

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

ENVIRONMENTAL ASSESSMENT

Route 58

Patrick County
State Project No.: 0058-070-E19, PE-101; UPC 17537
0058-070-E18, PE-101; UPC 17536
Federal Project No.:
From: 0.117 miles west of Route 795
To: Stuart Bypass

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

Approved for Public Availability

3/1/11
Date

Marine Lopez Cruz
For Division Administrator

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Section 1 – Purpose and Need

1.1 STUDY AREA

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA), is studying the environmental consequences of improvements to Route 58 in Carroll, Floyd and Patrick Counties. Figure 1.1 shows the project location throughout the corridor. To the west of Hillsville Route 58 provides connectivity to I-77 and I-81. To the east Route 58 intersects with U.S. Route 220. The project length is 11.22 miles and consists of lands adjacent to the Route 58 corridor through Patrick County that could potentially incur direct or indirect impacts as a result of the proposed project. The limits are from 0.11 miles west of Route 795 at the terminus of the existing Meadows of Dan Bypass to 1.49 miles north of the Northern Corporate Limits of Stuart. Route 58 is an important corridor for interstate, regional and local travel and this project is part of the continuing program to upgrade Route 58 across southern Virginia.

1.2 HISTORY

May 1989: The U.S. Route 58 Corridor Development Program was created by the Virginia General Assembly. It was established for the purpose of creation and enhancement of an adequate, safe, modern and efficient highway system connecting the communities, businesses, places of employment and residents of the southwestern-most and southeastern-most portions of the Commonwealth, thereby enhancing economic development potential, employment opportunities, and mobility throughout southern Virginia. The legislation also stipulated that to the maximum extent possible, the U.S. Route 58 corridor should be developed as an arterial utilizing existing four-lane highway sections, available rights of way, bypasses, connectors and alternate routes.

1990-1991: The Virginia Department of Transportation conducted a feasibility study to establish the best general corridor for improvements to the U.S. Route 58 Corridor from Jonesville to Martinsville, a distance of approximately 241 miles. The feasibility study was a high-level study focused on five major topics: transportation, engineering feasibility, environmental issues, economic development, and public opinion. Several alternative corridors were studied for the section between Hillsville and Stuart.

May 1992: The Commonwealth Transportation Board determined that the existing location of Route 58 provided the best general corridor for highway improvements between Stuart and Hillsville.

1994: The Virginia Department of Transportation began the U.S. Route 58 Location Study. This study evaluated potential alignments within the corridor selected by the Commonwealth Transportation Board in 1992. The primary purpose of the Location Study Report was to develop and refine functional designs for Candidate Build Alternatives to be evaluated in detail and from which a preferred alternative was to be selected.

June and November 1995: Public information meetings were held in Hillsville and Stuart.

September 1996: Location public hearings were held at the Carroll County High School and the Patrick County Administration Building.

January 1997: The Commonwealth Transportation Board approved the location of the preferred alternative for Route 58 from Hillsville to Stuart.

April 1997: The Virginia Department of Transportation completed the U.S. Route 58 Location Study Report.

July 1997: Preliminary Engineering Authorized by VDOT and consultant procurement initiated.

August 1998: Design Public Hearing held at the VFW Hall in Hillsville and at the Hooker Activity Center in Patrick County.

December 1998: Design Approval by the Commonwealth Transportation Board.

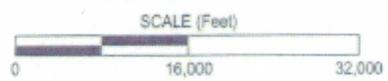
June 1999: Right of Way Authorized by VDOT for UPC 17536.

January 2000: Right of Way Authorized by VDOT for UPC 17357.

This project has been developed as a state funded project and as is noted in the project history it is currently at an advanced stage of project development. Using state funds VDOT has identified a location for the improvements, conducted public involvement activities, designed the project and purchased right of way. Approximately 78% (124 of 159) of the parcels have been acquired with state funds. This Environmental Assessment (EA) is being prepared in anticipation of securing federal funds for project construction.



Source: Galax Virginia-North Carolina 1:100,000 Scale Topographic Map, 1988



U.S. Route 58
HILLSVILLE TO STUART

PROJECT LOCATION

1.3 NEEDS – EXISTING CONDITIONS

The existing Route 58 corridor through the study area is a two lane facility. Daily traffic volumes on Route 58 range from approximately 1,900 vehicles to approximately 4,600 vehicles. Route 58 serves movements of people and freight across all of southern Virginia, but also serves as a local route for traffic in the Meadows of Dan to Stuart area.

There is a need to correct existing substandard conditions throughout the corridor. Between the Meadows of Dan Bypass and Stuart, U.S. 58 is a two-lane roadway. This 11.22 mile stretch of road contains many sharp curves and steep hills that do not meet current design standards. Most of the roadway has narrow, substandard 10-11 foot lanes and minimal or no shoulders. Sight distance to oncoming vehicles is inadequate at many intersections. Steep hills present great difficulty to trucks. The lack of truck climbing lanes or passing lanes through these areas causes travel delays and safety concerns. These deficiencies have resulted in posted speed limits ranging from 25 to 50 miles per hour throughout the corridor.

In addition to the needs identified above, the roadway improvements would be consistent with legislation which exists requiring the improvement of this section of Route 58. The U.S. Route 58 Corridor Development Program was created by the Virginia General Assembly in 1989. It was established for the purpose of creation and enhancement of an adequate, safe, modern and efficient highway system connecting the communities, businesses, places of employment and residents of the southwestern-most and southeastern-most portions of the Commonwealth, thereby enhancing economic development potential, employment opportunities, and mobility throughout southern Virginia. The legislation also stipulated that to the maximum extent possible, the U.S. Route 58 corridor should be developed as an arterial utilizing existing four-lane highway sections, available rights of way, bypasses, connectors and alternate routes.

1.4 NEEDS – FUTURE CONDITIONS

The Route 58 corridor from Hillsville to Stuart is the last remaining section to complete the widening of Route 58 from Virginia Beach to I-77. Through the study area Route 58 provides connectivity to I-77 and I-81. Patrick County through the West Piedmont Regional Planning District Commission has identified transportation improvements in the 2035 Rural Long Range Transportation Plan. This Plan cites safety deficiencies along Route 58 with crashes exceeding planning thresholds and poor site distances. The Plan also notes congestion deficiencies along Route 58. The corresponding project recommendations are to widen Route 58 to four lanes including a median.

To the west, the corridor would tie into a four-lane section of Route 58 through the Meadows of Dan. To the east, the corridor ties into an existing four-lane section of Route 58 around the town of Stuart. The study area's two-lane route hinders traffic flow through the corridor and exacerbates the existing substandard roadway conditions and safety deficiencies. Existing and projected traffic volumes are contained in Table 1.

1.5 SUMMARY

The purpose of the project is to improve safety and enhance mobility on U.S. Route 58 between the existing four-lane Meadows of Dan Bypass and the Stuart Bypass.

Table 1 Existing and Projected Traffic Volumes

Route 58										
Location		Existing 2008			Forecast					
					No-Build 2035			Build 2035		
From:	To:	AADT	VPH	% Heavy Trucks	AADT	VPH	% Heavy Trucks	AADT	VPH	% Heavy Trucks
Rte 58 BYP (Meadows of Dan)	Rte 758	2,250	200	9%	2,900	265	9%	9,400	850	12%
Rte 758	Rte 8	1,900	180	10%	2,900	275	10%	9,400	850	12%
Rte 8	Rte 58 Bus (Stuart)	4,600	435	8%	6,000	540	8%	9,400	850	12%

Section 2 - Alternatives

2.1 INTRODUCTION

This section describes the proposed project, alternatives previously considered and eliminated and a single build alternative which generally involves constructing a four-lane divided highway meeting principle arterial standards along the existing Route 58 corridor from the Meadows of Dan Bypass to the Stuart Bypass. The No-build Alternative was also retained and it serves as a baseline for comparison.

2.2. ALTERNATIVE DEVELOPMENT AND SCREENING PROCESS

The U.S. Route 58 Location Study Report identified three Candidate Build Alternatives (CBAs) following an alternatives development and screening process that included a presentation to the public through a citizen information meeting. The three CBAs were presented to the public in 1995 at a series of public informational meetings and to the state environmental review agencies at an Interagency Coordination Meeting. After consideration of the agency and public comments and additional technical studies a preferred alternative was developed. The preferred alternative, or Yellow Alternative, consisted of a combination of the least environmentally and most cost effective segments from the three CBAs. A second alternative was developed to be presented at the public hearing in case the preferred alternative was less attractive to the public. This second-choice alternative was called the Purple Alternate. Following the location public hearing the Commonwealth Transportation Board (CTB) adopted the Yellow Alternative as the preferred alternative, with certain modifications to be included in the project's final design. This alternative has been carried forward as the build alternative in this Environmental Assessment.

2.3 OTHER ALTERNATIVES ELIMINATED FROM DETAILED STUDY

Alternatives 1, 2 and 3 that were previously considered have been eliminated from further consideration. The Purple Alternate was carried forward for more detailed analysis in the 1997 Location Study, but was subsequently eliminated when the CTB adopted the preferred (Yellow Alternative). Alternatives were screened based on their ability to meet the needs identified in Section 1, engineering feasibility, cost and their effects on protected and sensitive natural and human resources. The Preferred Alternative alignment is shown on Figure 2.1.

2.4. ALTERNATIVES CARRIED FORWARD

2.4.1 No Action

Under the no action or no-build alternative, the proposed Route 58 improvements would not be constructed and Route 58 would remain in its present configuration as a two lane facility. Most other existing roads also generally would remain in their present configurations. Local and state transportation plans include projects to tie this project in with the existing Route 58 Bypass around the town of Stuart. These were assumed to be in place by the design year (2035), were taken into account in the road network assumed for traffic forecasting efforts for this project, and would be considered part of the assumed future no-build conditions. The no-build alternative would not meet the project purpose and need because it would not improve the existing safety deficiencies or enhance mobility through the corridor.

2.4.2 Preferred Alternative

Description. The proposed project would begin 0.11 miles west of Route 795 at the terminus of the existing Meadows of Dan Bypass and end at the western end of the Stuart Bypass approximately 1.49 miles north of the Northern Corporate Limits of Stuart. The project length is 11.22 miles. The new facility would be a four-lane principle arterial along the existing Route 58 alignment. It would have four 12-foot travel lanes with 8-foot shoulders outside shoulders, 6-foot inside shoulders and a variable width grass median as shown in Figure 2.2. Variations to this typical section are also provided in Figure 2.2 to accommodate engineering constraints.

Ability to meet needs. The preferred alternative would provide a four-lane divided highway along the existing two-lane U.S. Route 58 between the existing four-lane Meadows of Dan Bypass and the Stuart Bypass. It would correct existing substandard conditions by improving safety and enhancing mobility throughout the corridor.

Figure 2.1
Route 58 Preferred Alternative

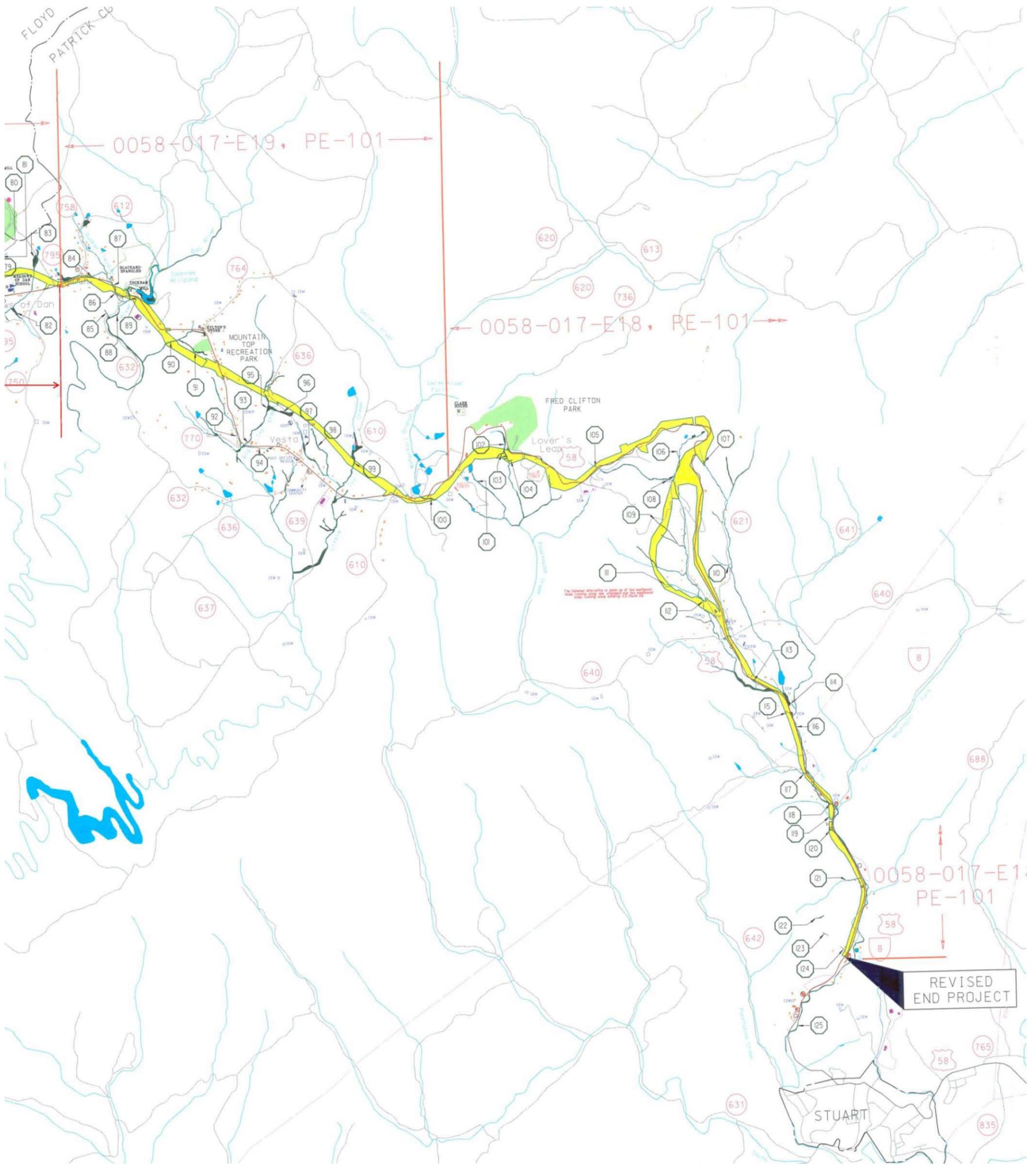
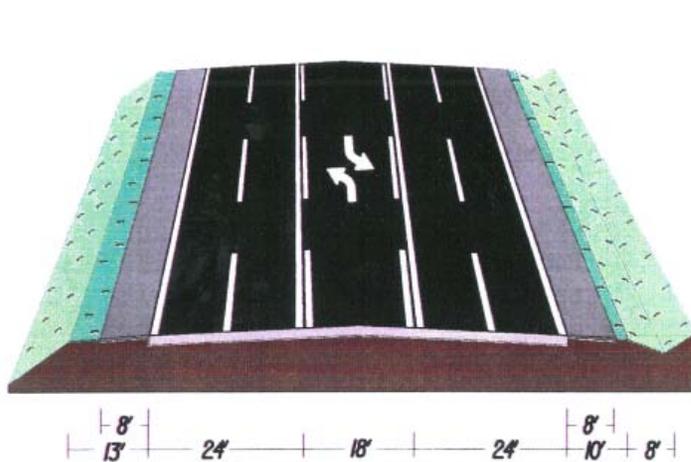
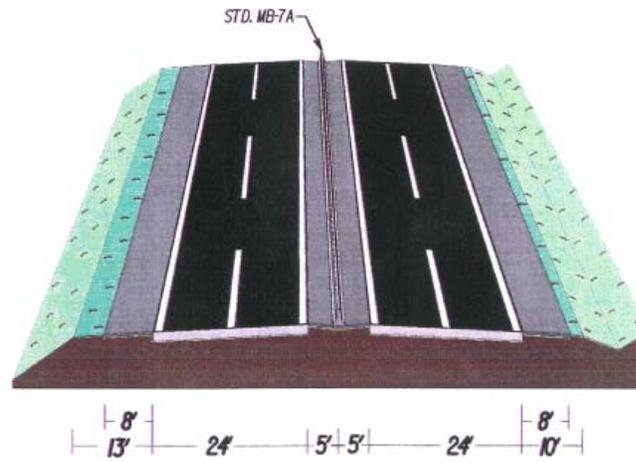


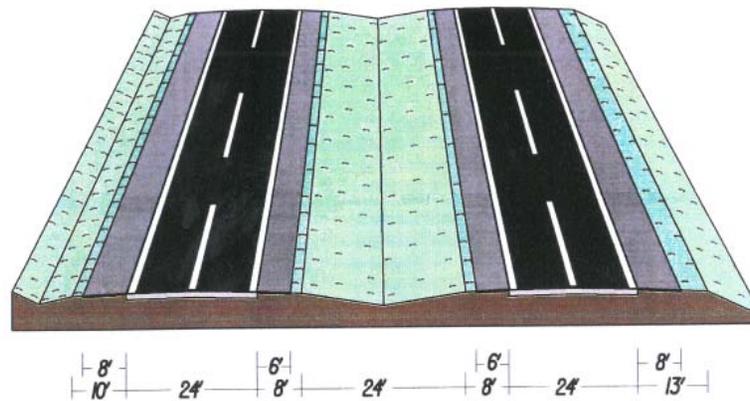
Figure 2.2
Route 58 Typical Sections



Five-Lane Typical Section for use along area west of Laurel Fork.



Optional Narrow Median Typical Section for use in very mountainous terrain.



Normal Typical Section (Rural Principal Arterial Standards) for use along most of the project.

Section 3 – Environmental Consequences

3.1 OVERVIEW OF ENVIRONMENTAL ISSUES

This section describes the environmental consequences of the proposed project. The impact assessment included parcels within or adjacent to the construction limits or approximately 200 feet on either side of the centerline of the route as shown in the 1997 Location Study Report.

This approach identifies the maximum potential impact estimates. **Table 2** summarizes environmental issues and their relevance to the project. **Table 3** quantifies the potential impacts associated with the build alternative.

Table 2. Environmental Issues

Land Use/Land Cover	This project is consistent with local land use plans and is located within the existing Route 58 corridor. Land cover adjacent to Route 58 consists of forest, developed, and farmland.
Relocations/Right of Way Acquisition	According to the 1997 Location Study Report 37 homes, 8 businesses, one church and one post office would be displaced by the project. Right of way acquisition is 78% complete as part of the previous efforts to construct the project with state funds.
Environmental Justice	The project has been developed in accordance with Executive Order 12898, <i>Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations</i> . There are no minority and low income populations along the corridor that would suffer disproportionately high and adverse effects from the project.
Community Facilities and Services	A post office and a church will be displaced by the project. No community facilities or services (schools, civic organizations, law enforcement or emergency services) would be displaced or adversely affected by the project.
Community Access	Community access would be improved as a result of the project although temporary disruptions may occur during construction.
Agriculture, Prime Farmland, and Soils	Most of the land along Route 58 is agricultural. Prime farmland and farmland of statewide importance also exist throughout the project area. See Farmland section for details.
Agricultural and Forestal Districts	There are no designated agricultural or forestal districts in Patrick County
Parks and Recreational Resources	Two state parks or designated recreational facilities exist in the project area. Fred Clifton Park in Lover's Leap is adjacent to existing Route 58, but would not be impacted by the project. Mountain Top Recreation Park in Meadows of Dan is adjacent to existing Route 58, but would not be impacted by the project. The project would involve no "use" of Section 4(f) properties and would have no conversion of properties protected under Section 6(f) of the Land and Water Conservation Fund Act (LWCFA).
Historic Properties	The Virginia State Historic Preservation Officer (SHPO) has concurred on August 28, 1997 that Blackwell-Spangler Farm is eligible for the National Register of Historic Places (NRHP) under Criteria B & C. This property will be affected, but not adversely as VDOT has committed to developing and implementing a landscaping plan to provide vegetative screening. Other properties investigated for NRHP eligibility were either avoided by the project's design or found to be not eligible. See Historic Properties section for details.
State Scenic River	No state-designated scenic rivers are located within the project area.
Visual	No substantial visual impacts are anticipated.
Hazardous Materials Sites	The potential hazardous materials sites identified in the project area are typical of small towns and rural agricultural communities. They include gas stations, automotive repair shops, underground storage tanks and others. The presence of hazardous material/petroleum impacts identified on properties to be acquired for the project will be addressed through coordination with existing property owners, regulatory agencies, and/or the development of special provisions for the management of hazardous materials during construction. See Hazardous Material section for details.

Table 2. Environmental Issues

Waters of the U.S., including Wetlands	The proposed project crosses approximately 5 acres of wetlands and 18,601 linear feet of stream.
Water Quality	Stormwater management facilities would be incorporated into the project to minimize long-term effects of the project on water quality. See Water Resources section for details.
Public Water Supplies	There are no surface public water supplies in the project area. Groundwater is the water supply source for many homes. There are no sole-source aquifers designated by the U.S. Environmental Protection Agency in the project area.
Floodplains	Approximately 11.3 acres of floodplain would be impacted by the project. No appreciable changes to 100-year floodplain elevations are expected. See Floodplains section for details.
Terrestrial and Aquatic Habitat and Wildlife	Former natural habitats have been extensively altered by agriculture and development and few native woodlands exist in the project area. Animal species adapted to human-altered environments reside in or migrate through the remaining mosaic of forests, farms, and yards. The Smith River is within the project vicinity and is a federal T&E water.
Threatened and Endangered Species	Substantial impacts to federally threatened or endangered species are not anticipated. See Wildlife and Habitat section for details.
Invasive Species	In accordance with Executive Order 13112, <i>Invasive Species</i> , the potential for the establishment of invasive terrestrial or aquatic animal or plant species during construction of the proposed project will be minimized by following provisions in VDOT's <i>Road and Bridge Specifications</i> . These provisions require prompt seeding of disturbed areas with mixes that are tested in accordance with the Virginia Seed Law and VDOT's standards and specifications to ensure that seed mixes are free of noxious species. While the proposed right of way is vulnerable to the colonization of invasive plant species from other portions of the site and from adjacent properties, implementation of the stated provisions will reduce the potential for the establishment and proliferation of invasive species.
Wildlife and Waterfowl Refuges	No wildlife or waterfowl refuges are located in the project vicinity.
Anadromous Fish, Trout Waters, and Shellfish	Trout waters (wild and stocked) exist throughout the project corridor. Time of year restrictions will likely apply to the project, but exact restrictions would be determined during final design as part of the permitting process and these would be followed during construction of the project.
Air Quality	An air quality analysis was completed and showed that the project would not cause or contribute to a violation, worsen existing conditions, or delay timely attainment of any National Ambient Air Quality Standards (NAAQS). Although the project is considered to have a low potential for mobile source air toxics (MSAT) effects, and it is possible that localized increases in MSAT emissions may occur as a result of this project, the analysis found that MSAT emissions will likely be lower than present levels in the design year of this project as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent between 1999 and 2050. See the air quality technical report in Appendix A for additional details of the analysis and findings.
Noise	Thirty three sites, representing 57 single family homes, are predicted to be noise impacted in the design year (2035) due to levels approaching or exceeding the Noise Abatement Criteria (NAC). Noise mitigation for these sites by means of a barrier is not feasible since all impacted sites have direct access to the roadway, which prohibits the construction of a feasible noise barrier. See the noise analysis technical report in Appendix B for additional details of the analysis and findings.
Pedestrian and Bicycle Considerations	There are no existing or planned bicycle or pedestrian facilities in the corridor.

Table 3. Summary of Impacts

Category	No-Build	Preferred Alternative
Homes displaced	0	37
Businesses displaced	0	8
Schools displaced	0	0

Table 3. Summary of Impacts

Category	No-Build	Preferred Alternative
Churches displaced	0	1
Other community facilities displaced (post office)	0	1
Section 4(f) property used (acres)	0	0
Historic properties affected	0	1
Agricultural and forestal district land used (acres)	0	0
Prime, unique, or statewide-important farmland converted (acres)	0	107*
Length of streams disturbed (linear feet)	0	18601
Wetlands displaced (acres)	0	5
Floodplains crossed (acres)	0	11.3
Threatened or endangered species Impacted	0	2
Hazardous material sites impacted	0	26
Violations of national ambient air quality standards	0	0
Noise receptors impacted	0	57

*Farmland acreage is over estimated and reflects the acreage of right of way remaining to be purchased on the project.

3.3 FARMLAND

Under the federal Farmland Protection Policy Act (FPPA), the U.S. Department of Agriculture defines “farmland” as the following:

- Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion.
- Unique farmland is land other than prime farmland that is used for the production of high-value food and fiber crops.
- Farmland other than prime or unique farmland that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops as determined by the appropriate State or unit of local government.

The land may be in cultivation, forest, pasture, or other uses except for urban or built-up land or water uses. The predominant land use in the project area is agricultural. The Route 58 Location Study Report estimates approximately 83 acres of farmland along the project of which 23 acres is cultivated and 60 acres is pasture. As required by FPPA, Form CPA-106, *Farmland Conversion Impact Rating for Corridor Type Projects* (see Appendix 3), was submitted to the Natural

Resources Conservation Service's (NRCS) District Conservationist. The District Conservationist confirmed that farmland as defined by the FPPA lies within the limits of the project. Since the supporting documentation for the acreage identified in the Location Study Report is unavailable (i.e. a geospatial file of the project area) the Natural Resources Conservation Service's (NRCS) District Conservationist considered the acreage of conversion to be equal to the remaining right of way acreage for the project (i.e. 107 acres). The relative value assigned was based on the potential for farmland in the corridor compared to other farmland in the area.

The relative value assigned by the District Conservationist was 83 on a scale of 0 to 100. The relative value score is based on information from several sources including soil surveys, NRCS field office technical guides, soil potential ratings or soil productivity ratings, land capability classifications, and important farmland determinations. The relative value score was added to the corridor assessment score which is generated from completing a section on the CPA-106 form. Corridors with the highest combined scores are to be regarded as most suitable for protection; and corridors with the lowest scores as least suitable. Corridors receiving a total score of less than 160 need not be given further consideration for protection. The total combined score for impacts to farmland was less than 160. Therefore, no further consideration is required for farmland protection measures or other alternatives that might reduce farmland conversion.

3.4 HISTORIC PROPERTIES

Historic properties are archaeological sites and historic buildings, structures, objects, and districts that are listed in, or eligible for listing in, the National Register of Historic Places (NRHP). Archaeological and architectural history surveys were previously completed on all U.S. Route 58 projects in the mid to late 1990s. No archaeological sites identified along the project corridor were determined to be eligible for the NRHP. In November 2009 it was determined that updates were not needed to the archaeological surveys, but were necessary on the architectural surveys. The area of potential effects (APE) for the updated architectural survey included all above ground resources constructed prior to 1970 not previously surveyed and located on parcels within or adjacent to the construction limits and/or within the viewshed of the improvements.

Two properties were identified as warranting further study to determine eligibility status for the NRHP. The properties are located along Route 58 and identified by the Virginia Department of Historic Resources (VDHR) as DSS #070-5067 and #070-5093. VDHR concurred on September 16, 2010 that both properties are not eligible for the NRHP.

Two properties were identified as potentially eligible for the NRHP and one property is currently listed on the NRHP. The potentially eligible properties are the Clark House identified as DSS #070-0157 and Hylton's Store identified as DSS #070-0130. The listed property is Cockram Mill and is identified as DSS #070-0006. VDHR concurred on September 19, 1997 that the project's design successfully avoided impacts to all three and no further work was necessary.

The Blackwell-Spangler Farm property identified by VDHR as DSS #070-0120 was investigated and found to be eligible for the NRHP under Criteria B & C. It was determined that no characteristics qualifying the structures for the NRHP under Criterion B or C will be diminished; therefore the effect on the property is not adverse. VDHR initially concurred on September 19, 1997 that the project would have no adverse effect on the property. In 1999 VDHR was notified that the project design required a stormwater management basin to be placed adjacent to the

property and that VDOT has committed to developing a landscaping plan to provide vegetative screening. VDHR concurred on March 3, 1999 that the project would have a no adverse effect on the Blackwell-Spangler Farm provided VDOT develop and implement the proposed landscaping plan. VDHR was informed on November 3, 2010 that FHWA intends to make a Section 4(f) *de minimis* impact determination for impacts to this property.

VDOT coordinated the past and recent identification efforts with VDHR in September 2010 and received their concurrence on effect determinations on November 2, 2010.

Pursuant to Section 106 of the National Historic Preservation Act consulting parties were identified and consulted. The Catawba Indian Nation elected to be a consulting party on the Route 58 projects and responded that they had no concerns within the proposed project area and requested they be notified if Native American artifacts or human remains were found during construction.

3.5 WATER RESOURCES

3.5.1 Surface Waters

Approximately 18,601 linear feet (or 3.5 miles) of streambeds are within the construction limits identified in the location study report. Named streams include: Tuggle Creek, Quaker Field Branch, Dan River, Big Ivy Creek, Waterfall Branch, Smith River, Poorhouse Creek, and Bull Mountain Fork. A number of unnamed tributaries also are present and are smaller, perennial and intermittent streams.

In compliance with reporting requirements of the Clean Water Act Section 303(d), the Virginia Department of Environmental Quality monitors streams for a variety of water quality parameters, including temperature, dissolved oxygen, pH, fecal coliform, *E. coli*, enterococci, total phosphorus, chlorophyll a and benthic invertebrates, as well as metals and toxics in the water column, sediments and fish tissues. Based on monitoring data, two streams crossed by the project are listed as impaired because water quality in them does not meet standards for one or more parameters. Those streams and the parameters for which they are considered impaired include:

- North Fork of the South Mayo River – Benthic-Macroinvertebrate Bioassessments
- Spoon Creek – *Escherichia coli*

Project impacts could include filling of stream channels for construction of roadbed or roadway slopes and placement of culverts to carry streams under the proposed roadway. Temporary siltation may occur during construction. Long-term effects on water quality could occur as a result of an increase in pollutant loads in runoff from impervious surfaces. Such pollutants include: particulates, metals, oil and grease, organics, nutrients and other harmful substances.

Due to the linear nature and size of this project, impacts to streams are unavoidable; however, all practicable measures will be taken to avoid and minimize impacts to water resources.

Minimization measures could include:

- Minor alignment shifts to avoid or minimize impacts.
- Temporary and permanent stormwater management measures.

- Use of retaining walls.
- Open bottom or countersunk culverts to retain natural stream bottoms.
- Ensuring culverts maintain low flow channels and high flow conveyances to avoid impairing stream hydraulics or impede aquatic organism fish passage during low flow periods.
- Conducting stream work in the dry.

A detailed avoidance, minimization, and mitigation plan will be developed for coordination with the environmental review agencies during final design as part of the water quality permitting process.

3.5.2 Wetlands

Approximately 4.97 acres of wetlands are within the construction limits identified in the Location Study Report. Wetland types include palustrine emergent (PEM), palustrine scrub shrub (PSS) and palustrine forested (PFO) systems (see Table 4). Functions of these wetlands include sediment trapping, nutrient reduction, habitat for wildlife, groundwater discharge and seasonal flood attenuation.

Table 4. Wetland and Stream Impact Summary

Construction Section	USGS Quad(s)	Wetland Impacts by Type (acres)				Impacted Stream Length (l.f.)
		PFO	PSS	PEM	TOTAL	
E19	Meadows of Dan Stuart	2.607	0.007	0.829	3.443	4915
E18	Stuart	0.174	0.300	1.055	1.529	13686
TOTALS		2.781	0.307	1.884	4.972	18601

Impacts would include filling of wetlands for construction of roadbed or roadway slopes. Compensation for unavoidable wetland impacts from the project would be developed in cooperation with the federal and state water quality permitting agencies during the permitting process. Such compensation would offset losses of wetland types and functions and could include: enhancement or restoration of existing wetlands, wetland creation onsite or offsite, use of credits from an approved wetlands mitigation bank or payments to the Virginia Aquatic Resources Trust Fund.

3.5.3 Floodplains

According to Federal Emergency Management Agency Flood Insurance Rate Maps, the proposed project would cross three streams with designated 100-year floodplains. Approximately 11.3 acres of floodplains lie within the project area. The streams include:

- Dan River
- North Fork Poor House Creek
- Bull Mountain Fork

In accordance with Executive Order 11988, *Floodplain Management*, floodplain encroachments would be avoided or minimized to the maximum extent practicable. Crossings will be designed such that the project would not appreciably increase, directly or indirectly, flood levels or the

risks of flooding. No substantial effects on natural or beneficial floodplain values are expected to result from the proposed project.

3.6 WILDLIFE AND HABITAT

3.6.1 Wildlife

The majority of the project area is part of the “Blue Ridge” habitat region as defined by the Virginia Department of Game and Inland Fisheries (DGIF) Virginia Wildlife Action Plan. This region is primarily forested with agriculture/open areas as the second most abundant land cover type. The Carroll County comprehensive plan lists the predominant land use in the project area as agricultural. Impacts to terrestrial wildlife would include the elimination of habitat within the limits of construction. However, most of the corridor is along the existing Route 58 alignment and therefore is already disturbed. Adjacent habitat in areas surrounding the project has been fragmented due to agricultural activities and residential development along existing roadways.

Impacts to aquatic wildlife could include the elimination of stream habitat within the limits of construction and potential impacts from sediment deposition due to stormwater runoff from the construction area. Stream losses will be compensated through mitigation measures to be developed in consultation with the permitting agencies. Such mitigation measures would also include habitat enhancement measures, thereby offsetting habitat losses resulting from the project. Additionally, temporary and permanent stormwater management and erosion and sediment controls will be implemented as part of the project, which should also minimize damages to aquatic habitats.

3.6.2 Threatened and Endangered Species

A search using Geographic Information System (GIS) data was performed by creating a two-mile buffer around the project area to determine the potential presence of Federal and State listed plant and animal species. DGIF’s Fish and Wildlife Information Service was also consulted for species within each county. This analysis revealed Department of Conservation and Recreation (DCR) Natural Heritage sites within the project area. Further coordination with state agencies identified the potential presence of the southern bog turtle (*Glyptemys muhlenbergii*) and the Roanoke logperch (*Percina rex*) in these sites. The southern bog turtle, which occurs in Virginia, is a federally threatened species listed because of similarity to the northern bog turtle. Coordination with the U. S. Fish and Wildlife Service (USFWS) indicated that this species is protected for law enforcement purposes only, to primarily prevent the transportation or sale of the species; and considers it as “essentially not listed” in Virginia.

Suitable habitat for the federally endangered Roanoke logperch is known to occur within two miles of the project area with collections noted in Poorhouse Creek and the Smith River. Temporary impacts to the fish habitat will be avoided or minimized through the use of siltation and erosion control measures. The extent of minimization and mitigation measures will be resolved and formalized during the water quality permitting process and will constitute a project commitment.

3.7 HAZARDOUS MATERIALS

An environmental review for properties that potentially contain hazardous materials proximate to the proposed project was undertaken in January 2010. Hazardous material sites are those sites potentially containing flammable, explosive, corrosive or toxic substances. The hazardous materials review included a half-mile search radius review of federal and state government records and a field reconnaissance review by VDOT of sites bordering the roadway improvement corridor. The hazardous materials sites in the area are typical of those for a small town and rural agricultural community. They include gas stations, automotive repair shops, underground tanks and others. Concerns associated with these sites include health hazards, liability issues, and the potentially high costs of clean-up. The database searches and field review identified 26 potential locations with one or more site occurrences as summarized below.

- 4 suspect former automotive stations and/or petroleum storage/dispensing stations
- 1 active automotive and/or petroleum storage/dispensing stations
- 11 sites with active and closed underground storage tanks
- 1 site permitted for point source discharge (septic or wastewater) to surface water
- 3 sites permitted for tracking air emissions from a point source(s) including climatic heating boilers, and emergency generators
- 2 sites listed in databases for the use, storage and/or generation of hazardous and universal materials/wastes
- 2 sites with active above ground storage tanks
- 5 sites with a reported leaking underground storage tank from a petroleum release either closed or under regulation

Based on the preliminary field observations petroleum and/or hazardous materials could be encountered at some sites during construction activities. The presence of hazardous material/petroleum impacts identified on properties to be acquired for the project would be addressed through coordination with existing property owners, regulatory agencies, and/or the development of special provisions for management of hazardous materials during construction.

3.8 INDIRECT EFFECTS

Indirect effects are those that are caused by the proposed action but occur later in time or farther in distance than the direct impacts discussed elsewhere in this document. The most common indirect effects associated with highway projects have to do with induced development, that is, development and the impacts of such development that would not otherwise occur if the project were not constructed. Lands surrounding existing Route 58 including the proposed project corridor currently can be accessed by the existing road network. As such, they are subject to development even in the absence of implementation of this project. Since the project is being built along the existing Route 58 corridor it doesn't provide new, direct access to adjacent lands with the exception of two short segments in the Lover's Leap area that shift off of existing Route 58 to minimize relocations. The proposed project would serve traffic generated by development on adjoining lands, but would not cause such development. Moreover, the project is consistent with the 2035 Rural Long Range Transportation Plan's recommendations for Route 58 through Patrick County.

3.9 CUMULATIVE EFFECTS

Cumulative effects are the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions, regardless of the sponsor of those actions. The assessment of cumulative effects requires an assessment of the impact that past and present actions have had on the environmental resources in the project study area that will also be impacted by the proposed project; the current affected environment is a reflection of the impacts of those past and present actions over time. Additionally, a review of cumulative effects requires an assessment of how reasonably foreseeable future actions may affect the same environmental resources that would be directly affected by the project. **Table 5** summarizes the more prominent environmental resources in the project study area that would be impacted by the proposed project, the impacts that these resources have experienced from past and present actions, the incremental impacts expected from the proposed project, identification of potential reasonably foreseeable future actions, and the potential impacts that may occur from other reasonably foreseeable future actions in or near the study area.

Despite the dramatic changes in the landscape that have occurred over time due to human settlement in the surrounding area, the intensity of the incremental impacts of the project are considered small, when viewed in the context of impacts from other past, present, and reasonably foreseeable future actions and would not rise to a level that would cause significant cumulative impacts.

Table 5. Summary of Cumulative Effects

Prominent Environmental Resources in Study Area	Impacts from Past and Present Actions	Impact from Proposed Action	Reasonably Foreseeable Action	Potential Impact on Resources from Reasonably Foreseeable Actions
Farmland	Conversions of farmland to residential and other uses.	Conversion of up to 107 acres of farmland to highway right of way.	Additional conversions of farmland to residential and other uses consistent with local zoning and comprehensive planning.	Conversions of farmland to residential and other uses; cumulative effect not substantial.
Waters of the U.S., including wetlands	Conversion or culverting of water resources to make way for development; degradation of water quality from agricultural and other runoff, impervious surfaces, increased runoff and sediment volumes.	Potential impacts to approximately 19600 linear feet of stream and 13 acres of wetlands; temporary siltation during construction and increase in pollutant loadings, which would be minimized through implementation of best management practices and stormwater management measures.	Additional impervious surfaces and conversion of resources; long-term water quality effects could occur as a result of increased impervious surface; spills from vehicles; an increase in non-point source pollutants from asphalt, grease, oil, metals, nutrients, nitrogen, deicing salts, roadside vegetation management chemicals, and suspended solids and other elements associated with roadways.	Increased impervious surfaces may affect water tables and streamflow volume and quality; adverse effects offset by enforcement of stormwater management, erosion and sediment controls, and water quality permitting requirements under local, state, and federal laws, including compensation requirements; cumulative effect not substantial.
Historic Properties	Older homes in the project area have been so altered that they have lost historic integrity that may have qualified them for NRHP eligibility.	Two historic properties were identified in the project area. There is no adverse effect to the one eligible property and no effect to one potentially eligible property due to design avoidance and minimization.	Build-out of residential and commercial developments in accordance with local zoning and comprehensive planning.	Owners of historic properties may elect to alter the buildings or demolish them, thereby diminishing their integrity or destroying them altogether.

Section 4 – Coordination and Comments

4.1 AGENCY COORDINATION

The federal, state, and local agencies listed below were contacted to obtain pertinent information and to identify key issues regarding potential environmental impacts for this project. Coordination conducted during the development of the Route 58 location study report also was reviewed to identify any pertinent issues or concerns.

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- Virginia Department of Agriculture and Consumer Services
- Virginia Department of Conservation and Recreation
- Virginia Department of Environmental Quality
- Virginia Department of Game and Inland Fisheries
- Virginia Department of Health
- Virginia Department of Historic Resources
- Virginia Marine Resources Commission
- Patrick County - County Administrator
- National Trust for Historic Preservation
- Catawba Indian Nation Tribal Historic Preservation Office

4.2 PUBLIC INVOLVEMENT

Public information meetings and hearings have been held throughout the development of the Route 58 Location Study (see Section 1.2). VDOT will advertise the availability of this Environmental Assessment for review and comment in order to obtain any additional input and comments from the community. . The EA will be available for review and comments for a minimum of 30 days. All comments received on the Environmental Assessment will be considered, and all substantive comments will be addressed in writing.