environmental Impact Statement from WVDOT.

We understand that determinations of effects on above-ground historic resources in Virginia will be deferred until more detailed designs of the Build Alternatives are prepared. We agree that the concepts described on p. 4-24 are appropriate ways to reduce and/or avoid adverse effects on the known historic resources. We agree that Phase 1 archaeological survey should be conducted if any of the Build Alternatives are selected, and if alignment modifications are made. This information will allow the DHR and DOT to assess the significance of sites identified and the likely effects of the project on these resources.

Please contact John E. Wells at this office if you have questions about our comments.

Sincerely,

[Signature]
nio H. Metz, Director
Division of Resource Services and Review

[Office Addresses]
Mr. Earl T. Robb  
State Environmental Administrator  
Virginia Department of Transportation  
1401 East Broad Street  
Richmond, Virginia 23219

Dear Mr. Robb:

Draft Environmental Impact Statement  
Coalfields Expressway  
State Project R000-961-101, PE-101  
Buchanan, Dickenson, and Wise Counties, Virginia

This is in response to your request for comments on the subject document. We appreciate you granting us a two week extension to the original May 12, 2000, comment deadline.

Our comments, which are generally minor and editorial in nature, are as follows:

1) Title page, first sentence of the project description. Paynesville is located in West Virginia, not Virginia.

2) Glossary. TEA-21 stands for the Transportation Equity Act for the 21st Century.

3) Page S-1. Section S-2: Purpose and Need. Second paragraph, third sentence. "US Route 83" should be changed to "Virginia Primary Route 83".

4) Page S-3. Section S-3.3: The Coalfields Expressway in West Virginia. Mention should be made that the 1998 TEA-21 allocated an additional $22.69 million for the construction of the Coalfields Expressway in West Virginia. The text in the following paragraph should also be revised to state that the design speed of the West Virginia portion is 65 mph; the speed limit postings will be determined during final design. Construction is anticipated to begin in the summer of 2000.
Mr. Earl T. Robb  
Page 2  
May 18, 2000

5) Page S-5. Section S-5: Summary of Beneficial and Adverse Impacts. Second paragraph, second sentence. “Section 8 housing facility” needs to be defined.

6) Page 1-2. Top of page. It should be added that the Record Of Decision for West Virginia’s portion was approved in January 2000.

7) Page 1-8. Section 1.4: Economic Development Need. Delete the word “improve” from the first sentence.

8) Page 1-10. First sentence, last paragraph of Section 1.4.1. Typographical error. Change “.and” to “and”.


10) Page 1-13. Second paragraph, first sentence. Delete the word “its”.

We appreciate the opportunity to review this document and look forward to future coordination with VDOT during subsequent design efforts by both our states. Please direct any questions to Jim Colby at (304)558-2885.

Very truly yours,

[Signature]

James E. Sothen, P.E., Director  
Engineering Division

JES:HS
United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
6669 Short Lane
Gloucester, VA 23061

July 5, 2001

Mr. Roberto Fonseca-Martinez
Division Administrator
Federal Highway Administration
P.O. Box 10249
400 N. Eighth St., Room 750
Richmond, Virginia 23240-0249

Colonel Allan B. Carroll
District Engineer
Norfolk District, Corps of Engineers
Fort Norfolk, 803 Front Street
Norfolk, Virginia 23510-1096

Attn: Ed Sundra, FHWA
Alice Allen-Grimes, Corps

Re: Coalfields Expressway - Dickenson, Wise, and Buchanan Counties, Virginia

Gentlemen:

This regards the ongoing coordination on the proposed Coalfields Expressway (Virginia Department of Transportation Project #: R000-961-101, PE101) in Dickenson, Wise, and Buchanan Counties, Virginia, and the potential impacts of this project on the federally endangered Indiana bat (Myotis sodalis). The Indiana bat has been documented in Wise and Dickenson Counties, Virginia. We note that surveys for the federally threatened small whorled pogonia (Isotria medeoloides) are ongoing and our recommendations have been provided. This letter constitutes the preliminary report of the Service on the proposed project and is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act (ESA)(87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Section 7 (a)(2) of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) requires federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally listed threatened or endangered species or result in the destruction or adverse modification of designated critical habitat. In the event that a federal agency determines that its action "may affect" a listed threatened or endangered species or designated critical habitat, the agency is required to consult with the
Service regarding the degree of impact and measures available to avoid or minimize the adverse effects.

Regarding winter habitat for the Indiana bat, we have reviewed the document entitled, “A Spring Staging Survey for Endangered Bats at Mine Portals in Wise, Dickenson, and Buchanan counties, Virginia.” We note that no federally listed bat species were found during this survey.

Regarding summer Indiana bat habitat, the U.S. Fish and Wildlife Service (Service) offered the Virginia Department of Transportation (VDOT) and Federal Highway Administration (FHWA) several options to consider to insure that the Indiana bat was not adversely affected by this project. These included conducting mist net surveys to determine whether the Indiana bat occupied the project area or implementing seasonal tree clearing during November 15 through April 1. VDOT chose to implement seasonal clearing.

As we stated in our letter dated February 28, 2001, in choosing to clear trees between November 15 and April 1, VDOT must make a determination that sufficient suitable Indiana bat foraging and roosting habitat will remain within two miles of the project action area, post construction. Specifically, the action agencies and VDOT must determine the percentage of suitable habitat remaining by dividing the area of forest clearing in the project action area, by the area of forest that will remain within two miles of the action area. VDOT has determined that over 97% of the potential bat foraging and roosting habitat will remain within two miles of the project action area, post construction.

Based on the above findings on winter and summer Indiana bat habitat, the Service has determined that this project is not likely to affect the Indiana bat. Therefore, no further Section 7 consultation regarding the Indiana bat is required with the Service. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

The Service appreciates your coordination of this project with us. We look forward to reviewing survey results for the federally threatened small whorled pogonia (*Isotria medeoloides*). If you have questions, please contact William Hester at (804) 693-6694, extension 134.

Sincerely,

Karen L. Mayne
Supervisor
Virginia Field Office

cc: Ms. Michelle Fall, VDOT Headquarters
June 26, 2001

Ms. Kathleen S. Kilpatrick, Director  
Virginia Department of Historic Resources  
Attn: Lily Richards, Project Review Division  
2801 Kensington Avenue  
Richmond, Virginia 23221

RE: Coalfield Expressway-Wise, Dickenson, and Buchanan Counties  
VDOT Project No. R000-961-101, PE101  
Archaeological Identification Survey and Evaluation  
VDHR File No. 1997-0950

Dear Ms. Kilpatrick:

The enclosed report (2 copies) for a cultural resources identification survey has been prepared by Coastal Carolina Research, Inc. Associated IPS documentation is being forwarded under separate cover and the IPS disk was sent on June 15, 2001. The report describes the results of an identification survey for cultural resources within a proposed VDOT Project involving construction of a four lane divided highway on new alignment within an approximately 53 mile corridor in Wise, Dickenson, and Buchanan Counties, Virginia.

Twenty-one archaeological sites and four artifact locations were recorded during the survey. Four of the sites (44DK23, 44DK24, 44DK27, and 44BU77) represented rockshelters. The four rockshelters were subjected to Phase II significance evaluation. One of the rockshelters, 44DK24, was felt by the consultant to be eligible for inclusion in the National Register of Historic Places (NRHP) under Criterion D (Criteria A, B, and C do not apply).

The remaining three rockshelters (44DK23, 44DK27, and 44BU77), archaeological sites (025-5063, 44DK22, 025-5064, 025-5065, 025-5066, 025-5027, 025-5067, 44DK26, 025-5068, 025-5029, 44BU78, 013-5046, 44BU79, 013-5047, 44BU80), and artifact locations (97-15-18, 97-15-19, 97-15-20, and 97-15-21) were not felt to be eligible for the NRHP under Criteria A, B, C, or D.

The Virginia Department of Transportation (VDOT), upon reviewing this document, is in agreement with the consultant's recommendation that Rockshelter 44DK24 may be eligible for
inclusion in the NRHP under Criteria D. The VDOT also agrees with the consultant that none of the other cultural resources identified during the survey are eligible for the NRHP.

We invite the Virginia Department of Historic Resources to concur with the above recommendations by completing the signature block below within 30 days of receipt of this letter. Please return a signed copy to this office for our records.

Should you have any questions or require additional information, please contact Mr. Calvert W. McIlhany at (540) 645-1644 or Ms. Kalli S. Lucas at (540) 645-1643.

Sincerely,

Calvert W. McIlhany
District Cultural Resources Manager

Enclosures

c: Mr. A. F. Opperman, w/enclosure
Ms. D. K. Bush
Mr. G. B. Young
Mr. D. R. Harris
Mr. T. G. Branson
Mr. A. D. Sumpter
Mr. J. M. Wittkofski
Ms. L. E. Surber

The Virginia Department of Historic Resources (VDHR) concurs with VDOT’s recommendation that Rockshelter 44DK24 is potentially eligible for inclusion in the National Register of Historic Places under Criterion D. The VDHR also concurs with VDOT’s recommendation that the remaining three rockshelters (44DK23, 44DK27, and 44BU77), archaeological sites (025-5063, 44DK22, 025-5064, 025-5065, 025-5066, 025-5027, 025-5067, 44DK26, 025-5068, 025-5029, 44BU78, 013-5046, 44BU79, 013-5047, 44BU80), and artifact locations (97-15-18, 97-15-19, 97-15-20, and 97-15-21) are not eligible for the NRHP under Criteria A, B, C, or D.

July 18, 2001

Director
United States Department of the Interior
FISH AND WILDLIFE SERVICE
Ecological Services
6669 Short Lane
Gloucester, VA 23051

August 30, 2001

Mr. Roberto Fonseca-Martinez
Division Administrator
Federal Highway Administration
P.O. Box 10249
400 N. Eighth St., Room 750
Richmond, Virginia 23240-0249

Colonel David L. Hansen
District Engineer
Norfolk District, Corps of Engineers
Fort Norfolk, 803 Front Street
Norfolk, Virginia 23510-1096

Attn: Ed Sundra, FHWA
Alice Allen-Grimes, Corps

Re: Coalfields Expressway - Dickenson, Wise, and Buchanan Counties, Virginia

Gentlemen:

This regards the ongoing coordination on the proposed Coalfields Expressway (Virginia Department of Transportation Project #: R000-961-101, PE101) in Dickenson, Wise, and Buchanan Counties, Virginia, and the potential impacts of this project on the federally threatened small whorled pogonia (Isotria medeoloides). We note that Section 7 consultation was completed on the federally endangered Indiana bat (Myotis sodalis) by our letter dated July 5, 2001. The U.S. Fish and Wildlife Service (Service) has reviewed the Biological Assessment and small whorled pogonia survey results for this project dated August 2001 and July 10, 2001 respectively. This letter constitutes the report of the Service on the proposed project and is submitted in accordance with provisions of the Endangered Species Act (ESA)(87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Based on our review of the small whorled pogonia survey results and Biological Assessment, the Service has determined that this project is not likely to affect the small whorled pogonia. Therefore, no further Section 7 consultation regarding the small whorled pogonia is required with the Service. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.
Mr. Fonseca-Martinez and Colonel Hansen

The Service appreciates your coordination of this project with us. If you have questions, please contact William Hester at (804) 693-6694, extension 134.

Sincerely,

[Signature]

for Karen L. Mayne  
Supervisor  
Virginia Field Office

cc: Mr. Jeff Rodgers, VDOT Headquarters