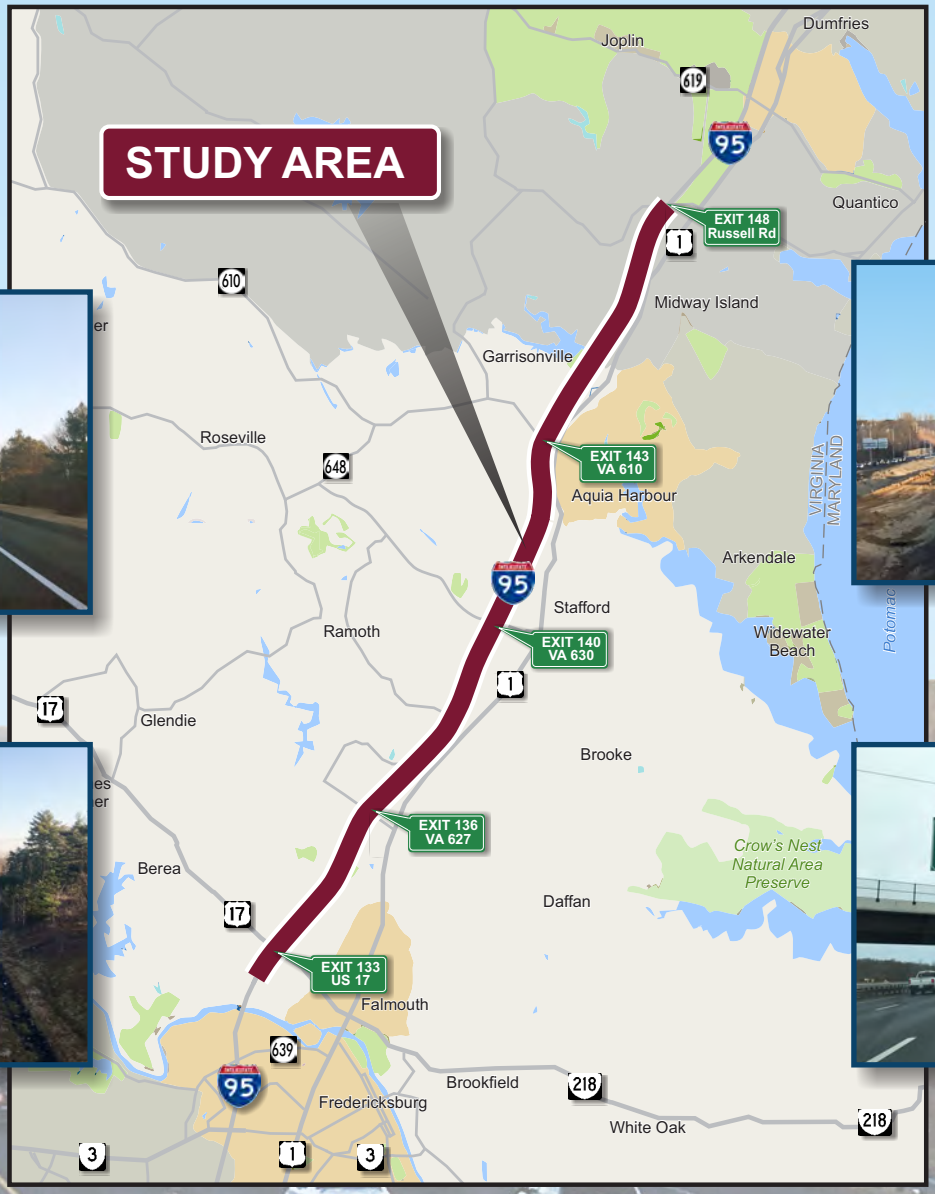
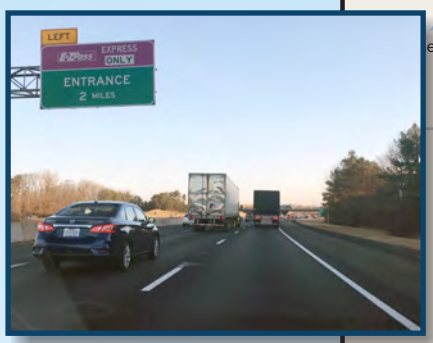
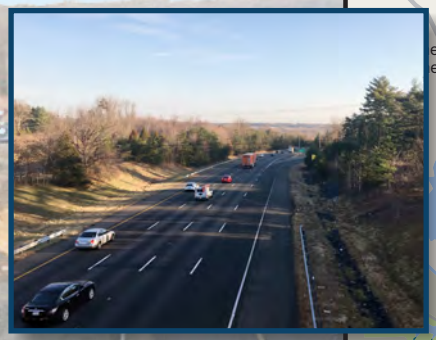
Interstate 95 Express Lanes Fredericksburg Extension Study

REVISED ENVIRONMENTAL ASSESSMENT







VDOT Virginia Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

AUGUST 2017

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

REVISED ENVIRONMENTAL ASSESSMENT

I-95 HOT Lanes Project

Project #: 0095-969-739, UPC #: 110527

Federal Project No.: NHPP-000S(345)
From: I-95 / US 17 N Interchange at Warrenton Road (Exit 133)
To: I-95 / Russell Road Interchange (Exit 148)

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

Approved for Public Availability:

8/31/2017
Date

Mark Frost
for **Division Administrator**
For Federal Highway Administration

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Appendix A: Build Alternative

Appendix B: Scoping Responses

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LIST OF ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ACS	American Community Survey
APE	Area of Potential Effects
AST	Above-ground Storage Tank
BA	Biological Assessment
BO	Biological Opinion
CBPA	Chesapeake Bay Preservation Act
C-D	Collector-Distributor
CAA	Clean Air Act
CEDAR	Comprehensive Environmental Data and Reporting System
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CLRP	Constrained Long-Range Plan
CO	Carbon Monoxide
CWA	Clean Water Act
dBA	A-weighted Sound Decibel
DHCD	Department of Housing and Community Development
DO	Dissolved Oxygen
DoD	Department of Defense
DOT	Department of Transportation
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.

EFH	Essential Fish Habitat
EJ	Environmental Justice
EO	Executive Order
ESC	Erosion and Sediment Control
FAMPO	Fredericksburg Area Metropolitan Planning Organization
FE	Federally-Endangered
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FT	Federally-Threatened
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GMMA	Groundwater Management Area
GP	General Purpose
GWRC	George Washington Regional Commission
HHS	Health and Human Services
HOT	High-Occupancy Toll
HOV	High-Occupancy Vehicle
HUC	Hydrologic Unit Code
I-95	Interstate 95
IPaC	Information for Planning and Conservation
JD	Jurisdictional Determination
Leq	Equivalent Sound Level
LOD	Limits of Disturbance
LOS	Level of Service
MDE	Maryland Department of the Environment
MOVES	Motor Vehicle Emissions Simulator
MSAT	Mobile Source Air Toxics
MWCOG	Metropolitan Washington Council of Governments

NAAQS	National Ambient Air Quality Standards
NB	Northbound
NCRTPB	National Capital Region Transportation Planning Board
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHD	National Hydrography Dataset
NHS	National Highway System
NLEB	Northern Long-Eared Bat
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NO_x	Nitrogen Oxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHWM	Ordinary High Water Mark
PCB	Polychlorinated Biphenyl
PEM	Palustrine Emergent
PFO	Palustrine Forested
PIM	Public Information Meeting
PM	Particulate Matter
PotNR	Potential National Register Boundaries
POW	Palustrine Open Water
PPTA	Public-Private Transportation Act of 1995
PSS	Palustrine Scrub/Shrub
PUB_x	Palustrine Unconsolidated Bottom Excavated
R3	Upper Perennial
R4	Intermittent
R6	Ephemeral
RDA	Redevelopment Area
RMA	Resource Management Area

RPA	Resource Protection Area
SB	Southbound
SE	State-Endangered
SHPO	State Historic Preservation Officer
SOV	Single-Occupant Vehicle
SSA	Sole Source Aquifer
ST	State-Threatened
SWM	Stormwater Management
SWP	Small Whorled Pogonia
TGA	Targeted Growth Area
TIP	Transportation Improvement Plan
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
TOYR	Time-of-year restrictions
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USM	Unified Stream Methodology
UST	Under-ground Storage Tank
VAC	VA Administrative Code
VaFWIS	Virginia Fish and Wildlife Information Service
VDACS	Virginia Department of Agriculture and Consumer Services
VDCR	Virginia Department of Conservation and Recreation
VDCR-DNH	Virginia Department of Conservation and Recreation–Department of Natural Heritage

VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VDH	Virginia Department of Health
VDHR	Virginia Department of Historic Resources
VDOF	Virginia Department of Forestry
VDOT	Virginia Department of Transportation
VESCH	Virginia Erosion and Sediment Control Handbook
VIMS	Virginia Institute of Marine Science
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
VPD	Vehicles per Day
VSMP	Virginia Stormwater Management Program

1. PURPOSE AND NEED

1.1 INTRODUCTION

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA) as the lead federal agency, is preparing a Revised Environmental Assessment (Revised EA) for the I-95 HOT Lanes Project EA (2011 EA) prepared in 2011 by FHWA and VDOT (FHWA and VDOT, 2011). The Revised EA evaluates a portion of the project not implemented following FHWA's 2011 Finding of No Significant Impact (FONSI). This portion, referred to as the Interstate 95 (I-95) Express Lanes Fredericksburg Extension Study (Fredericksburg Extension Study), includes extending two high-occupancy toll (HOT) lanes, or Express Lanes, between the separated Interstate 95 (I-95) northbound (NB) and southbound (SB) general purpose (GP) lanes from their current southern terminus south of Garrisonville, Virginia to the United States (US) 17 interchange north of Fredericksburg, Virginia. Express Lanes such as these are managed lanes that provide free or tolled access for personal and select commercial vehicles, depending on vehicle occupancy. In addition to the extension of Express Lanes as approved in 2011 with issuance of the FONSI, the Revised EA evaluates changes to access points along the Express Lanes considered in the 2011 EA.

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, FHWA and VDOT concurred that a Revised EA is the appropriate level of documentation to analyze the Fredericksburg Extension Study. The Revised EA accounts for new projects constructed since 2011 and addresses new environmental information. The Revised EA is prepared in accordance with FHWA's regulations implementing NEPA (23 CFR §771.119).

1.2 STUDY AREA

VDOT and FHWA studied the environmental consequences of improvements to I-95 through the City of Fredericksburg and the Counties of Spotsylvania, Stafford, Prince William, and Fairfax in the 2011 EA. Under provisions of Virginia's Public-Private Transportation Act of 1995 (PPTA), VDOT and private partners proposed to construct Express Lanes within the median of I-95 south of Dumfries and convert the existing high-occupancy vehicle (HOV) lanes to Express Lanes from Dumfries to the Capital Beltway (I-495). **Figure 1-1** shows the project location evaluated in the 2011 EA, which extended approximately 46 miles, beginning 1.10 miles south of US 17 (Mills Drive) near Spotsylvania, proceeded northward along existing I-95, and ended at the Capital Beltway in Fairfax County. At the northern terminus, as detailed in the 2011 EA, the transition to the existing I-395 HOV lanes and GP lanes would occur just north of the I-395/Edsall Road interchange.

Following issuance of the FONSI in 2011, VDOT completed conversion of the HOV lanes to Express Lanes from Dumfries to the Capital Beltway. In addition, in 2014, VDOT completed construction of the first portion of Express Lanes approved with the 2011 FONSI, extending from Dumfries to near VA 610 / Garrisonville Road (Exit 143) in Stafford County (**Figure 1-1**). The section of I-95 under evaluation in the Revised EA extends southward from near the I-95 / Russell Road Interchange (Exit 148), where enhanced Express Lane access is proposed, to near the I-95 / US 17 Interchange at Warrenton Road (Exit 133) in Stafford County, north of the Fredericksburg city limits (**Figure 1-2**). This study area includes the next area of planned Express Lane expansion, as approved with the 2011 FONSI, extending approximately ten miles from near the I-95 / VA 610 Interchange at Garrisonville Road (Exit 143) to near the I-95 / US 17 Interchange at Warrenton Road (Exit 133).

Figure 1-1: 2011 EA Project Location Map

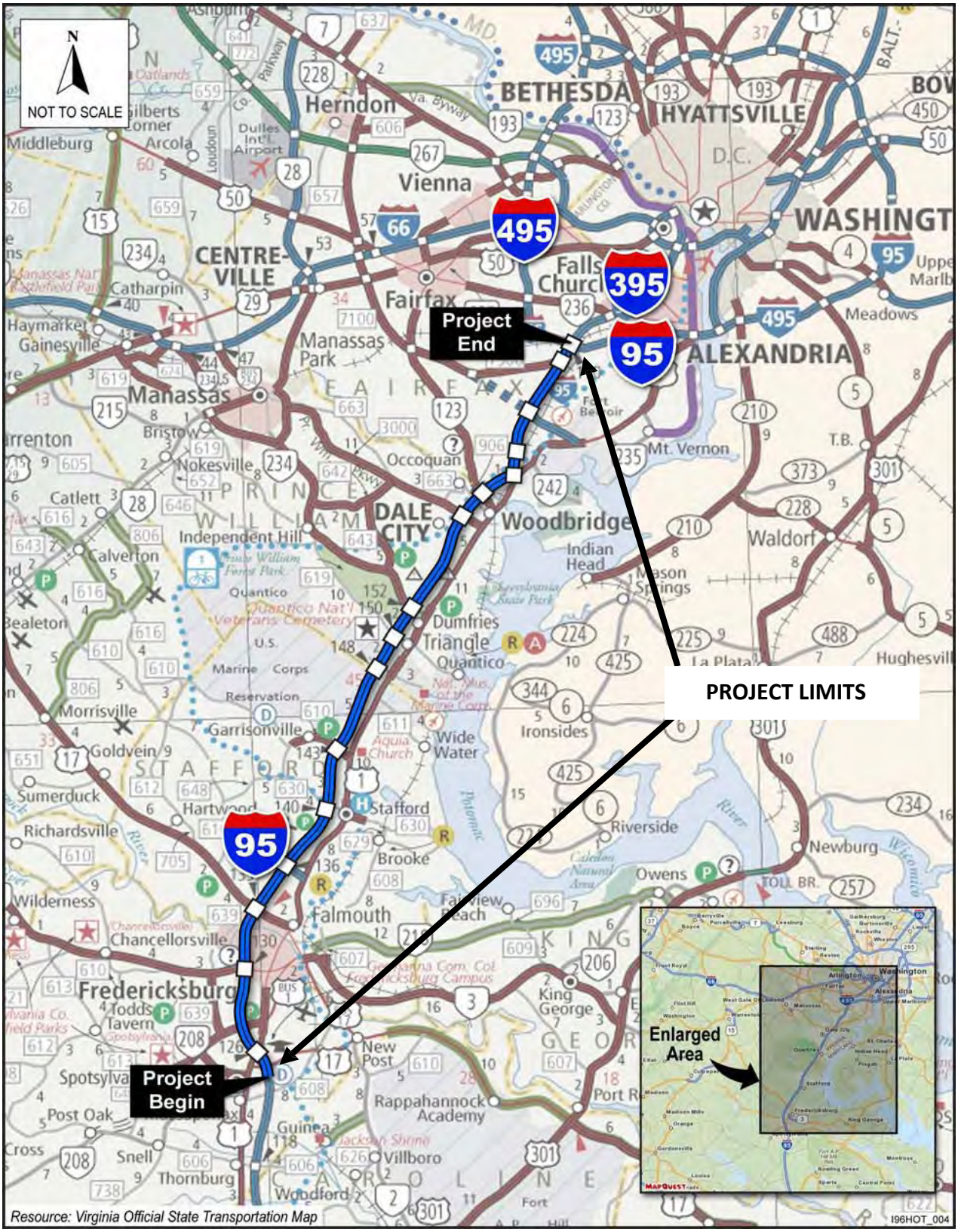
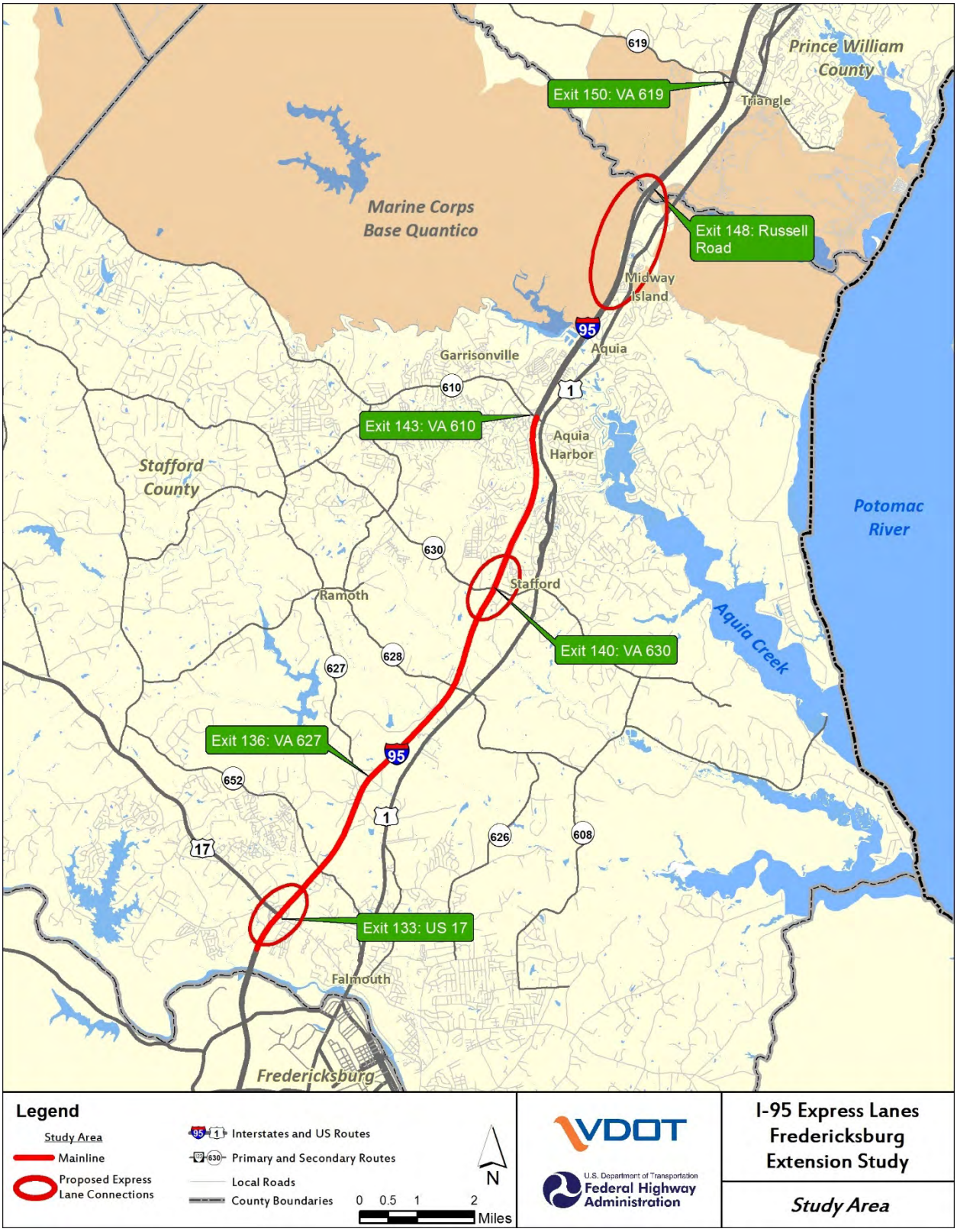


Figure 1-2: Fredericksburg Extension Study Area Map



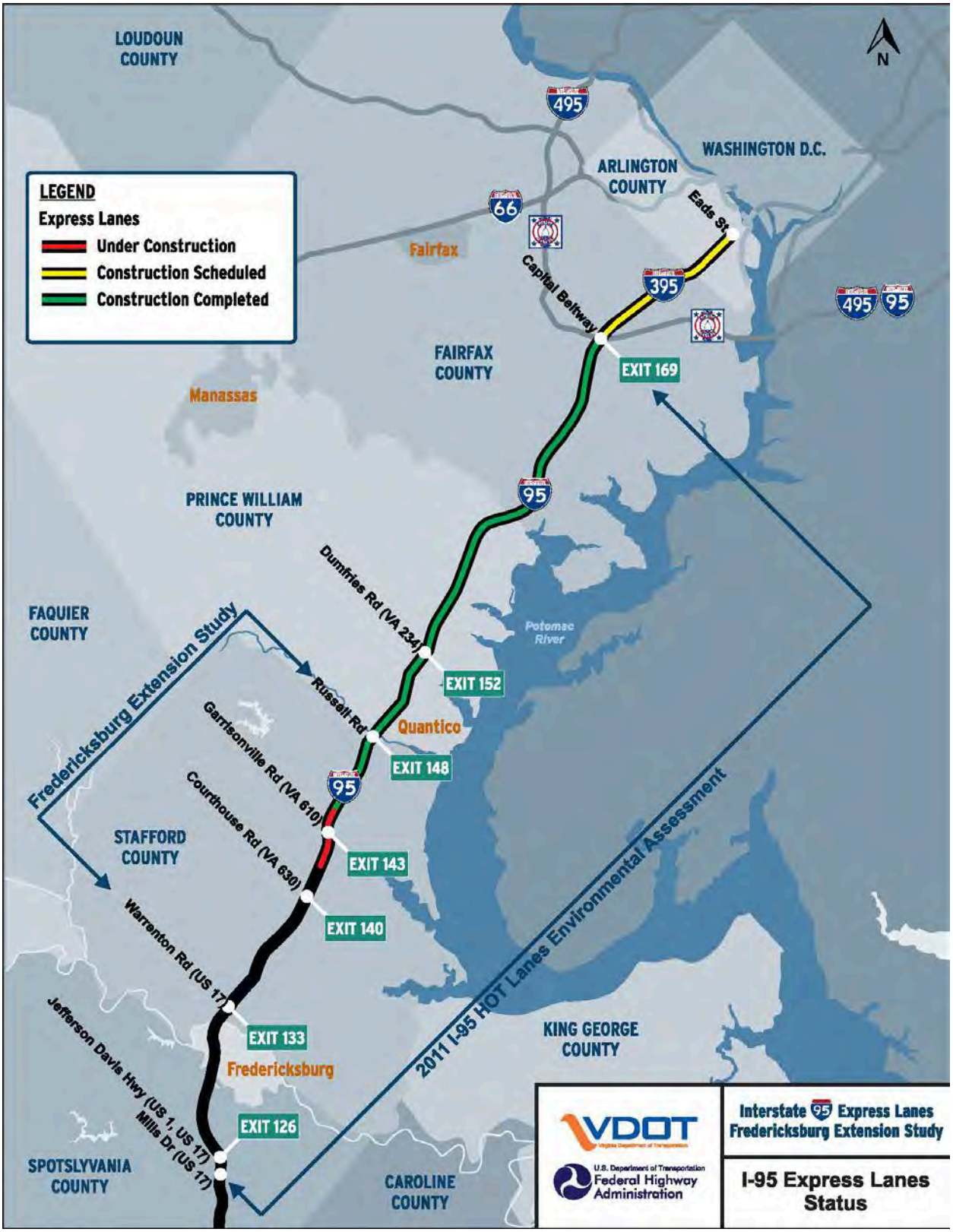
In addition to revising the 2011 EA to incorporate new environmental information, the Fredericksburg Extension Study Area, and ultimately the Revised EA, provides consideration of independent transportation improvement projects proposed within, or in proximity to, the Fredericksburg Extension Study Area to evaluate their influence on improvements proposed with the Fredericksburg Extension Study. The regional planned and programmed transportation improvement projects considered are shown in **Figure 1-2 and Figure 1-3** and include:

- **I-95 Rappahannock River Crossing Southbound Project (Exits 130 to 133):** The I-95 Rappahannock River Crossing Southbound Project will add two collector-distributor (CD) lanes parallel to I-95 SB between US 17 / Warrenton Road (Exit 133) in Stafford County and VA 3 / Plank Road (Exit 130) in Fredericksburg. VDOT plans to build a new I-95 SB bridge over the Rappahannock River to carry the new CD lanes that will parallel the existing I-95 SB bridge at the river. They also plan to modify the existing I-95 interchanges at US 17 and VA 3, as well as ramps to the Safety Rest Area and Virginia Welcome Center. VDOT prepared the *I-95 Rappahannock River Crossing Draft Environmental Assessment* in June 2015 (VDOT, 2015a). Supporting documents for this EA included air quality (VDOT, 2014a), natural resources (VDOT, 2015b), and noise (VDOT, 2014b) technical reports, and a cultural resources coordination letter between VDOT and the Virginia Department of Historic Resources (VDHR) (VDOT, 2015c). The project is fully funded through construction in VDOT's fiscal year 2017-2022 six-year improvement program. Work on the project is to begin in 2017 (VDOT, 2017k).

- **I-95 Express Lanes Southern Terminus Extension (Approximate two-mile extension from current southern terminus):** VDOT is currently extending one reversible lane from the Express Lanes' southern terminus near VA 610 / Garrisonville Road (Exit 143), approximately 2.2 miles further south as part of the I-95 Express Lanes Southern Terminus Extension, to address issues regarding congestion near Garrisonville Road during peak-use periods. When completed, this lane will split into NB and SB merge ramps and connect to the GP lanes in the area. VDOT examined the environmental impacts of the southern terminus extension in March 2016 with preparation of the *Reevaluation of 2011 Environmental Assessment (EA) for I-95 Express Lanes Southern Terminus Extension* (VDOT, 2016a) and determined that the 2011 EA findings were still valid and no new NEPA document was required for the approximately 2.2-mile extension. Construction commenced in July 2016 with full completion anticipated in the summer of 2018 (VDOT, 2017l).

- **Courthouse Road Interchange Relocation (Exit 140: VA 630):** VDOT plans to rebuild the Courthouse Road interchange as a diverging diamond interchange and relocate it south of the existing interchange. The project will relocate the intersection of Courthouse Road and US 1 to the south to align with Hospital Center Boulevard. As part of the project, VDOT will widen Courthouse Road to four lanes between US 1 and I-95. West of I-95, VDOT will widen Courthouse Road to four lanes to a point just west of Ramoth Church Road and Winding Creek Road. VDOT will also realign Ramoth Church Road and Winding Creek Road to intersect at a traffic signal, and will relocate the current Courthouse Road Park & Ride lot from its location west of I-95 to a new location east of I-95. The number of parking spaces will be expanded from 545 to 1,000. Construction began in summer 2017, with estimated completion by summer 2020 (VDOT, 2017m).

Figure 1-3: I-95 Express Lanes Status



- **I-395 Express Lanes Northern Extension (Approximate eight-mile extension from near Edsall Road to near Eads Street in Arlington):** The I-395 Express Lanes Extension Project will extend the I-395 Express Lanes for eight miles north from Turkeycock Run near Edsall Road to the vicinity of Eads Street in Arlington. Two existing HOV lanes will be converted to Express Lanes and a third lane will be added, providing three reversible Express Lanes. The improvements primarily will be built within the existing footprint of the I-395 HOV lanes. VDOT prepared the *Interstate 395 Express Lanes Northern Extension Environmental Assessment* (VDOT, 2016b) in September 2016 and completed the *Interstate 395 Express Lanes Northern Extension Revised Environmental Assessment* (VDOT, 2017n) in February 2017. Following completion of the Revised EA, FHWA issued a FONSI for the I-395 Express Lanes Northern Extension in February 2017 (FHWA, 2017). Construction began in summer of 2017 and is expected to be completed by summer 2020 (VDOT, 2017o).

As shown in **Figure 1-3**, the area of proposed improvements along I-95 as part of the Fredericksburg Extension Study was previously evaluated in its entirety in the 2011 EA. Also, as in the 2011 EA, the Fredericksburg Extension Study Area consists of lands within the I-95 median, where most of the proposed construction would occur, and lands adjacent to the I-95 corridor that could potentially incur direct or indirect impacts as a result of the proposed alternatives.

1.3 HISTORY

March 2004: Fluor Virginia, Inc. and Transurban USA, Inc. (Fluor-Transurban) submits a proposal to VDOT under provisions of Virginia's PPTA to develop, finance, design, and construct Express Lanes in the I-95 corridor from the Pentagon in Arlington County to south of Fredericksburg (VDOT, 2012).

December 2005: Based upon recommendations of the Advisory Panel convened by VDOT to review the PPTA proposal, VDOT's Commissioner entered into negotiations with Fluor-Transurban to implement the proposal as two separate projects, a northern one and a southern one, each with independent utility and logical termini, with the split occurring in the vicinity of the end of the existing HOV lanes at Dumfries (VDOT, 2012).

2006–2008: Environmental studies were conducted for the two projects, but ultimately were suspended after the filing of a lawsuit (VDOT, 2007a; VDOT, 2007b; VDOT, 2008a; VDOT, 2008b; VDOT, 2008c).

September 2011: FHWA and VDOT prepare the *I-95 HOT Lanes Project Environmental Assessment* to evaluate the environmental impacts of the expansion of Express Lanes in the I-95 corridor (FHWA and VDOT, 2011) supplemented with noise analysis (VDOT, 2011a) and air quality (VDOT, 2011b) technical reports.

December 2011. The FHWA issues a FONSI for the 2011 *I-95 HOT Lanes Project Environmental Assessment* (FHWA, 2011).

July 2012: VDOT finalized an interim agreement with 95 Express Lanes, LLC (a consortium of Fluor-Transurban) to design, build, operate, finance, and maintain new Express Lanes as part of the I-95 HOT Lanes Project evaluated in the 2011 EA (VDOT, 2012).

August 2012: Construction begins on the I-95 HOT Lanes Project extending from Edsall Road to Garrisonville Road (FHWA, No Date).

December 2014: Construction is completed on the I-95 HOT Lanes Project extending from Edsall Road to Garrisonville Road (Virginia Public-Private Partnerships, 2014).

March 2016: VDOT completes the *Reevaluation of 2011 Environmental Assessment (EA) for I-95 Express Lanes Southern Terminus Extension, Stafford County, Virginia* to extend Express Lanes approximately 2.2 miles further south from their current termination point near Garrisonville Road (VDOT, 2016a).

June 2016: VDOT provides 95 Express Lanes, LLC a design-build notice to construct a 2.2-mile reversible lane (with accompanying northbound and southbound ramps) to extend the I-95 Express Lanes southward as part of the I-95 Express Lanes Southern Terminus Extension Project (VDOT, 2017l).

July 2016: VDOT begins construction on the I-95 Express Lanes Southern Terminus Extension Project in Stafford County (VDOT, 2017l).

October 2016: VDOT initiates the preparation of environmental studies as part of the Revised EA reviewing the impacts of extending Express Lanes within the corridor as initially evaluated in the 2011 EA.

1.4 LOGICAL TERMINI

FHWA regulations implementing the NEPA require that:

"In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated in each EIS or finding of no significant impact (FONSI) shall:

1) Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
2) Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
3) Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements."

The central basis of all three of the above criteria is that projects have rational end points, that is, end points that are based on valid and sound reasoning. Among the factors considered in establishing the termini for this project as initially established in the 2011 EA are the following:

- The southern terminus of the project is based on capturing potential HOV and Express Lane travel from the Fredericksburg urban area. The Fredericksburg area is known to be a substantial commuter base for employees in the Northern Virginia / Washington, D.C. region. The next substantial urbanized area south of Fredericksburg is the City of Richmond, 50 miles to the south. The area between Fredericksburg and Dumfries also has been identified as an area underserved by transit, and therefore an area that would benefit from facilities, such as the proposed project, that would encourage transit and HOV use.

- The northern terminus of the project, as evaluated in the 2011 EA, connects to the Capital Beltway Express Lanes infrastructure under construction at that time, thereby expanding the regional reach and continuity of the Express Lanes system. Moreover, the Capital Beltway is a major crossroad that circumnavigates the Washington metropolitan region. As such, it collects traffic from throughout the region and feeds it to I-95 and I-395 at the Springfield interchange.

- The project proposed in the 2011 EA and as proposed in the Fredericksburg Extension Study can stand alone without requiring other improvements on adjoining sections of I-95 and I-395. Forecasted traffic level of service (LOS) south of the southern terminus is adequate without additional improvements. The transition to the HOV and GP lanes systems north of the Capital Beltway were designed such that additional improvements will not be required north of the

transition area as a result of the project. In the northern terminus transition section north of Edsall Road, as detailed in the 2011 EA, forecasted volumes were slightly higher on the GP lanes with the Express Lanes when compared to those without the Express Lanes in place. This difference resulted from the additional Express Lanes demand being priced out from the Express Lanes south of Springfield in order to not exceed the maximum existing hourly volume rate of 1,100 vehicles per hour at the northern terminus flyover at Turkeycock Run. Potential mitigation for these slightly higher volumes as evaluated in the 2011 EA included extending the acceleration/deceleration lane from the Turkeycock Run flyover to the westbound off-ramp to Duke Street. The project, as proposed in the 2011 EA, connects the acceleration/deceleration lane from the Turkeycock Run flyover to the eastbound off-ramp at Duke Street.

- The proposed project does not constrain the consideration of alternatives for other reasonably foreseeable alternatives beyond the project limits.

- The 46-mile length of the project corridor, as evaluated in the 2011 EA, spans multiple counties and the City of Fredericksburg and provides ample length to address environmental matters on a broad scale. The Revised EA further refines the environmental analysis near the southern end of the 2011 EA Study Area to account for new projects that have been constructed in the interim and new environmental information available since completion of the 2011 EA. As with the 2011 EA, the extent of the Fredericksburg Extension Study's environmental impacts is contained mostly within the existing footprint of the highway corridor, with little if any extension beyond the proposed limits of the Study.

1.5 NEEDS

As evaluated in the 2011 EA, I-95 consisted of three GP travel lanes in the northbound direction from the southern project terminus 1.1 miles south of the I-95 / US 17 South interchange in Spotsylvania County (Exit 126) to the VA 123 / Gordon Boulevard (Exit 160) interchange and then four GP travel lanes from there to the northern project terminus at the Capital Beltway, supplemented in a number of locations by acceleration/deceleration lanes at on and off-ramps and auxiliary lanes between interchanges. In the southbound direction, I-95, as evaluated in the 2011 EA, consisted of four lanes from the Capital Beltway to the Gordon Boulevard interchange[1] and from there, three lanes to the southern project terminus, with intermittent acceleration/deceleration lanes at on- and off-ramps and auxiliary lanes between interchanges. Before their conversion to Express Lanes following issuance of the FONSI in 2011, the existing I-95/I-395 HOV facility through the study area provided an additional two lanes within the median of I-95 and extended from Dumfries just south of the VA 234 / Dumfries Road (Exit 152) interchange to the Capital Beltway. North of the Capital Beltway, the HOV lanes continued to Washington, DC. As evaluated in the 2011 EA, south of Dumfries to the southern terminus of the project, a distance of approximately 28 miles, there were no HOV lanes. However, as listed in **Section 1.3**, and with the issuance of the FONSI in December 2011, VDOT completed construction of two Express Lanes extending from near VA 234 / Dumfries Road to near VA 610 / Garrisonville Road in December 2014 (Virginia Public-Private Partnerships, 2014).

[1] As part of the I-95 4th Lane Project, a fourth GP lane in the southbound direction of I-95 between the Fairfax County Parkway and US 1 opened on October 31, 2010. The final piece of the widening project, a fourth lane in each direction on the Occoquan River Bridge, was completed July 3, 2011.

1.5.1 Congestion and Travel Demand

In 2011, daily traffic volumes in the GP lanes ranged from approximately 77,900 vehicles per day (vpd) south of the US 1 interchange (Jefferson Davis Highway, Exit 126) to approximately 172,900 vpd just south of the Capital Beltway (Exit 170), as shown in **Table 1-1**. For the portion of I-95 within the Fredericksburg Extension Study Area, the 2011 daily traffic volumes in the GP lanes ranged from approximately 63,000 north of US 17 / Warrenton Road (Exit 133) to approximately 73,100 vpd north of VA 610 / Garrisonville Road (Exit 143) (VDOT, 2012). For the Revised EA, VDOT has updated the traffic volumes for the Fredericksburg Extension Study Area to account for the improvements completed with conversion of the HOV lanes to Express Lanes and the completion of Express Lanes to near VA 610 / Garrisonville Road (Exit 143) in 2014. In 2016, GP lane daily traffic volumes in the Fredericksburg Extension Study Area ranged from approximately 59,200 north of VA 610 / Garrisonville Road (Exit 143) to approximately 62,300 north of Route 8900 / Centreport Parkway (Exit 136) (VDOT, 2017p). Express Lane volumes north of VA 610 / Garrisonville Road ranged from approximately 6,100 vpd in the northbound direction to approximately 9,300 vpd in the southbound direction in 2016 (VDOT, 2017p).

I-95 serves movements of people and freight along the entire eastern seaboard, but it also serves as a regional route for commuters to the Washington, DC metropolitan area and a local route for traffic in the urbanized areas of the City of Fredericksburg and southeastern Fairfax County. The existing high-traffic volumes are due in part to the dramatic population growth in the study corridor. Data compiled by the Fredericksburg Area Metropolitan Planning Organization (FAMPO) show a 400 percent increase in population from 1960 to 2006 in the area covered by the George Washington Regional Commission (GWRC), which includes the City of Fredericksburg and the counties of Caroline, King George, Spotsylvania, and Stafford, making it the fastest growing region in Virginia since 1980 when its growth rate surpassed that of Northern Virginia. Much of the growth is attributable to in-migration of new residents seeking affordable housing and lower-density suburban lifestyles while continuing to work at jobs in the Washington, DC region.

The 2011 EA indicated that approximately 38 percent of the Fredericksburg region's workforce commutes northward, using I-95 as their primary commuting route. Broken down by jurisdiction, 50 percent of Stafford County's workforce, 28 percent of Spotsylvania County's workforce, and 19 percent of Fredericksburg's workforce commute northward (VDOT, 2011). This commuting pattern, along with the availability of HOV lanes in the northern portion of the study area north of Dumfries, has led to extensive use of carpooling and private bus services in the corridor. For example, as detailed in the 2011 EA, GWRC reports that there are nine commuter parking lots, eight of which are located along the I-95 corridor, with a total of more than 5,500 parking spaces available within the planning region. Moreover, there are 378 registered vanpools, large numbers of carpools (132 registered and hundreds not registered), and 25 private commuter bus runs along the corridor from Fredericksburg and Stafford County.[2]

[2] George Washington Regional Commission, May 2011.

Table 1-1: Existing and Future Traffic Volumes

Location on I-95	2011 Daily Volumes		2016 Daily Volumes			2035 No-Build Daily Volumes		2042 No-Build Daily Volumes		
	SB	NB	SB	NB	Express Lanes	SB	NB	SB	NB	Express Lanes
North of Capital Beltway (Exit 170: I- 495)	80,300	82,500	Not evaluated in Revised EA			80,500	84,800	Not evaluated in Revised EA		
North of Franconia/Old Keene Mill Roads (Exit 169: VA 644)	91,200	55,700	Not evaluated in Revised EA			93,200	59,100	Not evaluated in Revised EA		
North of Fairfax County Parkway (Exit 166: Route 7100)	76,800	96,100	Not evaluated in Revised EA			77,200	101,200	Not evaluated in Revised EA		
North of Lorton Road (Exit 163: VA 642)	75,800	88,500	Not evaluated in Revised EA			76,200	100,300	Not evaluated in Revised EA		
North of US 1 (Exit 161)	69,300	81,900	Not evaluated in Revised EA			72,100	99,700	Not evaluated in Revised EA		
North of Gordon Boulevard (Exit 160: VA 123)	74,700	85,000	Not evaluated in Revised EA			78,100	107,200	Not evaluated in Revised EA		
North of Prince William Parkway (Exit 158)	76,800	76,100	Not evaluated in Revised EA			80,100	90,000	Not evaluated in Revised EA		
North of Dale Boulevard/Opitz Boulevard Collector/ Distributor Road (Exit 156: VA 784/VA 642)	75,000	72,700	Not evaluated in Revised EA			77,100	86,600	Not evaluated in Revised EA		
North of Dumfries Road (Exit 152: VA 234)	66,600	70,700	Not evaluated in Revised EA			67,000	79,800	Not evaluated in Revised EA		
North of Joplin Road (Exit 150: VA 619)	71,200	77,200	Not evaluated in Revised EA			71,800	87,000	Not evaluated in Revised EA		
North of Russell Road (Exit 148)	68,600	72,900	Not evaluated in Revised EA			74,000	82,800	Not evaluated in Revised EA		

Location on I-95	2011 Daily Volumes[1]		2016 Daily Volumes			2035 No-Build Daily Volumes[1]		2042 No-Build Daily Volumes		
	SB	NB	SB	NB	Express Lanes	SB	NB	SB	NB	Express Lanes
North of Garrisonville Road (Exit 143: VA 610)	70,000	73,100	59,200	63,400	9,300 SB 6,100 NB	78,000	84,100	68,000	79,200	16,000 SB 12,500 NB
North of Courthouse Road (Exit 140: VA 630)	64,200	68,000	60,900	60,800	NA	79,000	84,500	76,600	81,400	NA
North of Centreport Parkway (Exit 136: Route 8900)	64,700	68,300	62,300	61,900	NA	83,700	87,700	76,200	78,200	NA
North of Warrenton Road (Exit 133: US 17)	63,000	66,400	62,200	62,100	NA	81,400	87,300	77,100	80,700	NA
North of Plank Road (Exit 130: VA 3)	60,400	67,200	Not evaluated in Revised EA			76,200	88,900	Not evaluated in Revised EA		
North of Jefferson Davis Highway (Exit 126: US 1)	54,100	49,300	Not evaluated in Revised EA			66,800	62,200	Not evaluated in Revised EA		
South of Jefferson Davis Highway (Exit 126: US 1)	39,000	38,900	Not evaluated in Revised EA			55,000	59,100	Not evaluated in Revised EA		

Sources: FHWA and VDOT (2011); VDOT (2017f), Metropolitan Washington Council of Governments (2017).

As reported in the 2011 EA, approximately 95 commuter bus runs are also made on a daily basis along the I-95 corridor from Prince William County—which provides over 7,500 park-and ride spaces, the majority of which are located along the I-95 corridor—to Tysons Corner, Arlington County (Crystal City, Rosslyn, Ballston), the Pentagon, and Washington, DC.[3] Finally, hundreds of "slug"-pools originate from various commuter lots in the region, especially the VA 610 commuter lots in Stafford County.[4]

While these ridesharing activities reduce the number of vehicles on the road and contribute to greater throughput of people, as opposed to just vehicles, the volumes of traffic are still near capacity throughout the corridor. The TransAction 2030 Plan, the long-range regional transportation plan prepared by the Northern Virginia Transportation Authority, reports that currently during the peak periods, one hour or more of stop-and-go traffic can be expected on I-95 from Washington, DC south to the Prince William County Line. Analysis by FAMPO, as reported in its 2035 Long-Range Transportation Plan, indicates that the LOS[5] is "E" or "F" in the remainder of the project area, from the Prince William County Line south to US 1 south of Fredericksburg. Although LOS is used as a measure of I-95's traffic performance in the 2011 EA and the Revised EA, the Revised EA does not establish a minimum LOS for I-95 in the Fredericksburg Extension Study Area. LOS values may not be reasonably attainable in some situations, including the heavily congested conditions occurring in the Fredericksburg Extension Study Area. FHWA revised policy (FHWA, 2016) also clarifies that the agency does not have regulations or policies that require specific minimum LOS values for improvement projects on the National Highway System (NHS). The NHS is a network of strategic highways that includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. I-95 in the Fredericksburg Extension Study Area is part of the NHS.

Recurring daily congestion resulting from travel demand exceeding available highway capacity results in slower travel speeds and increased travel times. As traffic flows approach and exceed capacity, the higher traffic densities result in vehicles being more closely spaced, increasing the interaction among vehicles and distractions to drivers. The flow becomes unstable and abrupt stop-and-go traffic movements occur. Because of the unstable nature of the traffic flow, the exact onset, severity, and frequency of the congested conditions are difficult to predict and the actual travel time may vary considerably from the average from one day to the next, especially when crashes or breakdowns result in lane restrictions or closures. Such non-recurring congestion (non-recurring because it happens differently every day) increases the unreliability of travel times in the corridor. Because of the unreliable travel times, people must allow extra time for travel during more congested conditions to be sure that they will arrive at their destinations on time.

In the absence of Express Lanes in the southern portion of the corridor, those participating in ridesharing and bus services still must contend with congestion and delays in the GP lanes and travel to near VA 610 / Garrisonville Road before deriving benefit from Express Lanes for trips oriented to northern Virginia and Washington, DC. Those Express Lanes enable bypassing of slow-moving traffic in the GP lanes and generally result in faster trips at higher speeds. Traffic during peak hours in the Express Lanes usually can

[3] Potomac and Rappahannock Transportation Commission, OmniRide and Metro Direct schedules.

[4] Slugging, also referred to as "Instant Carpooling" or "Casual Carpooling", is a term used to describe a form of commuting found in the Washington, DC area where a car needing additional passengers to meet the required three- person HOV minimum pulls up to a known slug line and picks up passengers. The ride is provided for free on that one occasion, with no other commitment on the part of the driver or passenger.

[5] LOS provides a comparative measure of the traffic performance of roads through a grading from "A" to "F". For limited-access highways like interstate routes, LOS "A" represents free flow traffic operations with almost unimpeded ability to maneuver within the traffic stream, while LOS "F" represents breakdown in flow and substantial impedance of the ability to maneuver within the traffic stream.

travel at the posted speed limit of 65 mph for a majority of the distance while traffic in the GP lanes, where the posted speed limit is 55 to 60 mph, travels bumper-to-bumper in stop-and-go conditions.

1.5.2 Unreliable Travel Times

Average travel time along the I-95 corridor is increasing, and the variability of travel time is increasing as well. Forecasts compiled by FAMPO show continuing population growth in the GWRC region, with a doubling by the year 2035 from the current 315,000 to 600,000 residents; the majority of growth projected in the areas immediately adjacent to and surrounding I-95 in Stafford and Spotsylvania Counties and the City of Fredericksburg. TransAction 2030 reports the following findings:

- Within the next 25 years, Northern Virginia is expected to attract over 650,000 new jobs, or more than half of the new jobs expected to come to the metropolitan Washington region.
- Within the next 25 years, Northern Virginia is also projected to attract 918,500 new residents, or 56 percent of the total population increase expected in the metropolitan area.
- Northern Virginia's growth in jobs and population could contribute to a regional housing shortage that is anticipated by the Metropolitan Washington Council of Governments (MWCOG), forcing residents to find housing outside of the metropolitan region, which will require longer commutes that compound congestion on area roads.

The travel generated by this continuing growth will further increase traffic volumes on I-95, as reflected in the travel demand forecasts shown in **Table 1-1**. These forecasts were prepared using the FAMPO and MWCOG regional travel demand forecasting models and cooperative forecasts for the 2035 design year (FHWA and VDOT, 2011), and the MWCOG travel demand model for the 2042 design year (MWCOG, 2017), which are based on the local jurisdictions' projections of population, households, and employment.

Traditional highway capacity expansion is not an option to meet the growing interstate travel demand because such expansion has become increasingly expensive and unaffordable, and the human impacts and physical constraints in the highly-urbanized areas in the northern section of the project corridor make it exceedingly difficult to implement. While it is commonly understood that people place a high value on reaching their destinations in a timely manner, it is also recognized that people place a high value on the ability to reach their destinations in a reliable manner. I-95 has become so congested in recent years that the GP lanes, and oftentimes the HOV lanes (prior to their conversion to Express Lanes), cannot provide reliable travel times during the peak periods.

Traffic forecasts for 2035 show total daily volumes on the I-95 GP lanes increasing to approximately 114,100 vpd south of the US 1 interchange to approximately 178,400 vpd just south of the Capital Beltway interchange (FHWA and VDOT, 2011). With these volumes, the LOS will deteriorate to "F" throughout most of the corridor by 2035 (see **Tables 1-2, 1-3, and 1-4**). By 2042, in the Fredericksburg Extension Study Area, total daily volumes in the GP lanes increase to 80,700 vpd north of the I-95 / US 17 interchange at Warrenton Road (Exit 133) to approximately 79,200 vpd north of VA 610 / Garrisonville Road (Exit 143) (MWCOG, 2017). The greatest percent increase in vpd ranged from an approximately eight percent increase in volume in the northbound GP lanes, north of VA 610 / Garrisonville Road, to an approximately 29 percent increase in volume in the southbound GP lanes north of Route 8900 / Centreport Parkway between 2011 and 2042. By 2042, these increases result in a LOS of "D" or worse throughout most of the Fredericksburg Extension Study Area in the northbound GP lanes during the AM peak travel period and a LOS of "F" for the entire Fredericksburg Extension Study Area within the southbound GP lanes during the PM peak travel period (MWCOG, 2017). Clearly, as detailed in the 2011 EA, future travel demand will exceed the available capacity of existing I-95 and will result in increased congestion in the existing GP lanes.

Table 1-2: Future Southbound Volumes and Levels of Service

Location on I-95	2035 No-Build AM Peak[1]		2042 No-Build AM Peak		2035 No-Build PM Peak[1]		2042 No-Build PM Peak	
	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
North of Capital Beltway (Exit 170: I- 495)	4,620	B	Not evaluated in Revised EA		8,115	E	Not evaluated in Revised EA	
North of Franconia/Old Keene Mill Roads (Exit 169: VA 644)	5,025	B	Not evaluated in Revised EA		8,810	D	Not evaluated in Revised EA	
North of Fairfax County Parkway (Exit 166: Route 7100)	4,945	C	Not evaluated in Revised EA		7,965	F	Not evaluated in Revised EA	
North of Lorton Road (Exit 163: VA 642)	4,085	B	Not evaluated in Revised EA		9,420	F	Not evaluated in Revised EA	
North of US 1 (Exit 161)	4,345	C	Not evaluated in Revised EA		9,530	F	Not evaluated in Revised EA	
North of Gordon Boulevard (Exit 160: VA 123)	4,265	B	Not evaluated in Revised EA		9,995	F	Not evaluated in Revised EA	
North of Prince William Parkway (Exit 158)	4,825	D	Not evaluated in Revised EA		9,415	F	Not evaluated in Revised EA	
North of Dale Boulevard/Opitz Boulevard Collector/ Distributor Road (Exit 156: VA 784/VA 642)	4,360	C	Not evaluated in Revised EA		9,580	F	Not evaluated in Revised EA	
North of Dumfries Road (Exit 152: VA 234)	3,995	C	Not evaluated in Revised EA		7,340	F	Not evaluated in Revised EA	
North of Joplin Road (Exit 150: VA 619)	4,180	C	Not evaluated in Revised EA		7,735	F	Not evaluated in Revised EA	
North of Russell Road (Exit 148)	3,815	C	Not evaluated in Revised EA		7,875	F	Not evaluated in Revised EA	

Location on I-95	2035 No-Build AM Peak[1]		2042 No-Build AM Peak		2035 No-Build PM Peak[1]		2042 No-Build PM Peak	
	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
North of Garrisonville Road (Exit 143: VA 610)	3,660	C	2,450	B	8,950	F	7,250	F
North of Courthouse Road (Exit 140: VA 630)	6,310	F	2,550	B	8,335	F	8,300	F
North of Centreport Parkway (Exit 136: Route 8900)	6,980	F	2,800	B	8,305	F	6,700	F
North of Warrenton Road (Exit 133: US 17)	6,130	F	2,975	B	7,875	F	6,200	F
North of Plank Road (Exit 130: VA 3)	5,110	D	Not evaluated in Revised EA		8,525	F	Not evaluated in Revised EA	
North of Jefferson Davis Highway (Exit 126: US 1)	4,375	D	Not evaluated in Revised EA		6,690	F	Not evaluated in Revised EA	
South of Jefferson Davis Highway (Exit 126: US 1)	3,645	C	Not evaluated in Revised EA		5,455	E	Not evaluated in Revised EA	

Sources: FHWA and VDOT (2011); MWCOG (2017). Note: FHWA revised policy (FHWA, 2016) clarifies that the agency does not have regulations or policies that require specific minimum LOS values for improvement projects on the National Highway System (NHS).

Table 1-3: Future Northbound Volumes and Levels of Service

Location on I-95	2035 No-Build AM Peak[1]		2042 No-Build AM Peak		2035 No-Build PM Peak[1]		2042 No-Build PM Peak	
	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
North of Capital Beltway (Exit 170: I- 495)	5,830	E	Not evaluated in Revised EA		6,515	F	Not evaluated in Revised EA	
North of Franconia/Old Keene Mill Roads (Exit 169: VA 644)	3,660	C	Not evaluated in Revised EA		3,765	C	Not evaluated in Revised EA	
North of Fairfax County Parkway (Exit 166: Route 7100)	4,690	C	Not evaluated in Revised EA		6,045	D	Not evaluated in Revised EA	
North of Lorton Road (Exit 163: VA 642)	8,395	F	Not evaluated in Revised EA		6,145	D	Not evaluated in Revised EA	
North of US 1 (Exit 161)	8,800	F	Not evaluated in Revised EA		7,415	E	Not evaluated in Revised EA	
North of Gordon	9,100	F	Not evaluated in		7,990	E	Not evaluated in	

Location on I-95	2035 No-Build AM Peak[1]		2042 No-Build AM Peak		2035 No-Build PM Peak[1]		2042 No-Build PM Peak	
	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
Boulevard (Exit 160: VA 123)			Revised EA				Revised EA	
North of Prince William Parkway (Exit 158)	7,275	F	Not evaluated in Revised EA		6,690	F	Not evaluated in Revised EA	
North of Dale Boulevard/Opitz Boulevard Collector/ Distributor Road (Exit 156: VA 784/VA 642)	6,890	F	Not evaluated in Revised EA		6,770	F	Not evaluated in Revised EA	
North of Dumfries Road (Exit 152: VA 234)	6,155	E	Not evaluated in Revised EA		5,825	E	Not evaluated in Revised EA	
North of Joplin Road (Exit 150: VA 619)	7,335	F	Not evaluated in Revised EA		6,205	F	Not evaluated in Revised EA	
North of Russell Road (Exit 148)	7,335	F	Not evaluated in Revised EA		5,890	E	Not evaluated in Revised EA	
North of Garrisonville Road (Exit 143: VA 610)	8,455	F	6,175	D	5,465	E	4,025	D
North of Courthouse Road (Exit 140: VA 630)	9,610	F	7,025	F	6,205	F	3,900	C
North of Centreport Parkway (Exit 136: Route 8900)	8,395	F	5,725	E	6,225	F	3,800	C
North of Warrenton Road (Exit 133: US 17)	8,025	F	5,400	C	6,340	F	3,800	C
North of Plank Road (Exit 130: VA 3)	6,885	F	Not evaluated in Revised EA		6,255	F	Not evaluated in Revised EA	
North of Jefferson Davis Highway (Exit 126: US 1)	4,530	D	Not evaluated in Revised EA		4,385	D	Not evaluated in Revised EA	
South of Jefferson Davis Highway (Exit 126: US 1)	3,365	C	Not evaluated in Revised EA		4,185	C	Not evaluated in Revised EA	

Sources: FHWA and VDOT (2011); MWCOG (2017). Note: FHWA revised policy (FHWA, 2016) clarifies that the agency does not have regulations or policies that require specific minimum LOS values for improvement projects on the National Highway System (NHS).

Table 1-4: Future Express Lanes Volumes and Levels of Service

Location on I-95	2035 No-Build AM Peak[1]		2042 No-Build AM Peak		2035 No-Build PM Peak[1]		2042 No-Build PM Peak	
	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
North of Garrisonville Road (Exit 143: VA 610)	Not evaluated in 2011 EA		1,100	A	Not evaluated in 2011 EA		1,600	B

Sources: FHWA and VDOT (2011); MWCOG (2017). Note: FHWA revised policy (FHWA, 2016) clarifies that the agency does not have regulations or policies that require specific minimum LOS values for improvement projects on the National Highway System (NHS).

1.5.3 Limited Travel Choices

Regional and statewide planning documents emphasize the need for both overall transportation capacity and for ways to accommodate travel demands more efficiently and reliably and through a variety of travel choices. While convenient, the single-occupant vehicle (SOV) is much less efficient in terms of roadway space requirements. Rideshare, where each vehicle can carry multiple occupants and effectively replace multiple vehicles with a single one, is a tool for improving the efficiency of highly congested commuter corridors such as I-95. The GWRC explicitly seeks to promote ridesharing and transportation demand management techniques to assist persons seeking options for travel to their workplaces and other destinations. It is the goal of the Commission's program to promote, plan, and establish transportation alternatives to the use of SOVs.

Under existing conditions, all vehicles, whether SOV, HOV, or transit vehicles traveling on I-95 must utilize the GP lanes south of VA 610 / Garrisonville Road. Accordingly, no speed or travel time advantage is gained by ridesharing or using transit. While transit services and ridesharing are currently available in the corridor, they are oftentimes no more reliable than SOV travel because they use the same congested GP travel lanes that are becoming increasingly congested. Higher reliability of travel times could provide inducements to greater usage of transit and ridesharing. Likewise, SOV drivers currently have few if any choices available to avoid freeway congestion and the inevitable delays in reaching their destinations.

1.6 SUMMARY

The purpose of the Fredericksburg Extension Study remains the same as evaluated in the 2011 I-95 HOT Lanes Project EA, which is to:

- **Reduce daily congestion and accommodate travel demands more efficiently.**
  Existing traffic volumes exceed available highway capacity and the forecasts prepared using the regional travel demand models show continuing traffic growth in the corridor, with much of the Fredericksburg region's workforce continuing to commute north.

- **Provide higher reliability of travel times.**
  People place a high value on reaching their destinations in a timely manner, and in recent years, I-95 has become so congested that the existing I-95 facilities cannot provide reliable travel times during the peak periods.

- **Expand travel choices.**
  Increase the attractiveness and utility of ridesharing and transit usage while also providing an option for SOVs to bypass congested conditions.

2. ALTERNATIVES

This chapter presents the improvements identified in a portion of the FONSI-selected Alternative from the 2011 EA. The Build Alternative has been updated with new engineering guidance and includes new access points. More detailed information may be found in the *Fredericksburg Extension Study Alternatives Technical Report* (VDOT, 2017b).

2.1 INTRODUCTION

This Revised EA is being prepared to account for new transportation projects constructed in the study area and vicinity since the FHWA FONSI was issued in 2011, and to update environmental information and data. The Build Alternative presented in this Revised EA is a distinct piece of the 2011 FONSI-selected Alternative.

The 2011 EA reviewed a study area that extended along I-95 from 1.1 miles south of the I-95 / US 17 South Interchange in Spotsylvania County (Exit 126) to just north of the I-95 / I-495 / I-395 Interchange in Springfield (Exit 169). The 2011 EA considered a Build and a No-Build Alternative (FHWA, 2011b).

The 2011 FONSI-selected Alternative consisted of constructing new HOT lanes from one mile south of the I-95 / US 17 South interchange (Exit 126) to VA 234 / Dumfries Road, and converting existing HOV lanes to HOT (Express) lanes between VA 234 / Dumfries Road (Exit 152) to just north of Turkeycock Run. Per the 2011 EA, the HOT Lanes would generally consist of two, 11- to 12-foot-wide travel lanes and variable shoulder widths, in accordance with the American Association of State Highway and Transportation Officials (AASHTO) standards. The Express Lanes would be operated using all-electronic tolling and would be reversible based on peak travel times (FHWA, 2011a).

Following issuance of the FONSI, the selected Alternative was divided into northern and southern construction sections for implementation. The northern section ran from VA 610 / Garrisonville Road (Exit 143) to VA 289 / Franconia-Springfield Parkway (Exit 169) and was advanced to construction. The southern section of the Express Lanes, which extended from the I-95 / US 17 South Interchange (Exit 126) north to VA 610 / Garrisonville Road (Exit 143), was proposed to be constructed in the future. A portion of the southern section is being evaluated in this Revised EA as part of the Fredericksburg Extension Study.

The 2011 FONSI-selected Alternative identified access points for entry to and exit from the Express Lanes via slip ramps or flyover ramps. Access points were proposed at locations where they would provide optimal access to the Express Lanes with minimal impacts to right-of-way and the I-95 GP lanes. Of the proposed access points connecting the GP lanes to the Express Lanes, 30 were proposed as at-grade slip ramps, and five were recommended as grade-separated flyover ramps:

- Between VA 630 / Courthouse Road (Exit 140) and VA 610 / Garrisonville Road (Exit 143);
- Between VA 610 / Garrisonville Road (Exit 143) and Russell Road (Exit 148);
- Between VA 619 / Joplin Road (Exit 150) and VA 234 / Dumfries Road (Exit 152);
- Between Alban Road and the Express Lanes; and
- At the northern terminus of the project (north of Edsall Road).

Since 2011, some sections of the proposed Express Lanes have been constructed or are under construction (**Figure 1-3**). Improvements proposed in the northern section, from the I-95 / Route 610 Interchange at Garrisonville Road (Exit 143) to the Turkeycock Road interchange on I-395, opened in December 2014. All access points described in this northern section were implemented. Following a NEPA reevaluation of the 2011 EA completed in March 2016, construction is underway to extend the Express Lanes approximately two miles south from the current southern terminus near VA 610 / Garrisonville Road (Exit 143). This project, called the I-95 Express Lanes Southern Extension, is anticipated to open in 2018. The I-95 Express Lanes Southern Extension consists of a reversible single lane in the median of I-95, which splits into NB entrance and SB exit ramps.

2.2 ALTERNATIVES DEVELOPMENT

This Revised EA focuses on refining a portion of the 2011 FONSI-selected Alternative that was not constructed: mainline improvements and Express Lane access points from the I-95 / US 17 North Interchange at Warrenton Road (Exit 133) to the I-95 / Russell Road interchange (Exit 148). Refer to the 2011 I-95 HOT Lanes Project EA for information regarding alternatives development.

2.3 ALTERNATIVES RETAINED FOR EVALUATION

This section presents the revisited southern portion of the 2011 FONSI-selected Alternative as well as the No-Build Alternative. During the course of the Fredericksburg Extension Study, several locations were considered for access to the Express Lanes at the I-95 / US 17 North Interchange at Warrenton Road (Exit 133), the I-95 / VA 630 Interchange at Courthouse Road (Exit 140), and the vicinity of the Marine Corps Base Quantico. The access points at US 17 / Warrenton Road and VA 630 / Courthouse Road were included in the 2011 FONSI-selected Alternative. The access point at Marine Corps Base Quantico was not included in the 2011 FONSI-selected Alternative; however, it is included in this Revised EA because extending the Express Lanes south without providing additional access would leave a gap of roughly 24 miles between NB entry and exit points that would reduce user choice and accessibility. Potential access in the vicinity of the Base was evaluated at Joplin Road, Telegraph Road, and Russell Road; Russell Road was identified as the most appropriate location. Access options are described in detail in the *Fredericksburg Extension Study Alternatives Technical Report* (VDOT, 2017b).

2.3.1 No-Build Alternative

Under the No-Build Alternative, the Express Lanes would not be extended south beyond the southern terminus of the I-95 Express Lanes Southern Extension project (south of VA 610 / Garrisonville Road at Exit 143). There would be no change to existing access points and I-95 would remain in its present configuration. VDOT would continue maintenance and repairs of the existing roadway, as needed, with no substantial changes to current capacity or management activities. The No-Build Alternative was not identified as the Preferred Alternative in the 2011 EA and subsequent FONSI, but is retained as a baseline for comparison in this Revised EA.

2.3.2 Build Alternative

Design Criteria

Design criteria for the Build Alternative described in this Revised EA have been updated from the 2011 EA based on AASHTO's *A Policy on Geometric Design of Highways and Streets*, 2011 and *Roadside Design Guide*, 2011; and the VDOT *Road and Bridge Standards*, 2016 and *Road Design Manual*, 2011. These criteria determine the design speed for the roadway and associated design elements such as minimum radii, lane width, roadway shoulder width, bridge shoulder width, median width, sight distance, and

vertical clearance. More detailed information is provided in Appendix A of the *Fredericksburg Extension Study Alternatives Technical Report* (VDOT, 2017b).

Description

The Build Alternative would extend two reversible Express Lanes in the median of I-95 from the vicinity of the I-95 / US 17 North Interchange at Warrenton Road (Exit 133) to south of I-95 / VA 610 Interchange at Garrisonville Road (Exit 143) to tie into the I-95 Southern Extension Project. It would also provide Express Lane access at several locations (further described below). The Express Lanes would be located in the median of I-95 and consist of two, 12-foot reversible lanes with 10-foot shoulders on each side.

One typical section was planned for the full Build Alternative: an open drainage section, which would convey stormwater from the roadway to an adequate outfall via open channels. The open section is shown in **Figure 2-1**. However, after reviewing the southern half of the study area, it was determined that a narrower section should be used in that half in order to avoid and minimize impacts to the Waters of the US. As a result, a narrower, closed drainage section was created. A closed drainage section is one that uses underground conduits to convey stormwater collected by inlets to an adequate outfall. The narrower, closed section would be applied from the I-95 / US 17 interchange at Warrenton Road (Exit 133) to the vicinity of VA 628 / American Legion Road, and the open section would be applied from the vicinity of VA 628 / American Legion Road to south of VA 610 / Garrisonville Road at Exit 143. Further efforts to minimize impacts would be explored in later stages of design and permitting that would follow a FONSI from FHWA.

In the open typical section, the grass median on the southbound side of the Express Lanes would range from 20 feet to 500 feet, and the grass median on the northbound side would range from 20 feet to 70 feet. In the closed typical section, the width of the median on the southbound side of the Express Lanes would range from 18 to 300 feet, and the width of the median on the northbound side would range from 12 to 70 feet. The width of the grass median in both sections is dependent upon the size of the existing median at a given location.

In order to accommodate the Express Lane improvements and associated entrance and exit access points, the existing GP lanes of I-95 would be widened or realigned in several locations. The NB GP lanes would be widened to include an auxiliary lane between a half-mile north of US 17 North and a half-mile north of VA 652 / Truslow Road. The SB GP lanes would be realigned between 0.3 miles north of Route 628 and 0.4 miles south of Route 628, and between 0.6 miles north of VA 652 / Truslow Road and the I-95 / US 17 North Interchange. Details regarding these proposed revised access points are provided in the *Fredericksburg Extension Study Alternatives Technical Report* (VDOT, 2017b).

Improvements at the I-95 / US 17 interchange at Warrenton Road (Exit 133) would be included in the environmental reevaluation for the Rappahannock River Crossing Project, a separate VDOT project. Changes and modifications in the design of the separate project that are within the limits of disturbance (LOD) of the Fredericksburg Extension Study are not reflected in this Revised EA.

Express Lane Access

The Build Alternative would provide Express Lane access at several locations including the I-95 / US 17 North Interchange at Warrenton Road (Exit 133), the I-95 / VA 630 Interchange at Courthouse Road (Exit 140), and near the I-95 / Russell Road Interchange at Marine Corps Base Quantico (Exit 148). The Build Alternative, including mainline and access improvements, is shown in **Appendix A**. The Express Lanes would operate as reversible HOT lanes based on peak traffic flow, and would be consistent with the portion of the 2011 FONSI-selected Alternative that has already been constructed.

Figure 2-2 shows the status of Express Lane access points from the 2011 FONSI-selected Alternative. Four access points proposed in the 2011 EA as slip ramps are included in this Revised EA:

- Two flyovers: an entrance south of Route 8900 / Centreport Parkway (Exit 136) and an entrance south of Russell Road (Exit 148) on I-95 SB; and
- One reversible direct connection at VA 630 / Courthouse Road (Exit 140): a SB exit and a NB entrance.

Four additional access points have been added to the 2011 FONSI-selected Alternative based on updated traffic and environmental information:

- A slip ramp north of US 17 / Warrenton Road (Exit 133) on I-95 SB;
- A flyover exit north of US 17 / Warrenton Road (Exit 133) on I-95 SB;
- A slip ramp entrance north of US 17 / Warrenton Road (Exit 133) on I-95 NB; and
- A flyover exit south of Russell Road (Exit 148) on I-95 NB.

The access points to and from the Express Lanes would vary for NB and SB travel; accordingly, the Build Alternative is described below for each direction.

Northbound Travel

The first access to the proposed northbound Express Lanes would be at their southern terminus south of the I-95 / US 17 North Interchange at Warrenton Road (Exit 133). Access to and from the NB Express Lanes would also occur as follows:

- North of the I-95 / US 17 North Interchange at Warrenton Road (Exit 133), vehicles could enter the Express Lanes from the left lane (west side) of I-95 via a new slip ramp and from a new flyover entrance from the right lane (east side) of NB I-95.
- At VA 630 / Courthouse Road (Exit 140), an entrance to the Express Lanes would come directly from Courthouse Road; this ramp would be reversible and would serve both NB and SB travel. Just off this exit, there would be a partial roundabout constructed between the Express Lane access ramp and a new Park & Ride lot entrance to allow users to turn around if attempting to enter the Express Lane ramp when the direction of traffic has been reversed.
- South of Russell Road (Exit 148), a flyover ramp emerging from the left lane (west side) of the Express Lanes would provide an exit from the Express Lanes and allow cars to merge into the right lane (east side) of the NB GP lanes.

Southbound Travel

The proposed southbound Express Lanes extension would begin approximately one mile south of VA 610 / Garrisonville Road (Exit 143) where the current Express Lanes end, and would continue to the proposed terminus of the Express Lanes, just north of US 17 (Exit 133). Access to and from the SB Express Lanes would occur as follows:

- South of Russell Road (Exit 148), users in the GP lanes could enter the Express Lanes just south of VA 637 via a new flyover from the right lane (west side) of SB I-95.
- At VA 630 / Courthouse Road (Exit 140), a new exit from the Express Lanes would connect directly to Courthouse Road; this ramp would be reversible and would serve both NB and SB travel. Just off this exit, there would be a partial roundabout constructed between the Express Lane access ramp and a new Park & Ride lot entrance to allow users to turn around if attempting to enter the Express Lane ramp when the direction of traffic has been reversed.

Figure 2-1: Typical Sections

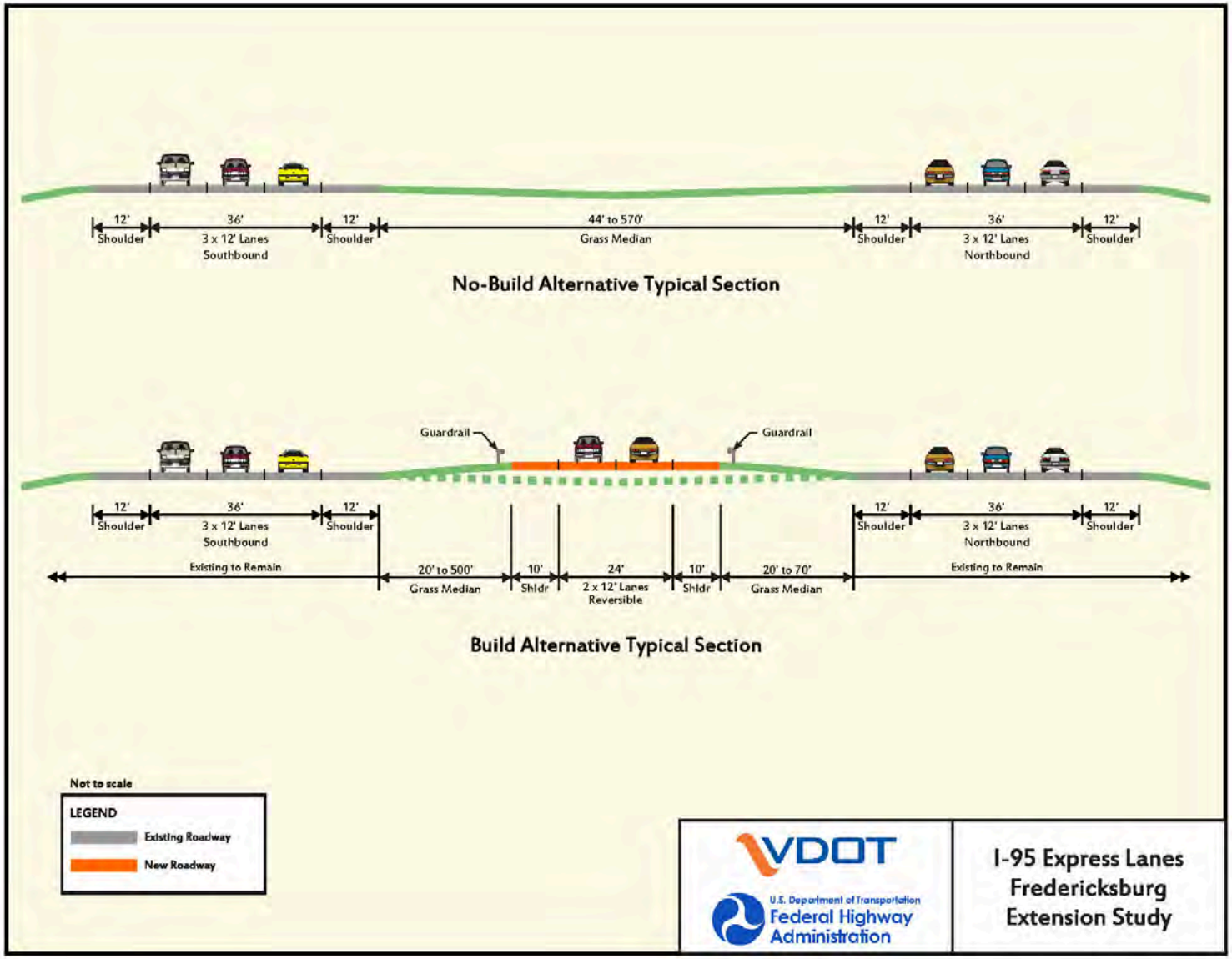
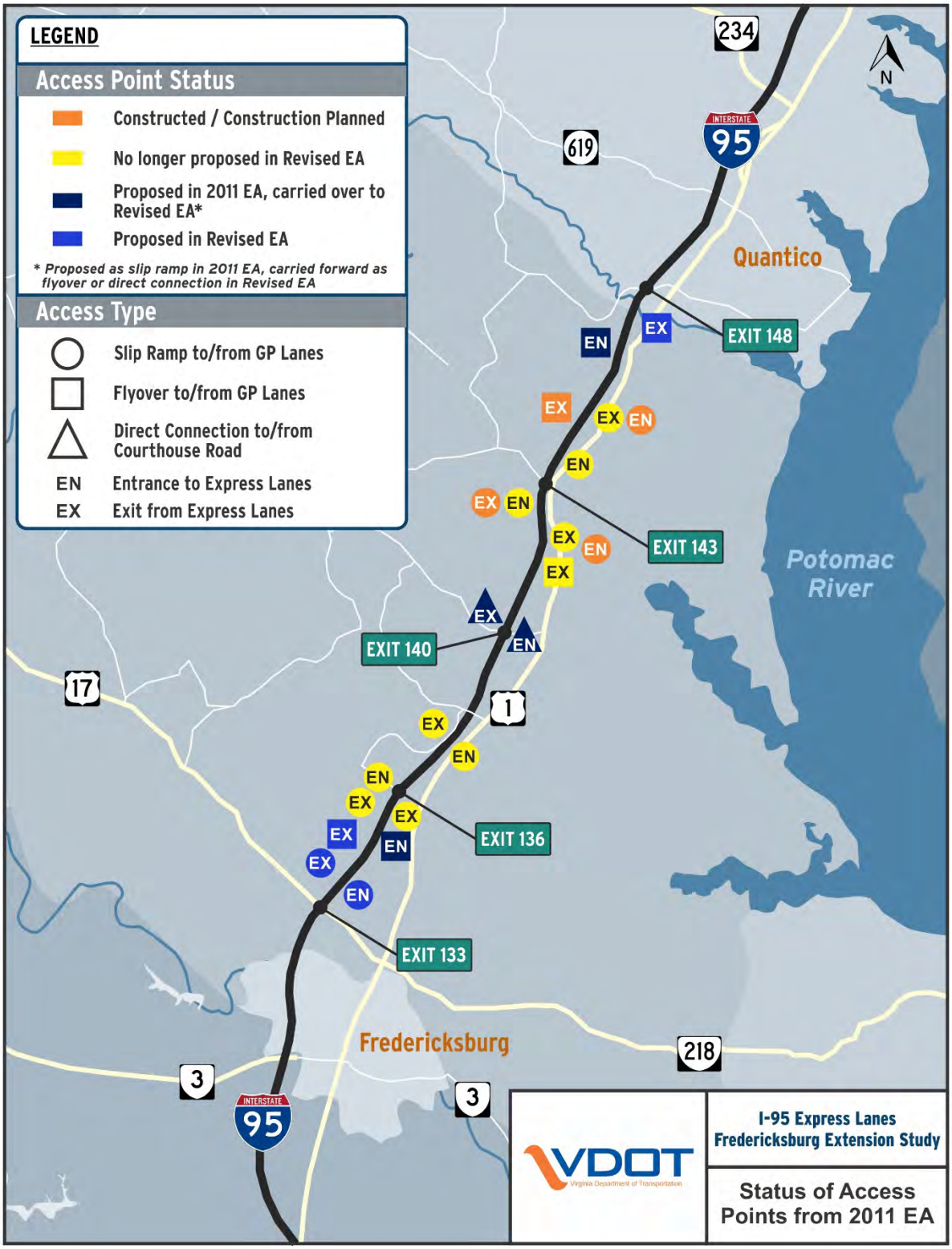


Figure 2-2: Status of Access Points from 2011 EA



- North of US 17 North / Warrenton Road (Exit 133), a new flyover ramp would provide an exit from the Express Lanes to access the GP lanes and US 17. SB travelers could also access GP lanes via a new slip ramp which merges into the left (east) GP lane.

Ability to Meet Needs

The Build Alternative described in this Revised EA is a portion of the 2011 FONSI-selected Alternative and therefore continues to meet the study needs.

The Build Alternative would increase the total daily volumes along I-95 within the study corridor as compared with 2042 No-Build conditions. Total projected daily traffic volumes (including both the GP and the new Express Lanes) would increase by approximately six percent (8,000 to 11,000 vpd) north of VA 610 / Garrisonville Road (Exit 143) and approximately eight to ten percent (15,000 to 17,000 vpd) between US 17 / Warrenton Road (Exit 133) and VA 610 / Garrisonville Road (Exit 143). North of VA 610 / Garrisonville Road (Exit143), the daily volumes in the GP lanes would decrease by approximately 4,000 vpd, while the Express Lane volumes would increase by approximately 14,000 vpd. Between US 17 / Warrenton Road (Exit 133) and VA 610 / Garrisonville Road (Exit143), the daily I-95 GP volumes would decrease by approximately 14,000 vpd and the proposed I-95 Express Lanes would carry approximately 26,000 vpd. **Table 2-1** shows the summary of daily traffic volumes for each major segment of I-95 (defined as segments between interchanges) within the study area.

Table 2-1: Daily Volume Comparison

Location on I-95	Direction	2016 Daily Volumes			2042 No-Build Daily Volumes			2042 Build Daily Volumes		
		GP	Express	Total	GP	Express	Total	GP	Express	Total
North of Jefferson Davis Highway (US 1, Exit 126)	NB	52,000	-	**105,100**	75,500	-	**151,400**	77,400	-	**156,000**
	SB	53,100	-		75,900	-		78,600	-	
North of Plank Road (Route 3, Exit 130)	NB	69,000	-	**136,000**	88,300	-	**173,800**	91,100	-	**180,100**
	SB	67,000	-		85,500	-		89,000	-	
North of Warrenton Road (US 17, Exit 133)	NB	62,200	-	**124,400**	80,700	-	**157,800**	76,200	13,300	**171,100**
	SB	62,200	-		77,100	-		68,400	13,200	
North of Centreport Parkway (Route 8900, Exit 136)	NB	61,900	-	**124,200**	78,200	-	**154,400**	76,000	13,300	**170,000**
	SB	62,300	-		76,200	-		67,500	13,200	
North of Courthouse Road (Route 630, Exit 140)	NB	60,900	-	**121,900**	81,400	-	**158,000**	76,400	15,300	**175,500**
	SB	61,000	-		76,600	-		67,900	15,900	
North of	NB	69,600	6,200	**153,700**	85,300	12,500	**188,800**	81,500	20,500	**199,800**

Location on I-95	Direction	2016 Daily Volumes			2042 No-Build Daily Volumes			2042 Build Daily Volumes		
		GP	Express	Total	GP	Express	Total	GP	Express	Total
Garrisonville Road (Route 610, Exit 143)	SB	68,600	9,300		75,000	16,000		75,500	22,300	
North of Russell Road (Exit 148)	NB	64,900	6,200	**143,000**	77,600	12,500	**175,400**	76,100	20,500	**183,100**
	SB	62,600	9,300		69,300	16,000		70,200	16,300	

A summary of projected LOS and travel times for the I-95 corridor for 2042 No-Build and 2042 Build conditions, developed using Highway Capacity Software (HCS), is provided in **Table 2-2**. The travel time estimates were developed from planning-level capacity analysis output and are intended to indicate relative changes in travel time between alternatives. Refer to **Chapter 1** for information regarding FHWA revised guidance on LOS.

Overall, the I-95 GP lanes are projected to continue to operate at LOS F in the NB direction during the AM peak period and at LOS F in the SB direction during the PM peak period. Compared to 2042 No-Build conditions, travel times within the GP lanes within the study segment are projected to decrease by five minutes in the NB direction during the AM peak period and seven minutes in the SB direction during the PM peak period. In the SB direction, the congested segment extends beyond the study limits in 2042, so the overall change in SB travel times may be larger if a larger study limit were reviewed.

Table 2-2: Freeway Facilities Results

Period	Existing				2042 No-Build				2042 Build			
	NB		SB		NB		SB		NB		SB	
	LOS	Travel Time (min)	LOS	Travel Time (min)	LOS	Travel Time (min)	LOS	Travel Time (min)	LOS	Travel Time (min)	LOS	Travel Time (min)
6 – 7 AM	F	26	A	17	F	37	B	17	F	32	B	17
7 – 8 AM	F		B		F		B		F		B	
8 – 9 AM	F		B		F		B		F		B	
3 – 4 PM	C	17	F	30	C	17	F	32	C	17	F	25
4 – 5 PM	C		F		C		F		C		F	
5 – 6 PM	C		F		C		F		C		F	
6 – 7 PM	C		F		C		F		C		F	

Travel times within the I-95 Express Lanes within the study limits are projected to be 16 minutes with free-flow conditions throughout the Express Lanes based on the forecasted demand, offering a travel time savings of nine to 16 minutes compared to the I-95 GP lanes in the peak periods (**Table 2-3**).

Table 2-3: I-95 Travel Time Comparison in Minutes

Direction & Time Period	Existing		2042 No Build		2042 Build		
	GP	Express	GP	Express	GP	Express	Express Savings
NB AM	26	-	37	-	32	16	16 min
SB PM	30	-	32	-	25	16	9 min

Source and notes: Corridor travel times from Rappahannock River to North of Exit 148 (approximately 18 miles). Results estimated from HCS Freeway Facilities analysis.

Limits of Disturbance (LOD) and the Inventory Corridor

The engineering elements of the Build Alternative described within this Revised EA were used to determine the planning-level LOD for performing the environmental analysis in **Chapter 3**. Specifically, the planning-level LOD was developed from the planning-level grading limits of the Build Alternative or areas designated for widening, and was buffered by an additional 30 feet. It is anticipated that this planning-level LOD would be refined as the project advances through more detailed design and permitting following a FHWA NEPA decision (anticipated to be a FONSI).

This Revised EA also includes the review of an inventory corridor that encompasses the I-95 mainline as well as the three interchanges with associated proposed access points: the I-95 / US 17 North Interchange at Warrenton Road (Exit 133) (**Figure 2-3**), the I-95 / VA 630 Interchange at Courthouse Road (Exit 140) (**Figure 2-4**), and the I-95 / Russell Road Interchange at Marine Corps Base Quantico (Exit 148) (**Figure 2-5**). Natural environmental resources have been identified and evaluated within the inventory corridor, which generally includes a 100-foot buffer beyond the existing right-of-way or a 30-foot buffer beyond the LOD, whichever encompasses a larger area. The inventory corridor provides flexibility for later stages of design. Impacts described in the environmental consequences sections of **Chapter 3** are based on the planning-level LOD. However, the final design would determine final impacts within the inventory corridor. The LOD and inventory corridor are shown alongside the Build Alternative in **Appendix A**.

Figure 2-3: Inventory Corridor and Improvements at the I-95 / US 17 Interchange at Warrenton Road (Exit 133)

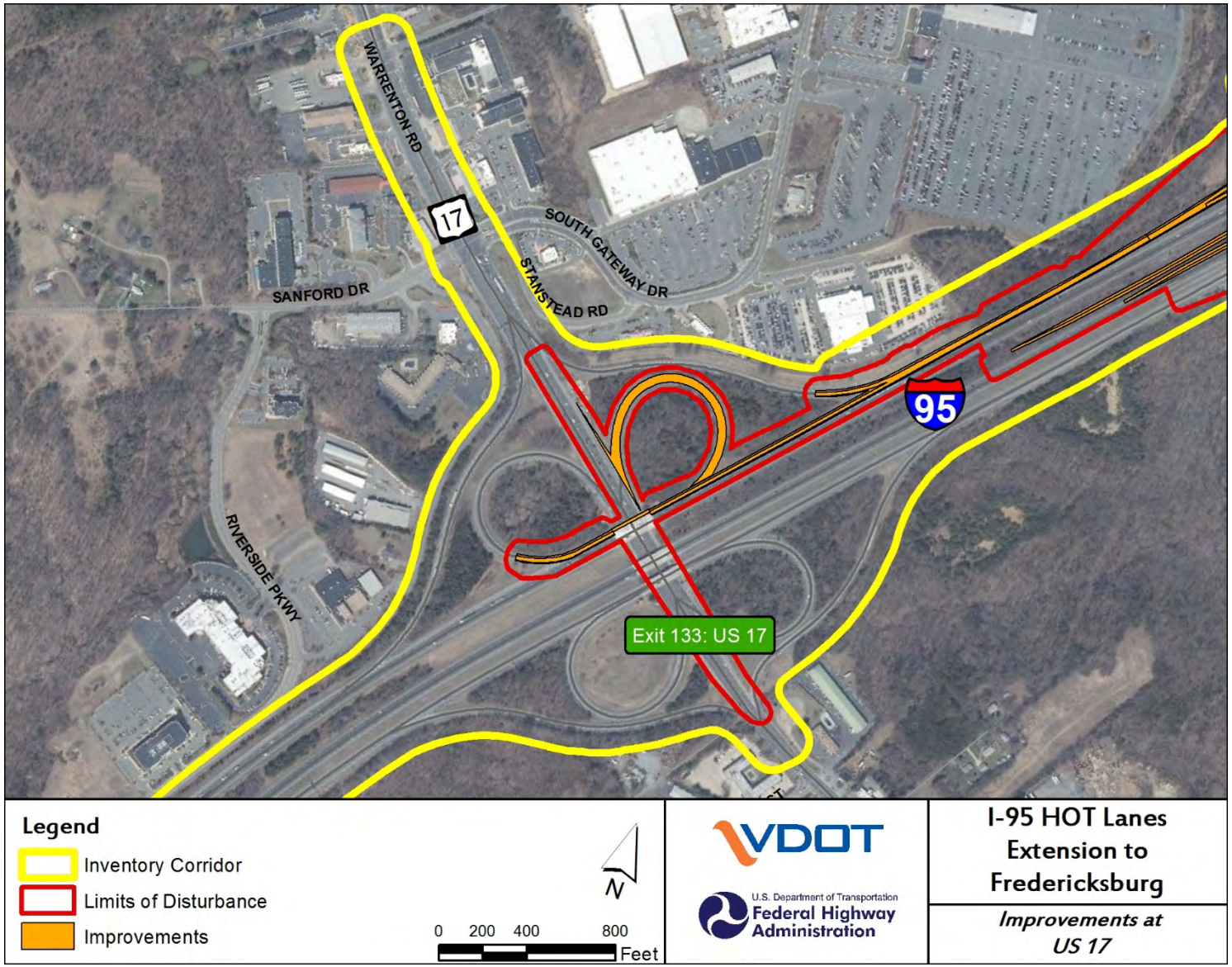


Figure 2-4: Inventory Corridor and Improvements at the I-95 / VA 630 Interchange at Courthouse Road (Exit 140)

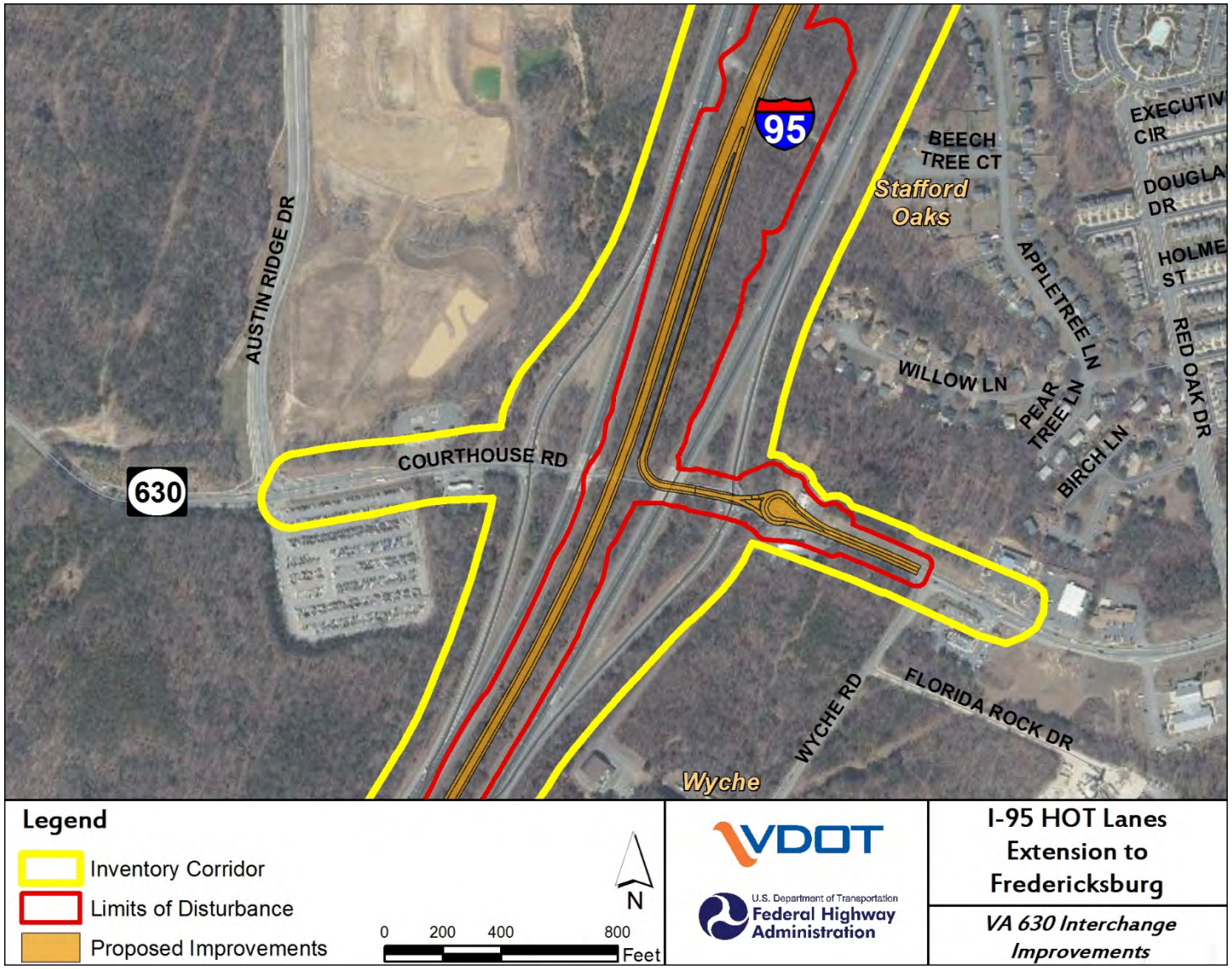
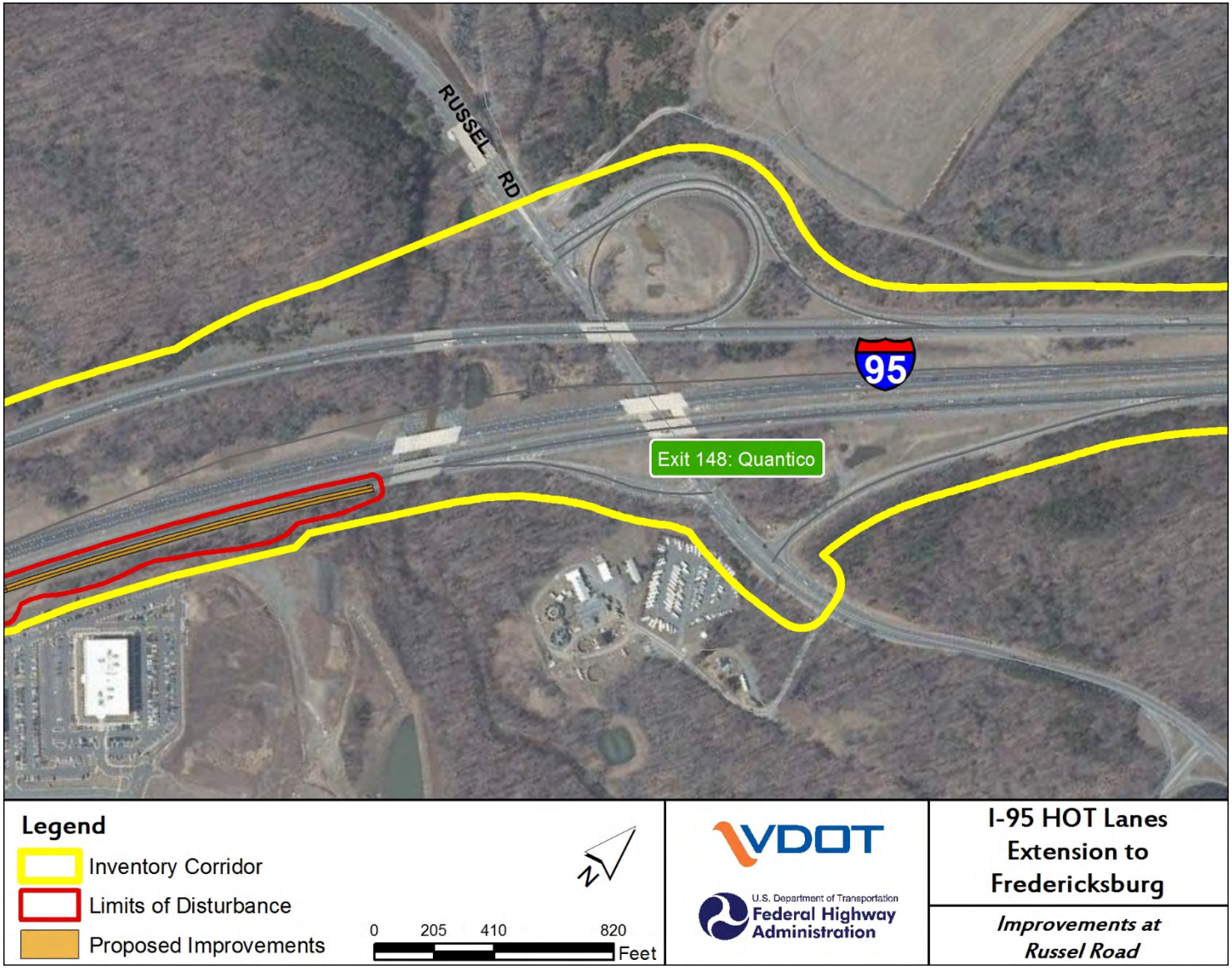


Figure 2-5: Inventory Corridor and Improvements at the I-95 / Russell Road Interchange (Exit 148)



3. EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

This chapter presents existing conditions and environmental consequences for each of the resources evaluated within the study area, and analyzes environmental consequences resulting from implementation of the project. More detailed information is provided in respective technical reports.

3.1 SUMMARY OF ENVIRONMENTAL ISSUES

The study area encompasses approximately 15 miles of the I-95 corridor from the I-95 / US 17 interchange at Exit 133 to the I-95 / Russell Road interchange at Exit 148. **Table 3-1** provides a summary of the environmental conditions within the study area for each resource and the estimated environmental impacts to those resources under the Build Alternative. The specific area of review for existing conditions of each resource is defined in the table below. Existing natural resources were quantified within the inventory corridor, described in **Chapter 2** and shown in **Appendix A**. Potential environmental impacts of the Build Alternative were estimated based on the Build Alternative's planning-level LOD. The planning-level LOD, also shown in **Appendix A**, was developed from the planning-level grading limits of the Build Alternative buffered by an additional 30-f oot offset. It is anticipated that this planning-level LOD would be refined as the project advances through more detailed design and permitting following a FHWA NEPA decision (anticipated to be a FONSI).

Table 3-1: Summary of Environmental Conditions and Impacts

Environmental Resource	Existing Conditions	Potential Environmental Consequences of the Build Alternative (Impacts within the LOD)
Socioeconomics and Right-of-Way	The project is in a populous area of Virginia. Census block groups within 1,000 feet on either side of I-95 were assessed. The total population is approximately 32,000. Most land within the study area is zoned for right-of-way (35%), followed by residential land (22%), and agricultural land (14%).	Most of the project would be constructed within existing VDOT right-of-way, and is not anticipated to require acquisition of complete properties. An estimated 37.8 acres from 51 parcels would be converted to right-of-way. The 37.8 acres would consist of agricultural (12.5 acres), commercial (15.4 acres), industrial (5.2 acres), and residential (4.7 acres) land. Refer to **Section 3.2** and the *Fredericksburg Extension Study Socioeconomic, Land Use, and Right-of-Way Technical Report (*VDOT, 2017h) for more information.

Environmental Resource	Existing Conditions	Potential Environmental Consequences of the Build Alternative (Impacts within the LOD)
Environmental Justice (EJ)	Environmental Justice populations were assessed at the Census block group level. There are no low-income Census block groups in the study area. Eleven of the 12 Census block groups along the study area are considered minority EJ populations.	Under the Build Alternative, both beneficial and adverse impacts would occur to minority populations residing along I-95 in the study area; however, there would be no disproportionately high and adverse impacts to minority populations. Refer to **Section 3.3** and the *Fredericksburg Extension Study Socioeconomic, Land Use, and Right-of-Way Technical Report (*VDOT, 2017h) for more information.
Community Facilities	Community facilities within the study area in Stafford County include one cemetery, one fire station, six health care facilities, six places of worship, five schools/universities, recreational trails at Smith Lake Park, and the East Coast Greenway bike trail.	The Build Alternative is mostly within the existing right-of-way and would not impact community facilities, which exist outside of the planning-level LOD and existing interstate facility. Refer to the *Fredericksburg Extension Study Socioeconomic, Land Use, and Right-of-Way Technical Report (*VDOT, 2017h*)* for more information.
Cultural Resources	Cultural resources were reviewed within a 100-foot buffer beyond the existing right-of-way along the study area. The field inventory area contains the Aquia Church (an architectural historic property), the Chancellorsville Battlefield study area, and one potentially eligible archaeological site.	The project would have no adverse effect on historic resources. The proposed design does not diminish any of the aspects of integrity for the Chancellorsville Battlefield or the Aquia Church that contribute to the eligibility of the historic resources to the NRHP. The design would avoid any impacts to archaeological site 44ST0909. However, this recommendation would be coordinated with SHPO and consulting parties at a later date so as to include public comment. Refer to **Section 3.4** for more information.
Section 4(f)	Section 4(f) facilities were identified within 1,000 feet on either side of I-95 between Exits 133 and 148. Publicly-owned parks and recreation facilities in the study area include Chichester Park, Stafford High School, Anthony Burns Elementary School, and Smith Lake Park. Historic properties identified in the study	None of the Section 4(f) properties in the study area would be physically impacted by the Build Alternative. There would be no impacts to the Section 4(f) properties from noise. The Build Alternative would not result in any Section 4(f) use. Refer to **Section 3.5** for more information.

Environmental Resource	Existing Conditions	Potential Environmental Consequences of the Build Alternative (Impacts within the LOD)
	area include Aquia Church, Chancellorsville Battlefield, and an early woodland camp site.	
Air Quality	The United States Environmental Protection Agency (USEPA) Green Book, which lists non-attainment, maintenance, and attainment areas, shows that Stafford County is designated as attainment for all National Ambient Air Quality Standards. The Virginia Department of Environmental Quality (VDEQ's) annual air quality monitoring report shows that measured pollutant concentrations from all stations representative of the study area are below the NAAQS.	**Carbon Monoxide (CO)** Worst-case modeling was conducted for three intersections and three interchanges (worst-case locations). These intersections and interchanges meet the applicable NAAQS for CO; therefore, other intersections and interchanges included in the Study Area also would be expected to meet the NAAQS. **Mobile Source Air Toxics (MSAT)** All MSAT-pollutant emissions are expected to significantly decline in the Opening and Design years when compared to Existing year. The Opening-year and Design-year analysis for the Build Alternative also showed that the Project is expected to reduce MSAT emissions when compared to the respective No-Build Alternative with benzene, ethylbenzene and POM only showing a very slight increase, in the Design-year, for the Build Alternative. **Indirect Effects and Cumulative Effects** The incremental impact of the proposed project on mobile source emissions, when added to the emissions from other past, present, and reasonably foreseeable future actions, is in conformance with the State Implementation Plan and will not cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of the NAAQS. **Mitigation** Per VDEQ, "*…all reasonable precautions should be taken to limit the emissions of VOC and NOx. In addition, the following VDEQ air pollution regulations must be*

Environmental Resource	Existing Conditions	Potential Environmental Consequences of the Build Alternative (Impacts within the LOD)
		adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions; 9 VAC 5-45, Article 7, Cutback Asphalt restrictions; and 9 VAC 5-50, Article 1, Fugitive Dust precautions." No further analysis is required in this Revised EA; refer to the *Fredericksburg Extension Study Air Quality Technical Report* (VDOT, 2017a) for more information.
Noise	Noise was studied within 500 feet of either side of edge-of-pavement where improvements were proposed for the Build Alternative. The measurement of individual, one-minute equivalent sound levels (Leqs) in the study area ranged from a low of 55 a-weighted sound decibels (dBA) to a high of 75 dBA. In general, values of the traffic-only Leq were the same as or very similar to the measured total Leqs at each of the measurement sites, which is an indication that roadway traffic is the dominant source of noise in spite of the presence of other sporadic and occasional noise events due to human-related activity.	Residential and recreational impacts are predicted to occur under the Build Alternative. To mitigate these impacts, a total of 1.2 miles of barriers have been preliminarily identified as being feasible and reasonable. These noise barriers would benefit 56 of the 190 impacted receptors, as well as 47 not impacted receptors, at an estimated cost of $6.8 million. Two additional noise barriers that have been found to be feasible and reasonable have already been approved and designed. Refer to **Section 3.6** and the *Interstate 95 Express Lanes Fredericksburg Extension Study Noise Analysis Technical Report* (VDOT, 2017g) for more information.
Wetlands	A total of approximately 15.5 acres of wetlands have been identified within the inventory corridor. Roughly 11 acres of wetlands occur within existing right-of way.	Approximately 3.2 acres of wetlands would be impacted by the Build Alternative. Refer to **Section 3.7** and the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.

Environmental Resource	Existing Conditions	Potential Environmental Consequences of the Build Alternative (Impacts within the LOD)
Streams and Water Quality	A total of 42,130 linear feet of streams have been identified in the inventory corridor. Roughly 3600 linear feet occur within existing right-of-way. There are 24 streams/rivers or stream/river segments in, or downstream of, the inventory corridor that are designated as "impaired waters" under Section 303(d) of the Clean Water Act (CWA). Approximately 1,600 linear feet of impaired waters occur within the right-of-way.	Approximately 8,520 linear feet of streams would be impacted by the Build Alternative. Approximately 1,090 feet of Falls Run, which is impaired for aquatic life, would be impacted by the Build Alternative. Refer to **Section 3.8** and the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.
Aquifers/Water Supply	No public groundwater wells, surface water intakes, springs, sole source aquifers, or reservoirs were found in the inventory corridor. The inventory corridor is within the Eastern Groundwater Management Area in Virginia.	Implementation of the Build Alternative would not affect aquifers/water supplies, as roadway cuts are not anticipated to encounter the groundwater table. No further analysis is required in this Revised EA; refer to the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.
Floodplains	There are roughly 78.7 acres of 100-year floodplains in the inventory corridor.	The Build Alternative would involve roughly 20.6 acres of encroachment within regulatory floodplains, but would not have significant adverse impacts on natural and beneficial floodplain values. Refer to **Section 3.9** and the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.
Prime, Unique, or Important Farmland	The inventory corridor contains roughly 37.7 acres of prime farmland and 53.1 acres of farmland of statewide importance. 22.2 acres of prime farmland and 19.1 acres of important farmland exist within the right-of-way.	Although prime farmland and farmland of statewide importance occur within the study area, there would be no impacts to Prime, Unique, or Important Farmland from the Build Alternative. No further analysis is required in this Revised EA; refer to the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.

Environmental Resource	Existing Conditions	Potential Environmental Consequences of the Build Alternative (Impacts within the LOD)
Topography and Soils	Stafford and Prince William counties are in an area of rolling topography, deeply incised by the major drainage patterns flowing toward the Potomac River to the east.	Construction activities involving earthmoving, clearing vegetation, grubbing, and grading would disturb soils and increase the potential for soil erosion. No further analysis is required in this Revised EA; refer to the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.
Resource Protection Areas (RPA)	There are approximately 102 acres of RPA lands within the inventory corridor.	Although RPAs occur throughout the study area, public roads and their appurtenant structures are conditionally exempt from regulation under 8VAC25-830-150. No further analysis is required in this Revised EA; refer to the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.
Wildlife and Wildlife Habitat	The inventory corridor and its vicinity contain forested lands, agricultural lands, pasture, grasslands, and scrub/shrub lands, as well as areas of cleared and maintained land. Natural cover (including forests) accounts for 233.4 acres of the inventory corridor alongside and within the median of I-95. Roughly 200 acres of forested land is within the existing right-of-way.	The majority of the Build Alternative would occur in the existing right-of-way, and would convert roughly 83 acres of forested land to transportation use. Refer to **Section 3.10** and the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.
Anadromous Fish	Confirmed Anadromous Fish Use Areas in, or adjacent to, the study area includes portions of the Rappahannock River, Potomac Creek, Accokeek Creek, Aquia Creek, Chopawamsic Creek, and the Potomac River.	No direct impacts to anadromous fish are anticipated with the Build Alternative since there are no potential or confirmed Anadromous Fish Use Areas that occur in the planning-level LOD. No further analysis is required in this Revised EA. Refer to the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.
Threatened, Endangered, and Special Status Species	Potential habitat for seven threatened or endangered species has been mapped in the inventory corridor: Dwarf Wedgemussel (*Alasmidonta heterodon*),	Approximately 177.0 acres of potential summer-roosting habitat for NLEB, 32.5 acres of potential SWP habitat, 0.3 acres of harperella habitat, and 0.3 acres of mussel habitat would be impacted by the

Environmental Resource	Existing Conditions	Potential Environmental Consequences of the Build Alternative (Impacts within the LOD)
	Harperella (*Ptilimnium nodosum*), Small Whorled Pogonia (*Isotria medeoloides*), Northern Long-eared Bat (*Myotis septentrionalis*), Brook Floater (*Alasmidonta varicosa*), Green Floater (*Lasmigona subviridis*), and Yellow Lance (*Elliptio lanceolata*). Potential habitat for the Northern Long-eared Bat (NELB) covers 605.8 acres, potential habitat for the Small Whorled Pogonia (SWP) covers 66.1 acres, potential habitat for Harperella covers 3.7 acres, and potential habitat for the mussels covers 5.9 acres.	Build Alternative. Due to the potential presence of the species where suitable habitat is present, performing presence/absence surveys may be required by US Fish and Wildlife Service, Virginia Department of Game and Inland Fisheries, and/or the Virginia Natural Heritage Program. If presence of any species is confirmed, these agencies may recommend a time-of-year restriction for activities within occupied habitat and these restrictions would be determined through the permitting process. Refer to **Section 3.11** and the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.
Quantico Slate	Quantico slate, a rock formation in portions of Stafford County, can cause acid drainage when disturbed exposed to oxygen in the atmosphere and water. Approximately 91 acres of Quantico slate is located in the inventory corridor.	Roughly four acres of Quantico rock may be disturbed by the Build Alternative. The appropriate method of dealing with potential acid drainage problems would be identified during final design, which would include acquisition of geotechnical borings to identify potential problem areas for use in design of foundations and road substructure. No further analysis is required in this Revised EA; refer to the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f) for more information.
Hazardous Materials	Eight properties within a half-mile of the I-95 centerline have been identified as a high priority, and an additional 13 parcels are listed as moderate priority for additional investigation work due to the risk of potential contaminant or hazardous material impacts associated with proposed construction activities from the Build Alternative.	Additional assessment and/or sampling investigations are recommended for the 21 locations where subsurface disturbance may intersect soils or groundwater potentially impacted by the identified sites, or where partial property takes are anticipated. The presence of these locations does not affect the FHWA NEPA decision. Refer to **Section 3.12** and the *Fredericksburg Extension Study Hazardous Materials Technical Report* (VDOT, 2017d) for more information.

Environmental Resource	Existing Conditions	Potential Environmental Consequences of the Build Alternative (Impacts within the LOD)
Indirect and Cumulative Effects	I-95 is subject to traffic delays and traffic unreliability, which impedes the delivery of goods and services, restricts access to tourism and commercial activities, and results in lost economic productivity. Past and present actions have been both beneficial and adverse to socioeconomic resources and land use within the study area, and past and present growth and development has increased the standards of living for communities. Past development has produced a steady decline in natural and historic resource conditions, and historic properties have been continuously created and destroyed by succeeding developments over time in the study area.	While there would be some indirect and cumulative effects, no significant issues were identified. Refer to **Section 3.14** and the *Fredericksburg Extension Study Indirect and Cumulative Effects Technical Report* (VDOT, 2017e) for more information.

3.2 SOCIOECONOMICS AND RIGHT-OF-WAY

The study area for socioeconomics, land use, and right-of-way is comprised of the Census block groups located within 1,000 feet on either side of I-95 between the I-95 / US 17 interchange at Exit 133 and the I-95 / Russell Road interchange at Exit 148 (**Figure 3-1**). Since Exit 148 is just within Prince William County, Prince William County is included in the study area even though the LOD is entirely within Stafford County. Impacts were calculated only within the planning-level LOD. Land use within the study area was identified using Geographic Information System (GIS) data from Prince William and Stafford counties, planning documents from these local jurisdictions, and aerial photography from Google Maps and Google Earth. The land use categories defined by Prince William and Stafford Counties are not the same. Therefore, zoning data acquired from these counties are used in this analysis as representative of existing land use.

3.2.1 Existing Conditions

Socioeconomics

Per American Community Survey (ACS) 2011-2015 5-Year data, the resident population of the study area Census block groups is approximately 35,600 persons. Of these, most residents live in Stafford County (**Table 3-2**).

Figure 3-1: Census Block Groups

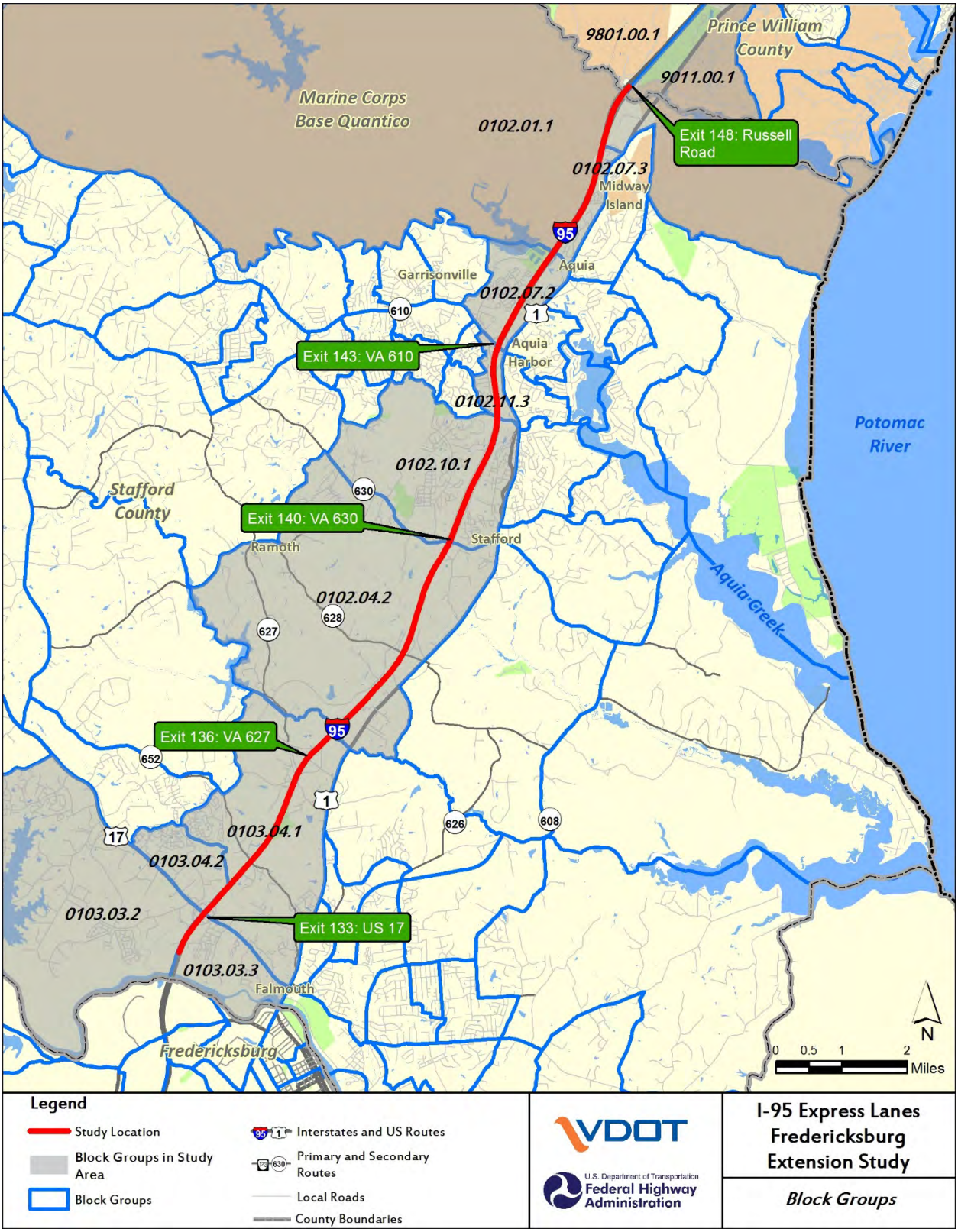


Table 3-2: Resident Population of Study Geographic Areas

Geographic Area	Population	Percentage of Population within Study Census Block Groups
Study Area Block Groups Total Population	35,571	100.0%
Prince William County	437,271	0.6%
Stafford County	137,145	24.0%
Virginia	8,256,630	Less than 1.0%

Source: ACS 2011-2015 5-Year data

Between 1980 and 2015, the population of the two counties within the project area, Stafford County and Prince William County, grew by approximately 240 percent and 200 percent, respectively. During the same period, a 54.4 percent population increase occurred statewide.

According to the 2011-2015 ACS 5-year estimates, within the studied Census block groups, approximately 70 percent of occupied housing units were owner-occupied and 30 percent were renter-occupied. Among the 12 studied Census block groups, there were a total of approximately 11,400 housing units.

Per the 2015 ACS data, approximately 95.6 percent of the labor force in the study Census block groups is employed (**Table 3-3**). This is higher than the proportion of employed labor force in Prince William County (94.7 percent), Stafford County (94.8 percent), and Virginia (93.7 percent).

Table 3-3: Study Census Block Group Employment Characteristics

Geographic Area	Total Population in Labor Force	Total Employed (Civilian and Military)	Total Percent Employed
Study Area Block Groups Total	18,402	17,586	95.6%
Prince William County	242,801	229,902	94.7%
Stafford County	72,937	69,155	94.8%
Virginia	4,376,786	4,100,756	93.7%

Source: ACS 2011-2015 5-Year data

Table 3-4 shows means of transportation to work in Prince William County, Stafford County, and Virginia. Most commuters within the study Census block groups (66.1 percent) commute alone by car, truck, or van (VDOT, 2017h). In the study localities, the proportion of driving resident commuters who travel alone ranges from 77.5 percent statewide, to 72.7 percent in Stafford County, and 74.1 percent in Prince William County. These percentages are similar those seen in the localities at the time of the 2011 EA, with the proportion of driving resident commuters who travel alone ranging from 77.2 percent statewide, to 74.0 percent in Stafford County, and 71.5 percent in Prince William County. The total number of commuters between 2011 and 2015, though, has increased by roughly 10.9 percent in Prince William County, 7.9 percent in Stafford County, and 3.7 percent in Virginia.

For more information regarding population, housing, and economic characteristics, please refer to the *Fredericksburg Extension Study Socioeconomic, Land Use, and Right-of-Way Technical Report* (VDOT, 2017h).

Table 3-4: Means of Transportation to Work

Geography	Total Com-muters	Total Com-muters Margin of Error	Total Public Transpor-tation Use	Total Public Transpor-tation Use Margin of Error	Total Car/Truck/ Van Alone	Total Car/Truck/ Van Alone Margin of Error	Total Car/Truck/ Van Carpool of 2 or More Persons	Total Car/Truck/ Van Carpool of 2 or More Persons Margin of Error	Percent Study Area Population that Commutes by Car/Truck/ Van Alone	Percent Study Area Population that Commutes by Car/Truck/ Van Carpool of 2 or More Persons
Prince William County-2015	225,994	+/-1,557	13,006	+/-984	167,420	+/-2,015	30,968	+/-1,543	74.1	13.7
Stafford County-2015	68,014	+/-1,001	2,582	+/-346	49,429	+/-987	10,535	+/-774	72.7	15.5
Virginia-2015	4,020,679	+/-9,014	183,183	+/-3,403	3,117,644	+/-9,722	379,361	+/-5,167	77.5	9.4
Prince William County-2011	203,840	+/-1566	11,162	+/-847	145,795	+/-2035	32,612	+/-1667	71.5	16.0
Stafford County-2011	63,056	+/-833	2,254	+/-275	46,630	+/-990	9,483	+/-705	74.0	15.0
Virginia-2011	3,877,505	+/-7946	166,735	+/-3469	2,994,405	+/-9135	402,758	+/-5334	77.2	10.4

Source: American Community Survey 2016; American Community Survey 2012

Land Use and Right-of-Way

The most prominent land use within 1,000 feet on either side of I-95 between Exits 133 and 143 is roadway right-of-way, followed by residential, agricultural, commercial, industrial, federal, and planned development (**Table 3-5**).

Growth in the Washington, DC metropolitan region and the Fredericksburg metropolitan area has resulted in substantial residential and commercial development in Northern Virginia, including Prince William and Stafford Counties. This intensified land use is evident along I-95, in places such as Midway Island, Garrisonville, Aquia, Stafford, and Berea. There is at least one mobile home park located within the study area.

Table 3-5: Study Area Land Use

Land Use	Total Acreage within Study Area	Percent of Total Acreage within Study Area
Agricultural	537	14%
Commercial	487	12%
Federal	270	7%
Planned Development	84	2%
Residential	814	21%
Industrial	342	9%
Right-of-way	1,305	35%
Total	**3,839**	**100%**

Locality plans from the National Capital Region Transportation Planning Board (NCRTPB), the FAMPO, Prince William County, and Stafford County all indicate the need for transportation improvements to ease commuter traffic issues. The NCRTPB approved an amendment to add the I-95 Express Lanes Extension Study to the Fiscal Year 2017-2022 Transportation Improvement Plan (TIP) (MWCOG, 2017), FAMPO included a project to extend the Express Lanes from near VA 610 / Garrisonville Road (Exit 143) to Exit 126 in its *2040 LongRange Transportation Plan* (FAMPO, 2013), and the Stafford County Comprehensive Plan recommended reducing traffic congestion on I-95 by extending the Express Lanes from Garrisonville Road to Exit 126 (Stafford County, 2016).

3.2.2 Environmental Consequences

Socioeconomics

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not result in new property acquisitions or impacts.

Build Alternative

Right-of-way impacts from the Build Alternative are summarized in **Table 3-6**. The planning-level LOD of the Build Alternative is almost entirely within existing right-of-way.

Table 3-6: Build Alternative Right-of-Way Acreage and Acquisition Zoning Type

Zoning Category	Acres
Existing VDOT Right-of-Way	338.0
New Right-of-Way	37.8
Agricultural	*12.5*
Commercial	*15.4*
Residential	*4.7*
Industrial	*5.2*
Total Right-of-Way Required for Build Alternative	**375.8**

Approximately 4.7 acres of residentially-zoned property, 15.4 acres of commercially-zoned property, 12.5 acres of agriculturally-zoned property, and 5.2 acres of industrially-zoned property may be converted to right-of-way by the Build Alternative, for a total of 37.8 acres of new right-of-way acquisition. While 51 partial acquisitions have been identified, it is anticipated that there would be no total acquisitions (VDOT, 2017h). Refer to the *Socioeconomics, Land Use, and Right-of-Way Technical Report* (VDOT, 2017h) for more information. Maintenance of traffic would be determined during the design phase of the project.

The Build Alternative would extend Express Lanes, requiring that SOVs and other vehicles not meeting HOV-occupancy requirements pay a variable toll to use the Express Lanes. The existing GP lanes would remain free for travelers using the facility, providing a choice to travelers whom, based on individual needs, may or may not choose to pay a toll. A scoping letter received from the Department of Defense, Washington Headquarters Services indicated that the agency anticipated their employees to make use of new Express Lanes (see **Chapter 4**).

Existing access in the study area to and from I-95 would continue under the Build Alternative. With the addition of Express Lanes, daily traffic volumes on GP lanes are projected to decrease, improving travel reliability. North of Exit 143, the daily volumes in the I-95 GP lanes would decrease by approximately 4,000 vpd, and between Exits 133 and 143, the daily I-95 GP volumes would decrease by approximately 14,000 vpd. Since the Build Alternative would improve travel choice and provide more reliable travel times for users in both the GP and the Express Lanes during peak periods, no adverse impact to employment or income is expected to occur under the Build Alternative.

Land Use and Right-of-Way

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not result in new impacts to study area land use. The No-Build Alternative is not in accordance with area comprehensive plans.

Build Alternative

Table 3-6 shows the Build Alternative impacts to zoning. The Build Alternative would result in the conversion of approximately 37.8 acres to transportation land use, impacting primarily agricultural and commercial land use. Because most Build Alternative construction would occur in existing transportation right-of-way, these impacts would be generally limited to slivers of land bordering I-95. Therefore, the Build Alternative would not change the overall existing and planned land use pattern in the study area or Prince William and Stafford Counties, nor is it anticipated to require acquisition of complete properties.

Furthermore, the NCRTPB TIP (MWCOG, 2017), FAMPO *2040 Long Range Transportation Plan* (FAMPO, 2013), the Stafford County Comprehensive Plan (Stafford County, 2016), and Prince William County Comprehensive Plan (Prince William County, 2008) all indicate an interest in creating more efficient travel along I-95.

The land use impacts described above account for potential permanent and temporary impacts. Temporary right-of-way required for construction would be short-term and returned to the previous land use upon completion of the project.

3.3 ENVIRONMENTAL JUSTICE

FHWA defines EJ as "identifying and addressing disproportionately high and adverse effects of the agency's programs, policies, and activities on minority populations and low-income populations to achieve an equitable distribution of benefits and burdens" (FHWA, 2015). The EJ analysis in this Revised EA has been prepared in accordance with the definitions, methodologies, and guidance provided in Executive Order (EO) 12898; the Council on Environmental Quality (CEQ) *Environmental Justice Guidance Under the National Environmental Policy Act*; US Department of Transportation (USDOT) Order 5610.2(a); FHWA EJ Order 6640.23A; FHWA memorandum *Guidance on Environmental Justice and NEPA*; the FHWA *Environmental Justice Reference Guide*; and the FHWA Technical Advisory T6640.8A.

Refer to **Chapter 4** for information regarding EJ outreach for the Revised EA.

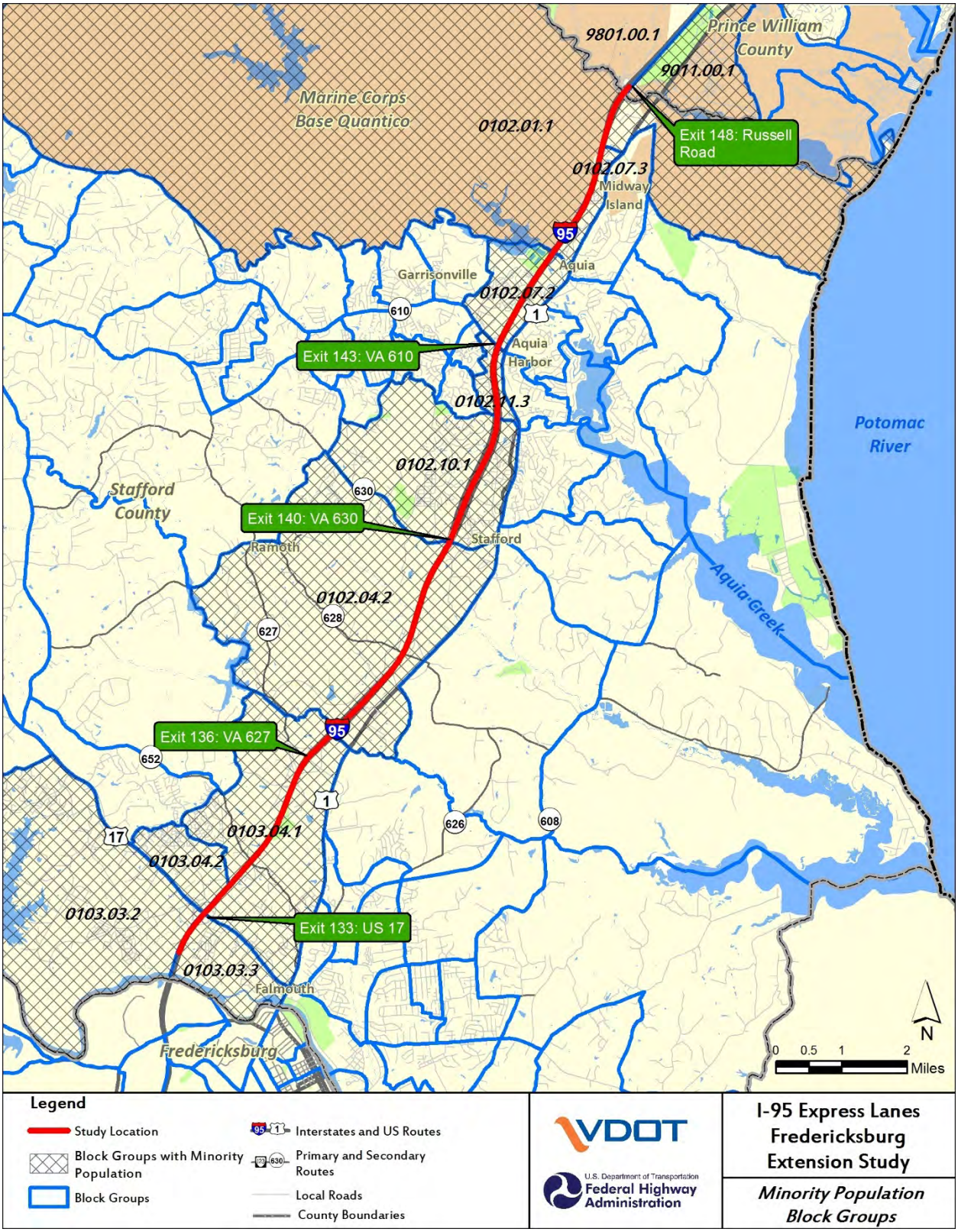
3.3.1 Existing Conditions

Minority Populations

The *Fredericksburg Extension Study Socioeconomics, Land Use, and Right-of-Way Technical Report* includes information on minority population characteristics by Census block group according to ACS 2011-2015 5-Year data (VDOT, 2017h). For this Revised EA, the minority population for a Census block group was found to be "meaningfully greater" than surrounding block groups in the study area if the value was greater than the value of the locality that has the lowest percentage of minority populations (Stafford County with 25 percent minority), plus an additional ten percent of that value (2.5 percent). This established a "meaningfully greater" threshold of 28 percent (rounded). Ethnic Hispanics can be of any race, and thus are counted separately. Prince William County has the lowest percentage of residents of Hispanic ethnicity (one percent) compared to Stafford County (two percent). Using the same methodology for minority population identification, the "meaningfully greater" threshold for ethnic Hispanic populations would therefore be 1.1 percent.

Eleven of the 12 Census block groups within the study area meet the minority or ethnic Hispanic thresholds for a minority population (**Figure 3-2**). Only Census block group 9801.00 BG 1 on Marine Corps Base Quantico, which has no residents, is not a minority population. All study area Census block groups containing minority populations are accessible via I-95 exits.

Figure 3-2: Environmental Justice Block Groups



Low-Income

The *Fredericksburg Extension Study Socioeconomics, Land Use, and Right-of-Way Technical Report* includes information on the low-income population characteristics per Census block group according to ACS 5-Year (2016) data (VDOT, 2017h). For this Revised EA, a family of four was used as a conservative poverty threshold. The Health and Human Services (HHS) 2015 Poverty Guidelines of the 48 Contiguous States and the District of Columbia identifies the poverty threshold as an income of $24,250 for a family of four. None of the study Census block groups have a median household income below the HHS family of four poverty threshold of $24,250.

3.3.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not result in new beneficial or adverse impact to minority or low-income populations. Minority and low-income populations would be subjected to the same, unreliable travel times as the overall population.

Build Alternative

Under the Build Alternative, both beneficial and adverse impacts would occur to minority populations residing along I-95 in the study area; however, there would be no disproportionately high and adverse impacts to minority populations. The Build Alternative would add capacity to the I-95 corridor in the study area and provide new access points to the managed lanes system as described in **Chapter 2**. The proposed project would provide two dedicated lanes for multi-occupant vehicles south of VA 610 / Garrisonville Road (Exit 143) where none exist today, as well as additional access points for vehicles to enter and exit the Express Lanes from US 17 / Warrenton Road (Exit 133) to Russell Road (Exit 148). This would benefit all travelers on I-95, including minority populations residing along I-95 in the study area that use I-95. Existing access in the study area to and from I-95 would continue under the Build Alternative.

North of Exit 143, the daily volumes in the I-95 GP lanes would decrease by approximately 4,000 vpd, and between Exits 133 and 143, the daily I-95 GP volumes would decrease by approximately 14,000 vpd. This reduction in daily traffic volume would improve travel reliability in the GP lanes for the overall population, including minority and low-income populations. Maintenance of traffic would be determined during the design phase of the project.

Making improvements to the median of an existing interstate facility reduces impacts to minority or low-income populations than otherwise could occur. Anticipated new right-of-way would be acquired in Census block groups that meet the established threshold for minority populations on either side of I-95 through the study area. However, because the Build Alternative is not anticipated to require acquisition of complete parcels, the impact would not be highly adverse. Whether potentially affected parcels are owned by minority persons would not be known until the right-of-way acquisition phase if the Build Alternative was implemented.

The Build Alternative would cause noise impacts to minority populations residing in the study area (see the *Fredericksburg Extension Study Noise Technical Report,* [VDOT 2017g]). In accordance with FHWA Order 6640.23, mitigation for noise impacts would be provided when warranted and determined to be reasonable and feasible, without discrimination.

3.4 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act of 1966, as amended (54 USC 306108), and its implementing regulations (36 CFR Part 800) require federal agencies to consider the effects of their undertakings on "historic properties," defined as buildings, structures, sites, districts, and objects, generally at least 50 years of age, that are listed on or eligible for listing on the National Register of Historic Places (NRHP). The Section 106 process is undertaken by federal agencies in consultation with the State Historic Preservation Officer, who in Virginia is the director of the VDHR; the Advisory Council on Historic Preservation, as appropriate; federally-recognized Indian tribes; representatives of local government; and other parties with a demonstrated interest in an undertaking.

3.4.1 Existing Conditions

The *Cultural Resources Survey Associated with the Fredericksburg Express Lanes Extension Study, Stafford and Prince William Counties, Virginia* (VDOT, 2017c) includes results from cultural resources studies undertaken, to date, to support the Section 106 process for the Fredericksburg Extension Study. These studies detail the results of the VDOT's efforts thus far to identify archaeological and architectural resources.

Prior to commencing fieldwork, a field inventory area was established to identify previously recorded resources. The field inventory area for the Fred Express project encompassed a 100-foot buffer beyond the existing right-of-way along the study area. The architecture and archaeological historic properties in the field inventory area were identified in surveys conducted for earlier projects by VDOT and additional surveys conducted for this project to update or supplement previous findings.

The Revised EA study area has been heavily surveyed as a result of previous studies of the I-95 corridor, including the Express Lanes, results found in the reports *Phase I Archeological Investigation for the I-95/395 HOV/Bus/HOT Lanes Project, Stafford and Spotsylvania Counties, and the City of Fredericksburg, Virginia*, 2007 prepared by Thunderbird Archaeological Associates and *Architectural Survey of the Proposed Rappahannock River Crossing Project, Stafford and Spotsylvania Counties, and the City of Fredericksburg, Virginia, 2014* prepared by Dovetail Resource Group. Work in the I-95 corridor was also completed as part of the Rappahannock River Crossing, results found in the report *Phase I Archaeological Identification Survey and Phase II Archaeological Evaluation Investigations for the I-95 Rappahannock River Crossing Project Stafford County, Spotsylvania County, and the City of Fredericksburg, Virginia, 2012* prepared by McCormick Taylor.

The study area contains one architectural historic property, the Aquia Church (089-0008), included in **Table 3-7**, below**.** The Aquia Church is an excellent example of Georgian ecclesiastical architecture with a Greek Cross plan constructed 1751 c. The building is composed of brick laid in a Flemish bond with terminating quoins and door surrounds carved from locally-quarried Aquia stone.

The study area includes the study area for the Chancellorsville Battlefield (088-5180), included in **Table 3-7**, below. The American Battlefield Protection Program defines the property within the battlefield boundaries using three separate criteria: the study area, the core area, and the Potential National Register Boundaries (PotNR). The study area and the core area of a battlefield include the historic footprint of the battle. The PotNR also includes the historic footprint of the battle; however, the PotNR portion retains a high degree of integrity and is the only portion of the battlefield that is eligible for the NRHP. Only the study area of the Chancellorsville Battlefield extends into the inventory area, the PotNR does not.

Table 3-7: Architectural Resource Listed in or Eligible for the NRHP

VDHR No.	Resource	City/County	NRHP Eligibility Status
089-0008	Aquia Church	Stafford	NRHP Listed 1991
088-5180	Chancellorsville Battlefield	Spotsylvania	Determined Eligible 2000

The study area for the project contains two potentially eligible archaeological properties, sites 44ST0909 and 44ST0622 (**Table 3-8**). Site 44ST0909 is an early Woodland, temporary camp site and 44ST0622 is a 19th or 20th century domestic site. Site 44ST0622 was earlier determined potentially eligible in consultation with the State Historic Preservation Officer (SHPO), but field and archival research conducted for this study revealed that the site had been mapped incorrectly in the SHPO's database and the Virginia Cultural Resource Inventory System. Further, the site is not located within the inventory corridor.

Table 3-8: Archaeological Resources Listed in or Eligible for the NRHP

VDHR No.	Resource	City/County	NRHP Eligibility Status
44ST0909	Early Woodland Camp Site	Stafford	Potentially Eligible 2007
44ST0622	19th-20th Century Domestic Site	Stafford	Potentially Eligible 2000

3.4.2 Environmental Consequences

The Area of Potential Effects (APE) for direct effects includes any areas within the LOD of the project, including existing right-of-way. The APE for indirect effects is any areas of direct impact from the project and any land parcels immediately adjacent to the LOD, but not already impacted by modern development and sound walls. The APE for this project was previously surveyed for the HOT Lanes Project, VDOT Project No.: 0095-966-109, P101; UPC: 70850; VDHR File No.: 2007-0006. The SHPO agreed with the VDOT's recommendation that the Build Alternative, as a portion of the 2011 FONSI-selected Alternative from the I-95 HOT Lanes Project, would have no effect on historic resources.

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not result in new direct impacts on historic resources.

Build Alternative

In accordance with 36 CFR 800.5(a), VDOT has applied the criteria of adverse effect to historic properties within the project's APE. The regulations implementing Section 106 of the National Historic Preservation Act of 1966, as amended, defines an effect as an "alteration to the characteristics of a historic property qualifying it for inclusion in or eligible for the National Register" {36 CFR 800.16(i)}. The effect is adverse when the alteration of a qualifying characteristic occurs in a "manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association" {36 CFR 800.5(a)}. Based on the alignment found in this Revised EA, the project would have no adverse effect on historic resources. The proposed design does not diminish any of the aspects of integrity for the Chancellorsville Battlefield (088-5180) nor the Aquia Church (089-0008) that contribute to the eligibility of the historic resources to the NRHP. Further, the inclusion of flyovers within the planning-level LOD at Russell Road would avoid any impacts to archaeological site 44ST0909 that would otherwise have been impacted by providing access to Russell Road from the median of I-95. However, this recommendation would be coordinated with SHPO and consulting parties following public review of this Revised EA and prior to requesting a FONSI from FHWA.

3.5 SECTION 4(F)

Section 4(f) of the USDOT Act of 1996, as amended (49 USC 303(c), 23 CFR 774), applies to publicly-owned parks, recreational areas, wildlife or waterfowl refuges, and public or private historic sites. If a determination is made that there is no feasible and prudent alternative to the use of the land from the property, and the action includes all possible planning to minimize harm to the property resulting from such use; or the use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant will have a *de minimis* impact, as defined in 23 CFR § 774.17, on the property, then the use of the Section 4(f) property may be approved.

Section 4(f) facilities were identified within 1,000 feet on either side of I-95 between Exits 133 and 148.

3.5.1 Existing Conditions

Publicly-owned parks and recreation facilities in the study area include:

- Chichester Park;
- Stafford High School;
- Anthony Burns Elementary School; and
- Smith Lake Park.

Historic properties identified in the study area include:

- Aquia Church
- Chancellorsville Battlefield, and
- An early woodland camp site.

3.5.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not require use of any Section 4(f) resources within the corridor.

Build Alternative

Eight properties protected under Section 4(f), (four recreation facilities and four historic resources) are located in the study area. None of the Section 4(f) properties in the study area would be physically impacted by the Build Alternative. There would be no Section 4(f) use of publicly-owned parks, recreation areas, or historic sites. Two Section 4(f) properties are sufficiently close to the Build Alternative alignment to be considered for noise impact: Chichester Park and Anthony Burns Elementary School. The predicted noise levels at both properties are within 3 decibels of the No-Build sound level; as a result, there would be no impacts to the Section 4(f) properties from noise (refer to the *Fredericksburg Extension Study Noise Technical Report* for more information [VDOT, 2017g]). Therefore, the Build Alternative would not result in any Section 4(f) use.

3.6 NOISE

A noise assessment was performed pursuant to 23 CFR 772: *Procedures for Abatement of Highway Noise and Construction Noise and the VDOT Highway Traffic Noise Impact Analysis Guidance Manual*, Version 7 (VDOT, 2015). All traffic noise computations for this study were conducted using the latest version of the FHWA Traffic Noise Model (FHWA Traffic Noise Model [TNM] version 2.5). TNM incorporates state-of-the-

art sound emissions and sound propagation algorithms that simulate the noise environment by considering inputs for traffic vehicle classification and speed; inputs for roadway design geometry; terrain features; and existing elements that effect sound propagation such as building rows, ground zones, and tree zones. The study area for detailed evaluation is generally defined as approximately 500 feet on either side of the edge of pavement of the roadways where improvements are proposed for the Build Alternative.

Noise monitoring was conducted at 30 short-term (30 minutes in duration) sites from March 21 to 23, 2017. Traffic classification counts on the roadways nearest each measurement site were conducted simultaneously with each noise measurement. The short-term measurements characterized existing noise levels in the study area but were not necessarily conducted during the loudest hour of the day. They included contributions from sources other than traffic, such as aircraft.

3.6.1 Existing Conditions

The measurement of individual, one-minute equivalent sound levels (Leqs) ranged from a low of 55 a-weighted sound decibels (dBA) at a second rowhome at 24 Banner Spring Circle, Stafford, which is shielded from traffic noise by existing homes and terrain; to a high of 75 dBA near 61 Bass Drive, Stafford, which is near I-95 and not shielded. In general, values of the traffic-only Leq were the same as or very similar to the measured total Leqs at each of the measurement sites, which is an indication that roadway traffic was the dominant source of noise in spite of the presence of other sporadic and occasional noise events due to human-related activity.

Other sources of noise in the existing environment included aircraft overflights, lawn equipment, biogenic sounds (birds and insects), wind in the trees, and other human-related activity. There is a total of 151 existing condition noise impacts. Existing noise barriers in the corridor provide traffic noise attenuation of at least five decibels (5 dBA) for two residences on Beauregard Drive (CNE UU); one residence on Ravenwood Drive (CNE TT); and 92 residences on Stafford Glen Court, Tanglewood Lane, Whitsons Run, Fallsway Lane, Fairfield Court, and Ryan Way (CNE NN). Refer to Figure 5-1 in the *Fredericksburg Extension Study Noise Analysis Technical Report* for labeled maps of these barriers (VDOT, 2017g).

3.6.2 Environmental Consequences

Noise impact was assessed for existing conditions, the No-Build, and Build Alternative, and is summarized by FHWA land use activity category in **Table 3-9**. Traffic projections are preliminary and would be reevaluated during the final design noise analysis, accounting for final lane configuration that would be part of the design. VDOT's noise Guidance Manual, Section 10.0, *Additional Considerations for Final Design Highway Traffic Noise Barrier Analysis,* details the types of refinements in noise modeling and analysis that are required during final design (VDOT, 2015). These include changes in roadway profile and horizontal geometry; incorporating planned fill and retaining walls; and practical noise barrier locations, incorporating review by the roadway design engineers.

Table 3-9: Noise Impact Summary

Alternative	Impact Type	Land Use and Noise Abatement Criteria (NAC) Activity Category (Number of Impacts)				
		Residential Exterior (B)	Recreational Exterior (C)	Institutional Interior (D)	Commercial Exterior (E)	Total
Existing	NAC	130	21	0	0	**151**
No-Build	NAC	129	34	0	0	**163**
Build	NAC	153	37	0	0	**190**

Source: VDOT, 2017g

No-Build Alternative

Overall, No-Build sound levels are predicted to increase by approximately 0.5 decibels during the loudest hour of the day relative to the existing levels. Design-Year 2042 No-Build condition traffic is predicted to result in 163 total impacts. No new barriers would be constructed along the corridor.

Build Alternative

Predicted 2042 Build Alternative exterior Leqs average about 1 to 1.5 decibels higher than the existing levels. This increase is primarily due to the roadway improvements allowing slightly higher traffic volumes in the loudest-hour periods, and projected increases in heavy truck traffic.

Overall, residential and recreational impacts are predicted to occur under the Build Alternative. A total of 190 impacted receptors are predicted for the Build Alternative, comprised of 153 residential dwelling units (Category B), and 37 receptors representing one school's recreational areas and six other recreational receptors (Category C). No commercial (exterior, Category E) receptors and no institutional (interior, Category D) receptors are predicted to be impacted under the Build Alternative.

Noise abatement must be considered where noise impact is predicted. Noise abatement is evaluated to determine if it is warranted, feasible, and reasonable. **Table 3-10** summarizes the total length, estimated cost, and benefits that would be provided by the one barrier evaluated that was found to be warranted, feasible, and reasonable in the section of the project where detailed noise analysis was performed: between US 17 / Warrenton Road (Exit 133) and VA 610 / Garrisonville Road (Exit 143). Two additional noise barriers that are found to be feasible and reasonable have already been approved and designed between VA 630 / Courthouse Road (Exit 140) and VA 610 / Garrisonville Road (Exit 143) as part of a separate project. Details of those barriers are taken from the noise abatement design report for the I-95 Express Lanes Project, Segments I-III, and are described in Appendix G of the *Fredericksburg Extension Study Noise Analysis Technical Report* (VDOT, 2017g). The three feasible and reasonable barriers are represented in the mapping in **Appendix A** of this Revised EA.

Table 3-10: Summary of Feasible and Reasonable Noise Barriers

Location	Length (mi.)	Estimated Cost ($42/sq. ft.)	Number of Benefited Receptors		
			Impacted	Not impacted	Total
CNE PP	1.2	$6,804,000	56	47	**103**

The noise evaluation conducted as part of this study is preliminary and based on planning-level design. Final design traffic data would inform more detailed noise analyses during the final design and permitting phases of the study. As such, noise barriers that are found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis. Similarly, noise barriers that were not considered feasible and reasonable may be found to meet established criteria and be recommended for construction. If a noise barrier is determined to be feasible and reasonable in final design, the affected public would be given an opportunity to decide whether they are in favor of construction of the noise barrier.

The need for an analysis of reflected sound and the potential use of sound absorbing materials would be evaluated during the noise barrier analysis conducted during the final design phase of the project.

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

3.7 WETLANDS

Routine wetland determination methods were used to determine the presence and boundary of wetlands in the study area. Wetland Determination Data Forms were completed to document representative conditions in the delineated wetland and adjacent upland.

3.7.1 Existing Conditions

Mapping in the *Fredericksburg Extension Study Natural Resources Technical Report* and **Appendix A** shows the location of wetlands identified in the field reconnaissance survey (VDOT, 2017f). A total of 15.2 acres of wetlands have been identified in the inventory corridor (**Table 3-11**). The wetlands have been categorized based on vegetation type using the system defined by Cowardin et al. in *Classification of Wetlands and Deepwater Habitats of the United* States (Cowardin et al., 1979). The wetlands are further divided based on location in the two Hydrologic Unit Codes (HUC): eight-digit watersheds (02070011 and 02080104) that are represented in the inventory corridor. All wetlands identified in the inventory corridor are palustrine wetlands, which are freshwater wetlands with salinities below 0.5 parts-per-thousand and maximum water depths of 6.6 feet.

Most of the palustrine wetlands identified are Palustrine Forested wetlands (75 percent), followed by Palustrine Emergent wetlands (17 percent). Approximately 50 percent of the wetlands are located in the median of I-95, within the existing right-of-way. The wetlands within the field inventory area are concentrated within the southern half of the corridor.

Table 3-11: Inventory Corridor Wetland Acreage by Watershed

Watershed	PFO Acres	PSS Acres	PEM Acres	POW Acres	PUBx Acres	Study Area Acreage
Lower Potomac River (02070011)	10.7	0.3	2.6	0.8	0.0	14.4
Lower Rappahannock River (02080104)	0.9	0.0	0.0	0.2	0.0	1.1
Total	**11.6**	**0.3**	**2.6**	**1.0**	**0.0**	**15.5**

Notes: PFO = Palustrine Forested, PSS = Palustrine Scrub/Shrub, PEM = Palustrine emergent, POW = Palustrine Open Water, PUBx = Palustrine Unconsolidated Bottom Excavated

VDOT and FHWA are committed to requesting a preliminary jurisdictional determination (JD) from United States Army Corps of Engineers (USACE) to confirm these wetland estimates. The JD would occur after the NEPA process but prior to procurement.

3.7.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not result in new impacts to wetlands.

Build Alternative

Of the 15.5 acres of tidal wetland in the inventory corridor, 3.2 acres of wetlands would be impacted by the Build Alternative (**Table 3-12**). Direct impacts from grading, conversion of vegetation type, and hydrologic isolation would result in loss of wetland functions within the immediate footprint of the impact. The magnitude of the effects to wetland functions impacted by conversion and hydrologic alteration/isolation is generally less than the effects from cut/fill. However, hydraulic alteration can remove all wetland function if the site is converted to an upland.

Table 3-12: Estimated Wetland Impacts in the Planning Level LOD

Watershed	PFO Acres	PSS Acres	PEM Acres	POW Acres	Total in Watershed (Acres)
Lower Potomac River (02070011)	2.8	0.0	0.0	0.0	**2.8**
Lower Rappahannock River (02080104)	0.4	0.0	0.0	0.0	**0.4**
Total	**3.2**	**0.0**	**0.0**	**0.0**	**3.2**

Notes: PFO = Palustrine Forested, PSS = Palustrine Scrub/Shrub, POW = Palustrine Open Water

Wetlands impacts would occur predominantly in the median, in the southern portion of the study area, between VA 630 / Courthouse Road and VA 627 / Enon Road (refer to **Appendix A** for maps showing environmental features in relation to the planning-level LOD). In order to minimize impacts to wetlands, the narrower, closed typical section would be applied in the southern portion of the Build Alternative, where the majority of wetlands and streams within the study area are located. Further efforts to minimize impacts would be explored in later stages of design and permitting, and would be coordinated with the appropriate regulatory agencies.

3.8 STREAMS AND WATER QUALITY

Non-tidal streams were identified in the study area using the National Hydrography Dataset (NHD) from the US Geological Survey (USGS, 2017a; USGS, 2017b) and field reconnaissance. The water quality of rivers, streams, and waterbodies contained within (as well as some that are downstream of) the study area was evaluated in the recent 303(d) and 305(b) integrated reports released by Virginia and Maryland. Water quality condition data from the *Final 2014 305(b)/303(d) Water Quality Assessment Integrated Report*, released by VDEQ in 2016, was used to determine the location of impaired waters in relation to the study area (VDEQ, 2016). The Maryland Department of the Environment's (MDE) *Draft 2016 Integrated Report of Surface Water Quality* is through the public comment period and supplants the Final 2014 Integrated Report identifying the impaired waters downstream of the study area (MDE, 2016).

3.8.1 Existing Conditions

The majority of the inventory corridor lies within the Atlantic Slope watershed of the Lower Potomac River watershed (HUC 02070011) with the southern end of the study area occurring within the Lower Rappahannock River watershed (HUC 02080104). The study area crosses the following sub-watersheds:

- Chopawamsic Creek (HUC 020700110105)
- Lower Aquia Creek (HUC 020700110203)
- Accokeek Creek (HUC 020700110204)
- Potomac Creek – Beaverdam Creek (HUC 020700110206)
- Rappahannock River – Hazel Run (HUC 020801040102)

The streams in the inventory corridor are located within the inner Coastal Plain Physiographic Province near the Fall Zone. The inner edge of the Coastal Plain roughly corresponds to the route of I-95. The inner Coastal Plain is a broad upland, gently dissected by streams but quite rugged where short, high-gradient streams have incised steep ravine systems (Fleming et al., 2016).

During the survey, streams in the inventory corridor were classified as either ephemeral (R6), intermittent (R4), or upper perennial (R3). Ephemeral streams were generally located in areas with the smallest drainage area, or areas that had drainage diverted away from them. Flows in intermittent streams were dependent on a number of factors, including the groundwater table and the discharge from feeder streams. Perennial streams generally had a larger watershed or were spring-fed. Most stream channels within the VDOT right-of-way and developed areas showed signs of historic alteration, including ditching or straightening, as well as areas of rip-rap. Streams in the study area, located outside of the VDOT right-of-way in undeveloped areas, were found to be relatively undisturbed while others appeared to be historically altered, but have since naturalized. Many of the streams identified are fragmented in nature, with upstream and downstream connections via culvert. All streams were found to have a significant nexus to offsite navigable waters and are therefore considered jurisdictional under the CWA. In heavily developed areas or within the VDOT right-of-way, the nexus may be due to jurisdictional flow through underground pipes/culverts that discharge to the surface offsite. **Table 3-13** shows the approximate total stream lengths within the study area for each of the two watersheds, categorized by flow persistence. Mapping provided in the *Fredericksburg Extension Study Natural Resources Technical Report* shows the location of streams in the study area as identified in the field reconnaissance survey.

Table 3-13: Stream Lengths in Study Area by Watershed

Watershed	Ephemeral (R6) Linear Feet	Intermittent (R4) Linear Feet	Perennial (R3) Linear Feet	Total in Watershed (Linear Feet)
Lower Potomac River (02070011)	6,322	8,146	23,724	**38,192**
Lower Rappahannock River (02080104)	133	2,595	1207	**3,935**
Total in Cowardin Classification	**6,455**	**10,741**	**24,931**	**42,127**

There are 24 streams/rivers or stream/river segments in, or downstream of, the inventory corridor that are designated “impaired waters” under Section 303(d) of the CWA (**Table 3-14**) (VDEQ, 2016).

Table 3-14: Impaired Waters in and Downstream of the Study Area

State ID	Assessed Water Unit	Impairment	Pollutant	Impairment Length in Study Area (Linear Feet)
POTOH1	Lower Potomac River-Oligohaline	Aquatic Life Open Water	Low DO Low DO	0
VAN-E20R FAL01A04	Falls Run	Aquatic Life	Benthic-Macroinvertebrate Bioassessments	1,090
VAN-E20E RPP03A02; VAN-E20E RPP02A02; VAN-E20E RPP01A02; VAN-E21E RPP05A02	Rappahannock River-Estuarine	Aquatic Life Fish Consumption Recreation	Low DO PCB in Fish Tissue *Escherichia coli*	0
VAN-E20R CLB01A00	Claiborne Run	Fish Consumption Recreation	PCB in Fish Tissue *Escherichia coli*	0
VAN-A29E POM20A04; VAN-A29E POM02A02; VAN-A29E POM03A08; VAN-A29E POM01A04	Potomac Creek-Estuarine	Fish Consumption	PCB in Fish Tissue	0
VAN-A29E POM01B06	Potomac Creek-Estuarine	Aquatic Life Fish Consumption	pH PCB in Fish Tissue	0
VAN-A29R POM02A06	Potomac Creek-Riverine	Recreation	*Escherichia coli*	0
VAN-A29R ACC01A00	Accokeek Creek	Recreation	*Escherichia coli*	0
VAN-A28R AUS02A06	Austin Run	Recreation	*Escherichia coli*	0
VAN-A28E AUA02A04; VAN-A28E AUA01D06; VAN-A28E AUA01C00; VAN-A28E AUA20A02; VAN-A28E AUA01B06; VAN-A28E AUA01A14	Aquia Creek-Estuarine	Fish Consumption	PCB in Fish Tissue	0
VAN-A26R XLF01A10	Unnamed Tributary to Potomac River	Recreation	*Escherichia coli*/pH	0
VAN-A26E_CHO01B06; VAN-A26E CHO01A04	Chopawamsic Creek-Estuarine	Fish Consumption	PCB in Fish Tissue	0

Notes: DO = dissolved oxygen; PCB = polychlorinated biphenyl.
Sources: VDEQ (2016); Maryland Department of the Environment (2016).

Only Falls Run, which is impaired for aquatic life, is within the inventory corridor. Benthic-macroinvertebrate surveys conducted along the stream indicate that the stream's health is compromised as the benthic survey scores resulting from the surveys are below the impairment threshold. Benthic-macroinvertebrate community health can be an indicator of water quality as species in this community respond to stressors with standards (e.g., dissolved oxygen levels), and those that do not have standards (e.g., nutrients and sedimentation) (VDEQ, 2016).

3.8.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not result in new impacts to streams or changes to water quality.

Build Alternative

Approximately 1,090 feet of Falls Run would be impacted by the Build Alternative. Falls Run, which is impaired for aquatic life, intersects the planning-level LOD of the Build Alternative at its southern end, between US 17 (Exit 133) and VA 652 / Truslow Road. In sum, approximately 8,520 linear feet of streams (out of a total of about 42,130 linear feet in the inventory corridor) would be impacted by the Build Alternative. The majority of potential stream impacts are associated with mainline improvements. The remaining potential stream impacts are located at interchange gore areas. However, the Build Alternative would not have significant adverse impacts on streams and water quality, as any impacts would occur in locations already impacted by the existing roadway.

In order to minimize impacts to Waters of the US, the narrower, closed typical section would be applied in the southern portion of the Build Alternative, where the majority of wetlands and streams within the study area are located. Further efforts to minimize impacts would be explored in later stages of design and permitting, and would be coordinated with the appropriate regulatory agencies. Minor alignment shifts in localized areas could be employed to avoid lateral encroachments on particular streams; however, since the Build Alternative primarily involves expanding an existing roadway, opportunities are dependent upon the current positioning of the stream relative to the roadway crossing. Culverts could be countersunk and sized appropriately using VDOT criteria to minimize the effects to aquatic species. Employing Erosion and Sediment Control (ESC) measures and following best management practices in the *Virginia Erosion and Sediment Control Handbook* would prevent sedimentation and divert runoff away from receiving streams (VDEQ, 1992). Additional measures to minimize impacts would include locating stormwater management (SWM) facilities outside of wetlands (assumed in the planning-level LOD).

In accordance with the 2008 USACE and USEPA Mitigation Rule, stream impacts caused by the Build Alternative would be mitigated by purchasing stream credits from an approved stream mitigation bank within the eight-digit HUC watersheds encompassing the Build Alternative. If credits are not available for purchase in these watersheds, a contribution would be made to an approved in-lieu fee program.

3.9 FLOODPLAINS

The Federal Emergency Management Agency (FEMA) identifies and maps the nation's flood-prone areas through the development of Flood Insurance Rate Maps. Digital floodplain data was obtained from the FEMA Flood Map Service Center and plotted in the study area to determine the extent of floodplain areas (FEMA, 2017). Digital floodplain data from the National Flood Hazard Layer was obtained from the FEMA GeoPlatform and plotted in the study area to determine the location and extent of floodplain areas.

3.9.1 Existing Conditions

The study area includes approximately 78.7 acres of 100-year floodplain (**Table 3-15**). The approximate locations of 100-year floodplain limits in the study area are provided in **Figure 3-3**. Each locality in the study area practices floodplain management and development within the respective floodplains and is restricted to certain activities, such as private and public utilities, SWM facilities, and road crossings.

Figure 3-3: Floodplains

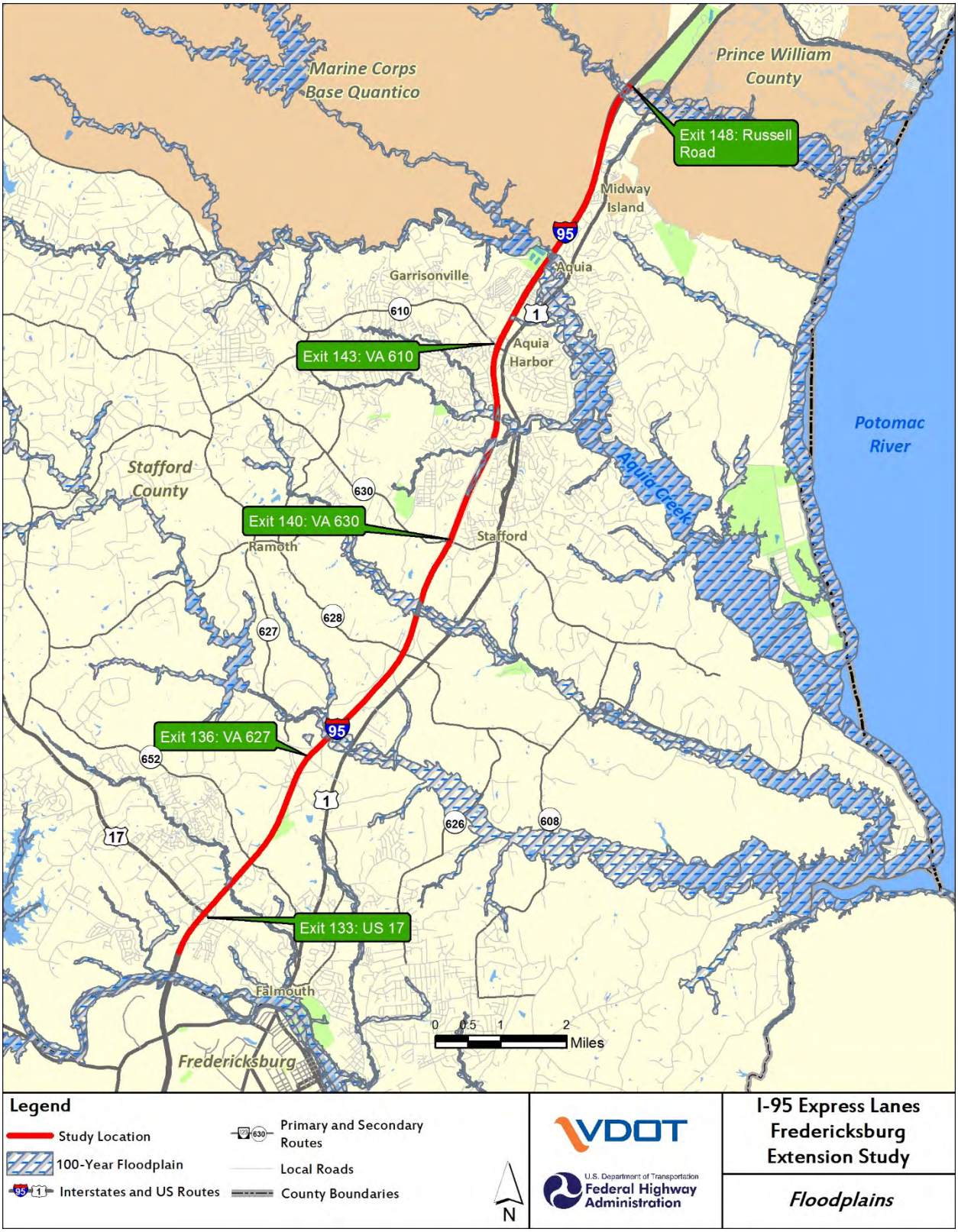


Table 3-15: 100-Year Floodplains in the Study Area

Waterway	Acreage
Falls Run	4.7
Potomac Creek	11.4
Accokeek Creek	7.6
Austin Run and Tributaries	40.7
Aquia Creek and Tributaries	10.3
Chopawamsic Creek	4.0
Total	**78.7**

3.9.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not result in new impacts to floodplains.

Build Alternative

Filling floodplains could result in loss of floodplain functions. Floodplain encroachment could alter the hydrology of the floodplain that could indirectly result in more severe flooding in terms of flood height, duration, and erosion (FEMA, 2016). The Build Alternative would impact approximately 20.6 acres of 100-year floodplains out of the total 78.7 acres of 100-year floodplains in the inventory corridor **(Table 3-16)**. However, the Build Alternative would not have significant adverse impacts on natural and beneficial floodplain values, as any impacts would occur over floodplains already impacted by the existing roadway.

Efforts to minimize floodplain encroachment would be considered during design to avoid or minimize impacts on natural and beneficial floodplain values.

The Build Alternative is consistent with local land use plans, occurs along the existing I-95 corridor, and does not encourage or accelerate growth or changes in land use that are not already anticipated. Therefore, the Build Alternative would not encourage, induce, allow, serve, support, or otherwise facilitate incompatible base floodplain development.

Individual impacts to any one floodplain would be relatively small in size and severity. Most floodplain encroachments from the Build Alternative would be from the perpendicular crossing of floodplains, not from longitudinal encroachments as detailed in **Table 3-16**. Perpendicular crossings would result in less floodplain fill, maximizing floodwater conveyance and storage compared to longitudinal encroachments.

Roadway design would focus on avoiding and minimizing floodplain encroachment to ensure that the design is consistent with EO 11998, FHWA policy as set forth in 23 CFR 650, and VDOT criteria.

Table 3-16: 100-Year Floodplain Impacts in the Planning Level LOD

Waterway	Impact in the Planning Level LOD (Acres)	Impact Type
Falls Run	4.3	Construction of ramps adjacent to existing culverted crossing
Potomac Creek	3.4	Construction of bridge crossing for travel lanes in median adjacent to existing bridged crossing
Accokeek Creek	2.6	Construction of additional travel lanes in median adjacent to existing culverted crossing

Waterway	Impact in the Planning Level LOD (Acres)	Impact Type
Austin Run and Tributaries	9.8	Construction of additional travel lanes in median adjacent to existing culverted crossing
Aquia Creek and Tributaries	0.6	Construction of bridge crossing for travel lanes in median adjacent to existing bridged crossing
Chopawamsic Creek	0.0	Construction of bridge crossing for ramp lanes in median adjacent to existing bridged crossing
Total	**20.6**	

3.10 WILDLIFE AND WILDLIFE HABITAT

Habitat descriptions were developed through review of remote resources including aerial imagery and forest cover data obtained from the Virginia Department of Forestry (VDOF), and were obtained during the wetland field survey. The Virginia Department of Game and Inland Fisheries (VDGIF) Virginia Fish and Wildlife Information Service (VaFWIS) was used to obtain a list of species confirmed as being present within two miles of the study area. The complete list of species confirmed within two miles of the study area is provided in Appendix B of the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f).

3.10.1 Existing Conditions

Terrestrial lands with natural cover, including forests, account for approximately 233.4 acres of the inventory corridor, and are concentrated in the southern section. Vegetation identified during the field survey indicates that the inventory corridor is dominated by a mix of hardwood tree species with an understory containing shrub, herbaceous, and vine vegetation. The forests in the study area, which are typical of Oak-Hickory Forest or Oak-Hickory Woodlands and Savannas Associations, could provide habitat for many of the typical terrestrial urban wildlife species inhabiting this region, including mammals, reptiles, and birds. Habitat adjacent to the highway has been fragmented by residential, commercial, industrial, and government and military land uses. Habitat fragmentation in these developed areas has resulted in low-quality edge habitat. The interstate poses a virtually impenetrable barrier to crossings by terrestrial species due to vehicle strikes and the presence of fence lines that bound the interstate, preventing wildlife from entering the facility. The edge habitat along the interstate in the right-of-way, in interchange loops, and the area in the median, are poor habitat for wildlife due to access restrictions posed by travel lanes and soundwalls.

The wildlife species most capable of adapting to habitat fragmentation due to dense urban and suburban development include, but are not limited to: rabbits (*Sylvilagus floridanus malurus*), whitetail deer (*Odocoileus virginianus*), eastern gray squirrels (*Sciurus carolinensis carolinensis*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor lotor*), striped skunk (*Mephitis mephitis*), and many common non-migratory bird species (VDGIF, 2015).

Fish species recorded in area streams have included the American eel (*Anguilla rostrate*), common carp (*Cyprinus carpio*), and white sucker (*Catostomus commersonii*) (VDGIF 2017a). Game fish species observed include the white perch (*Morone americana*), striped bass (*Morone saxatilis*), and largemouth bass (*Micropterus salmoides*) (VDGIF 2017).

A review of data obtained from the National Marine Fisheries Service (NMFS) indicates that essential fish habitat (EFH) exists in the Potomac River for adult and juvenile summer flounder (*Paralichthys dentatus*),

scup (*Stenotomus chrysops*), black sea bass (*Centropristis striata*), and bluefish (*Pomatomus saltatrix*) (National Oceanic and Atmospheric Administration [NOAA], 2017). However, no EFH exists in the study area (NOAA, 2017). Existing fish habitat within the study area is fragmented due to the presence of culverts, bridges, and other structures.

For information regarding additional species in the study area, please refer to the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f).

3.10.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not result in new impacts to habitat or wildlife.

Build Alternative

The majority of the planning-level LOD occurs in the existing right-of-way resulting in no increased width to the I-95 roadway that acts as a barrier preventing wildlife movement. The road width would be increased in five limited areas; however, increasing the width of the roadway corridor in these areas would not likely exacerbate the problems posed to wildlife movement, as the existing interstate facility currently prevents terrestrial wildlife from crossing the travel lanes.

Approximately 82.6 acres of terrestrial habitat (of the total 233.4 acres in the study area) would be converted to transportation use in the planning-level LOD (VDOF, 2005). These forested areas occur mainly in the median of the divided interstate and in lesser amounts along the outside edges of the existing lanes to accommodate proposed ramps and SWM facilities.

Vegetation cleared in the median of the divided lanes would not appreciatively contribute to fragmentation of forest resources as these areas are currently separated from contiguous forested areas by the existing travel lanes. Vegetation cleared along the outside edges of the current travel lanes would be removed in small strips. Fragmentation would not occur in these areas, as the cleared right-of-way would simply be expanded into the forested areas. Forested land would not be newly separated from contiguous forests.

The bridges in the planning-level LOD may provide habitat for bats, as well as migratory birds protected under the Migratory Bird Treaty Act. Potential impacts to bats are further discussed in **Section 3.11.2**. For birds, the VDGIF institutes a time-of-year restriction for certain activities for listed species occurring between March 15 and August 15 of each year. If nests of birds protected under the Migratory Bird Treaty Act are located in the planning-level LOD, appropriate coordination would occur with state and federal agencies prior to construction. Disturbance, destruction, and removal of active nests would be avoided during the nesting season. In addition, the collection, capture, relocation, or transport of migratory birds, eggs, young, or active nests would not occur without a permit.

Extension of culverts, or bridge additions, will not contribute to fragmentation of aquatic habitat as these resources are currently crossed by existing structures. The indirect impacts to hydrology, aquatic wildlife, and aquatic habitat within any given stream would be limited as the improvements are confined to widening an existing corridor. Existing culverts would be extended or resized where appropriate and bridges widened or replaced in accordance with design standards. All roadway crossings would utilize structures designed to accommodate passage of aquatic organisms. The design will also be mindful of maintaining natural stream bottoms and natural shoreline preservation, as failure to do so would cause adverse indirect effects to aquatic wildlife. Re-alignment, re-sizing, and replacement of existing culverts

can reduce overall current stream quality degradation upstream and downstream of the direct impacts area. These measures would be fully considered during design/permitting of the Build Alternative.

3.11 THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

Species and location information was collected from queries of the United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) (USFWS, 2017a), VaFWIS (VDGIF, 2017c), and the Virginia Department of Conservation and Recreation (VDCR) Department of National Heritage (DNH) (VDCR, 2017b) online databases. Potential habitat for listed species was evaluated and catalogued during the wetland delineation field survey. Habitat acreages were produced in a GIS for species where potential habitat was observed in the field survey area.

3.11.1 Existing Conditions

The information obtained from review of these databases is summarized in **Table 3-17**. The table presents the species that are currently listed as threatened or endangered that are known to occur, or have the potential to occur, within the vicinity of the study area along with each species' listed status and source of its listing. More specific information regarding data gathering sources and the approach used are presented within the discussion of each resource in a separate *Rare, Threatened, And Endangered Species Technical Report* contained in Appendix A of the *Fredericksburg Extension Study Natural Resources Technical Report* (VDOT, 2017f). Based upon an understanding of the life histories of potentially present species, and as a result of the offsite and field analysis performed, potential habitat was verified in the study area for all listed species found in **Table 3-17**.

Table 3-17: Threatened or Endangered Species Mapped in the Vicinity of the Study Area

Species	Status*	Source of Listing
Dwarf Wedgemussel (*Alasmidonta heterodon*)	FE, SE	IPaC, VaFWIS, VDCR-DNH
Harperella (*Ptilimnium nodosum*)	FE	IPaC
Small Whorled Pogonia (*Isotria medeoloides*)	FT	IPaC, VDCR-DNH
Yellow Lance (*Elliptio lanceolata*)	Proposed FT**	IPaC
Northern Long-eared Bat (*Myotis septentrionalis*)	FT, ST	IPaC, VaFWIS
Brook Floater (*Alasmidonta varicosa*)	SE	VaFWIS
Green Floater (*Lasmigona subviridis*)	ST	VaFWIS, VDCR-DNH

FE= federally-endangered; SE= state-endangered; FT= federally-threatened; ST= state-threatened.
***Proposed as a federally-threatened species on April 5, 2017.*

This information was utilized as a general framework for the habitat evaluation to determine the presence of habitat, existing conditions, and environmental consequences of the proposed activities in the study area. Additionally, a discussion is included for those species that were determined to have potentially suitable habitat in the study area. No critical habitat has been designated by USFWS in the study area. The database search results did not indicate the presence of the state-endangered little brown bat (*Myotis lucifigus*) or tri-colored bat (*Perimyotis subflavus*). However, per VDGIF protocols, the bat's winter habitat and roost tree application were reviewed. The study area is not within the vicinity of known hibernacula or maternity roosts and per VDGIF protocols, no habitat assessment was required for the little brown bat or the tri-colored bat in the study area.

Suitable foraging and summer roosting habitat for the NLEB is present throughout the study area. For the purposes of this study, all forested areas were considered a potential summer roosting habitat. Acreages were quantified based upon coverage on aerial photography and reconciled with areas that were

identified as currently deforested during the field assessment. The total acreage of estimated NLEB summer roosting habitat is included in **Table 3-18**.

Potential small whorled pogonia (SWP) habitat was identified in the study area within forested areas along the NB and SB lanes of I-95, as well as the median. Suitable habitat areas are depicted on the Threatened and Endangered Species Habitat Map (Appendix D of the *Fredericksburg Extension Study Natural Resources Technical Report*). The estimated total acreage of this potential SWP habitat is included in **Table 3-18**.

Table 3-18: Potential Terrestrial Threatened or Endangered Species Habitat in Inventory Corridor

Species	Habitat Area
Northern Long-eared Bat	605.8 Acres
Small Whorled Pogonia	66.1 Acres

Potential habitat for mussels was found in various perennial streams in the study area, as depicted on the Threatened and Endangered Species Habitat Maps (Appendix D of the *Fredericksburg Extension Study Natural Resources Technical Report*). These streams include Aquia Creek, Chopawamsic Creek, Austin Run, and Potomac Creek, as well as unnamed perennial streams. The acreage and linear feet of habitat for aquatic threatened or endangered species is provided in **Table 3-19**. For the purposes of this study, the range of favorable habitat conditions preferred by any of the five aquatic species noted in **Table 3-19** was considered in the habitat evaluation and designation of streams as potential habitat. Intermittent and ephemeral stream channels were categorized as unsuitable habitat and were not evaluated.

Potential habitat for harperella is present in four perennial stream channels in the study area, including Aquia Creek, Chopawamsic Creek, Austin Run, and one unnamed perennial stream, as depicted on the Threatened and Endangered Species Habitat Map (Appendix D of the *Fredericksburg Extension Study Natural Resources Technical Report*).

Table 3-19: Potential Aquatic Threatened or Endangered Species Habitat in Inventory Corridor

Species	Linear Feet of Aquatic Habitat	Habitat Acreage
Brook Floater	14,274	5.9
Dwarf Wedgemussel	14,274	5.9
Green Floater	14,274	5.9
Yellow Lance*	14,274	5.9
Harperella	10,233	3.7

**Proposed as a federally-threatened species on April 5, 2017.*

While the tables above indicate potential habitat for terrestrial and aquatic threatened or endangered species in the inventory corridor, much of the habitat within this area has been fragmented by residential, commercial, industrial, and government and military land uses along the highway. These uses have resulted in low-quality edge habitat, which is best suited for edge-adapted species.

3.11.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not result in new impacts to threatened or endangered species.

Build Alternative

Northern Long-Eared Bat Habitat

Of the 605.8 acres of potential NELB summer roosting habitat identified in the inventory corridor, approximately 177.0 acres occurs in the planning-level LOD (**Table 3-20**). Potential habitat was observed in forested areas located in the median of the divided lanes. Potential habitat was also observed where the planning-level LOD extends outside of the current right-of-way near the Warrenton Road and Courthouse Road interchanges.

Forest clearing along the edge of the existing right-of-way would result in minimal reduction in forested cover and quality of forested habitat. Clearing of forested habitat within interchanges and smaller fragmented forested areas within the median would result in the removal of sub-optimal habitat that has a low potential for roosting and generally does not provide suitable commuting and foraging corridors for bats. Larger tracts of contiguous forest within the median provide suitable summer roosting habitat and foraging in areas. However, the areas are still fragmented from the surrounding landscape by a three-lane, heavily trafficked highway. Clearing of these forested areas would not result in the removal of optimal habitat for NLEB. No confirmed maternity roosts or hibernacula are located within a two-mile radius of the study area, further limiting the potential effects on the species.

On January 14, 2016, the USFWS published a final 4(d) Rule that defines prohibitions for purposeful and incidental take of NLEB. A December 2016 range-wide programmatic agreement between USFWS and FHWA, Federal Railroad Administration, and Federal Transit Administration for the Indiana Bat and NLEB can be utilized for these species in lieu of formal Section 7 consultation, if the project adheres to the scope and criteria of the range-wide Biological Assessment (BA). The Intra-Service Programmatic Biological Opinion (BO) on the final 4(d) Rule for the NLEB may be used for projects only affecting the NLEB that do not include the Indiana Bat. Steps to complete the Section 7 process prior to construction will be taken. These steps would likely include:

- Updating the database searches to list current species;
- Performing informal consultation with the USFWS to determine if the species or critical habitat is potentially present;
- Conducting habitat assessments for any new species and update habitat assessments for those species for which assessments have previously been conducted;
- Determining what effect the project may have on the species or its habitat;
- Conducting presence/absence surveys, if necessary;
- Submitting project information to USFWS to determine whether the project adheres to the scope and criteria of the range-wide BA for the Indiana and Northern long-eared bat, and the Intra-Service Programmatic BO on the Final(d) Rule for the NLEB, if necessary; and
- Preparing the Biological Assessments for any species to support Section 7 formal consultation, if necessary.

Small Whorled Pogonia Habitat

Of the 66.1 acres identified in the inventory corridor, approximately 32.5 acres of potential SWP habitat was confirmed in the planning-level LOD in the median of the divided interstate (**Table 3-20**). However, an IPaC official species list obtained from the USFWS does not list the SWP as a species of concern in the planning-level LOD. If the species does occur in the planning-level LOD, impacts from forest clearing along the eastern and western edge of the existing right-of-way would render these areas as unsuitable, as well as some adjacent habitat areas due to increased plant densities from edge effects of the clearing. Forest

clearing within the median also would likely render all habitat unsuitable either from forested conversion or fragmentation of the suitable habitat that would lead to unsuitable habitat conditions from an increased density of understory and herbaceous growth due to edge effects. Coordination with appropriate agencies and a survey to determine the presence of the species in the area would be conducted prior to construction.

Table 3-20: Potential Impacts to Terrestrial Threatened or Endangered Species Habitat

Species	Habitat Acreage in Planning Level LOD
Northern Long-eared Bat	177.0
Small Whorled Pogonia	32.5

Mussel Habitat

Of the 5.9 acres identified in the inventory corridor as potential mussel habitat, approximately 0.3 acres occurs in the planning-level LOD (**Table 3-21**). The quality of suitable mussel habitat within Chopawamsic Creek, Austin Run, and Potomac Creek should not be substantially impacted if the areas remain bridged and hydrologic conditions and water quality do not change as a result of construction activities. Suitable habitat within the median would likely be rendered unsuitable due to direct impacts or possible alterations in hydrology and water quality. Efforts to avoid and or minimize direct instream impacts and any downstream impacts can be made by adhering to strict ESC and performing all instream construction activities behind cofferdams.

Harperella Habitat

Of the 3.7 acres identified in the inventory corridor, approximately 0.3 acres of potential harperella habitat occurs in the planning-level LOD (**Table 3-21**). However, the quality of suitable harperella habitat within Aquia Creek, Chopawamsic Creek, and Austin Run should not be significantly impacted if the areas remain bridged and hydrologic conditions do not change as a result of construction activities. The remaining potential habitat within the median would likely be rendered unsuitable due to direct impacts or possible alterations in hydrology and water quality.

Table 3-21: Potential Impacts to Aquatic Threatened or Endangered Species Habitat

Species	Linear Feet of Habitat in Planning Level LOD	Habitat Acreage in Planning Level LOD
Brook Floater	795.2	0.3
Dwarf Wedgemussel	795.2	0.3
Green Floater	795.2	0.3
Yellow Lance*	795.2	0.3
Harperella	951.5	0.3

**Proposed as a federally-threatened species on April 5, 2017*

To further reduce potential impacts to terrestrial and aquatic threatened and endangered species and their habitat, efforts to minimize the construction footprint would be considered during the permitting and design phase. As noted previously in this document, the narrower, closed typical section would be applied in the southern portion of the Build Alternative, where the majority of wetlands and streams within the study area are located. Construction practices would avoid the removal of existing vegetation to the greatest extent possible and include the implementation of best management practices for ESC as well as SWM to reduce potential impacts to adjacent habitats and properties. To minimize impacts to both terrestrial and aquatic species, construction methods, such as the use of silt fence and straw bales, diversion ditches, sediment traps and basins, culvert outlet protection, vegetative streambank

stabilization, dewatering structures, temporary and permanent seeding, and flagging or fencing of areas that are not to be disturbed, should be considered.

Due to the potential presence of the species where suitable habitat is present, performing presence/absence surveys may be required by the agencies. If presence of any species is confirmed, the agencies may recommend a time-of-year restriction for activities within occupied habitat and these restrictions would be determined through the permitting process. A summary of current applicable VDGIF time-of-year restrictions for specific species currently listed or proposed as threatened or endangered is provided in **Table 3-22**.

Table 3-22: Threatened and Endangered Species Time-of-Year Restrictions

Species	Time-of-Year Restrictions
Northern Long-eared Bat	April 15 – Sep 15 for tree removal activities
Dwarf Wedgemussel	March 15 – May 31; August 15 – October 15
Brook Floater/Green Floater	April 15 – June 15; August 15 – September 30
Yellow Lance*	May 15 – July 31
Harperella	July 1 – September 30

**Proposed as a federally-threatened species on April 5, 2017*

In accordance with a memorandum of understanding between VDOT and FHWA, the results of presence/absence surveys would not influence the NEPA/location decision process. Therefore, if surveys were required from the resource agencies, the coordination requiring the surveys would occur during the permitting/design stage of the study. Following, or as part of, the coordination, VDOT would complete the surveys required by the natural resource agencies.

3.12 HAZARDOUS MATERIALS

For the purposes of the contaminated and hazardous materials priority analysis, the study area for detailed evaluation is defined as a 0.5-mile radius from the I-95 right-of-way from Exit 133 to Exit 148. The 0.5-mile radius has been used because of the way that hazardous material data is collected and made available. For more information, please see the *Fredericksburg Extension Study Hazardous Materials Technical Report* (VDOT, 2017d).

Due to the generally flat topography within the proposed project area and lack of deep foundation requirements, only shallow cut-and-fill excavation is anticipated for the improvement corridor. Based on the topography and proximity to major surface water bodies, groundwater in the area is anticipated to be shallow (VDOT, 2017d).

3.12.1 Existing Conditions

A search of federal and state regulatory agency databases was performed to identify potential hazardous materials. An Environmental Data Resources, Inc. (EDR) report identified eight properties as a high priority, and an additional 13 parcels were listed as moderate priority for additional investigation work due to the risk of potential contaminant or hazardous material impacts associated with proposed construction activities along the highway improvement corridor. The sites of concern and potential contaminant risks are listed in detail in the *Fredericksburg Extension Study Hazardous Materials Technical Report* (VDOT, 2017d).

Site reconnaissance was performed to verify information provided in the EDR report and determine any additional information regarding recognized environmental conditions. The following potential environmental concerns were observed from publicly-accessible areas: underground and aboveground

fuel storage tanks, unsecured 55-gallon drums, fuel dispensers, surface water discharge, a landfill, a soil stockpile, and an electrical transformer in poor condition.

3.12.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in any project-related construction and would therefore not disturb soil or groundwater that might have been impacted by any of the hazardous material sites.

Build Alternative

The properties listed in the *Fredericksburg Extension Study Hazardous Materials Technical Report* represent an increased risk of potential contamination impact that could migrate from the sites and into the project corridor (VDOT, 2017d). Additional assessment and/or sampling investigations are recommended for 21 locations where subsurface disturbance may intersect soils or groundwater potentially impacted by the identified sites (**Table 3-23**), or where partial property takes are anticipated. "Risk Priority," as listed in the table below, indicates the potential hazard associated with the contaminant of concern for a site in relation to its potential for impacting construction of the Build Alternative. For information regarding the criteria for ranking low-, moderate-, or high-priority sites, please see the *Fredericksburg Extension Study Hazardous Materials Technical Report* (VDOT, 2017d).

Table 3-23: Sites of Potential Environmental Concern

Map No.	Address	Site Listing	Noted Hazmat Concern	Risk Priority
4	375 Warrenton Road	Exxon	VA LTANKS, VA LUST	Moderate
10	14 Simpson Road	Days Inn Motel	VA LUST, VA LTANKS	Moderate
11	535 Warrenton Road	Shell	VA LTANKS, VA UST	Moderate
12	50 South Gateway Drive	Blue Beacon Truck Wash	Surface water discharge	Moderate
13	53 Stanstead Road	Servicetown Truck Plaza	VA LTANKS	Moderate
14	534 Warrenton Road	Wawa/BP/Citgo	Two records of tanks at a fuel station, with a closed case of leaking USTs	High
15	554/546 Warrenton Road	Exxon	One record of tanks at a fuel station, with a closed case of leaking USTs	High
16	56 McLane Drive	Southland Distribution Center	VA LTANKS	Moderate
17	40 Transfleet Drive	Stafford County Schools Central Garage	VA LTANKS, VA UST, VA AST	Moderate
18	1280 Jefferson Davis Highway	Liberty Gas	Fuel USTs, one unmarked, unsecured 55-gallon drum, surface water discharge from wash bay	Moderate
20	101 Centreport Parkway	Vacant	VA AST	Moderate
22	1489 Jefferson Davis Highway	M&M Auto Parts Inc.	VA UST, RCRA NonGen, ECHO	Moderate

Map No.	Address	Site Listing	Noted Hazmat Concern	Risk Priority
28	1118 Courthouse Road	Texaco/Mobil	Two records of 10,000-gallon gasoline tanks at a fuel station, with a closed case of leaking USTs and recorded surface spill	High
29	1115 Courthouse Road	Texaco/Citgo/Mobil	One record of a 6,000-gallon gasoline tank at a fuel station, with a closed case of leaking USTs and recorded large spill of diesel fuel, requiring soil excavation	High
30	1056 Courthouse Road	Shell	Two records of a 12,000-gallon and an 8,000-gallon gasoline tanks at a fuel station, with a closed case of leaking USTs	High
31	1049 Courthouse Road	Exxon	Two records of two 10,000-gallon gasoline; two 8,000-gallon diesel fuel; one 8,000-gallon gasoline; one 4,000-gallon gasoline and one 1,000-gallon used oil tanks at a fuel station; with two closed cases of leaking USTs	High
37	95 Garrisonville Road	Rosner Toyota	VA AST	Moderate
38	105 Garrisonville Road	Wawa Food Market	VA UST, RCRA-SQG, PA MANIFEST	Moderate
39	171 Garrisonville Road	7-Eleven Store	Three records of a 12,000-gallon; two 10,000-gallon; and a 4,000-gallon gasoline tank and a 10,000-gallon kerosene tank at a fuel station; with two closed cases of leaking USTs; and a record of regulated hazardous waste production	High
40	20 Prosperity Lane	Zipmart 96	RCRAInfo – SQG	Moderate
55	14742 Joplin Road	Marine Corps Combat Development Command	Record of the recently closed landfill that operated from 1971 to 1983, receiving waste paints and solvents; landfill leachate was observed leaking from the southern portion of the landfill and found to contain various organic compounds	High

For the listed sites, a Phase I and/or Phase II Environmental Site Assessment is recommended to define whether specific impacts to the proposed construction design exists. For additional information, please refer to the *Fredericksburg Extension Study Hazardous Materials Technical Report* (VDOT, 2017d).

3.13 INDIRECT AND CUMULATIVE EFFECTS

The CEQ regulations for implementing NEPA address federal agency responsibilities applicable to indirect and cumulative impacts considerations, analysis, and documentation (40 CFR § 1508.25) in the content requirements for the environmental consequences section of an Environmental Impact Statement (40 CFR § 1502.16) (FHWA, 2014).

Because indirect and cumulative effects may be influenced by actions including those taken by others outside of the immediate study area, assumptions must be made to estimate the result of these actions.

The CEQ regulation cited above states that the analysis must include all the indirect effects that are known, and make a good faith effort to explain the impacts that are not known but which are "reasonably foreseeable." Court decisions on this topic indicate that indirect impact analysis should consider impacts that are sufficiently likely to occur and not those that only may be conceived or imagined (FHWA, 2014). NEPA does not define what constitutes "reasonably foreseeable actions." CEQ has provided guidance on how to define reasonably foreseeable actions, based upon court opinions. CEQ makes it clear that actions that are probable should be considered while actions that are merely possible, conceptual, or speculative in nature are not reasonably foreseeable and need not be considered in the context of cumulative impacts (CEQ, 1981; FHWA, 2014).

Therefore, while reasonably foreseeable events may be uncertain, they must still be probable. As such, those events that are considered possible, but not probable, may be excluded from NEPA analysis. There is an expectation in the CEQ guidance that judgments concerning the probability of future impacts will be informed, rather than based on speculation (FHWA, 2014).

The VDOT and FHWA adopted new methodologies used for analyzing indirect and cumulative effects since completion of the 2011 EA and issuance of the 2011 FONSI. This analysis complies with the updated requirements but does not apply the new methodology to the environmental conditions, as they existed in 2011. For additional information regarding regulations and guidance regarding Indirect and Cumulative Effects, refer to the *Fredericksburg Extension Study Indirect and Cumulative Effects Technical Report* (VDOT, 2017e).

3.13.1 Indirect Effects

CEQ defines indirect effects as "...effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR 1508(a)). These induced actions are those that would or could not occur without the implementation of the proposed project.

No-Build Alternative

Under the No-Build Alternative, there would be negative indirect effects related to socioeconomic, natural, and historic resources. Continued and increasing traffic delays and traffic unreliability along I-95 and beyond the study corridor could cause some individuals or businesses to leave the area and locate elsewhere to reduce transportation-related costs. Given the importance of the I-95 corridor in connecting important destinations within the study area, region, and nation, it is more likely that increasing congestion and travel unreliability would continue to impede the delivery of goods and services, restrict access to tourism and commercial activities, and result in lost economic productivity due to workers being delayed in traffic and increased fuel consumption from increased idling.

Although SWM along the I-95 corridor has been updated during the past with retrofitted and more modern systems as improvements have been made, there are still sections where SWM features are absent, or the features are outdated, and these areas would not be improved under the No-Build Alternative. Existing indirect effects associated with untreated or poorly treated stormwater runoff from these areas would continue.

Build Alternative

The Build Alternative would add capacity to I-95 by adding two Express Lanes within the median of the interstate for approximately ten miles. The temporary and permanent right-of-way requirements would be limited to minimal acquisition adjacent to the existing interstate; therefore, the Build Alternative would have minimal indirect effects on land use and community cohesion.

No total acquisitions would occur and therefore no direct impact to EJ populations would occur. Indirect effects of increased noise, dust, or visual disturbance may occur during construction of the Build Alternative. Transportation benefits would be borne by all users of I-95 including the EJ population that utilize the facility.

Potential indirect effects to wetlands, streams, water quality, floodplains, wildlife habitat, and threatened or endangered species could result from temporary construction impacts and increased stormwater runoff due to increases in impervious surface area. However, potential indirect effects to these resources would be minor, as VDOT would adhere to the local, state, and federal regulations governing construction impacts in these areas and use of standard ESC and SWM measures and their associated required monitoring protocols.

The Build Alternative has the potential to induce growth around the existing interchanges and major feeder roads along the study corridor. Because the growth is anticipated to occur as infill or redevelopment around existing interchanges in previously developed areas, and such growth would occur primarily in areas allowing that type of development as identified in planning and zoning, it is anticipated that the indirect effects of induced growth to socioeconomic, natural, and historic resources would not be substantial.

3.13.2 Cumulative Effects

CEQ defines cumulative effects (or impacts) as, "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR § 1508.7). Cumulative effects include the total of all impacts, direct and indirect, experienced by a particular resource that have occurred, are occurring, and would likely occur as a result of any action or influence, including effects of a federal activity (USEPA, 1999).

No-Build Alternative

Past and present actions have been both beneficial and adverse to socioeconomic resources and land use within the study area, and it is expected that reasonably foreseeable future actions under the No-Build Alternative would be as well. Past and present growth and development has increased the standards of living for communities that benefited from community cohesion, and community facilities and recreational resources have been built. Such growth and development has also benefited local economies by improving access to markets and customers. Under the No-Build Alternative, increased congestion would have a negative effect on local economic growth by restricting the efficient movement of people and goods.

Past development has produced a steady decline in natural and historic resource conditions. Land use intensification has resulted in reduced water quality with many waters impaired for human and wildlife use; loss of wetlands, streams, and floodplains; wildlife population loss from over-exploitation and loss of habitat; fragmented habitat; and degraded habitat quality. Impacts that occurred early in the development of the region had a greater impact than more recent projects, given the lack of previous

development and absence of environmental regulations. Under the No-Build Alternative, sections of I-95 without SWM features, or those with outdated features, would continue to contribute untreated or poorly treated stormwater to local waterways.

Historic properties have been continuously created and destroyed by succeeding developments over time in the study area. Since 1964, this pattern has occurred more extensively and is expected to continue into the future. However, federal and state laws requiring agencies to consider effects to historic properties have slowed the loss of historic properties and this trend would likely continue in the foreseeable future under the No-Build Alternative.

Build Alternative

Existing congestion reduces access to markets and customers, and opportunities that could otherwise occur. The Build Alternative would result in reduced congestion providing more efficient movement of people and goods that benefits productivity and the local economy. In addition, the short-term impact of more jobs and associated expenditures resulting from the Build Alternative is expected to provide additional benefits.

The Build Alternative would have a minor contribution to the cumulative effects for natural resources including short-term reduced water quality, as well as changes to floodwater storage capacity and retention times and vegetative community composition and structure. The construction and post-construction discharges of stormwater would possibly contribute to minor, localized (small extent) increases in the pollutants and nutrients causing impairments. The conversion of habitat to transportation use would also have a minor contribution to impacts to threatened or endangered species; however, mitigation measures would compensate for impacts to wetlands and water quality. Further, federal, state, and local regulations would continue to require minimization, mitigation, and compensation for terrestrial and aquatic habitat direct and indirect effects reducing the potential for the Build Alternative to contribute to cumulative effects for these resources.

Transportation improvements and other actions potentially adversely affect archaeological and architectural historic properties by destruction or altering the integrity of their historically important characteristics. However, Section 4(f) of the Department of Transportation (DOT) Act of 1966 affords some protection to historic properties by requiring DOT agencies to avoid adversely affecting archaeological and architectural historic properties important for preservation in place, and only authorizing adverse effects if there is no prudent and feasible alternative. Further, Stafford and Prince William counties regulate potential effects to historic properties by creating historic overlay zones and districts within which proposed projects are reviewed by committees and boards to minimize adverse effects to historic resources. With these protections, it is anticipated that the Build Alternative would have a minor contribution to the cumulative effects to historic resources in the study area.

4. COORDINATION AND COMMENTS

4.1 AGENCY COORDINATION

In November and December 2016, VDOT mailed scoping letters and questionnaires to state, federal, and local agencies and organizations to obtain pertinent information and data, as well as to identify key issues regarding the potential environmental impacts for this study. The state, federal, and local agencies included the following:

- Caroline County
- City of Fairfax
- City of Fredericksburg
- DoD-Air Force District of Washington
- DoD-Office of Economic Adjustment
- DoD-Office of the General Council
- DoD-Office of the Secretary of Defense
- DoD-Washington Headquarters Service
- Fairfax County
- Fredericksburg Area Metropolitan Planning Organization (FAMPO)
- Marine Corps Base Quantico
- National Capital Region Transportation Planning Board (NCRTPB)
- National Oceanic and Atmospheric Administration (NOAA)-National Marine Fisheries Service (NMFS), Habitat Conservation Division
- Natural Resources Conservation Service (NRCS)
- Prince William County
- Spotsylvania County
- Stafford County
- Town of Dumfries
- Town of Occoquan
- Town of Quantico
- US Army Corps of Engineers (USACE)-Norfolk District
- US Department of Housing and Urban Development, Richmond Field Office
- US Department of Interior-Office of Environmental Policy and Compliance
- US Department of Transportation (USDOT)-Federal Railroad Administration
- US Department of Transportation-Federal Transit Administration
- US Environmental Protection Agency (USEPA)
- US Fish and Wildlife Service (USFWS)
- US Forest Service (USFS)
- US National Park Service
- Virginia Department of Agriculture and Consumer Services
- Virginia Department of Aviation
- Virginia Department of Conservation and Recreation (VDCR)-Department of Natural Heritage (VDCR-DNH)
- Virginia Department of Emergency Management-Region 7
- Virginia Department of Forestry (VDOF)
- Virginia Department of Environmental Quality (VDEQ)
- Virginia Department of Game and Inland Fisheries (VDGIF)-Environmental Services Section
- Virginia Department of Health, Office of Drinking Water
- Virginia Department of Historic Resources (VDHR)-Office of Review and Compliance
- Virginia Department of Housing and Community Development (DHCD)
- Virginia Department of Mines, Minerals, and Energy
- Virginia Department of Rail and Public Transportation
- Virginia Economic Development Partnership
- Virginia Marine Resources Commission
- Virginia Outdoors Foundation
- Virginia State Police Department

4.1.1 Agency Scoping Responses

In response to the scoping letters, VDOT received responses from a number of agencies identifying transportation needs, environmental resources, and other relevant factors to be analyzed in this Revised EA. **Table 4-1** provides a summary of the responses received. Copies of the correspondence is provided in **Appendix B.**

Table 4-1: Agency Scoping Responses

Agency	Scoping Responses
United States Department of Agriculture, Natural Resources Conservation Service	Response specified the types of soil map units found along and adjacent to the study corridor, and advised that there were some prime farmland or farmland of statewide important soils adjacent to the I-95 corridor.
Department of Defense (DoD), Washington Headquarters Services	Response stated that VDOT could expect that usage of the potential Express Lanes extension will include some Department of Defense personnel commuting to/from the Pentagon and the Mark Center. Response further requested that VDOT estimate the potential increase in commuters using the Express Lanes (broken down by mode) and evaluate origins and destinations of these new users (which could be accomplished through an analysis of GPS/cell phone data). The area of interest in the response is north of the study area.
Department of the Interior, National Park Service, Prince William Forest Park	Response indicated interest in being actively engaged in the project, and provided answers to the questionnaire. This response was based on the larger study area presented in scoping, but not retained as part of this Revised EA. Prince William Forest Park is north of the study area.
Department of the Interior, National Park Service, Fredericksburg and Spotsylvania National Military Park	Response indicates that, while the project would not directly impact lands within the boundary of Fredericksburg and Spotsylvania National Military Park, it may affect Civil War resources associated with the Union Army's occupation of Stafford County.
United States Environmental Protection Agency	Response requested that the Revised EA be done in compliance with the NEPA and CEQ regulations implementing NEPA. Detailed description was recommended for aquatic resources and functions, and it was stated that stormwater ponds, best management practices, and construction staging areas should not be located in wetlands and streams. Guidance was also provided regarding tools to better identify areas with EJ populations.
The United States Department of Homeland Security, United States Coast Guard	Response indicated that an exemption from Coast Guard Bridge Permitting may apply to any replacements or new bridge projects within the study area, and requested that an enclosed Bridge Questionnaire be completed and returned to request a permit determination.

Agency	Scoping Responses
The United States Army Corps of Engineers	Response described the USACE process, including the requirement that they authorize only the least environmentally damaging practicable alternative. It was requested that waters and wetlands be identified and mapped before alternatives are considered, and that impacts to aquatic resources should be avoided, minimized, and documented. Further, options for compensating for unavoidable impacts to wetlands and other aquatic resources should be an early consideration. The USACE also recommended considering a broader study area than the HUC-12 for indirect effects to aquatic resources. USACE conveyed its wishes to participate in interagency meetings and field reviews to the extent possible.
The United States Department of Housing and Urban Development	Response indicated general support for the project, and that USEPA data should be considered for the high respiratory air quality problem area around I-95 at Exit 152. Exit 152 is north of the study area.
The Commonwealth of Virginia Department of State Police	Response recommended that lanes include minimum inside and outside widths of ten feet to provide adequate space so as not to delay response and removal of disabled vehicles and accidents. Response further advised that construction projects within the study area would result in significant traffic disruptions, and that the Department should be compensated at time-and-one-half rate for each employee assigned to patrol the construction area. Additionally, more law enforcement patrol coverage should be considered for I-95 overflow areas, like Route 1, during construction and post-construction due to added responsibility from additional users. Emergency vehicle access to restricted lanes should be adequately provided. Finally, the response requested that the study include an analysis of the impact of the permanent truck-fixed scale facility near Exit 152 on the human and natural environment. The fixed-scale facility is north of the study area.
The Virginia Department of Aviation	Response indicated that a 7460 form will need to be prepared and submitted to the Federal Aviation Administration to determine if the proposed construction would result in the creation of any hazard to air navigation. Response also advised that the proximity of the proposed Express Lanes to the Stafford Regional Airport could potentially impact the instrument approach procedures into the airport if the finished grade of the roadway constitutes a FAR Part 77 penetration. The Virginia Department of Aviation recommended that a meeting be arranged with the Stafford Regional Airport Director and the Federal Aviation Administration Washington Airports District Office.

Agency	Scoping Responses
The Commonwealth of Virginia Department of Game and Inland Fisheries	Response recommended that the VaFWIS would be helpful in assisting in the determination of wildlife resources that may be present on or near the project site.
The Commonwealth of Virginia Department of Historic Resources	Response indicated that the project has the potential to affect cultural resources listed in or eligible for the NRHP, and recommended that the VDHR website be referenced for guidance on information and formatting required for VDHR to conduct a review. Coordination with VDHR is ongoing, and a request for concurrence on an effect determination would occur after public review of the document but before request for FONSI.
The Commonwealth of Virginia Department of Health	Response indicated that an air quality study would be beneficial to examine the impact that additional vehicular generated pollution would have on health in the region. Response also provided a link to a PowerPoint with information regarding the VDH's Health Opportunity Index, and encouraged VDOT to address whether and how future highway construction in the corridor could serve to further connect existing communities. Response also provided information regarding public groundwater wells within a one-mile and a five-mile radius of the project.
The Virginia Department of Housing and Community Development	Response recommended that information regarding data related to low-income and minority populations come from coordination with the local Planning District Commission. A review of DHCD files did not show any multifamily housing projects or shelters funding directly by DHCD in proximity to the study area.
The Commonwealth of Virginia Department of Conservation and Recreation	Response provided information from both the Division of Planning and Recreational Resources and the Division of Natural Heritage. The Division of Planning and Recreational Resources directed attention to the Rappahannock River as a scenically designated river, and to Locust Shade Park, which is protected under the Land and Water Conservation Fund. Locust Shade Park is north of the study area and the Rappahannock River is south of the study area. The Division of Natural Heritage provided guidance on resources found in the following quads: Fredericksburg, Stafford, Quantico, Quantico and Joplin, Occoquan, and Fort Belvoir.
The Department of Rail and Public Transportation	Response indicated that the I-95/I-395 TDM study should be referenced in the Revised EA. As of June 5, 2017, the I-95/I-395 Transit TDM plan is not yet available for review.

Agency	Scoping Responses
Commonwealth of Virginia Department of Environmental Quality	Response requested that notification of the NEPA document and federal consistency documentation should be sent directly to the Office of Environmental Impact Review, and should include USGS topographic maps and shape files. The response also provided a list of agencies with which coordination is recommended, and a list of databases that may provide additional information.
The County of Stafford	Response indicated general approval of the project and provided answers to the questionnaire. Of note were the facilities named by the County (Stafford Regional Airport and Chichester Park) and the Quantico slate rock formation. Information regarding historical properties; watersheds, wetlands, and habitat; historical aerial imagery; Census data; and additional studies were also provided.
The County of Prince William	Response included answers to the questionnaire, which stated interest in further improvements along the I-95 corridor in Prince William County. The study area does not extend past Exit 148 at Russell Road at the southern end of Prince William County. The response included additional information about where special consideration should be taken in regards to water resources, cultural resources, historic imagery, Census data, relevant studies, and planned transportation and development projects
City of Fredericksburg	Response provided answers to questionnaire, but noted that it was outside the study area.
The County of Spotsylvania	Response provided answers to the questionnaire, but noted that it was outside the study area.
The United States Forest Service, the Department of Defense Office of Economic Adjustment, the Federal Transit Administration, and the Air Force Association	Acknowledged receipt of the scoping letter but did not contribute further information.

4.2 PUBLIC INVOLVEMENT

4.2.1 Public Information Meetings

On March 21 and March 22, 2017, VDOT held Public Information Meetings (PIM) to introduce the study to the public, share available information, and gather public input for consideration during study development. The meetings were originally scheduled for March 13 and March 14, 2017, but due to inclement weather, were rescheduled on March 21 and March 22, respectively. The PIMs took place at local high schools accessible by transit to the local community, and were held in an open house format with display boards depicting general information, including a study overview, the study purpose and

need, the study area, and the study schedule. At 7 PM, a VDOT representative gave a presentation which provided information similar to the information provided on the display boards. Comment sheets and informational handouts were provided at each meeting, and VDOT representatives were available to discuss the study and answer questions. Spanish-speaking interpreters were present at both meetings. A total of 28 people attended (nine on March 21 in Woodbridge, VA and 19 on March 22 in Fredericksburg, VA). Ten public comments were received at the PIMs and ten emailed comments were received following the PIMs.

4.2.2 Location/Design Public Hearing

After publication of the Revised EA, VDOT will hold a location/design public hearing for this study in September 2017. The purpose of the hearing will be to present the findings of this Revised EA, provide a discussion forum between the public and the project team, and obtain input and comments from the community. In addition, there will be a minimum 30-day public comment period following notice of availability of the EA. Any comments received during the public hearing and public comment period will become part of the public hearing record.

4.2.3 Additional Coordination Efforts

Mailing List

A mailing list was developed to identify owners of parcels within a 100-foot buffer beyond the existing right-of-way along the project corridor. Approximately 2,500 property access letters were mailed pursuant to §33.1-94 of the Code of Virginia. VDOT mailed letters to property owners within the study area to inform them that an agent of VDOT may need to access their property to survey the area's topographic features and property boundaries; identify wetlands; undertake stream studies; conduct environmental drilling (to collect soil and groundwater samples for analysis); monitor existing noise levels; or perform other transportation design-related evaluations and environmental assessments, which could include taking photographs and collecting environmental samples. In the letter, VDOT requested the property owners to notify other tenants, if also living or working on the property, about potential activities. The letter included contact information for the VDOT Project Manager in the event that the property owner had concerns regarding entry or wanted to request advanced notification prior to field work being conducted on the property. Requests for advanced notice or other information was noted by the project team and honored during field visits.

Website

Information for the study, including the EA and all technical documentation, is available to the public through the following VDOT website:

http://www.virginiadot.org/projects/fredericksburg/i-95_express_lanes_fredericksburg_extension.asp

The website is continually updated as new information becomes available.

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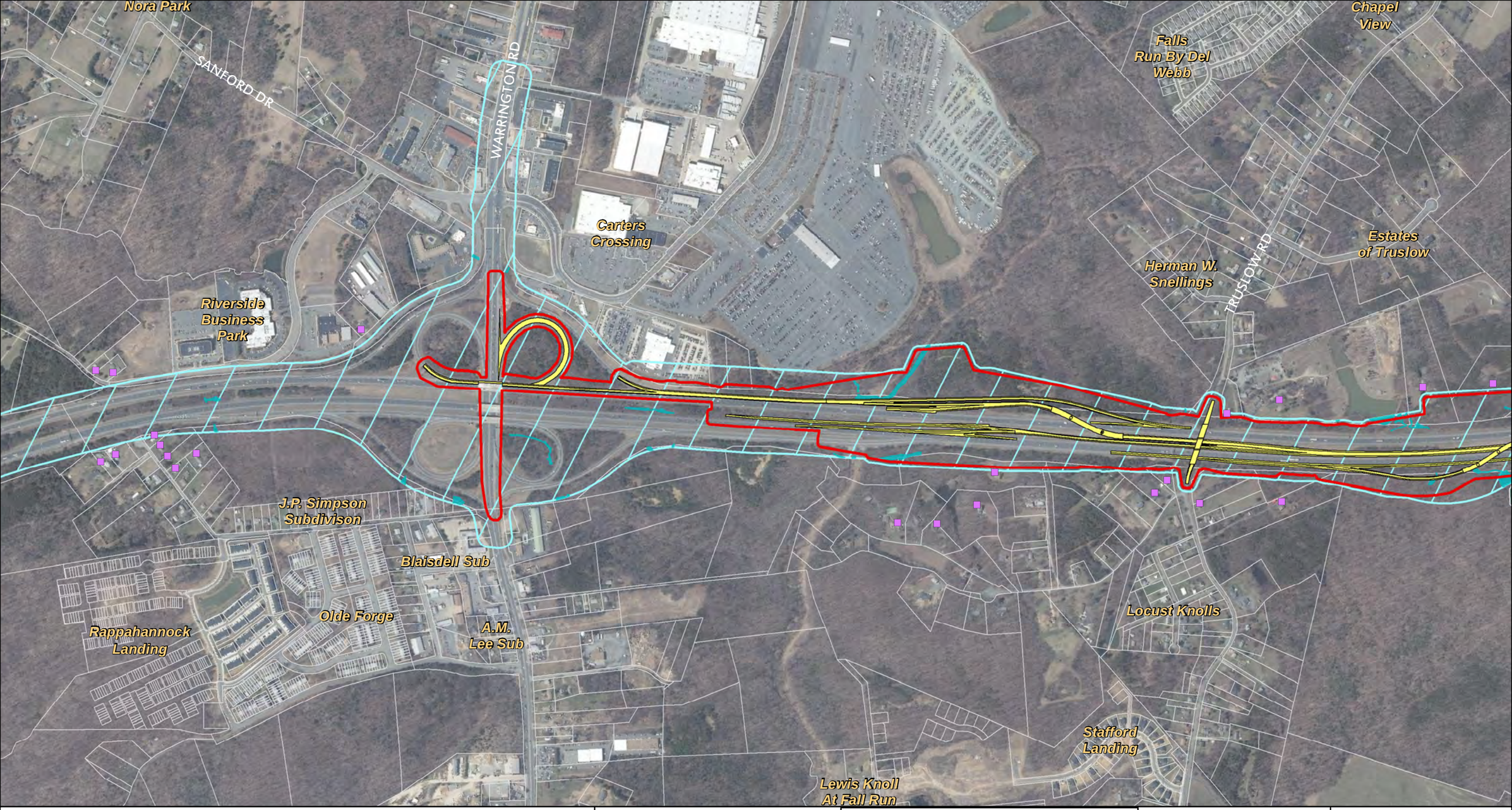
APPENDIX A

Build Alternative



Legend

- Limits of Disturbance
- Inventory Corridor
- Proposed Improvements
- Parks
- Impacted Noise Receptors
- Wetlands/Streams
- Parcels
- Military Facilities

Noise Barriers

- Existing
- Future
- Feasible and Reasonable

0 200 400 800 1,200 1,600 Feet

1 in = 800 ft

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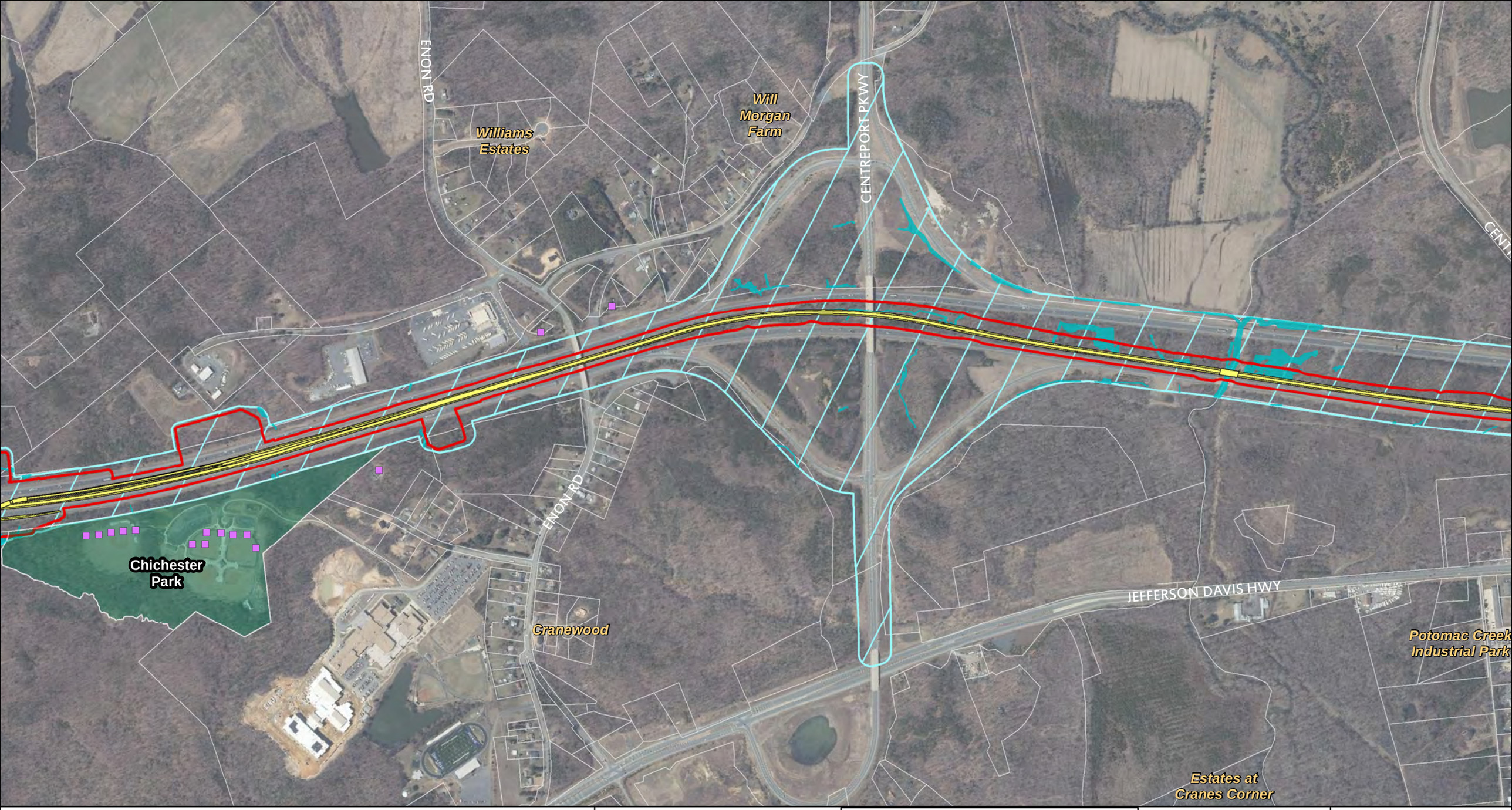
Sheet 1 of 7

U.S. Department of Transportation
Federal Highway Administration

VDOT

Interstate 95 Express Lanes Fredericksburg Extension Study

Build Alternative



Legend

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- Inventory Corridor
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- Military Facilities

Noise Barriers

- Existing
- Future
- Feasible and Reasonable

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1 in = 800 ft

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Sheet 2 of 7

U.S. Department of Transportation Federal Highway Administration

VDOT

Interstate 95 Express Lanes Fredericksburg Extension Study

Build Alternative

CENTREPORT PKWY

RAMOTH CHURCH RD

North Stafford Industrial Park

Tayor Bott Industrial Park

Penny Industrial Park

Evans Mobile Home Park

Ellison Estates

Potomac Creek Industrial Park

Cranes Corner Industrial Park

JEFFERSON DAVIS HWY

Legend

- Limits of Disturbance
- Inventory Corridor
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- Parks
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- Wetlands/Streams
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Noise Barriers

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0 200 400 800 1,200 1,600 Feet

1 in = 800 ft

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Sheet 3 of 7

U.S. Department of Transportation Federal Highway Administration

VDOT

Interstate 95 Express Lanes Fredericksburg Extension Study

Build Alternative

Embrey Mill
AUSTIN RIDGE DR
Austin Ridge
COURTHOUSE RD
Westgate At Stafford Courthouse
Westgate Center
Wyche Prop
Stafford Oaks
Moncure Estates
Bells Valley (Moncure Valley)
Azalea Woods
WYCHE RD
Courthouse Square
Townes of Ashleigh
Belandres
Canterbury Village
Woodmont
Summit Ridge
Wyche Industrial Park
JEFFERSON DAVIS HWY
COURTHOUSE RD
Courthouse Square at Stafford
Paradise Estates Mobile Home Park
Somerset Landing
Tamarlane
Austin Run Townhouses
Crescent Pointe

Legend

- Limits of Disturbance
- Inventory Corridor
- Proposed Improvements
- Parks
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- Wetlands/Streams
- Parcels
- Military Facilities

Noise Barriers

- Existing
- Future
- Feasible and Reasonable

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1 in = 800 ft

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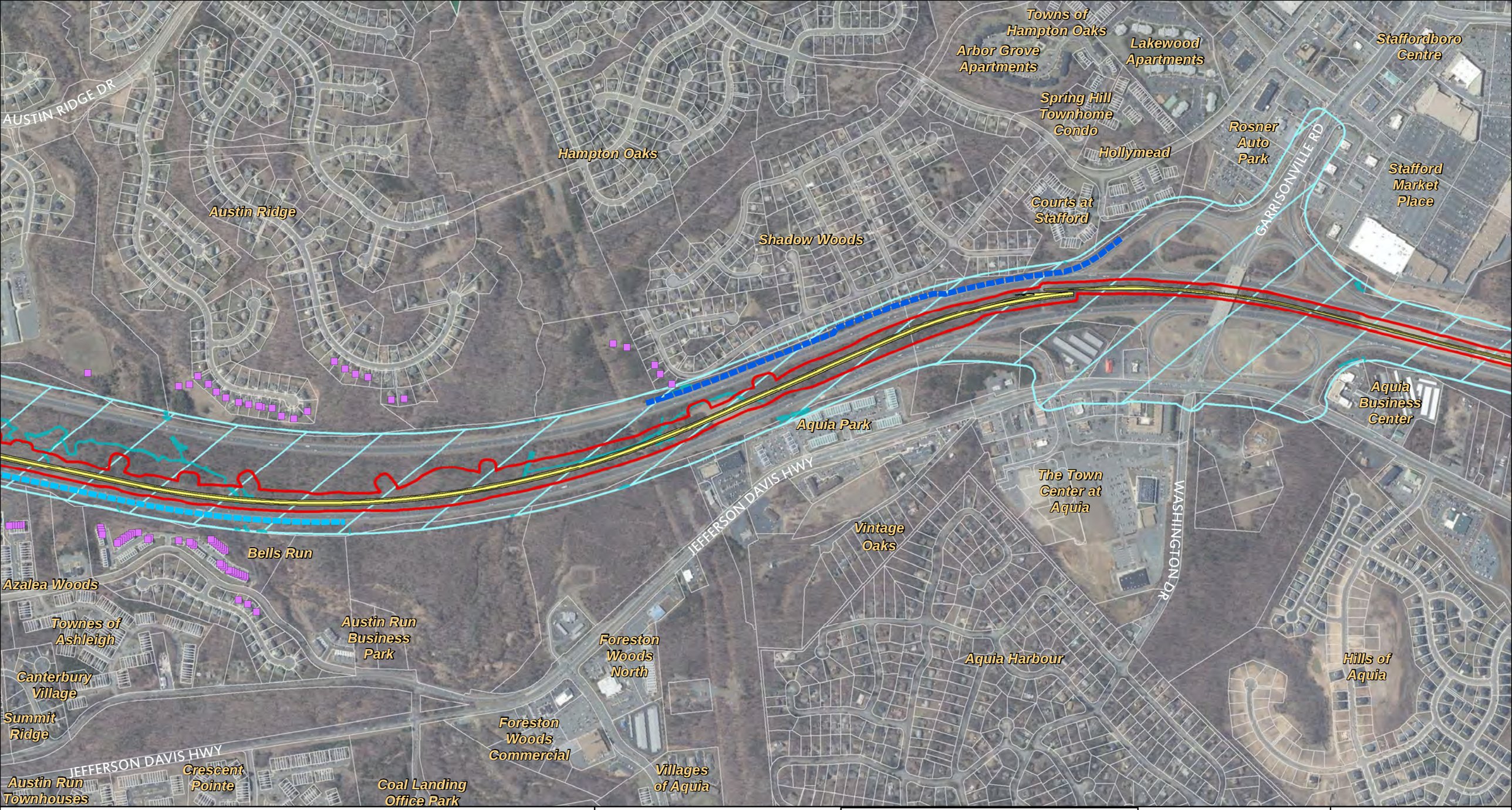
Sheet 4 of 7

U.S. Department of Transportation Federal Highway Administration

VDOT

Interstate 95 Express Lanes Fredericksburg Extension Study

Build Alternative



Legend

- Limits of Disturbance
- Inventory Corridor
- Proposed Improvements
- Parks
- Impacted Noise Receptors
- Wetlands/Streams
- Parcels
- Military Facilities

Noise Barriers

- Existing
- Future
- Feasible and Reasonable

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1 in = 800 ft

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Sheet 5 of 7

U.S. Department of Transportation Federal Highway Administration

VDOT

Interstate 95 Express Lanes Fredericksburg Extension Study

Build Alternative

Riley Estates
DOC STONE RD
Hampton Arliss Estates
Sunningdale Meadows Condo
Foxwood Village Mobile Home Park
Staffordborough
Stafford Market Place
Woodstream
Smith Lake Park
Marine Corps Base Quantico
Aquia Business Center
Port Aquia Commercial
Potomac Hills
Taylors Mobile Home Park
JEFFERSON DAVIS HWY
Sunnyside (Vasquez)
Guinn's Mobile Home Park
TELEGRAPH RD
Hills of Aquia
Widewater Village At Stafford
Sunnyside Estates
Sunnyside Mobile Home Park
Brentsmill
TELEGRAPH RD
OLYMPIC DR
Griffis Estates

Legend

- Limits of Disturbance
- Inventory Corridor
- Proposed Improvements
- Parks
- Impacted Noise Receptors
- Wetlands/Streams
- Parcels
- Military Facilities

Noise Barriers

- Existing
- Future
- Feasible and Reasonable

0 200 400 800 1,200 1,600 Feet

1 in = 800 ft

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Sheet 6 of 7

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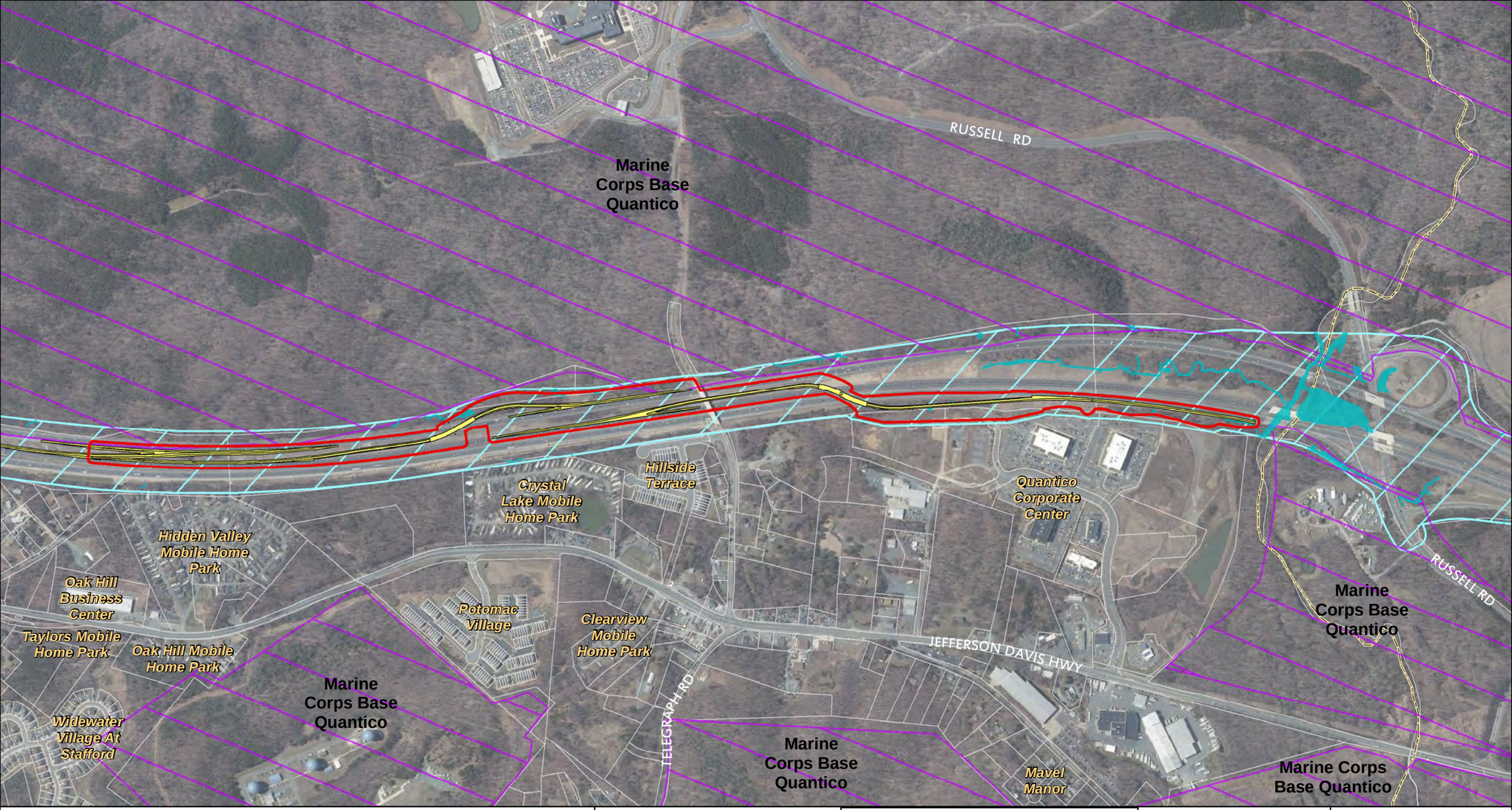
VDOT

Interstate 95 Express Lanes Fredericksburg Extension Study

Build Alternative



Legend

- Limits of Disturbance
- Inventory Corridor
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Noise Barriers

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- Feasible and Reasonable

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1 in = 800 ft

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Sheet 7 of 7

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Interstate 95 Express Lanes Fredericksburg Extension Study

Build Alternative

APPENDIX B

Scoping Responses

From: Carbone, Joseph -FS [mailto:jcarbone@fs.fed.us]
Sent: Sunday, December 11, 2016 11:12 AM
To: Smizik, Scott (VDOT)
Cc: Smalls, James -FS
Subject: RE: Interstate 95 Express Lanes Extension Study

Thanks. I don't think we will have any comments, but please change the Forest Service contact information to Jim Smalls (email in the cc).

Joe Carbone
Ecosystem Management Coordination Staff

Forest Service
Washington Office Ecosystem Management Coordination Staff

p: 202-205-0884
c: 202-631-6586
jcarbone@fs.fed.us

Sidney R. Yates Federal Building, 1400 Independence Avenue, SW
Washington, DC 20250
www.fs.fed.us

Caring for the land and serving people

From: Smizik, Scott (VDOT) [mailto:Scott.Smizik@vdot.virginia.gov]
Sent: Monday, December 05, 2016 7:54 AM
To: Carbone, Joseph -FS <jcarbone@fs.fed.us>
Subject: Interstate 95 Express Lanes Extension Study

Good morning –

Please see attached scoping letter for subject study. Thank you in advance for your cooperation and support in this effort.

Scott Smizik
Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219
Desk: (804) 371-4082
Cell: (804) 306-0920
Fax: (804) 786-7401
Scott.Smizik@VDOT.Virginia.gov

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Project: Interstate 95 Express Lanes Fredericksburg Extension Study
Counties of Fairfax, Prince William and Stafford

I. Please provide any comments or feedback that you feel may be beneficial to the development of this study.

The soil map units found along the study corridor consist of “cut and fill” or ‘urban land”. There are some prime farmland or farmland of statewide important soils delineated adjacent to the I-95 corridor that possibly could be impacted if the project area extends beyond the present “right-of-way”. There are also some hydric soils mapped adjacent to the corridor. These areas may possibly be considered wetlands if the other two conditions of a wetland exist in conjunction with the hydric soil.

Don Flegel
Area 1 Soil Resource Specialist

From: Air Force Memorial [mailto:AirForceMemorial@afa.org]
Sent: Monday, December 05, 2016 10:40 AM

To: Smizik, Scott (VDOT); Potturi, Krishna, PE (VDOT)
Cc: Barbara Taylor; Grabey, Kurt S CIV USAF AFDW (US); Law, Cheryl L Col USAF AFDW (US); Atwood, Marcelyn NMI CTR USAF AFDW (US); Zachary Steele
Subject: RE: Interstate 95 Express Lanes Extension Study

Scott and Krishna,
The United States Air Force is taking over operations at the Air Force Memorial from the Air Force Association. Mr. Kurt Grabey, Ccd on this email is the Air Force District of Washington Director of Staff. He and his staff should be contacted regarding the I-95 Express Lanes and this study going forward. Please direct all future correspondence to him.
I thank you on behalf of Mr. Van Cleef and the Air Force Association.
Barb Taylor

From: Smizik, Scott (VDOT) [mailto:Scott.Smizik@vdot.virginia.gov]
Sent: Monday, December 05, 2016 8:10 AM
To: Air Force Memorial
Subject: Interstate 95 Express Lanes Extension Study

Good morning –

Please see attached scoping letter for subject study. Thank you in advance for your cooperation and support in this effort.

Scott Smizik
Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219
Desk: (804) 371-4082
Cell: (804) 306-0920
Fax: (804) 786-7401
Scott.Smizik@VDOT.Virginia.gov

From:	Eric Almquist
To:	Travis R. Comer; Nicholas Krause
Subject:	FW: Interstate 95 Express Lanes Extension Study
Date:	Wednesday, December 07, 2016 3:16:57 PM

From: Smizik, Scott (VDOT) [mailto:Scott.Smizik@vdot.virginia.gov]
Sent: Tuesday, December 06, 2016 5:46 PM
To: Eric Almquist <ealmquist@rkk.com>; Sari E. Rothrock <srothrock@rkk.com>; Nicholas Krause <nkrause@rkk.com>
Subject: Fwd: Interstate 95 Express Lanes Extension Study

See below. Please get the recommended letter out this week.

Thanks

Begin forwarded message:

> **From:** "Glasson, Daniel L CIV OEA (US)" <daniel.l.glasson.civ@mail.mil>
> **Date:** December 6, 2016 at 4:34:15 PM EST
> **To:** "Scott.Smizik@vdot.virginia.gov" <Scott.Smizik@vdot.virginia.gov>, "krishna.potturi@vdot.virginia.gov" <krishna.potturi@vdot.virginia.gov>
> **Cc:** "Schebler, Daniel J CIV OEA (US)" <daniel.j.schebler.civ@mail.mil>
> **Subject: RE: Interstate 95 Express Lanes Extension Study**
>
> Ms. Potturi and Mr. Smizik,
>
> I am responding to a letter from Ms. Potturi (transmitted via email from Mr. Smizik) dated December 2, 2016 on behalf of Director Patrick J. O'Brien regarding a request for the Department of Defense Office of Economic Adjustment (OEA) Director's input on an Environmental Assessment underway studying the addition of travel lanes to I-95 from near Exit 133 to near Exit 160. While OEA is a funding entity for other transportation improvement projects in the Northern Virginia area (and in close collaboration with VDOT), OEA has no jurisdiction nor legal interests in the study area identified by the EA as potentially impacted.
>
> However, other Department of Defense components may have an interest. To ensure your request for appropriate input reaches the proper entity within the Department of Defense, I recommend you send a separate letter addressed to Mr. Michael L. Rhodes, Director of Administration and Management, within the Secretary of Defense's Office. Mr. Rhodes's postal address is:
>
> Mr. Michael L. Rhodes, SES
> Director, ODCMO
> 1950 Defense Pentagon
> Room 3E971
> Washington, DC 20301-1950

I would also suggest requesting conferral with the OSD General Counsel office.

I am available to discuss this response at your convenience.

Respectfully,

Daniel Glasson
Program Director, Community Investment
Department of Defense
Office of Economic Adjustment (OEA)
2231 Crystal Drive, Suite 520
Arlington, VA 22202
daniel.l.glasson.civ@mail.mil
Office: 703-697-2082
Cell: 703-901-7670

Connect with OEA online!
Website I LinkedIn I Google+ I YouTube I Flickr
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Original Message ----------
From: Smizik, Scott (VDOT) <Scott.Smizik@vdot.virginia.gov>
Sent: Monday, December 5, 2016 1:59 PM
To: 'patrick.o'brien@wso.whs.mil'
Subject: [Non-DoD Source] Interstate 95 Express Lanes Extension Study

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

Good afternoon -

Please see attached scoping letter for subject study. Thank you in advance for your cooperation and support in this effort.

Scott Smizik
Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219
Desk: (804) 371-4082
Cell: (804) 306-0920
Fax: (804) 786-7401
Scott.Smizik@VDOT.Virginia.gov<Caution-mailto:scott.smizik@vdot.virginia.gov>

DEPARTMENT OF DEFENSE
WASHINGTON HEADQUARTERS SERVICES
1155 DEFENSE PENTAGON
WASHINGTON, DC 20301-1155

FACILITIES SERVICES
DIRECTORATE

Mr. Krishna Potturi
Virginia Department of Transportation (VDOT)
Project Manager, VDOT Fredericksburg District
1401 E. Broad Street
Richmond, Virginia 23219

Dear Mr. Potturi:

In response to your letter regarding the development of the Environmental Assessment for the potential effects from adding additional travel lanes to I-95, please note that the Pentagon Reservation is outside the area of study and the Integrated Services Division has no jurisdiction to comment on human and natural resources within this area. However, the opportunity to participate in this effort is greatly appreciated as the potential modifications will affect commuters traversing to and from the Pentagon.

Please note that the following information may be beneficial to the development of your study. The Washington Headquarters Services (WHS) internal data collection on Pentagon and Mark Center personnel commuting patterns between 2014 and 2016 shows that the highest concentration of commuters to the Pentagon and the Mark Center reside along the I-95 corridor in Arlington, Fairfax, Prince William, and Stafford Counties, with a number of employees residing as far south as Spotsylvania County. As much of these locations fall within VDOT's study area, VDOT can expect that usage of an Interstate 95 Express Lanes extension to Fredericksburg will include some Department of Defense (DoD) personnel commuting to/from the Pentagon and the Mark Center. Specifically regarding the environmental review component, the Environmental, Sustainability, and Energy Branch has no information to contribute concerning this project.

Additionally, WHS would like to better understand how the High Occupancy Toll (HOT) lane extension may or may not change use of the transportation facilities at both the Mark Center and Pentagon Reservation. This information will assist WHS in planning for potential changes that occur once the lanes are open. WHS requests that the potential increase in commuters using the HOT lanes be estimated. Ideally this would be broken down by mode and include carpool, vanpool, slugging, single-occupancy vehicle, and commuter bus. An evaluation of the origins and destinations of these new HOT users would also be valuable. The latter could be accomplished through an analysis of the GPS/cell phone data that VDOT has access to through their agreement with Streetlight.

Again, the opportunity to comment is appreciated, and my point of contact for inquiries is Ms. Yolanda Creal at (703) 697-1850 or email at yolanda.y.creal.civ@mail.mil.

Regina M. Grant

Regina M. Grant
Director, Integrated Services Division

United States Department of the Interior
NATIONAL PARK SERVICE
PRINCE WILLIAM FOREST PARK
18100 Park Headquarters Road
Triangle, Virginia 22172

VIA ELECTRONIC MAIL: NO HARD COPY TO FOLLOW

1.D (PRWI)

December 22, 2016

Krishna K. Potturi, PE
Project Manager
Virginia Department of Transportation
87 Deacon Road
Fredericksburg, VA 22405

Dear Project Manager Potturi:

This letter is in reference to your correspondence dated December 5, 2016 regarding the proposed Interstate 95 Express Lanes Fredericksburg Extension Study, and subsequent Environmental Assessment. Since the entire Prince William Forest Park, a unit of the National Park Service, lies within the project area, this proposal has the potential to effect the park and its Congressionally-stated management mandate. Consequently, we are interested in remaining engaged throughout this project and we request that you consider granting the National Park Service formal Cooperative Agency Status for this proposed project.

Besides general natural and cultural resources and visitor use concerns, we are also interested in seeing how the Virginia Department of Transportation plans to incorporate the parts of the National Environmental Policy Act and the National Historic Preservation Act that are unique to National Park Service (NPS) land, as well as how Section 4(f) of the Department of Transportation Act will be incorporated into this planning process.

Attached to this letter is our response to your initial questionnaire. We are especially interested in ensuring that transportation needs are met in a holistic manner, with attention to the myriad of other related and interconnected issues and concerns, and that the planning for these needs be conducted in an integrated and transparent fashion, with input and involvement with a wide spectrum of interested publics, stakeholders, collaborating agencies, and affected communities. Let us know if we may be of assistance. Please direct any questions to Chief of Resource Management David Ek at 703-221-3329 or at David_Ek@nps.gov. Thank you for your attention to these topics of mutual interest.

Sincerely,

Kathy Kimmitz
Acting Superintendent

cc: Joel Gorder, NPS
Sam Tamburro, NPS
David Ek, NPS

Project: **Interstate 95 Express Lanes Fredericksburg Extension Study, Counties of Fairfax, Prince William and Stafford**

1. **Please identify and confirm any National Park Service or Department of Interior lands within the study area.**

   In 1936, Congress created Prince William Forest Park and added it into the National Park Service (NPS) system of parks. The park currently manages approximately 14,000 acres, located in both Prince William and Stafford Counties, Virginia. Although all laws, regulations, and policies of the National Park Service apply, when the park was established, three main primary attributes were emphasized: the cultural landscape associated with the park's Civilian Conservation Corps (CCC) occupancy and legacy, the protection of the area's Piedmont forests; and the protection of the Quantico Creek watershed.

   The entire extent of Prince William Forest Park lies within the designated project for this proposed Express Lane project. Over 1.3 miles of the park's boundary border the existing I-95; therefore, any widening of this interstate has the potential to negatively impact park resources (both directly and indirectly). Most of the direct potential impact is centered between Exits 150 and 152.

2. **Please provide any comments or feedback that you feel may be beneficial to the development of this study.**

   - No NPS land is depicted on the project area map attached to Virginia Department of Transportation's December 2 letter regarding this proposed project. In addition, portions of what the map indicates as being managed by Quantico Marine Corps Base is actually NPS managed lands. The boundary map appears to be outdated. The NPS proposes that this map and other associated public material be updated to reflect current boundaries.

   - The NPS would like an assurance that public access to the park is not compromised, since the park's main entrance (for the over 312,000 visits per year), is near the I-95 corridor.

   - Adding lanes to an interstate has the potential to negatively impact the park's soundscape, so therefore, we are concerned about potential noise impacts to the park's natural and cultural resources. The NPS would like to see a noise study included in the planning studies to evaluate what impacts that adding an additional lane may have on the surrounding soundscape and to outline the potential mitigation measures that may be utilized to minimize those impacts.

- If a new express lane is added to I-95, there is the potential for new direct habitat loss to result. The NPS would like to see no formerly designated park land be used to accommodate additional interstate lanes.

- Since a fundamental purpose of this park is the protection of the Quantico Creek watershed and the protection of one of the largest Piedmont forests in the area, the NPS proposes that as this Express Lane project proceeds, that sufficient baseline environmental studies be conducted to professionally assess the potential impact to both the area's Piedmont forests and the Quantico Creek watershed.

- The park contains known populations of federally-listed plant and animal species, such as the small whorled pogonia (*Isotria medeoloides*) and the northern long-eared bat (*Myotis septentrionalis*), some located near the I-95 corridor. However, most areas have not been surveyed for their presence. The NPS would like to see comprehensive surveys for all listed species documented within the park, or that have the potential to be found in the park. Note: acoustic bat monitors have also detected the presence of the federally-Endangered Indiana myotis (*Myotis sodalis*).

- NPS policy requires that National Environmental Policy Act (NEPA) analysis for proposed projects not only assess potential impacts to federally-listed species, but also state-listed species. There are several state-listed species within Prince William Forest Park, including the confirmed presence of little brown myotis (*Myotis lucifugus*), and tri-colored bat (*Perimyotis subflavus*); therefore, the NPS a comprehensive survey for state-listed species within the park in proximity to the project area.

- Besides federally or state-listed species, the park contains other rare and sensitive species and communities, including fresh water mussels and rare occurrences of a fresh water sponge. The NPS requests that the Environmental Assessment for the proposed Express Lane expansion also assess the potential impact to these rare and sensitive species and communities.

- For informational purposes, there may be other NEPA regulations and policies requirements unique to units of the National Park Service. Due to the potential for this proposed project to effect NPS resources, the NPS requests the entities working on this proposed express lane expansion maintain close communication with the NPS. To facilitate these and other concerns, the National Park Service request formal <u>Cooperative Agency Status</u>.

3. Please identify and confirm any historic properties or cultural resources within the study.

- Similar to the statement above (in question #2) about NEPA requirements, there may be National Historic Preservation Act elements that are unique to units of the NPS, specifically Section 106. Therefore, project proponents should consult with appropriate NPS staff, as well as the Virginia State Historic Preservation Office (SHPO) throughout the planning and implementation phases of this project.

- The entire park is listed as a Cultural Landscape under the National Register of Historic Places; therefore, there is the potential that this proposed project may effect cultural landscape. The NPS proposes that studies be conducted that assess the projects effect on cultural landscapes.

- There are known prehistoric and historic sites immediately adjacent to the current I-95 road corridor, but no comprehensive surveys has been conducted. Consequently, any proposed road widening may affect the park's known or currently unknown eligible prehistoric and historic cultural properties. The NPS proposes that park lands in the vicinity of the project area be surveyed for potential prehistoric and historic resources in order to assess the project's potential to affect cultural resources, but also to suggest potential mitigation measures.

- Within the park, immediately adjacent to the I-95 corridor, are remnant traces of the original Washington-Rochambeau Trail, now a designated National Historic Trail. In addition, parts of the current Potomac Heritage Trail lie within the identified study area, as are proposed extensions. These trail segments are both within the park's boundary and on adjacent land. The NPS proposes that the Express Lane expansion project be planned in a manner that would not compromise the integrity of these historic and recreational resources or their ability to regionally interconnect with similar trail segments within other nearby jurisdictions.

From: Koenig, Daniel (FTA) [mailto:daniel.koenig@dot.gov]
Sent: Monday, December 05, 2016 9:23 AM
To: Smizik, Scott (VDOT)
Cc: McGill, Melissa (FTA)
Subject: FW: Interstate 95 Express Lanes Extension Study

Hi Scott – I'm forwarding to Melissa McGill, FTA's VA planner, for her awareness. Doesn't look like the project has any transit elements so our participation will be limited. Thanks.

From: Smizik, Scott (VDOT) [mailto:Scott.Smizik@vdot.virginia.gov]
Sent: Monday, December 05, 2016 7:58 AM
To: Koenig, Daniel (FTA)
Subject: Interstate 95 Express Lanes Extension Study

Good morning Dan –

Please see attached scoping letter for subject study. If you are not the appropriate contact, could you please forward. Thank you in advance for your cooperation and support in this effort.

Scott Smizik
Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219

Desk: (804) 371-4082
Cell: (804) 306-0920
Fax: (804) 786-7401

Scott.Smizik@VDOT.Virginia.gov

From: Okorn, Barbara [mailto:Okorn.Barbara@epa.gov]
Sent: Wednesday, December 21, 2016 4:16 PM
To: Potturi, Krishna, PE (VDOT)
Cc: Rudnick, Barbara
Subject: Interstate 95 Express Lanes Fredericksburg Extension Study Scoping

Krishna,
EPA has reviewed your letter dated December 2, 2016 regarding the subject project. We understand that the study is being done in compliance with the National Environmental Policy Act (NEPA) and CEQ regulations implementing NEPA. Please find below recommendations for the scope of analysis for the proposed Environmental Assessment (EA).

- Information regarding the purpose and need, alternatives analyzed, avoidance and minimization of resources, and cumulative effects for the proposed project should be included in the EA.
- The NEPA document should include a clear and robust justification of the underlying purpose and need for the proposed action. The purpose and need statement is important because it helps explain why the proposed action is being undertaken and what objectives the project intends to achieve. The purpose of the proposed action is typically

the specific objective of the activity. The need should explain the underlying problem for why the project is necessary.

- Alternatives analysis should include the suite of other activities or solutions that were considered and the rationale for not carrying these alternatives forward for detailed study.
- The document should describe potential impacts to the natural and human environment. Existing resources should be identified and EPA encourages that adverse impacts to natural resources, especially wetlands and other aquatic resources, be avoided and minimized.
- A robust narrative fully describing any aquatic resources and functions should be included in the EA. We suggest at a minimum, a narrative should be provided that includes: a discussion of hydrology, including sources and direction of flow; the vegetative communities in the impact area, including size of trees (dbh), percent canopy cover, understory and other components such as woody debris and snags, and presence of invasive species; soil type(s); and an assessment of expected functions based on the HGM type, ecological community, and surrounding landuse. Photos should be included. Some information on resources may be gained from public websites including:
- EnviroMapper[1]: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system
- Envirofacts[2]: https://www3.epa.gov/enviro/
- NEPAssist[3]: https://www.epa.gov/nepa/nepassist
- 303(d) Listed Impaired Waters: https://www.epa.gov/exposure-assessment-models/303d-listed-impaired-waters

- Stormwater ponds, best management practices (BMPs) and construction staging areas should not be located in wetlands and streams. Stormwater management alternatives that address the existing and new construction should be considered.
- EPA suggests coordinating with other appropriate federal, state and local resource agencies on possible impacts to wetlands, streams, historic resources and/or rare, threatened and endangered species. As needed, assessment of aquatic resources functions should be provided. We would be pleased to coordinate with VDOT and the U.S. Army Corps of Engineers on this work.
- An evaluation of air quality and community impacts, including noise, light and possible traffic impacts, should be included in the document. General conformity status should be included in the document.
- The NEPA document should include an analysis of any hazardous sites or materials, and the status of any ongoing or past remediation efforts in the project area. This includes any groundwater contamination.
- We recommend the NEPA document include a discussion and analysis of greenhouse gas emissions, climate change, and extreme weather events (in particular in association with resiliency design).
- Environmental Justice (EJ) should also be evaluated, including the identification of potential communities of concern, and meaningful and timely community involvement, public outreach, and access to information. Please consider application of a tool

developed by EPA to help users to identify areas with EJ population: https://www.epa.gov/ejscreen. Additionally please refer to "Promising Practices for EJ Methodologies in NEPA Reviews document for EJ analysis in NEPA reviews": https://www.epa.gov/environmentaljustice/ej-iwg-promising-practices-ej-methodologies-nepa-reviews. Our regional expert on EJ would be pleased to discuss methodology for identification of EJ communities at your convenience. It may be appropriate for a larger study area than only within the direct impacts of the project.

- Consideration should be given to potential impacts to at-risk populations, as well as consideration to sensitive subpopulations, possibly including elderly, children and others. It is recommended community impacts be avoided, minimized and mitigated, to the greatest extent possible.
- Tribal interests should be considered in the EA.
- The document should address potential indirect and cumulative effects in the project areas; analysis may aid in the identification of resources that are likely to be adversely affected by multiple projects, and sensitive resources that could require additional avoidance or mitigation measures. It is suggested that a secondary and cumulative effects analysis begin with defining the geographic and temporal limits of the study; this is generally broader than the study area of the project. The cumulative impact analysis should evaluate impacts to environmental resources that have the potential to be impacted by the project (i.e. wetlands, surface water, etc). Assuming the12-digit HUC within the direct impact area may not be adequate.

1 The Watershed Assessment, Tracking & Environmental Results System (WATERS) unites water quality information previously available only from several independent and unconnected databases
2 Includes enforcement and compliance information
3 NEPAssist is a tool that facilitates the environmental review process and project planning in relation to environmental considerations. The web-based application draws environmental data dynamically from EPA Geographic Information System databases and web services and provides immediate screening of environmental assessment indicators for a user-defined area of interest. These features contribute to a streamlined review process that potentially raises important environmental issues at the earlier stages of project development.

Thank you for coordinating with EPA on this project. We look forward to working with you as more information becomes available. Please let me know if you have any questions on the recommended topics above. Please provide a copy of the EA to EPA when it is available for review.

Sincerely,
Barb

Barbara Okorn
USEPA Region III (3EA30)
1650 Arch Street
Phila, PA 19103
Phone (215) 814-3330

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford Street
Portsmouth, VA 23704-5004
Staff Symbol: dpb
Phone: (757) 398-6557
Fax: (757) 398-6334
Email:
Michael.R.Thorogood@uscg.mil

16590
10 FEB 2017

Ms. Krishna Potturi
Virginia Department of Transportation
1401 East Broad Street
Richmond, VA 23219-2000

Dear Ms. Potturi:

We reviewed the information provided in your letter dated December 2, 2016, regarding the coordination between the Virginia Department of Transportation (VDOT) and the Federal Highway Administration (FHWA) to initiate the Interstate 95 Express Lanes Fredericksburg Extension Study as part of an Environmental Assessment (EA), under the National Environmental Policy Act (NEPA) of 1969, as amended.

Our initial review of the route identified in the study indicates that an exemption from Coast Guard Bridge Permitting may apply to any bridge replacements or new bridge projects within the study area.

As individual or groups of bridge projects are identified, requests for a permit determination should be submitted to this office. The enclosed Bridge Questionnaire should be completed and forwarded with a cover letter to request a permit determination.

Please note that an exemption from Coast Guard Bridge Permitting is valid for five years from the date of issuance in the exemption letter. If the construction project does not commence within this time period, you must contact this office for reaffirmation of the exemption. No exemptions from Coast Guard Bridge Permitting related to this project have been issued.

If you have any questions, please contact Mr. Michael Thorogood, at the phone number or email address shown above.

Sincerely,

HAL R. PITTS
Bridge Program Manager
By direction of the Commander
Fifth Coast Guard District

Encl: Bridge Project Questionnaire

Copy: CG Sector Hampton Roads, Waterways Management

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford Street
Portsmouth, VA 23704-5004
Staff Symbol: (dpb)
Phone: 757-398-6557
Fax: 757-398-6334
Email:
Michael.R.Thorogood@uscg.mil
CGDFiveBridges@uscg.mil

BRIDGE PROJECT QUESTIONNAIRE

Please provide the following information:

A. NAVIGATION DATA:

1. Name of Waterway: _____

1a. Mileage along waterway measured from mouth or confluence _____

1b. Tributary of: _____

2. Geographic Location: _____

_____

(Road Number, City, County, State) and (**Latitude and Longitude in NAD 83 form**)

3. Township, section and range, if applicable: _____

4. Tidally influenced at proposed bridge site? Yes ____ No _____ .
Range of tide: _____
Tidal data source: _____

5. Depth and width of waterway at proposed bridge site:

	Depths	Widths
At Mean High Tide	_____	_____.
At Mean Low Tide	_____	_____.

6. Character of present vessel traffic on waterway. If none , so state: None _____.
Canoe _____ Rowboat _____ Small Motorboat _____ Cabin Cruiser _____ .
Houseboat _____ Pontoon Boat _____ Sailboat .

6a. Provide vertical clearance requirement for largest vessel using the waterway:

6b. Provide photograph of each type of vessel using the waterway.

7. Are these waters used to transport interstate or foreign commerce?
Yes _____ No _____ .

7a. Are these waters susceptible to use in their natural condition or by reasonable improvement as a means to support interstate or foreign commerce?
Yes _____ No _____ .

7b. Any planned waterway improvements to permit larger vessels to navigate (to your knowledge)? _____ If so, what are they? _____

_____

8. Any natural or manmade obstructions, bridges, dams, weirs, etc. downstream or upstream? Yes _____ No _____ .

8a. If yes, provide upstream/downstream location with relation to the proposed bridge. _____

8b. If bridges are located upstream or downstream, provide vertical clearance at mean high water and mean low water and horizontal clearance normal to the axis of the channel. _____

8c. Provide a photograph of the bridge from the waterway showing channel spans.

9. Will the structure replace an existing bridge? Yes _____ No _____ .

9a. Provide permit number and issuing agencies of permits for bridge(s) to be replaced. _____

9b. Provide vertical clearance at mean high water and mean low water and horizontal clearance normal to the axis of the channel for the proposed bridge.

_____

10. List names and addresses of persons whose property adjoins bridge right-of-way.

_____

_____

_____

_____

11. List names and addresses/location of marinas, marine repair facilities, public boat ramps, private piers/docks along the waterway within ½ mile of the bridge site.

_____

_____

_____

_____

12. Attach location map and plans for the proposed bridge; including vertical clearances above mean high water and mean low water and horizontal clearance normal to axis of the waterway.

13. Attach three (3) photographs taken at the proposed bridge site: one looking upstream, one looking downstream, and one looking along the alignment centerline across the bridge site.

Name of applicant: _____

Name of agent completing questionnaire: _____

Name of agent's firm: _____

Agent's telephone number: _____

Address for correspondence: _____

_____

Applicant's telephone number: _____

Date: _____ Signature: _____

PLEASE NOTE: MISSING INFORMATION AND REQUIRED SIGNATURES WILL DELAY PROCESSING

Attachments: Location Map
Bridge Plans
Photographs

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

January 11, 2017

SUBJECT: Scoping Comments for the Environmental Assessment for the Interstate 95 Express Lanes Fredericksburg Extension Study; NAO-2016-02129

Mr. Mack Frost
Federal Highway Administration
Post Office Box 10249
Richmond, Virginia 23240-0249

Mr. Krishna K. Potturi, PE
Project Manager
Virginia Department of Transportation
87 Deacon Road
Fredericksburg, Virginia 22405

Dear Messrs. Frost and Potturi:

This letter is in response to your letter dated December 2, 2016 requesting comments for an Environmental Assessment (EA) initiated by the Federal Highway Administration and the Virginia Department of Transportation for the Interstate 95 (I-95) Express Lanes Fredericksburg Extension Study. The project will involve adding travel lanes to I-95 in Stafford, Prince William and Fairfax Counties. Enclosed are the comments of the Norfolk District Corps of Engineers (USACE) regarding your proposed study. Your letter included a list of questions as an attachment; we are not providing a response to each question, but our comments herein provide responses in relation to our program.

USACE regulates activities in waters of the United States pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (Public Law 95-217). Considering the size, scope and corridor location of this project, a permit or permits will likely be required from USACE for the proposed widening. Our regulations require that we consider a full range of public interest factors and conduct an alternatives analysis in order to identify the least environmentally damaging practicable alternative (LEDPA), which is the only alternative we can authorize. In addition to wetland and waters impacts, we must consider factors such as land use (including displacements of homes and businesses), floodplain hazards and values, water supply and conservation, water quality, safety, cost, economics, threatened and endangered species, historic and cultural resources, and environmental justice.

As you develop alternatives, waters and wetlands should be identified and mapped before alternatives are considered, and you should document how impacts to aquatic resources were avoided and minimized. An assessment of the presence of USACE jurisdictional areas should be conducted by VDOT's environmental staff or consultants. Measures to avoid and minimize impacts to streams and wetlands, such as bridging, widening to the side of the existing roadway where there are fewer aquatic resources, and/or reducing median widths should be incorporated wherever practicable. Relocation of streams should be avoided. Stormwater management facilities should be located outside of jurisdictional areas.

Options for compensating for unavoidable impacts to wetlands and other aquatic resources should be an early consideration. Wetland impacts are typically mitigated at ratios of 2:1 for forested, 1.5:1 for scrub/shrub, and 1:1 for emergent. However, additional mitigation may be required for particularly valuable or difficult-to-mitigate wetlands. Typically, we require stream mitigation for unavoidable stream impacts to greater than 300 linear feet of stream at a crossing. However, we also consider the cumulative impacts to streams from a given project, and may require mitigation for shorter lengths of stream if there are many impacts in close proximity, or if there are multiple impacts to the same stream and/or its direct tributaries. We encourage natural channel design to the extent practicable for streams that must be relocated, and may consider not requiring additional compensation for relocated channels that are so designed. We utilize the Unified Stream Methodology for determining how much stream mitigation is required for impacted streams.

The project study area may include waterways utilized by anadromous fish. We recommend coordination with NOAA Fisheries Service and the Virginia Department of Game and Inland Fisheries (VDGIF) regarding these species.

We have no comment on the study areas for indirect and cumulative effects (ICE) for socioeconomic and historic resources. You suggest the 12-digit Hydrologic Unit Code for the ICE analysis for natural resources. While the HUC-12 may be appropriate for assessing ICE for some natural resources, it may not be sufficient to address the indirect effects to aquatic resources that could extend downstream and beyond the limits of the HUC-12. You should consider whether a broader study area may be needed to assess those effects. We have no specific comments at this time regarding potential induced growth, but we agree that such effects should be considered as you develop your study. We request that you coordinate with USACE and other federal agencies regarding the methdologies you propose to use for identifying resources for both direct and indirect impact analysis as well as the cumulative effects analysis.

We wish to participate in any interagency meetings and field reviews for this project to the extent possible. The Norfolk District encourages the use of a collaborative process for the study of this project, documenting concurrence of the pertinent federal agencies at important steps, to provide the local governments and the public with a more dependable framework for planning decisions.

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966 and Section 7 of the Endangered Species Act. FHWA is the lead Federal Agency in accordance with the "Programmatic Agreement Among the Federal Highway Administration, the U.S. Army Corps of Engineers, Norfolk District, the Tennessee Valley Authority, the Advisory Council on Historic Preservation, the Virginia State Historic Preservation Officer, and the Virginia Department of Transportation Regarding Transportation Undertakings Subject to Section 106 of the National Historic Preservation Act of 1966."

In accordance with 50 CFR 402.07, FHWA is also designated as the lead Federal agency for consultation with the U. S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) concerning potential effects to Federally-listed threatened and endangered species. In addition, FHWA is designated as the lead Federal agency for consultation with NMFS for Essential Fish Habitat, as required under Section 305(b)(2) of the Magnuson Stevens Fishery Conservation and Management Act.

Should you have any questions, you may contact Alice Allen-Grimes at telephone 757-201-7219 or by email at alice.w.allen-grimes@usace.army.mil.

Sincerely,

Kimberly A. Prisco-Baggett

Kimberly A. Prisco-Baggett, MBA
Chief, Special Projects
Regulatory Section

cc:
Virginia Department of Historic Resources, Richmond
Virginia Department of Transportation, Richmond
Environmental Protection Agency, Philadelphia

U. S. Department of Housing & Urban Development

Richmond Office
600 E. Broad Street, 3rd Floor
Richmond, VA 23219
1-800-842-2610

January 4, 2017

Mr. Krishna K. Patturi, PE
Project Manager
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219-2000

Re: VDOT I-95 Express Lanes Fredericksburg Extension Study
Counties: Stafford, Prince William, Fairfax

Dear Mr. Patturi:

Thank you for your December 2, 2016 letter relating to the evaluation of impacts for the proposed Fredericksburg Express Lane Extension Study along Interstate 95 in the counties of Stafford, Prince William and Fairfax.

Your letter stated that the path for the proposed project extends from slightly South of Exit 133 in Stafford County to slightly North of Exit 160 in Fairfax County. In the project mix are proposed HOT (high-occupancy toll) Lanes to be added from Exit 133 to Exit 143 in Stafford. Additionally, the environmental assessment will consider the addition of one northbound general purpose travel lane from near Exit 155 in Prince William County to near Exit 160 in Fairfax County.

You requested information to help determine if the proposed HOT Express Lanes and the one general purpose lane would affect any neighborhood programs under the jurisdiction of the HUD Richmond Field Office.

Specifically, you asked if the Richmond HUD Field Office has any comments or feedback that would benefit the development of the proposed study.

At this time, HUD Richmond has no comments or feedback to make other than it has become apparent to HUD Richmond staff traveling on I-95 both to and from Washington DC, that travel delays in the I-95 corridor between Richmond and Washington are becoming more and more prevalent.

Adding additional lanes should help move traffic through the project area with less delay from overcrowded road conditions during traditional rush hours.

Further, you asked if the Richmond HUD Field Office could furnish data related to low-income and minority populations for the study. While HUD cannot furnish data from its own investigations, EPA data should be considered for the high respiratory air quality problem area around I-95 at Exit 152. It is not clear to HUD what could be the cause for the location specific tendency toward higher incidence of air degradation at Exit 152.

Beyond the above comments, and after review of the locations with regards to HUD properties and activities in Stafford, Prince William and Fairfax Counties, the Richmond HUD Field Office can find no impact as a result of Virginia Department of Transportation's proposals.

Thank you for your interest in the Department's programs. Members of your staff that have questions or require technical assistance should contact Mr. Kerry Johnson, Environmental Protection Specialist, at 804-822-4803.

Sincerely,

Carrie S. Schmidt

Carrie S. Schmidt
Field Office Director

United States Department of the Interior

NATIONAL PARK SERVICE
Fredericksburg and Spotsylvania
National Military Park
120 Chatham Lane
Fredericksburg, Virginia 22405

IN REPLY REFER TO:
1.A.1 (FRSP)

December 14, 2016

Krishna K. Potturi
Project Manager
Virginia Department of Transportation
87 Deacon Road
Fredericksburg, VA 22405

Dear Krishna K. Potturi:

This letter is in reference to your correspondence, received December 5, 2016, regarding the Interstate 95 Express Lanes Fredericksburg Extension Study. Thank you for contacting Fredericksburg and Spotsylvania National Military Park (FRSP). We appreciate the opportunity to cooperate with VDOT on local and regional transportation projects and plans.

As your letter states, VDOT has initiated an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA). It was unclear if the NEPA process will include compliance with the National Historic Preservation Act of 1966, specifically Section 106 or if this project be subject to review under Section 4(f) of the Department of Transportation Act of 1966. As the study continues, clarification would be most helpful.

While there are no National Park Service (NPS) lands immediately impacted by Interstate 95 construction around Exit 133, there may be some impacts to lands associated with Prince William Forest Park. It is our understanding that the park superintendent was contacted. Please note this letter pertains to FRSP only and is not inclusive of any other federal lands.

While this project does not directly impact lands currently within the boundary of FRSP, it is important to point out that the project may affect Civil War resources associated with the Union Army's occupation of Stafford County in the winter of 1862-1863. These resources include sites with potential landscape and archaeological significance. Campsites are known to survive within the Interstate 95 corridor in Stafford County. The cumulative impact of the continued expansion of the highway should be a factor in VDOT's review. To that end, our park staff is happy to be a resource for the work of cultural resource management staff and/or contractors, as they identify historic resources and assess potential impacts.

The National Park Service remains deeply interested in the evolution of the broader transportation network in the Fredericksburg region. To the extent this project may lay the foundation for new roads or new connections to existing roads, we would like to be kept apprised of the study's progress. If there is anything we can do to help, please feel free to contact me.

Sincerely,

Kirsten Talken-Spaulding
Superintendent

cc: Vidal Martinez, PRWI

STAFFORD
Virginia

Board of Supervisors
Robert "Bob" Thomas, Jr., Chairman
Laura A. Sellers, Vice Chairman
Meg Bohmke
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Wendy E. Maurer
Paul V. Milde, III
Gary F. Snellings

C. Douglas Barnes
Interim County Administrator

December 27, 2016

Krishna K. Potturi, P.E.
VDOT Fredericksburg District
87 Deacon Road
Fredericksburg, VA 22405

Subject: Interstate 95 Express Lanes Fredericksburg Extension Study

Dear Mr. Potturi:

Thank you for the opportunity to comment on this project. The Interstate 95 Express Lanes Extension will benefit Stafford County in a variety of ways and has strong support by the Stafford County Board of Supervisors, as well as regional transportation agencies. The project will relieve traffic congestion, reduce air pollution, and benefit the economic development of the region. Locating the project within the median of the Interstate decreases the impacts to both the environment and nearby residents.

Stafford County staff has reviewed the proposed I-95 Express Lanes extension study area with respect to the NEPA Evaluation Questionnaire included with your letter dated December 2, 2016, and staff has provided the attached comments.

If you have any questions, please feel free to contact Christopher K. Rapp P.E., Director of Public Works, at 540-658-4047.

Sincerely,

C. Douglas Barnes

C. Douglas Barnes
Interim County Administrator

Enclosures: 5

CDB:ckr:tbm:wam

cc: Michael T Smith, Deputy County Administrator
Christopher K. Rapp, P.E, Director of Public Works

1300 Courthouse Road, P. O. Box 339, Stafford, VA 22555-0339 Phone: (540) 658.8600 Fax: (540) 658.7643 www.staffordcountyva.gov

Project: **Interstate 95 Express Lanes Fredericksburg Extension Study**
County of Stafford

1. Please provide any comments or feedback that you feel may be beneficial to the development of this study.

Within this study area, much of the adjacent properties are existing commercial properties or planned for commercial development, with some existing or planned residential uses. Potential noise impacts on adjacent properties should be assessed and adequate noise reduction measures provided, including sound walls where warranted.

There are several other facilities and types of uses in the study which exists that may need special consideration. The Stafford Regional Airport lies to the west of Interstate 95 in the vicinity of mile marker 137. The main approach to the runway is in this area with low flying planes approaching the runway for landing. Chichester Park is located to the south of the Enon Road overpass on the east side of the Interstate. This park includes several lighted ball fields.

A potential environmental concern would be the disturbance of Quantico slate, a rock formation found in this portion of Stafford County. Construction activities through this formation can result in acidic rock drainage, potentially resulting in threats to water quality, sedimentation, and local vegetation. A sulfide hazard analysis should be considered if the proposed project will result in the disturbance of Quantico slate.

The proposed segment of the I-95 Express Lanes Extension has steep slopes, potentially warranting evaluations for structural integrity of the subgrade.

2. Specific indirect (secondary) effects and cumulative impacts (ICE) study areas will be developed for socioeconomic resources, historic resources, and natural resources. The socioeconomic resources ICE study area will include the Census block groups that lie directly or partially within the direct impact study area. The historic resources ICE study area will include the area within which indirect effects to historic properties could occur from altering the setting, feeling, and association contributing to the integrity of the property. The natural resources ICE study area will be based on the subwatershed 12-digit Hydrologic Unit Code (HUC) within the direct impact area. Please provide your input on these ICE study areas.

There are multiple historical properties in the study area. The County's Geographic Information System (GIS) has these mapped and this database can be provided. In addition, there is at least one known obelisk used as a boundary marker in the project area that will be affected by the project. This object has historical significance to the County and should be moved outside the project area to prevent damage and ensure its protection.

The project will cross several creeks, including Accokeek Creek, Potomac Branch, and Falls Run. Several wetlands, Resource Protection Area (RPA) buffers, and habitats of threatened and endangered species are known to exist within these watersheds. The information on threatened and endangered species are compiled and maintained by the Virginia Department of Conservation and Recreation. The County has access to this database.

The associated HUC Codes with the project are 020700110204, 020700110203, and 020700110206.

3. Does your agency possess any historic aerial imagery or mapping (i.e., NWI historical mapping), reports, data sources, or expert input that might be useful for informing the analyses, specifically for indirect effects and cumulative impacts, conducted in this environmental study?

Stafford County has historic aerial imagery that dates back to 1937. This has been incorporated into its Geographic Information System and can be provided upon request. The County also has access to the National Wetland Inventory

(NWI) historical mapping prepared and maintained by U.S. Fish and Wildlife Services. The Virginia Cultural Resources Information System (VCRES) maintains information on archaeological and historical structures in Stafford, and the County has access to this system as well.

4. As part of this scoping package we have provided a snapshot of recent economic and social data from the United States Census Bureau, we seek your concurrence that this data reflects your current jurisdictional population profile. Additionally, please identify locations in the study area where environmental justice populations may exist, or groups that interact with these environmental justice populations.

We have reviewed the census data you have provided and have no reason to believe it does not reflect the current jurisdictional population profile. We are not aware of any specific locations within the study where the populations you mention are directly impacted by the proposed Express Lanes extension.

Please note that the data you have provided with your December 2, 2016 letter is based on the Census' American Community Survey (ACS) 5-year averages from years 2014 - 2010. Additional 5-year average data does exist in the ACS from years 2015 - 2011 and would reflect more accurate information.

5. Please provide any data related to low-income and minority populations that would be used in the socioeconomic and environmental justice impact analysis implemented by Executive Order 12989: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", and Council on Environmental Quality guidance, Environmental Justice Guidance Under NEPA (1997).

We have attached maps of the census block groups listed in the attachment to your letter dated December 2, 2016. These maps reflect median income and the percent minority population for the block groups in the study area.

6. What are the current planned transportation and/or development projects within your jurisdiction / study area? Are there any public documents / permits that estimate impacts of these projects?

We are providing some links from our County website to assist with your evaluation.

This link shows ongoing and proposed transportation projects Countywide. The map has additional links containing details for each project.

http://staffordva-gis.maps.arcgis.com/apps/webappviewer/index.html?id=9ba953b8501a44e3b1dc0ca3ed23872a

Two additional links provide information on residential subdivisions. One link maps all approved subdivisions within Stafford County, and the other shows active projects with the number of housing units.

http://staffordva-gis.maps.arcgis.com/apps/webappviewer/index.html?id=06f237d27c884ec0bca0094a2bb600d9

http://www.staffordcountyva.gov/DocumentCenter/View/5757

7. Please identify all environmental or engineering studies / reports which have been recently completed by your agency within the study area.

The County produces an MS4 Annual Report. We can provide these upon request. In addition, there are also several dam break inundation studies available. We have attached a Dam Break Inundation Zone Map from the County's Comprehensive Plan showing these areas.

We are also aware of a recent Department of Environmental Quality (DEQ) Total Maximum Daily Load (TMDL) Report (2014) that is critical to the future development of the I-95 corridor. The title of this report is 'Bacteria Total Maximum Daily Load (TMDL) Development for Tributaries to the Potomac River: Prince William and Stafford Counties'.

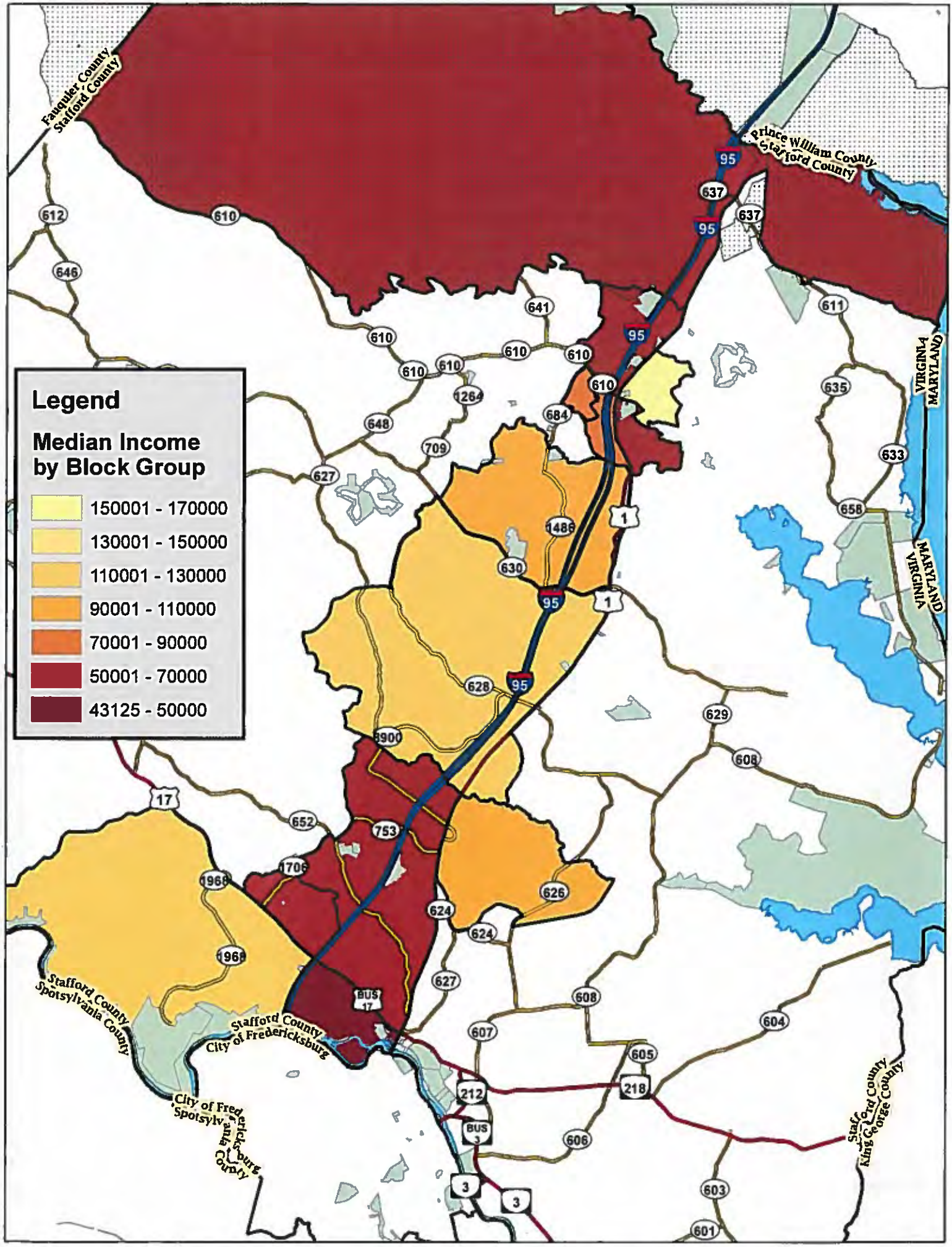
8. Please provide appropriate contact information for ongoing studies being completed by your agency within the study area.

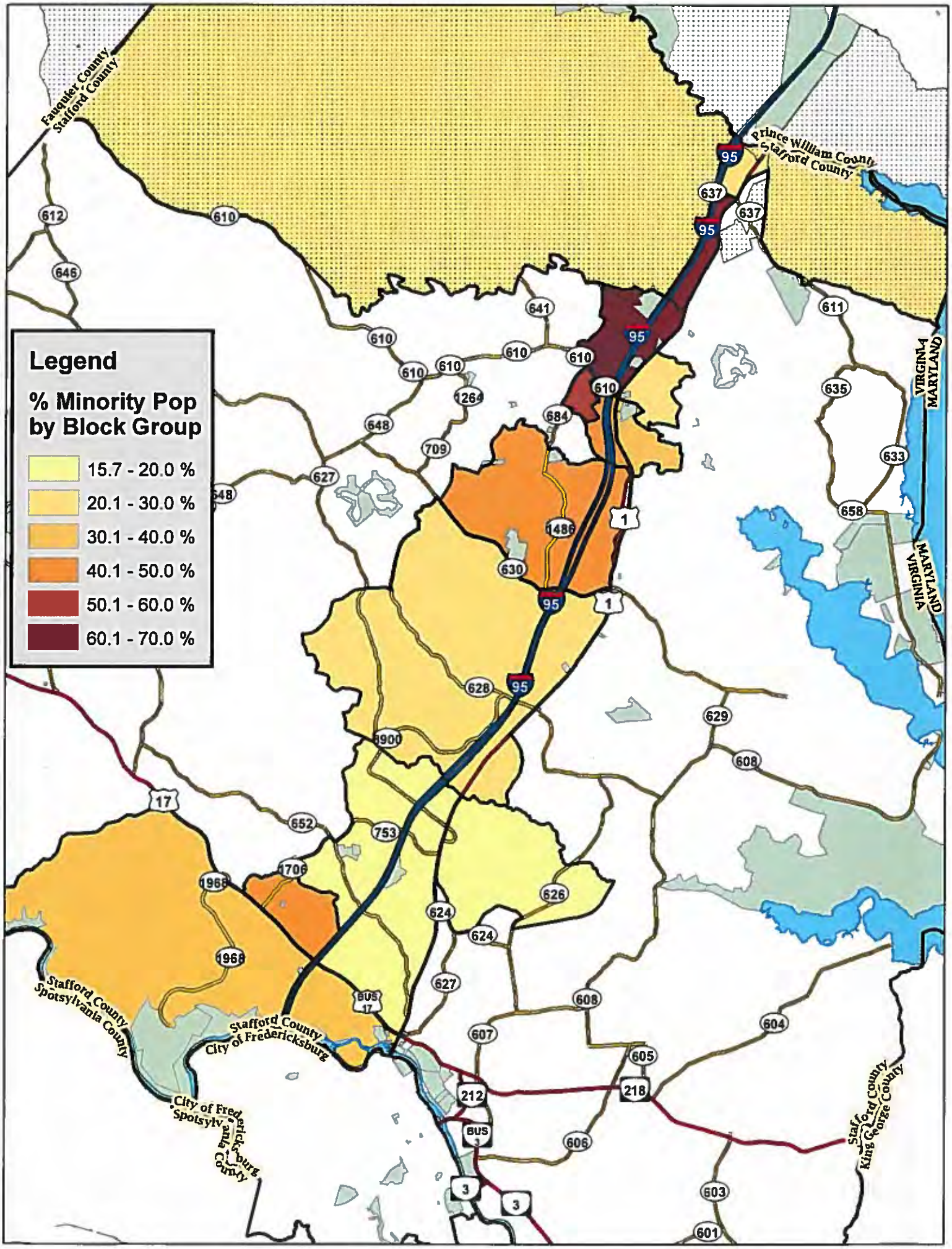
There are no ongoing studies to be completed by Stafford County within the study area. However, the Fredericksburg Area Metropolitan Planning Organization (FAMPO) recently completed an I-95 Corridor Study and has an on-going Travel Demand Management (TDM) Study. VDOT (Fredericksburg District) currently has an on-going Route 17 Strategically Targeted and Roadway Solutions (STARS) Project which could be directly impacted by the final design of the Interstate 95 Express Lanes project.

These regional studies are being coordinated through various regional or State bodies. The local County contact is Joey Hess, Senior Transportation Planner, Department of Public Works, Stafford County. He can be contacted at JHess@staffordcountyva.gov or 540-658-4611.

9. Transportation projects have the potential to change and/or accelerate land use patterns. Do you see change or an acceleration of land use patterns in your area as a result of the proposed transportation improvements?

Stafford County anticipates that this project will accelerate development in the area of the transportation improvements. In preparation of this trend, in August 2016, the County updated its Comprehensive Plan and Future Land Use Plan, to include targeted growth areas in the vicinity of Interstate 95 from the Courthouse Road/Exit 140 area, south to the Warrenton Road/Exit 133 corridor. These areas are planned to accommodate a large percentage of the planned future residential and commercial development. For more details, the Comprehensive Plan can be viewed on the County website at: http://stafford.va.us/index.aspx?nid=1712


Legend
Median Income by Block Group
150001 - 170000
130001 - 150000
110001 - 130000
90001 - 110000
70001 - 90000
50001 - 70000
43125 - 50000
Fauquier County
Stafford County
Prince William County
Stafford County
VIRGINIA
MARYLAND
MARYLAND
VIRGINIA
Stafford County
Spotsylvania County
Stafford County
City of Fredericksburg
City of Fredericksburg
Spotsylvania County
Stafford County
King George County


Legend
% Minority Pop by Block Group
15.7 - 20.0 %
20.1 - 30.0 %
30.1 - 40.0 %
40.1 - 50.0 %
50.1 - 60.0 %
60.1 - 70.0 %
Fauquier County
Stafford County
Prince William County
Stafford County
VIRGINIA
MARYLAND
MARYLAND
VIRGINIA
Stafford County
Spotsylvania County
Stafford County
City of Fredericksburg
City of Fredericksburg
Spotsylvania County
Stafford County
King George County
95
1
17
3
212
218
BUS 17
BUS 1
612
610
646
641
611
635
633
658
648
627
709
1264
684
1486
630
628
629
608
1900
17
652
753
1706
1968
626
624
607
605
604
606
603
601

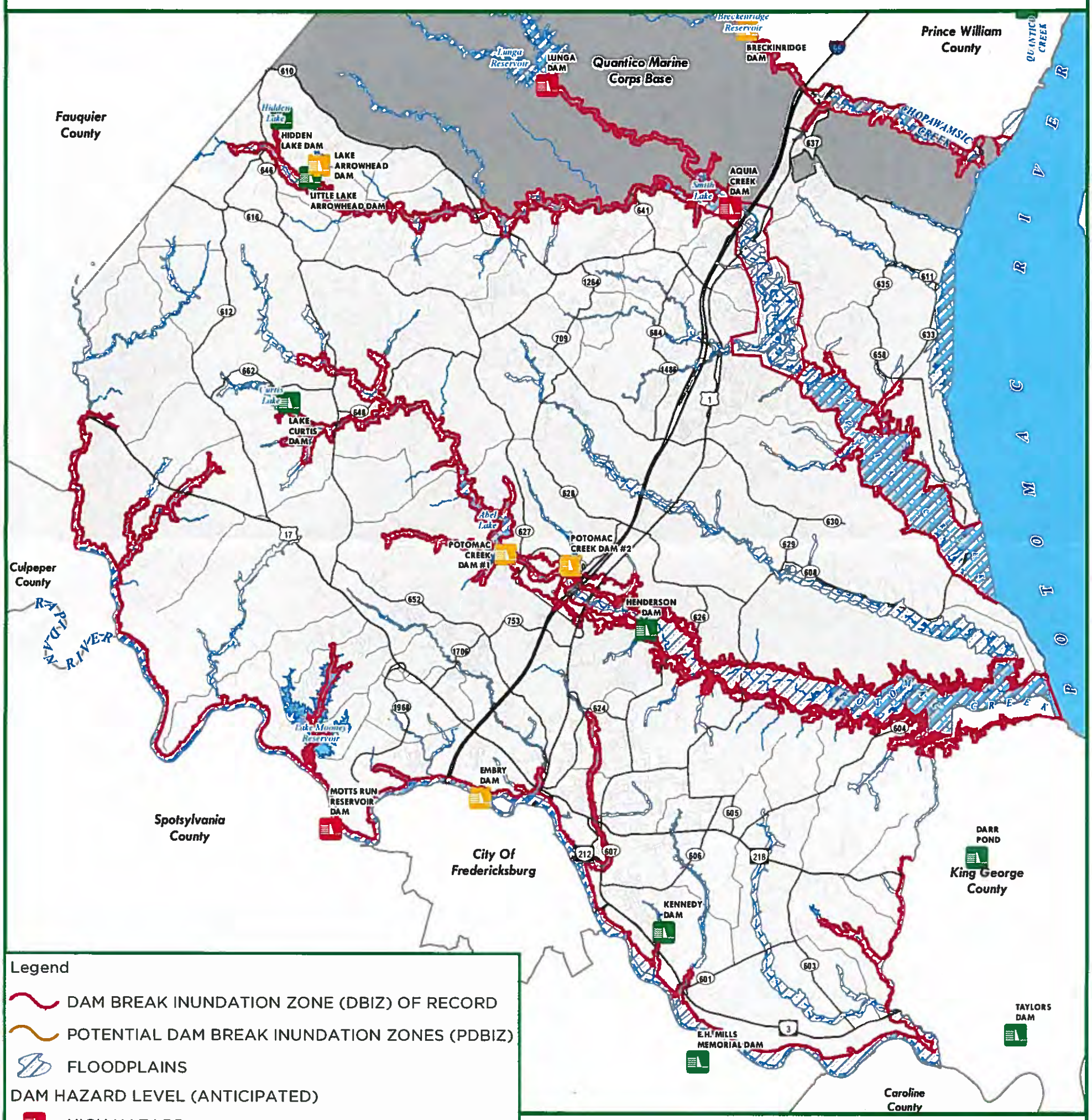
Geographic Area/Census Tract Block Groups		Total Population	Percent of Study Area Block Group Population	White alone		Black or African American alone		American Indian and Alaska Native alone		Asian alone		Native Hawaiian and Other Pacific Islander alone		Some Other Race alone		Two or More Races		Minority Population		Hispanic Population		Median Household Income	Total Housing Units	Occupied Housing Units		Owner Occupied		Renter Occupied	
				Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent			Number	Percent	Number	Percent	Number	Percent
Fairfax County	CT 4221.02 BG 1	2,168	6.3%	887	40.9%	241	11.1%	0	0.0%	496	22.9%	0	0.0%	297	13.7%	247	11.4%	1,281	59.1%	602	27.8%	$87,684	603	603	100.0%	259	43.0%	344	57.0%
	CT 4221.02 BG 2	1,988		574	28.9%	870	43.8%	0	0.0%	370	18.6%	0	0.0%	83	4.2%	91	4.6%	1,414	71.1%	270	13.6%	$136,875	554	554	100.0%	516	93.1%	38	6.9%
	CT 4222.02 BG 2	1,851		422	22.8%	476	25.7%	0	0.0%	794	42.9%	0	0.0%	0	0.0%	159	8.6%	1,429	77.2%	101	5.5%	$109,408	640	606	94.7%	313	51.7%	293	48.3%
Prince William County	CT 9002.01 BG 1	2,147	52.3%	1,472	68.6%	362	16.9%	8	0.4%	137	6.4%	0	0.0%	133	6.2%	35	1.6%	675	31.4%	1,024	47.7%	$60,625	704	640	90.9%	415	64.8%	225	35.2%
	CT 9002.02 BG 1	1,436		1,182	82.3%	0	0.0%	0	0.0%	166	11.6%	0	0.0%	88	6.1%	0	0.0%	254	17.7%	1,012	70.5%	$78,897	312	273	87.5%	149	54.6%	124	45.4%
	CT 9002.02 BG 2	2,018		1,182	58.6%	212	10.5%	0	0.0%	204	10.1%	0	0.0%	383	19.0%	37	1.8%	836	41.4%	777	38.5%	$75,724	570	570	100.0%	479	84.0%	91	16.0%
	CT 9002.03 BG 1	2,539		940	37.0%	1,075	42.3%	0	0.0%	12	0.5%	0	0.0%	356	14.0%	156	6.1%	1,599	63.0%	949	37.4%	$29,427	914	892	97.6%	142	15.9%	750	84.1%
	CT 9003.00 BG 1	1,372		944	68.8%	243	17.7%	0	0.0%	25	1.8%	12	0.9%	47	3.4%	101	7.4%	428	31.2%	125	9.1%	$77,708	693	638	92.1%	334	52.4%	304	47.6%
	CT 9003.00 BG 2	2,847		1,283	45.1%	491	17.2%	0	0.0%	486	17.1%	17	0.6%	182	6.4%	388	13.6%	1,564	54.9%	506	17.8%	$64,722	1,126	1,016	90.2%	445	43.8%	571	56.2%
	CT 9003.00 BG 3	3,083		1,183	38.4%	1,307	42.4%	0	0.0%	241	7.8%	0	0.0%	143	4.6%	209	6.8%	1,900	61.6%	497	16.1%	$81,111	1,076	1,076	100.0%	563	52.3%	513	47.7%
	CT 9004.03 BG 1	1,208		806	66.7%	82	6.8%	0	0.0%	118	9.8%	0	0.0%	170	14.1%	32	2.6%	402	33.3%	359	29.7%	$67,273	403	374	92.8%	238	63.6%	136	36.4%
	CT 9004.10 BG 1	2,714		1,095	40.3%	1,008	37.1%	0	0.0%	166	6.1%	0	0.0%	29	1.1%	416	15.3%	1,619	59.7%	754	27.8%	$57,564	935	893	95.5%	375	42.0%	518	58.0%
	CT 9005.01 BG 1	1,908		1,211	63.5%	282	14.8%	0	0.0%	31	1.6%	0	0.0%	235	12.3%	149	7.8%	697	36.5%	902	47.3%	$63,875	578	578	100.0%	313	54.2%	265	45.8%
	CT 9005.01 BG 3	1,199		527	44.0%	152	12.7%	0	0.0%	57	4.8%	0	0.0%	254	21.2%	209	17.4%	672	56.0%	479	39.9%	$103,269	384	344	89.6%	154	44.8%	190	55.2%
	CT 9005.02 BG 1	2,681		1,189	44.3%	794	29.6%	0	0.0%	341	12.7%	0	0.0%	25	0.9%	332	12.4%	1,492	55.7%	377	14.1%	$135,313	1,109	1,058	95.4%	873	82.5%	185	17.5%
	CT 9009.01 BG 4	407		352	86.5%	46	11.3%	0	0.0%	0	0.0%	0	0.0%	9	2.2%	0	0.0%	55	13.5%	23	5.7%	$35,139	281	245	87.2%	83	33.9%	162	66.1%
	CT 9009.05 BG 2	1,525		530	34.8%	797	52.3%	0	0.0%	150	9.8%	0	0.0%	0	0.0%	48	3.1%	995	65.2%	189	12.4%	$108,882	432	380	88.0%	278	73.2%	102	26.8%
	CT 9010.01 BG 1	1,475		1,058	71.7%	181	12.3%	26	1.8%	0	0.0%	0	0.0%	193	13.1%	17	1.2%	417	28.3%	759	51.5%	$49,712	566	485	85.7%	289	59.6%	196	40.4%
	CT 9010.01 BG 2	1,539		854	55.5%	474	30.8%	0	0.0%	73	4.7%	0	0.0%	49	3.2%	89	5.8%	685	44.5%	49	3.2%	$87,589	602	588	97.7%	326	55.4%	262	44.6%
	CT 9010.01 BG 3	1,832		669	36.5%	995	54.3%	0	0.0%	0	0.0%	0	0.0%	24	1.3%	144	7.9%	1,163	63.5%	248	13.5%	$94,976	653	653	100.0%	516	79.0%	137	21.0%
	CT 9010.01 BG 4	1,968		1,224	62.2%	491	24.9%	0	0.0%	178	9.0%	0	0.0%	19	1.0%	56	2.8%	744	37.8%	267	13.6%	$142,321	609	574	94.3%	454	79.1%	120	20.9%
	CT 9010.08 BG 1	4,256		1,103	25.9%	1,963	46.1%	0	0.0%	424	10.0%	0	0.0%	197	4.6%	569	13.4%	3,153	74.1%	1,018	23.9%	$71,538	1,360	1,248	91.8%	499	40.0%	749	60.0%
	CT 9010.08 BG 2	3,193		1,383	43.3%	1,052	32.9%	0	0.0%	418	13.1%	0	0.0%	195	6.1%	145	4.5%	1,810	56.7%	876	27.4%	$93,868	888	804	90.5%	520	64.7%	284	35.3%
	CT 9010.11 BG 2	2,473		1,450	58.6%	775	31.3%	37	1.5%	47	1.9%	0	0.0%	72	2.9%	92	3.7%	1,023	41.4%	237	9.6%	$137,137	875	853	97.5%	689	80.8%	164	19.2%
	CT 9010.12 BG 1	2,991		1,997	66.8%	519	17.4%	0	0.0%	384	12.8%	0	0.0%	36	1.2%	55	1.8%	994	33.2%	240	8.0%	$105,595	1,429	1,332	94.5%	1,243	93.3%	89	6.7%
	CT 9011.00 BG 1	3,472		2,315	67.3%	309	9.0%	68	2.0%	53	1.5%	60	1.8%	239	7.0%	378	11.0%	1,107	32.3%	569	16.6%	$49,886	699	694	99.3%	20	2.9%	674	97.1%
	CT 9801.00 BG 1*	0		0	-	0	-	0	-	0		0	-	0	-	0	-	0	-	0	-	-	0	0	-	0	-	0	-
Stafford County	CT 101.03 BG 1	1,106	38.8%	784	70.9%	214	19.3%	0	0.0%	53	4.8%	0	0.0%	12	1.1%	43	3.9%	322	29.1%	85	7.7%	$165,469	399	369	92.5%	351	95.1%	18	4.9%
	CT 101.03 BG 3	1,639		985	60.1%	379	23.1%	0	0.0%	17	1.0%	56	3.4%	98	6.0%	104	6.3%	654	39.9%	248	15.1%	$61,023	750	662	88.3%	303	45.8%	359	54.2%
	CT 102.01 BG 1	2,148		1,506	70.1%	343	16.0%	6	0.3%	76	3.5%	0	0.0%	143	6.7%	74	3.4%	642	29.9%	396	18.4%	$53,167	22	22	100.0%	7	31.8%	15	68.2%
	CT 102.04 BG 2	2,134		1,543	72.3%	396	18.6%	14	0.7%	90	4.2%	0	0.0%	91	4.3%	0	0.0%	591	27.7%	261	12.2%	$121,797	427	427	100.0%	363	85.0%	64	15.0%
	CT 102.07 BG 2	3,687		1,348	36.6%	1,072	29.1%	77	2.1%	36	1.0%	0	0.0%	1,136	30.8%	18	0.5%	2,339	63.4%	1,265	34.3%	$66,058	1,465	1,291	88.1%	811	62.8%	480	37.2%
	CT 102.07 BG 3	2,000		601	30.1%	388	19.4%	0	0.0%	149	7.5%	0	0.0%	862	43.1%	0	0.0%	1,399	70.0%	887	44.4%	$65,164	599	599	100.0%	270	45.1%	329	54.9%
	CT 102.10 BG 1	7,453		3,920	52.6%	2,093	28.1%	0	0.0%	280	3.8%	0	0.0%	575	7.7%	585	7.8%	3,533	47.4%	1,072	14.4%	$96,417	2,341	2,175	92.9%	1,359	62.5%	816	37.5%
	CT 102.11 BG 1	1,982		905	45.7%	504	25.4%	10	0.5%	73	3.7%	0	0.0%	417	21.0%	73	3.7%	1,077	54.3%	487	24.6%	$72,318	805	729	90.6%	232	31.8%	497	68.2%
	CT 102.11 BG 3	965		547	56.7%	85	8.8%	0	0.0%	0	0.0%	0	0.0%	285	29.5%	48	5.0%	418	43.3%	323	33.5%	$80,865	249	249	100.0%	203	81.5%	46	18.5%
	CT 103.03 BG 2	6,191		4,215	68.1%	1,182	19.1%	14	0.2%	361	5.8%	9	0.1%	66	1.1%	344	5.6%	1,976	31.9%	373	6.0%	$120,574	1,988	1,917	96.4%	1,515	79.0%	402	21.0%
	CT 103.03 BG 3	1,074		681	63.4%	235	21.9%	0	0.0%	0	0.0%	0	0.0%	112	10.4%	46	4.3%	393	36.6%	128	11.9%	$43,125	436	404	92.7%	214	53.0%	190	47.0%
	CT 103.04 BG 1	2,959		2,493	84.3%	179	6.0%	9	0.3%	37	1.3%	0	0.0%	198	6.7%	43	1.5%	466	15.7%	296	10.0%	$54,213	1,371	1,324	96.6%	1,101	83.2%	223	16.8%
	CT 103.04 BG 2	2,289		1,346	58.8%	663	29.0%	0	0.0%	124	5.4%	0	0.0%	55	2.4%	101	4.4%	943	41.2%	334	5.9%	$50,719	1,109	960	86.6%	162	16.9%	798	83.1%
	CT 104.03 BG 1	1,652		1,325	80.2%	200	12.1%	14	0.8%	26	1.6%	0	0.0%	26	1.6%	61	3.7%	327	19.8%	71	4.3%	$91,719	576	558	96.9%	481	86.2%	77	13.8%
City of Fredericksburg	CT 5.00 BG 3	2,490	7.6%	648	26.0%	1,267	50.9%	0	0.0%	75	3.0%	0	0.0%	430	17.3%	70	2.8%	1,842	74.0%	469	18.8%	$40,927	907	797	87.9%	129	16.2%	668	83.8%
Block Groups Intersected by Study Area		96,009	-	50,679	52.8%	24,397	25.4%	289	0.3%	6,768	7.0%	154	0.2%	7,964	8.3%	5,764	6.0%	45,330	47.2%	19,704	20.5%	$77,708	32,419	30,434	93.9%	17,986	59.1%	12,448	40.9%
Fairfax County		1,117,072	-	705,991	63.2%	104,083	9.3%	3,630	0.3%	202,094	18.1%	814	0.1%	51,513	4.6%	48,947	4.4%	411,081	36.8%	178,923	16.0%	$112,102	409,108	391,794	95.8%	267,156	68.2%	124,638	31.8%
Prince William County		428,772	-	266,081	62.1%	86,197	20.1%	1,348	0.3%	32,799	7.6%	469	0.1%	19,209	4.5%	22,669	5.3%	162,691	37.9%	90,746	21.2%	$98,514	141,002	134,737	95.6%	96,757	71.8%	37,980	28.2%
Stafford County		134,672	-	94,428	70.1%	23,169	17.2%	665	0.5%	3,875	2.9%	138	0.1%	7,466	5.5%	4,931	3.7%	40,244	29.9%	13,644	10.1%	$98,721	45,187	42,763	94.8%	32,769	76.6%	9,994	23.4%
Fredericksburg City		26,632	-	17,588	66.0%	5,974	22.4%	104	0.4%	741	2.8%	11	0.0%	1,089	4.1%	1,125	4.2%	9,044	34.0%	2,877	10.8%	$49,454	11,037	9,849	89.2%	3,561	36.2%	6,288	63.8%

* Location of Marine Base Quantico

Source: American Community Survey 5-Year 2010-2014 Estimates

Produced: 5/5/2016

FIGURE 6.12
Dam Break Inundation Zones
Stafford County Comprehensive Plan
Stafford County, Virginia
April 27, 2016



Data layers are compiled from various sources and are not to be construed or used as a "legal description." Data layers are believed to be accurate, but accuracy is not guaranteed.

NAD 1983 HARN StatePlane Virginia North FIPS 4501 Feet

W:\arcdata\Arcmxd\CompPlan_2016revisions\Chapter6.12_DamInundationZones.mxd

COUNTY OF PRINCE WILLIAM

5 County Complex Court, Suite 290, Prince William, Virginia 22192-9201
(703) 792-6825 Metro (703) 631-1703 Fax (703) 792-7159

DEPARTMENT OF
TRANSPORTATION

Ricardo Canizales
Director

May 1, 2017

Krishna K. Potturi, P.E.
Project Manager
VDOT Fredericksburg District
87 Deacon Road
Fredericksburg, VA 22405

RE: Interstate 95 Express Lanes Fredericksburg Extension Study
Counties of Fairfax, Prince William, and Stafford

Dear Mr. Potturi:

On behalf of the Prince William County Department of Transportation, I am submitting comments to the I-95 Express Lanes Fredericksburg Extension Study. We have provided comments and our concerns to the questions provided in the NEPA Evaluation Questionnaire.

I have included a disc along with a copy of our referenced questionnaire responses. If you have any questions or need additional information, please feel free to contact me at 703-792-6273.

Sincerely,

James Davenport

James Davenport
Regional Planner

Enclosures: I-95 Express Lanes Fredericksburg Ext. Study
Disc – March 2017 Equity Emphasis Areas Map & Methodology by MWCOG
Route 1 Multimodal Alternatives Analysis
North Woodbridge TLC Study

X:Planning/James/VDOT/Letter for I-95 comments.doc

Project: Interstate 95 Express Lanes Fredericksburg Extension Study Counties of Fairfax, Prince William and Stafford

1. Please provide any comments or feedback that you feel may be beneficial to the development of this study.

   We recommend that the Virginia Department of Transportation (VDOT) conduct substantial outreach efforts to the communities in the corridor, and allow adequate time for the communities and their representatives to review the proposed improvements, providing comments and input.

   We are glad to see the Environmental Assessment (EA) will be evaluating the potential effects from the addition of one general-purpose lane in the northbound direction only; however, we believe that the addition of the one general lane in the southbound direction at the same location should be included as well. Interstate 95, southbound is a major choke point from the Occoquan Bridge extending from Exit 160 to Exit 158 in the Northern Virginia region along the I-95 corridor. This is not just during peak periods as congestion along the south end of the bridge can start mid-day and continue through the evening on weekdays as well as the entire day on the weekends. In September 2016, the Board of County Supervisors identified the addition of a southbound general-purpose lane starting from the Occoquan Bridge to Route 234, as a priority project and directed the Transportation staff to submit such a project to SmartScale for evaluation and consideration. The County hopes that this study will make it more feasible for Prince William County to move forward on the potential pre-design of this improvement project and submit a scaled back version (phased project) for evaluation for future state and federal funds.

   Another issue that is important to the County is the ability to maintain and improve transit capacity to serve our residents as the planned improvements on I-95 and planned extensions take place. The County remains concerned if funds will be available for not only capital improvements to our transit service but also to ensure that there will be adequate funds to support operations for both existing and future commuter and local transit service within the County. The County wants to ensure that the project will not overburden existing and planned Park & Ride facilities and is requesting the EA to address these impacts as part of the study. It is important that the VDOT work closely with Prince William County and the private developers to identify and acquire the appropriate properties that will serve as future sites for additional commuter lots and/or expansions of the existing lots.

   Impacts to the County's secondary roads must also be taken into account; these additional commuters may use adjacent secondary roads in order to gain access to the parking facilities. We appreciate the Commonwealth of Virginia studying the I-95 infrastructure and striving to improve capacity along the corridor. The County is concerned that impacts to our secondary roads will not be taken into account when considering such extensions on I-95.

2. Specific indirect (secondary) effects and cumulative impacts (ICE) study areas will be developed for socioeconomic resources, historic resources, and natural resources. The socioeconomic resources ICE study area will include the Census block groups that lie directly or partially within the direct impact study area. The historic resources ICE study area will include the area within which indirect effects to historic properties could occur from altering the setting, feeling, and association contributing to the integrity of the property. The natural resources ICE study area will be based on the subwatershed 12- digit Hydrologic Unit Code (HUC) within the direct impact area. Please provide your input on these ICE study areas.

   Careful consideration should be taken where I-95 crosses the unnamed tributary to Chopawamsic Creek at Locust Shade Park, between Exits 148 and 150. This stream has been restored as part of the Prince William Stream Mitigation Bank. Careful measures of avoidance should be taken keep this restored stream preserved in perpetuity.

The study needs to account for direct effect to cultural resources in cases when storm water management facilities are added to the project or existing facilities are expanded or modified. Additionally, the study should account for potential impacts to the Potomac Heritage Trail.

Our records show eight above ground resources within 600 feet of the I-95 corridor centerline (Table 1) for indirect impacts. Neabsco Mills Ironworks Site (076-0265) is likely within the Area of Potential Effect (APE) for direct effects.

Table 1

DHR ID#	Property Name	Historic District	NR Eligibility	Survey Update
076-0265	Neabsco Mills Ironworks Site (Historic/Current), Tayloe's Iron Works (Historic)		DHR Board Det. Eligible	9/16/2013
212-0008	Dumfries Public Cemetery (Current), Quantico Church Site (Historic), Dumfries Cemetery (Historic)			9/16/2013
076-0299	Chopawamsic Recreation Demonstration Area (Historic), Prince William Forest Park Historic District (Historic/Current)	Prince William Forest Park Historic District	NRHP Listing, VLR Listing	9/16/2013
076-5195	Colonial Road (King's Highway) Section, U.S. Marine Corps Hertiage Center (Historic/Location)	Revolutionary War Route and Transportation Survey... 1781 - 1782		9/16/2013
287-5004	Building No. 1303 (Current), Pump House (Descriptive)			9/16/2013
212-5025	Dumfries Elementary School (Historic/Current)			9/16/2013
287-5005	Building No. 1304 (Current), Enlisted Barracks (Historic)			9/16/2013
287-5006	Building No. 1314 (Current), Warehouse (Descriptive)			9/16/2013

3. Does your agency possess any historic aerial imagery or mapping (i.e., NWI historical mapping), reports, data sources, or expert input that might be useful for informing the analyses, specifically for indirect effects and cumulative impacts, conducted in this environmental study?

   Prince William County does have older imagery dating back to 1937. The County Archeologist in the County Planning Department has historical overlays for these maps.

4. As part of this scoping package, we have provided a snapshot of recent economic and social data from the United States Census Bureau; we seek your concurrence that this data reflects your current jurisdictional population profile. Additionally, please identify locations in the study area where environmental justice populations may exist, or groups that interact with these environmental justice populations.

   Please see the attached EEA Memo to Tech, March 2017 Equity Emphasis Areas Map and Methodology provided by MWCOG.

5. Please provide any data related to low-income and minority populations that would be used in the socioeconomic and environmental justice impact analysis implemented by Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and Council on Environmental Quality guidance, Environmental Justice Guidance Under NEPA (1997).

   Please see the attached EEA Memo to Tech, March 2017 Equity Emphasis Areas Map and Methodology provided by MWCOG.

6. What are the current planned transportation and/or development projects within your jurisdiction / study area? Are there any public documents / permits that estimate impacts of these projects?

   Eagles Point Development may require sound mitigation; other projects include proposed rezoning of Ray's Regarde and improvements to Kilby Elementary School.

   Route 1 Widening:

   - Section between Marys Way and Featherstone Road – Design Phase – Negotiations with contractor are completed; EIS completed. Please see attached NEPA documentation approval of the project: http://www.pwcgov.org/government/dept/dot/Documents/Route%201-%20Featherstone%20to%20Marys%20Way.pdf
   - Section between Possum Point Road and Brady's Hill Road – Town of Dumfries – Submitted for SmartScale funding.
   - Section between Marys Way and Occoquan Bridge – VDOT – Construction phase http://www.virginiadot.org/projects/northernvirginia/route_1_widening.asp
   - Interchange Project at U.S. 1 and Route 123 – Submitted for SmartScale funding.

   *It is important to note that during an incident on I-95, VDOT will not divert traffic onto Route 1 during active construction of the facility.

Neabsco Mills Road Widening:

- Route 1 to Smoke Court – Preliminary design phase; EIS will be conducted as part of the preliminary design – Completion date approximately 18 months.

7. Please identify all environmental or engineering studies / reports which have been recently completed by your agency within the study area.

Route 1 Multimodal Alternatives Analysis – see attachments.

The Route 1 Multimodal Alternatives Analysis addresses the mobility needs of Richmond Highway in Northern Virginia. The study evaluated the benefits, costs, and impacts of implementing multimodal improvements along a 15-mile stretch of Richmond Highway, extending from the I-95/I-495 Beltway area, through Fairfax County, to the Woodbridge Virginia Railway Express (VRE) Station, in Prince William County. The study was initiated to identify the needs of travelers to and through the corridor.

North Woodbridge TLC Study (older study) – see attached.

8. Please provide appropriate contact information for ongoing studies being completed by your agency within the study area.

There are no current studies at this point.

9. Transportation projects have the potential to change and/or accelerate land use patterns. Do you see change or an acceleration of land use patterns in your area as a result of the proposed transportation improvements?

The County is concerned for the needed capacity of our current and future Park & Ride facilities, especially since an extension of the HOT lanes into Fredericksburg may add demand for existing Park & Ride infrastructures. Given the levels of congestion around the Route 610, Route 630, and US 17 interchanges, it is reasonable to expect that a southern extension of the Express Lanes would encourage more ridesharing activity; and with it, increased demand for commuter parking. As Park & Ride, facilities in the corridor are already at or very near capacity; this increased demand could likely push demand from the Stafford and Fredericksburg areas into Prince William County. This may be the case if the state or jurisdictions south of Prince William County do not provide additional Park & Ride facilities for their own commuters.

While historically, some commuters from the southern jurisdictions have used facilities located within Prince William County in order to take advantage of PRTC's commuter bus services and more active slug lines, lots that feature frequent transit service and active slug lines do not have existing capacity to absorb an increase in demand. The potential result is a corresponding reduction in ridesharing activity and transit use among Prince William County residents, due to a lack of available commuter parking capacity.

With impacts of land use in Prince William County a likely scenario from the extension, it is important that VDOT work closely with the County and the private developers to identify and acquire the appropriate properties that may serve as future sites for additional commuter lots and/or expansion of existing lots.

Additionally, impacts to the County's secondary roads are a concern. Land use on these roads may change due to the potential increase in traffic from the I-95 extension project and may reduce property values in the areas near those secondary roads.

Erik F. Nelson
Transportation Administrator

City of Fredericksburg
P.O. Box 7447
Fredericksburg, VA 22404-7447
Telephone: 540-372-1080
Fax: 540-372-1158

January 24, 2017

Krishna K. Potturi, PE
Project Manager
VDOT Fredericksburg District
87 Deacon Road
Fredericksburg, VA 22405

RE: I-95 Express Lanes Extension Study – NEPA Evaluation Questionnaire

Dear Mr. Potturi,

Attached is our response to the NEPA Evaluation Questionnaire related to the above project. The City of Fredericksburg is physically outside the study area boundary, but we appreciate that there will still be certain impacts to the City, especially as this project ties in with the Rappahannock River Crossing project.

If you have any questions, please do not hesitate to contact me at 540 372-1080 or enelson@fredericksburgva.gov.

Very truly yours,

Erik F. Nelson

Project: Interstate 95 Express Lanes Fredericksburg Extension Study
Counties of Fairfax, Prince William and Stafford

1. Please provide any comments or feedback that you feel may be beneficial to the development of this study.

Fredericksburg supports this project, but the defined study area does not physically extend into the City limits.

2. Specific indirect (secondary) effects and cumulative impacts (ICE) study areas will be developed for socioeconomic resources, historic resources, and nah1ral resources. The socioeconomic resources ICE study area will include the Census block groups that lie directly or partially within the direct impact study area. The historic resources ICE study area will include the area within which indirect effects to historic properties could occur from altering the setting, feeling, and association contributing to the integrity of the property. The natural resources ICE study area will be based on the subwatershed 12-digit Hydrologic Unit Code (HUC) within the direct impact area. Please provide your input on these ICE study areas.

The Environmental Assessment for the I-95 Rappahannock River Crossing identified the location of a canal lock once thought to have been destroyed during construction of the initial I-95 bridge. Since a bridge is already in place and the discovered resource can be avoided during any subsequent construction, there will no further loss of setting, feeling, or association. Because the existing bridge is already in place, there will also be no further compromise of natural and socioeconomic resources.

3. Does your agency possess any historic aerial imagery or mapping (i.e., NWI historical mapping), reports, data sources, or expert input that might be useful for informing the analyses, specifically for indirect effects and cumulative impacts, conducted in this environmental study?

We have no additional information beyond what is already presented in the Environmental Assessment for the I-95 Rappahannock River Crossing.

4. As part of this seeping package we have provided a snapshot of recent economic and social data from the United States Census Bureau, we seek your concurrence that this data reflects your current jurisdictional population profile. Additionally, please identifY locations in the stt1dy area where environmental justice populations may exist, or groups that interact with these environmental justice populations.

We concur with the information from the Census Bureau.

5. Please provide any data related to low-income and minority populations that would be used in the socioeconomic and environmental justice impact analysis implemented by Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", and Council on Environmental Quality guidance, Environmental Justice Guidance Under NEPA (1997).

There are low-income minority communities east of I-95 in Fredericksburg. Heritage Park apartments are south of Fall Hill Avenue. Bragg Hill/Central Park Townhomes are north of Fall Hill Avenue.

6. What are the current planned transportation and/or development projects within your jurisdiction / study area? Are there any public documents / permits that estimate impacts of these projects?

VDOT is completing the Fall Hill Avenue widening project, which includes a new bridge over I-95. VDOT will begin work on interchange improvements at I-95 and State Route 3 this year.

7. Please identify all environmental or engineering studies / reports which have been recently completed by your agency within the study area.

None.

8. Please provide appropriate contact information for ongoing studies being completed by your agency within the study area.

No studies in-work.

9. Transportation projects have the potential to change and/or accelerate land use patterns. Do you see change or an acceleration of land use patterns in your area as a result of the proposed transportation improvements?

As a result of the proposed improvements to I-95, we do not expect land use patterns to change, but we do anticipate an acceleration in the pace of development in Fredericksburg.

Submitted by: Erik F. Nelson, Fredericksburg Transportation Administrator

From:	Potturi, Krishna, PE (VDOT)
To:	Smizik, Scott (VDOT)
Subject:	FW: I-95 Express Lanes EA Comments
Date:	Tuesday, January 17, 2017 1:56:51 PM
Attachments:	Developments Map.pdf Spotsylvania_ExpressLanesEA_20170117.pdf ROAD PROJECTS 2016.xlsx

---

Scott,

Attached is the response from Spotsylvania county.

Thanks,
Krishna.

From: Wanda Parrish [mailto:WParrish@spotsylvania.va.us]
Sent: Tuesday, January 17, 2017 1:17 PM
To: Potturi, Krishna, PE (VDOT)
Subject: RE: I-95 Express Lanes EA Comments

2nd e-mail with attachment

From: Wanda Parrish
Sent: Tuesday, January 17, 2017 1:16 PM
To: 'Krishna.Potturi@vdot.virginia.gov'
Subject: I-95 Express Lanes EA Comments

Mr. Potturi, I have attached the Spotsylvania County Planning Dept's response to your December 2nd letter regarding the I-95 Express Lanes EA. I will send one of the attachments in a second e-mail due to size.

Please feel free to contact me with any questions.

Thank you
Wanda

Wanda Parrish

Spotsylvania County Director of Planning

9019 Old Battlefield Blvd, Suite 320

Spotsylvania, VA 22553

(540) 507-7434 (office)

(540) 507-7425 (direct)

www.spotsylvania.va.us

Board of Supervisors
GREG BENTON
GREG CEBULA
TIMOTHY J. McLAUGHLIN
DAVID ROSS
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CHRIS YAKABOUSKI

Department of Planning
WANDA PARRISH, AICP
Planning Director

9019 OLD BATTLEFIELD BLVD., STE 320
SPOTSYLVANIA, VA 22553
PHONE: (540) 507-7434

January 17, 2017

Krishna K. Potturi
Project Manager
Virginia Department of Transportation Fredericksburg District

Via e-mail: Krishna.Potturi@vdot.virginia.gov

RE: I-95 Express Lanes Extension Study

Dear Mr. Potturi:

Thank you for providing Spotsylvania County with the opportunity to provide comments related to the I-95 Express Lanes Extension Environmental Assessment. The study area ends north of Spotsylvania County in Stafford County and the project will have no direct physical impact on Spotsylvania. I reviewed the 9 questions posed and I have attached a list of planned transportation projects and a map of approved development projects in response to question 6.

Please feel free to contact me with any questions or if you need additional information.

Sincerely,

Wanda Parrish

Wanda Parrish, AICP
Director of Planning

Description	Route	UPC	Project Location	Ad Date	Professional Engineering	Right of Way acquisition
Intersection and turn lane improvements - Rte. 620 & Rte. 1	620	51845	Harrison / Rte. 1	1/12/2016	$2,071,702	$8,146,818
Rte. 628 at Intersection Rte. 208 turn lanes & traffic signal	628	100442	Signal Rte. 208 / Smith Station	2/23/2016	$667,921	$771,527
Provide left turn, thru and right turn lanes NB Rte. 1234	1234	105726	Spotsy. Ave / Mine	4/26/2016	$531,354	$0
Rte. 606 - Reconstruction of Mudd Tavern Road, widenting and trun lanes	606	105463	Mudd Tavern east	4/27/2016	$1,422,650	$3,849,170
Bridge Replacement, Rte. 606 over I-95, Ex. Including widenting and turn lanes Fed ID	606	100829	Mudd Tavern Bridge	4/27/2016	$1,580,383	$0
ROUTE 721 (Grand Brooks RD) - Rural Rustic	9999	107190	Grand Brooks	5/5/2016	$30,000	$0
Reconstruction - Jones Powell Road	653	105718	Jones Powell	7/1/2016	$30,000	$0
Rural Addition - Holly Drive, road pavement.	0	109670	Holly Drive	9/6/2016	$0	$0
Intersection Improvement at Rte. 1 & Hickory Ridge Rd	1	105724	Hickory Ridge	#########	$775,000	$461,441
Intersection Improvements lane widening - Rte. 17 Mills Dr & Rte. 609	17	105893	Rte. 17 @ Thornton Rolling	#########	$630,000	$350,000
Rte. 658 N Anna River, Bridge Replacement, EX FED ID 180	658	81501	North Anna River Bridge replacement	3/14/2018	$549,202	$141,082
Rte. 620 - Reconstruct & Surface treatment (Spotswood Furnace Rd)	620	104427	Spotswood Furnace	5/1/2018	$90,000	$0

#HB2.FY17 -- New Commuter Parking Lot at Rte. 1 & Commonwealth Dr.	1	109474	Rte. 1 / Commonwealth commuter lot	12/8/2020	$1,420,000	$3,000,000
Rte. 620 - Reconstruction and widening 4 lanes	620	107141	Harrison Rd, Gordon to Plank	5/11/2021	$350,000	$1,000,000
#HB2.FY17 Rte. 17 I95 Bridge to Hospital Blvd	17	107140	Rte. 17 Bridge to Hospital Blvd.	9/14/2021	$3,000,000	$2,000,000
Rte. 711 - Crossover movement conversion lanes	711	109516	Rte. 711 Crossover conversion	11/9/2021	$382,000	$230,000
#HB2.FY17 Rte. 606 WEST - Reconstruction Mudd Tavern Road lane widening to 4 lanes	606	105464	Mudd Tavern west	2/8/2022	$2,000,000	$8,750,000

SPOTSYLVANIA SMART SCALE FY17 PROJECT APPLIC

Description	Route		Project Location		PE	RW
Intersection Improvements Rte. 208 and Breckenridge Drive to extend turn lanes for	208		Rte. 208 and Breckenridge Dr.	n/a	$174,000	$0
Intersection Improvements Route 208 and Hood Drive	208		Rte. 208 and Hood Drive	n/a	$500,000	$2,250,000
Intersection Improvements on Lafayette Blvd and Harrison Rd to include turn lanes	620		Harrison Road and Lafayette Blvd	n/a	$140,000	$230,000
Widening of Smith Station Road at Courthouse Road	628		Smith Station Road at Courthouse	n/a	$825,000	$550,000
I95 Exit 126, Rte. 1 Improvements onto Southpoint Parkway exten full movement	1		Exit 126 Rte. 1 South	n/a	$1,750,000	$1,845,000
Widening of Harrison Road and Bridge over I95	620		Widening Harrison Road and Bridge over I95	n/a	$6,970,000	$12,500,000

SPOTSYLVANIA UNPAVED ROADS THAT HAVE BEEN PRIORITIZ

Description	Route		Project Location			
Road Pave In Place	643		Haleys Mill Road			
Road Pave In Place	643		Williams Lane			
Road Pave In Place	620		Spotswood Furnace Road			
Road Pave In Place	642		Woolfolk Road			

Road Pave In Place	647		Twilight Lane			
Road Pave In Place	696		Sullivan Road			
Road Pave In Place	703		Mastin Lane			
Road Pave In Place	682		Parker Lane			
Road Pave In Place	732		Mallard Point Lane			
Road Pave In Place	724		Wigglesworth Road			
Road Pave In Place	726		Ryland Payne Road			
Road Pave In Place	762		White Shop Lane			
Spotsylvania Corridor Studies						
Rt 1 & Rt 208 Corridor Study	Findings from Corridor Study will provide guidance with future road plans					
Rt 2 & Rt 17 Corridor Study	Findings from Corridor Study will provide guidance with future road plans					
MAJOR REGIONAL PROJECTS						

Construction	Fund source	Project Status
$12,433,637	Local, CMAQ, HSIP, RSTP, Revenue Sharing, Tele Fees, Formula Secondary	Under Construction
$1,524,324	Revenue Sharing	Almost Complete
$1,068,646	Revenue Sharing	Under Construction
$5,978,614	Local, Revenue Sharing, Formula Secondary	Advertised
$9,333,026	CTB Formula, HB 1887 SGR, Revenue Sharing, Tele Fees, Fed	Advertised
$1,570,000	Revenue Sharing	Under Construction
$570,000	Revenue Sharing	In Design
$227,193	Local, Tele Fees, SSYP Incidental	Construction to start soon
$773,940	Revenue Sharing	Ready for Advertisement
$1,995,000	Revenue Sharing, CMAQ, RSTP	Ready for Advertisement
$1,858,234	HB1887 SGR, STP	In Design
$484,572	None Identified	Planning phase

$12,180,000	HB1887 SGR	Planning phase
$2,750,000	Local, Revenue Sharing	Planning phase
$15,000,000	HB1887 DGP, Revenue Sharing	PFI Level plans soon
$821,000	HSIP	Planning phase
$10,500,000	HB1887 DGP, Revenue Sharing, Formula Secondary	In Design

CATIONS

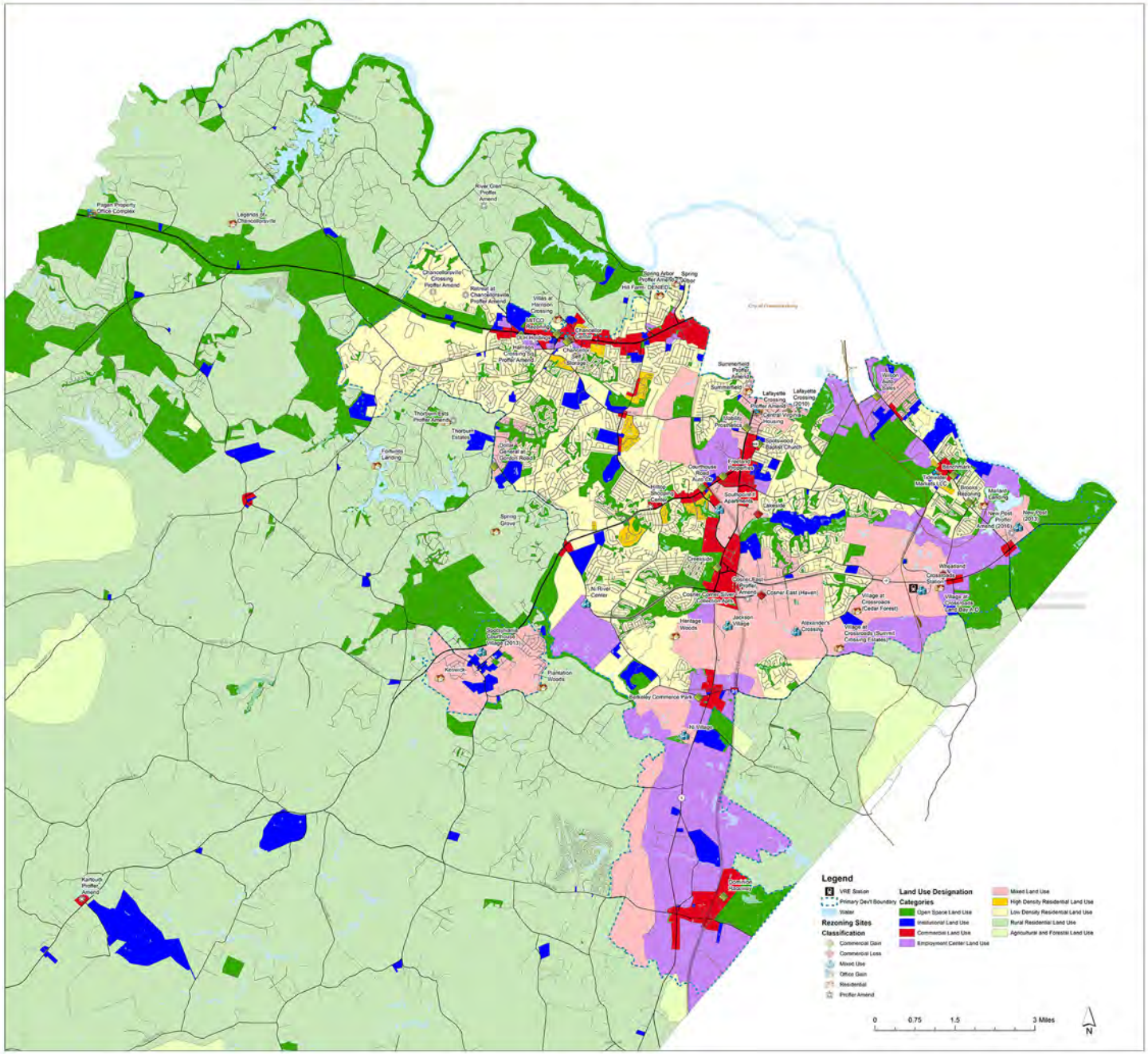
CN	FUNDING SOURCE	Project Status
$576,000	Smart Scale	Application being ranked
$2,400,000	Smart Scale	Application being ranked
$465,000	Smart Scale	Application being ranked
$3,600,000	Smart Scale	Application being ranked
$10,900,000	Local, Revenue Share, Smart Scale	Application being ranked
$66,600,000	Smart Scale	Application being ranked

ZED AND FUNDED

CN COST	FUNDING SOURCE	Project Status
$934,114	Local, Revenue Sharing	Planning phase/funded
$291,740	Local, Revenue Sharing	Planning phase/funded
$361,203	Local, Revenue Sharing	Planning phase/funded
$250,063	Local, Revenue Sharing	Planning phase/funded

$119,474	Local, Revenue Sharing	Planning phase/funded
$205,607	Local, Revenue Sharing	Planning phase/funded
$55,569	Local, Revenue Sharing	Planning phase/funded
$263,956	Local, Revenue Sharing	Planning phase/funded
$75,019	Local, Revenue Sharing	Planning phase/funded
$130,588	Local, Revenue Sharing	Planning phase/funded
$166,709	Local, Revenue Sharing	Planning phase/funded
$55,569	Local, Revenue Sharing	Planning phase/funded
$400,000	Local, Revenue Sharing	Planning phase/funded
$400,000	Local, Revenue Sharing	Planning phase/funded

SPOTSYLVANIA COUNTY REZONING ACTIVITY FOR PERIOD MARCH 30, 2009 THROUGH OCTOBER 6, 2016



PREVIOUSLY APPROVED REZONINGS FOR PERIOD 03-30-2009 THROUGH 10-06-2016

Case	Rezoning Detail	Project Acreage	Zn.	Commercial Industrial Office Zoning Acreage +/-	Zoning +/- Summary	Approval Date	By High Units (Previously Proffered) SFD	SFA	MF	Total Units Resulting With Approval SFD	SFA	MF	Project Type
[illegible]	R-1 to RDH-4	34.382	RDH-4	34.382	Residential (Increase Density)	12/6/2009	33	0	0	83	50	0	Mixed Residential
[illegible]	[illegible]	[illegible]	C-2	3.46	Residential Loss (Mixed Use Office)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Mixed Non-Residential
[illegible]	R-1, C-1 to C-1, C-2	3.93	C-1	3.93	Commercial	1/26/2009	5	0	0	0	0	0	Commercial
[illegible]	Rt-1 to C-2	2.63	C-2	2.63	Commercial Gain	5/13/2008	3	0	0	0	0	0	Commercial
[illegible]	Cherry Pond Business Park	6.5 to O-2	O-2	1.63	Office Gain	7/14/2008	1	0	0	0	0	0	Office
[illegible]	Market Landing	6.2 to R-5	R-5	25.8679	Residential (Increase Density)	7/14/2008	11	0	0	0	150	0	Residential (SFA)
[illegible]	Pagan Property Office Complex	C-1 to O-1	O-1	4.27	Office Gain	1/26/2010	1	0	0	0	0	0	Office
[illegible]	Rocky Arbor	R-1 to RDH-4	RDH-4	164.245	Residential (Increase Density)	11/16/2009	9	0	0	31	10	0	Mixed Residential
[illegible]	Lafayette Crossing (2010)	C-2, C-3, B-2, RDH-4 to C-1, RDH-4	C-1	3.678	Mixed Use (Increase C-1 and residential Density)	7/6/2010	4	0	0	10	10	100	Mixed Use
[illegible]	R-1 to C-2	1.55	C-2	1.55	Residential Loss w/ Commercial Gain	9/14/2010	1	0	0	0	0	0	Commercial
[illegible]	C-2, B-2 to RM-1	40.4	RM-1	40.4	Residential (Increase Density) Commercial Loss	1/11/2011	0	0	0	0	0	300	Residential (MF)
[illegible]	R-1 to B-2	0.32	C-1	0.32	Retail Center Gain	7/12/2011	1	0	0	0	0	0	Commercial
[illegible]	Rt-1 to C-1	1.1	C-1	1.1	Mixed Use	10/11/2011	10	0	0	0	600	0	Mixed Use
[illegible]	R-1 to RDH-4	142	RDH-4	142	Residential (Increase Density)	8/13/2013	30	0	0	142	72	340	Residential
[illegible]	R-1 to R-5	54.1	R-5	54.1	Residential (Increase Density)	10/8/2013	1	0	0	0	0	0	Residential
[illegible]	R-2 and C-2 to B-2, C-2	4.9	C-2	0.9	Commercial Gain	8/14/2012	1	0	0	0	0	0	Mixed Use
[illegible]	C-2, C-3, B-2 to B-2	19.4	B-2	19.4	Residential (Increase Density) Commercial Loss	3/14/2012	2	0	0	0	0	0	Residential (SFA)
[illegible]	M-1 to M-2, I-1	49.8	I-1	49.8	Industrial land (Increase Office Use (Commercial) and Residential)	9/13/2012	0	0	0	0	0	618	Mixed Use
[illegible]	R-1 to C-2	0.992	C-2	0.992	Commercial Gain	11/6/2012	0	0	0	0	0	0	Commercial
[illegible]	R-1 to C-2	4.99	C-2	4.99	Commercial Gain	3/12/2013	0	0	0	0	0	0	Commercial
[illegible]	Rt-1, R-2 to RDH-3	307.76	RDH-3	307.76	Commercial Loss	1/22/2014	130	0	0	1027	520	1,027	Mixed Residential
[illegible]	R-2 to C-2	10.5	C-2	10.5	Commercial Gain	5/20/2013	2	0	0	0	0	0	Commercial
[illegible]	C-3, I-1 to M-1, M-2, M-1, M-2	100	C-3	2.14	Industrial and Commercial Zoning Gain	9/10/2013	0	0	0	273	100	332	Mixed Use
			M-1	10.86									
			M-2	86.5									
			M-1	10.86									
[illegible]	Southpointe Courthouse Village	RDC, C-2, VC, RU, A-2 to MU-2, MU-3, MU-4, MU-5	C-2	0.14	Mixed Use	7/16/2013	[illegible]	[illegible]	[illegible]	145**	298**	950**	Mixed Use
			C-1	0.14									
			MU-2	0.14									
			MU-3	0.14									
			MU-4	0.14									
			MU-5	0.14									
			C-1	0.14									
			C-2	0.14									
			Rt	0.14									
			VC	0.14									
			RU	0.14									
			A-2	0.14									
[illegible]	Fuller's Landing	R-2 to PRD-1	PRD-1	110	Residential (Increase Density)	8/24/2012	10	0	0	49	0	0	SFD
[illegible]	R-1 to C-2	0.64	C-2	0.64	Commercial Gain	11/14/2013	2	0	0	0	0	0	Commercial
[illegible]	Villas at Harrison Crossing	R-1 to RDH-4	RDH-4	10.48	Residential (Increase Density)	11/12/2014	0	140	0	140	0	0	Residential (Possible SFD, SFA Mix)
[illegible]	Starlo General at Gordon Road	R-1 to C-2	C-2	0.61	Commercial Gain	3/24/2014	2	0	0	0	0	0	Commercial
[illegible]	Central Virginia Housing Institute	R-1 to O-1	O-1	1.3	Office Gain	11/14/2013	1	0	0	0	0	0	Office
[illegible]	Spotsylvania East	C-1 to RDH-M	RDH-M	20	Residential (Increase Density) Commercial Loss	12/16/2013	0	0	0	0	0	274	Residential (MF)
[illegible]	R-1 to C-1	26.43	C-1	26.43	Mixed Use	6/24/2014	0	0	0	80	0	50	Mixed Use
[illegible]	Southport II Apartments	C-1 to R-12, MU-5	R-12	25.98	Mixed Use	8/26/2014	0	0	0	0	0	630**	Mixed Use
[illegible]	Mobility Prosthetics	R-1 to C-2	C-2	0.97	Commercial Gain	10/14/2014	0	1	0	0	0	0	Commercial
[illegible]	Renwood	R-1 to RDH-4, O-1	RDH-4	14	Residential (Increase Density) Office Loss	9/9/2014	34	0	0	0	80	0	Residential (SFA)
[illegible]	Renwood Baptist Church	R-1, C-1 to C-2	C-2	1.91	Commercial Gain	10/28/2014	4**	0	0	0	0	0	Commercial
[illegible]	Legends of Chancellorsville	Rt-1 to PRD-1	PRD-1	109.16	Residential (Split Vote)	7/8/2014	10	0	0	210	0	0	Residential
[illegible]	Wheatland	C-1 to RDH-12	RDH-12	10.04	Commercial Loss	12/8/2014	0	0	0	120	0	0	Residential
[illegible]	Thornburg Estates	R-1 to R-2	R-2	17.1	Residential (Split Vote)	12/8/2014	14	0	0	60	0	0	Residential
[illegible]	Jackson Village	R-1 to MU-5	MU-5	24.16	Mixed Use	5/12/2015	0	0	0	0	0	0	Mixed Use (Retail and Office Space)
[illegible]	Alexander's Crossing	Rt-1, I-1, C-2 to MU-5, RM-1, I-1	RM-1	191	Mixed Use	12/8/2015	310	0	0	310	0	1,110	Mixed Use
			Rt	109.40									
			I-1	1.51									
			I-2	104.37									
			MU-5	50 Ac. Comp Plan									
			RM-1	50 Ac. Comp Plan									
[illegible]	Parkside Hills	R-2 to R-2	R-2	150	Residential (Increase Density)	1/26/2016	36	0	0	112	0	0	Residential
[illegible]	Stadium Drive*	R-5, B-2 to RDH-3	RDH-3	130.37	Residential (Increase Density)	5/24/2016	13	0	0	38	0	0	Residential
[illegible]	Lafayette Market LLC	C-2 to C-1	C-1	1.3	Commercial Gain	1/8/2016	1	0	0	0	0	0	Commercial
[illegible]	Chancellor Rd Storage	C-2, O-1, O-2 to C-1	C-1	4.63	Commercial Gain	5/24/2016	0	0	0	0	0	0	Commercial

REZONING APPLICATIONS ACTIVELY UNDER REVIEW AS OF 10-06-2016

Case	Rezoning Detail	Project Acreage	Zn.	Commercial Industrial Office Zoning Acreage +/-	Zoning +/- Summary	Approval Date	By High Units (Previously Proffered) SFD	SFA	MF	Total Units Resulting With Approval SFD	SFA	MF	Project Type
[illegible]	R-1 to R-1	100	Rt	100	Residential (Increase Density)	4/26	10	0	0	154	0	0	Residential
			R-1	100									
[illegible]	Village at Crossroads Station Land Bay B (Cedar Forest)	R-1 to RDH-3	RDH-3	30.63	Residential (Increase Density)	4/26	0	0	0	20	0	0	Residential
[illegible]	Village at Crossroads Station Land Bay A	R-1 to MU-3	MU-3	87	Residential (Increase Density)	4/26	50	0	0	150	400	0	Residential
			R-1	100									
[illegible]	Village at Crossroads Station Land Bay F (Summit Crossing Estates)	R-1 to RDH-3	RDH-3	85.5	Residential (Increase Density)	4/26	10	0	0	0	0	0	Residential
			R-1	100									
[illegible]	The Towns at Post Spotsylvania	B-C, R-B to RDH-3	B-C	47	Residential (Increase Density)	4/26	0	0	0	0 (Up to 34)	0	0	Residential
[illegible]	Southwest Area Auto Center	R-1 to C-2	C-2	3.5	Commercial Gain	4/26	0	0	0	0	0	0	Commercial
[illegible]	Wilson Auto Sales	C-1 to C-1	C-1	0.64	Commercial Gain	4/26	0	0	0	0	0	0	Commercial

PROFFER AMENDMENTS APPROVED OR UNDER REVIEW FOR PERIOD 03-30-2009 THROUGH 10-06-2016

Case	Rezoning Detail	Project Acreage	Zn.	Commercial Industrial Office Zoning Acreage +/-	Zoning +/- Summary	Approval Date	By High Units (Previously Proffered) SFD	SFA	MF	Total Units Resulting With Approval SFD	SFA	MF	Project Type
[illegible]	N/A	N/A	N/A	N/A	Proffer Amendment	4/26/2016	0	0	0	0	0	0	Transportation
[illegible]	N/A	21.26	N/A	N/A	Proffer Amendment	1/8/2012	0	0	0	0	0	0	Commercial
[illegible]	N/A	4.26	N/A	N/A	Proffer Amendment	3/12/2013	0	0	0	0	0	0	Residential (SFA)
[illegible]	N/A	0.62	N/A	N/A	Proffer Amendment	8/13/2013	0	0	0	0	0	0	Commercial
[illegible]	N/A	37.63	N/A	N/A	Proffer Amendment	10/22/2013	43	0	0	43	0	0	Residential (SFD)
[illegible]	N/A	38.100	N/A	N/A	Proffer Amendment	4/22/2014	41	0	0	41	0	0	Mixed Use
[illegible]	N/A	164.245	N/A	N/A	Proffer Amendment	6/10/2014	30	10	0	10	30	0	Residential
[illegible]	N/A	25	N/A	N/A	Proffer Amendment	12/8/2014	0	50	0	0	50	0	Residential
[illegible]	N/A	7.2737	N/A	N/A	Proffer Amendment	1/27/2015	0	0	0	0	0	0	Residential Living Center
[illegible]	N/A	49.8 (Total 50 Ac. Comp Plan)	N/A	N/A	Proffer Amendment	11/13/2015	0	0	0	110	150	0	Residential (SFD)
[illegible]	N/A	101 (Orig)	N/A	N/A	Proffer Amendment	9/28/2016	150	0	0	0 (Up to 300 housing unit cap; Project into operation)			Residential (SFD)
[illegible]	N/A	189	N/A	N/A	Proffer Amendment	N/A	0	0	0	0	0	0	Mixed Use
[illegible]	N/A	101.24	N/A	N/A	Proffer Amendment	N/A	14	0	0	10	0	0	Residential
[illegible]	N/A	0.8	N/A	N/A	Proffer Amendment	N/A	0	0	0	0	0	0	Commercial

* Non-Proffered version will capped and potential.
** Non-Proffered version will be cap should proffer.
*** Straight base of under-depict etc.
**** Proffered outside Metro office map, etc.

Note: Table Acreage calculations are approximations based on Spotsylvania County Geographical Information System data. Calculations presented may or may not represent the actual recorded acreage found at the County Clerks office appearing on property plats. Unit type, unit mix information are based on rezoning case file record information.

-Analysis and Mapping by Spotsylvania County Planning.

October 6, 2016

Colonel W. S. (Steve) Flaherty
Superintendent

(804) 674-2000

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF STATE POLICE

P. O. Box 27472, Richmond, VA 23261-7472

Lt. Colonel Tracy S. Russillo
Deputy Superintendent

January 4, 2017

Mr. Krishna K. Potturi, PE
Virginia Department of Transportation
Northern Virginia District
4975 Alliance Drive
Fairfax, Virginia 22030

Dear Mr. Potturi:

Thank you for your letter of December 2, 2016, requesting input regarding your planned environmental assessment for proposed highway improvements of the Interstate 95 Express Lanes Fredericksburg Extension Study involving the counties of Fairfax, Prince William, and Stafford.

We have identified the following issues for consideration in response to your request as it pertains to this project:

- The improvement plans for additional travel lanes along the I-95 corridor in the listed areas as well as capacity improvements for the High-Occupancy Toll (HOT) lanes should include minimum inside and outside shoulder width of 10 feet (3.0m). I-95 is the longest north-south Interstate, followed by I-75, and the sixth-longest Interstate Highway overall. I-95 passes through more states than any other Interstate Highway at 15 states. According to the U.S Census Bureau, only five of the 96 counties along the route are completely rural. Statistics provided by the I-95 Corridor Coalition suggest the region served is "over three times more densely populated than the U.S. average and as densely settled as much of Western Europe." Many factors can contribute to the routine disruption of traffic within the National Capitol Region (NCR) and law enforcement calls for service suggest many disruptions occur as a result of disabled vehicles within the travel lanes and minor property damage accidents where one or more vehicles may be disabled as a result of the incident. Inadequate shoulder width significantly contributes to the delay in response and removal of these vehicles due to the constant heavy volume of traffic within the NCR. Significant back-ups result almost immediately following these types of incidents.

- Construction projects within the specified areas will result in significant traffic disruptions which will most likely create additional law enforcement calls for service. The added workload will require increased manpower from law enforcement in order to effectively handle all calls and minimize additional disruptions. An increased law enforcement presence along the proposed I-95 improvement area should result in a faster incident response and provide for a quicker clearance of traffic disruptions. If the additional manpower is deemed temporary during the construction phase, the Department should be compensated at a time and one-half rate for each employee assigned to patrol the construction area. This time and one-half rate will permit employees to work within the construction zone outside of their normal work hours, allowing the Department to maintain its current patrol obligations and manpower staffing requirements.

- A common trend within the NCR as a result of capacity improvements has been the increase in urban development and the overall population. The increased urban development will ultimately make the new improvements inadequate over time and will call for additional upgrades along the I-95 corridor. Additional highways and alternate routes may need to be considered to provide adequate alternatives in the event of major traffic disruptions resulting from urban sprawl. The I-95 corridor is a major artery of the interstate system vital to the east coast and is aligned with Route 1 along the proposed improvement area. The Route 1 corridor is routinely impacted in the listed counties by overflow traffic from I-95 during rush hour and weekend travel as a result of traffic disruptions. Additional law enforcement patrol coverage should be considered for this area during the construction phase.

- The Department of State Police has three area offices that are responsible for handling all calls for service within the proposed construction area: Area 5 which includes Stafford and Spotsylvania counties is also responsible for handling many calls off of the I-95 corridor. This added responsibility reduces patrol time on the interstate and will most likely require additional manpower to provide adequate road coverage. Fairfax and Price William Counties have a combined population of approximately 1.5 million people. Stafford County has an estimated population of 136,788 people. Current staffing levels in the Department of State police within the three affected counties provides twenty five (25) troopers to patrol Fairfax and Prince William Counties, seventeen (17) troopers to patrol Stafford County and eighteen (18) troopers to patrol the I-95 & I-495 Express Toll Lanes (HOT). These numbers equate to a ratio of approximately 1 trooper for every 32,000 people

- residing within the three counties. This estimate does not consider citizens travelling along the I-95 corridor who reside outside of the listed counties.

- Emergency vehicle access to restricted lanes and other areas within the study limits should be considered and adequately provided. These emergency access points allow for a much quicker response from law enforcement and emergency personnel during traffic disruptions. Routine access points allow for more effective traffic monitoring from law enforcement and helps maintain posted speed limits through the use of static patrols. The access points should be controlled with restricted access signage indicating its use is for emergency vehicles only.

- Another environmental factor for consideration is the permanent truck fixed scale facility on Interstate 95, neat Exit 152, in Prince William County. The truck scales run twenty-four hours a day, seven days a week and have a significant impact on the free flow of traffic. Backups as a result of increased commercial vehicle traffic can routinely create traffic disruptions northbound from Exit 148 and southbound from Exit 158. The Dumfries scale facility weighs approximately 500,000 vehicles each year and is considered to be the busiest fixed CMV weight facility station in the Commonwealth of Virginia. The assessment should include an analysis of its impact to the human and natural environment with consideration given to relocate the truck scales to an area with a reduced human population if feasible.

I hope you find this information helpful, and I look forward to our continued mutual support in this and other VDOT highway improvement endeavors.

Sincerely,

George L. Daniels Jr.

Director, Bureau of Field Operations

GLDjr/TEJ

Smizik, Scott (VDOT)

From: Denny, S. Scott (DOAV)
Sent: Tuesday, December 06, 2016 4:15 PM
To: Smizik, Scott (VDOT)
Cc: Harrington, Rusty N. (DOAV)
Subject: I-95 Express Lane Scoping Comments

Mr. Smizik:

The Virginia Department of Aviation has reviewed the information you provided regarding any potential scoping comments for the I-95 Express Lane Extension Study. Since the proposed project will result in construction within 20,000 linear feet of both the Stafford Regional Airport and the Quantico Marine Airfield, a 7460 form will have to be prepared and submitted to the FAA to determine if the proposed construction would result in the creation of any hazard to air navigation. The 7460 form can be found on the FAA.gov website.

Additionally, the proximity of the proposed express lane to the Stafford Regional Airport could potentially impact the instrument approach procedures into the airport if the finished grade of the roadway constitutes a FAR Part 77 penetration. Since the finished grade elevation is unknown as of this point, I strongly suggest the scope of this environmental effort include a coordination meeting with the Stafford Regional Airport Director and the Federal Aviation Administration Washington Airports District Office. This office can help facilitate a meeting between these parties if you so wish.

Please contact me if you have any questions regarding this matter or would like to discuss this project in greater detail.

Sincerely,

S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation
804-236-3638
Scott.denny@doav.virginia.gov

Molly J. Ward
Secretary of Natural Resources

COMMONWEALTH of VIRGINIA

Department of Game and Inland Fisheries

Bob Duncan
Executive Director

January 4, 2017

Ms. Krishna K. Potturi
VDOT Fredericksburg District
1401 East Broad Street
Richmond, VA 23219-2000

Re: Request for Determination of Impact upon Wildlife Resources: Interstate 95 Fredericksburg Express Extension Study Counties of Fairfax, Prince William, and Stafford

Dear Ms. Potturi:

We appreciate that you submitted your project(s) for review by VDGIF to ensure the protection of sensitive wildlife resources during project development. Due to current staffing limitations within our Fish and Wildlife Information Services (FWIS) and Environmental Services sections, we are unable to review and provide comments on projects that are not currently involved in one of the regulatory review processes for which we are a consultatory agency (see http://www.dgif.virginia.gov/environmental-programs/environmental-services-section.asp). Please note that no response from VDGIF does not constitute "no comment" nor does it imply support of the project or associated activities. It simply means VDGIF has not been able to respond to your request.

To assist you in determining which, if any, wildlife resources under our jurisdiction, including threatened and endangered wildlife, may be present on or near your project site, we recommend that you access the Virginia Fish and Wildlife Information System (VAFWIS) at http://vafwis.org/fwis/.

If you should have further questions or need additional information about VDGIF's Environmental Programs, please visit: http://www.dgif.virginia.gov/environmental-programs/.

Please feel free to attach a copy of this correspondence and any reports from VAFWIS with your project paper work to document your correspondence with us regarding this project.

Thank you,

Shirl Dressler, Program Support Technician
Environmental Services Admin.

COMMONWEALTH of VIRGINIA

Department of Historic Resources

Molly Joseph Ward
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

6 December 2016

Ms Krishna Potturi
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219-2000

RE: Interstate 95 Express Lanes Fredericksburg Extension Study
Counties of Fairfax, Prince William, and Stafford
DHR File No. 2016-1226

Dear Ms Potturi:

The Department of Historic Resources (DHR) has received your letter of 2 December 2016 initiating National Environmental Policy Act (NEPA) consultation with us for the above referenced project. It is our understanding that the Virginia Department of Transportation (VDOT) proposes to add additional travel lanes on Interstate 95 (I-95) extending from near Exit 133 in Stafford County to near Exit 160 in Fairfax County.

The undertaking has the potential to affect cultural resources listed in or eligible for the National Register of Historic Places. We recommend referencing our website at http://dhr.virginia.gov/review/orcFedPrjRev.html for guidance on what information and in what format we require in order to conduct our review. The DHR looks forward to continued consultation with VDOT on this project.

If you have any questions about our comments, please contact me at (804) 482-6090.

Sincerely,

Marc Holma, Architectural Historian
Division of Review and Compliance

C: Scott Smizik, VDOT

From:	Rafferty, Elizabeth (DHCD)
To:	Potturi, Krishna, PE (VDOT)
Cc:	Smizik, Scott (VDOT)
Subject:	FW: Interstate 95 Express Lanes Extension Study
Date:	Wednesday, December 14, 2016 3:50:44 PM
Attachments:	shelton.pdf

Good afternoon,
The Virginia Department of Housing and Community Development appreciates the opportunity to provide a response to the NEPA Evaluation Questionnaire as part of the preparation of a supplemental environmental impact statement for the Interstate 95 Express Lanes Fredericksburg Extension Study. Below you will find a response to the questions provided.

1. Please provide any other comments or feedback that you feel may be beneficial to the development of this study.

   The Department of Housing and Community Development does not have any additional comments at this time.

2. Please provide any data related to low income and minority populations that would be used in the socioeconomic and environmental justice impact analysis implemented by the Executive Order (EO) 12898 "Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low Income Populations", and the Council of Environmental Quality (CEQ) guidance, Environmental Justice guidance under NEPA (1997).

   The Department of Housing and Community Development recommends that you seek feedback from and coordinate with the local Planning District Commission to understand local impacts on vulnerable and low-income populations. The PDC will have better information than DHCD. A review of DHCD files did not show any multifamily housing projects or shelters funded directly by DHCD in proximity to the target area identified on the map.

Please let ne us know if you need anything ese.
Thank you,
Liz

Elizabeth Rafferty
Policy and Legislative Director
Department of Housing and Community Development
804-304-3492- cell
804-371-7011-office

From: Shelton, Bill (DHCD)
Sent: Monday, December 5, 2016 9:36 AM
To: Rafferty, Elizabeth (DHCD) <Elizabeth.Rafferty@dhcd.virginia.gov>
Cc: Atkinson, Lisa (DHCD) <Lisa.Atkinson@dhcd.virginia.gov>; Ballard, Velma (DHCD) <Velma.Ballard@dhcd.virginia.gov>; Davis, Cindy (DHCD) <Cindy.Davis@dhcd.virginia.gov>
Subject: FW: Interstate 95 Express Lanes Extension Study

FYI, and any comments as you think appropriate. Bill

Bill Shelton
Director, Virginia Department of Housing and Community Development
Main Street Centre
600 East Main Street, Suite 300
Richmond, Virginia 23219
804.371.7002

From: Smizik, Scott (VDOT)
Sent: Monday, December 5, 2016 8:24 AM
To: Shelton, Bill (DHCD) <Bill.Shelton@dhcd.virginia.gov>
Subject: Interstate 95 Express Lanes Extension Study

Good morning –

Please see attached scoping letter for subject study. Thank you in advance for your cooperation and support in this effort.

Scott Smizik
Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219
Desk: (804) 371-4082
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Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

David C. Dowling
Deputy Director of Soil and Water Conservation and Dam Safety

Thomas L. Smith
Deputy Director of Operations

MEMORANDUM

DATE: December 28, 2016

TO: Krishna Potturi, VDOT

FROM: Roberta Rhur, Environmental Impact Review Coordinator

SUBJECT: DRC 16-048, VDOT, Interstate 95 Express Lanes, Fredericksburg Extension Study

Division of Planning and Recreational Resources

The Department of Conservation and Recreation (DCR), Division of Planning and Recreational Resources (PRR), develops the *Virginia Outdoors Plan* and coordinates a broad range of recreational and environmental programs throughout Virginia. These include the Virginia Scenic Rivers program; Trails, Greenways, and Blueways; Virginia State Park Master Planning and State Park Design and Construction.

Please be aware that the Rappahannock River is a scenically designated river; for this reason, we recommend all new crossings be mitigated by sensitive and aesthetic designs that support the scenic qualities of a designated river. We suggest you coordinate with Lynn Crump, the scenic river program manager, lynn.crump@dcr.virginia.gov should this project impact the river.

In Prince William County, near Quantico, the project runs adjacent to Locust Shade Park. This local park is protected under the Land and Water Conservation Fund (LWCF); due to this status, any impacts to the parks boundaries are considered a conversion of use and must be mitigated for under the guidelines of the LWCF. We recommend coordination with Synthia Waymack, synthia.waymack@dcr.virignia.gov, if there is any potential that this project could impact Locust Shade Park.

Division of Natural Heritage

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System 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.

Fredericksburg Quad:
According to the information currently in our files, the Falls Run at Rt. 17 Stream Conservation Unit (SCU) is located within the project site. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The Falls Run at Rt. 17 SCU has been given a

biodiversity ranking of B3, which represents a site of high significance. The natural heritage resource associated with this site is:

NP-Lower Rappahannock First Order Stream G2G3/S2S3/NL/NL

The documented Aquatic Natural Community is based on Virginia Commonwealth University's **INSTAR** (*Interactive Stream Assessment Resource*) database which includes over 2,000 aquatic (stream and river) collections statewide for fish and macroinvertebrate. These data represent fish and macroinvertebrate assemblages, instream habitat, and stream health assessments. The associated Aquatic Natural Community is significant on multiple levels. First, this stream is a grade B, per the VCU-Center for Environmental Sciences (CES), indicating its relative regional significance, considering its aquatic community composition and the present-day conditions of other streams in the region. This stream reach also holds a "Healthy" stream designation per the INSTAR Virtual Stream Assessment (VSS) score. This score assesses the similarity of this stream to ideal stream conditions of biology and habitat for this region. Lastly, this stream contributes to high Biological Integrity at the watershed level (6th order) based on number of native/non-native, pollution-tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

Threats to the significant Aquatic Natural Community and the surrounding watershed include water quality degradation related to point and non-point pollution, water withdrawal and introduction of non-native species.

Stafford Quad:
According to the information currently in our files, the Aquia Creek – Rt. 1 – Government Landing Stream Conservation Unit (SCU) is located within the project site. The Aquia Creek – Rt. 1 – Government Landing SCU has been given a biodiversity ranking of B2, which represents a site of very high significance. The natural heritage resources associated with this site are:

Aquatic Natural Community (NP-Lower Potomac Fourth Order Stream)	G1/S1/NL/NL
Aquatic Natural Community (NC-Lower Potomac Fourth Order Stream)	G1?/S1?/NL/NL

The associated Aquatic Natural Communities are significant on multiple levels. First, these streams are a grade B, per the VCU-Center for Environmental Sciences (CES), indicating their relative regional significance, considering their aquatic community composition and the present-day conditions of other streams in the region. These stream reaches also hold a "Healthy" stream designation per the INSTAR Virtual Stream Assessment (VSS) score.

Threats to the significant Aquatic Natural Communities and the surrounding watersheds include water quality degradation related to point and non-point pollution, water withdrawal and introduction of non-native species.

Please note according to DCR's species distribution model, potential may exist for the Dwarf wedgemussel (*Alasmidonta heterodon*, G1G2/S1/LE/LE) within Potomac Creek and Aquia Creek.

Furthermore, Aquia Creek has been designated by the VDGIF as a "Threatened and Endangered Species Water" for the Dwarf wedgemussel.

Quantico Quad:
According to the information currently in our files, the Chopawamsic Creek Upstream Russell Road Stream Conservation Unit (SCU) is within the project site and has been given a biodiversity ranking of B2, which represents a site of very high significance. The natural heritage resource associated with this site is:

Aquatic Natural Community (NP – Lower Potomac Third Order Stream)	G1G2/S1S2/NL/NL

The associated Aquatic Natural Community is significant on multiple levels. First, this stream is a grade B, per the VCU-Center for Environmental Sciences (CES), indicating its relative regional significance, considering its aquatic community composition and the present-day conditions of other streams in the region. This stream reach also holds a "Healthy" stream designation per the INSTAR Virtual Stream Assessment (VSS) score.

Threats to the significant Aquatic Natural Community and the surrounding watershed include water quality degradation related to point and non-point pollution, water withdrawal and introduction of non-native species.

Additionally, the Chopawamsic Creek Conservation Site is downstream of the project site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Chopawamsic Creek Conservation Site has been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resources of concern at this site are:

Somatochlora filosa	Fine-lined emerald	G5/S2/NL/NL
Cabomba caroliniana	Carolina fanwort	G3G5/S1S2/NL/NL

The Fine-lined emerald is a state rare dragonflyst species measuring 54-66 mm in length (Needham and Westfall, 1975). This colorful, slender species inhabits slow-flowing blackwater with sand, mud or silt substrate and emergent vegetation along the banks (TNC, 1996).

Adult Odonata (dragonflies and damselflies), commonly seen flitting and hovering along the shores of most freshwater habitats, are accomplished predators. Adults typically forage in clearings with scattered trees and shrubs near the parent river. They feed on mosquitoes and other smaller flying insects, and are thus considered highly beneficial. Odonates lay their eggs on emergent vegetation or debris at the water's edge. Unlike the adults, the larvae are aquatic and typically inhabit the sand and gravel substrates. Wingless and possessing gills, the larvae crawl about the submerged leaf litter and debris stalking their insect prey. The larvae seize unsuspecting prey with a long, hinged "grasper" that folds neatly under their chin. When larval development is complete, the aquatic larvae crawl from the water to the bank, climb up the stalk of the shoreline vegetation, and the winged adult emerges (Hoffman 1991; Thorpe and Covich 1991).

Because of their aquatic lifestyle and limited mobility, the larvae are particularly vulnerable to shoreline disturbances that cause the loss of shoreline vegetation and siltation. Though somewhat tolerant of decreased water quality, they are sensitive to alterations that result in poor water quality, aquatic substrate changes, and thermal fluctuations. Threats include activities that alter the water flow or substrate such as: impoundments, channelization, dredging, siltation, agricultural non-point pollution, and municipal and industrial pollution. In addition, timber harvest may increase siltation and cause a decrease in dissolved oxygen as canopy cover is removed and water temperature rises (NatureServe, 2009).

The Carolina fanwort is an aquatic plant with feathery fan-like leaves and small white 5-petaled flowers. It is found in shallow, fresh to slightly brackish waters of the southeastern United States ranging north

through Virginia and rarely into New England. Sedimentation, nutrient loading, and competition with invasive species (particularly Hydrilla verticillata) threaten this species in the Commonwealth.

In addition, the Pipeline - Little Union Slopes Conservation Site is within two miles of the project site. The Pipeline - Little Union Slopes Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resource of concern at this site is:

Isotria medeoloides	Small whorled pogonia	G2?/S2/LT/LE

Small whorled pogonia, a perennial orchid, grows in a variety of woodland habitats in Virginia, but tends to favor mid-aged woodland habitats on gently north or northeast facing slopes often within small draws. It is quite natural for plants of this species to remain dormant in the soil for long periods of time. Direct destruction, as well as habitat loss and alteration, are principle reasons for the species' decline (Ware, 1991). The Virginia Field Office of the U.S. Fish and Wildlife Service recommends that field surveys for this species be conducted in areas of Virginia south of Caroline County from May 25 through July 15 and in areas of Virginia from Caroline County and north from June 1 through July 20 (K. Mayne, pers. com. 1999). Please note that this species is currently classified as threatened by the United States Fish and Wildlife Service (USFWS) and as endangered by the Virginia Department of Agriculture and Consumer Services (VDACS).

Also Powells Creek Conservation Site is downstream of the project area. The Powells Creek Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance. The natural heritage resource of concern at this site is:

Tidal Freshwater Marsh	(Mixed High Marsh Type)	G3/S4?/NL/NL

Tidal Freshwater Marsh (Mixed High Marsh Type) (*Impatiens capensis-Peltandra virginica-Polygonum arifolium-Schoenoplectus fluviatilis-Typha angustifolia* Tidal Herbaceous Vegetation) occupies the higher elevation zone of freshwater to slightly oligohaline marshes on the Atlantic Coast from Maine to Virginia. From Delaware to northern Virginia, this is the principal mixed freshwater tidal marsh community and forms extensive patches along many tidal rivers. This community is composed of mixed, dense, and often diverse marsh vegetation with highly variable species composition and patch dominance. The soils are highly variable, varying from silts and silty mucks to peats and sands across the range (NatureServe, 2010). In Virginia, this community occurs most extensively in estuarine reaches of the Potomac River drainage, but has also been documented along the Rappahanock, Pamunkey, Mattoponi, and James Rivers.

Freshwater tidal marshes are naturally dynamic systems that are best developed where there is a major input of freshwater, daily tidal range of at least 0.5 m, and a geomorphology that tends to constrict and magnify tidal influence in the upper reaches of the estuary. These marshes are subject to diurnal flooding by tides and river discharge (NatureServe, 2010). Principal threats include chronic sea-level rise leading to increasing upstream salinity, pollutants, and invasive exotic plants such as marsh dewflower (*Murdannia keissak*) (Fleming et al. 2011).

Finally, Hard-stem bulrush (*Schoenoplectus acutus* var. *acutus,* G5T5/S1/NL/NL) has been historically documented downstream of the project site. Hard-stem bulrush is a member of the sedge family and is found in wetlands across North America (Flora of North America Editorial Committee 2002). In Virginia it has only been documented historically in a few scattered locations in a calcareous fen in the Ridge and Valley region, and in marshes in the Northern Piedmont /Northern Coastal Plain regions (Virginia Botanical Associates 2011). This tall, stout, rhizomatous, colonial, perennial bulrush produces fruit during the summer (Gleason and Cronquist 1991), and surveys would best be conducted from July-August. Threats include direct habitat destruction, hydrological disturbances, and water quality degradation.

Quantico and Joplin Quads:
The Mount West and Russel Road Slopes Conservation Sites are within two miles of the project area. The Mount West Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance, and the Russell Road Slopes Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resource of concern at these sites is the Small whorled pogonia.

Occoquan Quad:
According to the information currently in our files, the Unnamed Tributary to Neabsco Creek Stream Conservation Unit (SCU) is located within the project site. The Unnamed Tributary to Neabsco Creek SCU has been given a biodiversity ranking of B4, which represents a site of moderate significance. The natural heritage resource associated with this site is:

Aquatic Natural Community
(NP-Middle Potomac-Anacostia-Occoquan First Order Stream) G3G4/S3S4/NL/NL

The associated Aquatic Natural Community is significant on multiple levels. First, this stream is a grade B, per the VCU-Center for Environmental Sciences (CES), indicating its relative regional significance, considering its aquatic community composition and the present-day conditions of other streams in the region. This stream reach also holds a "Healthy" stream designation per the INSTAR Virtual Stream Assessment (VSS) score.

Threats to the significant Aquatic Natural Community and the surrounding watershed include water quality degradation related to point and non-point pollution, water withdrawal and introduction of non-native species.

Fort Belvoir Quad:
Please note according to DCR's species distribution model, potential may exist for the Dwarf wedgemussel (*Alasmidonta heterodon*, G1G2/S1/LE/LE) in the Occoquan River.

Due to the potential for Dwarf wedgemussel within Aquia Creek, Potomac Creek, and the Occoquan River, DCR recommends a survey for the species within the study area. In addition, due to the potential for Small whorled pogonia to occur within the project site, DCR recommends a survey for the species within the study area. With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources
.
DCR-Division of Natural Heritage biologists are qualified and available to conduct inventories for rare, threatened, and endangered species. Please contact J. Christopher Ludwig, Natural Heritage Inventory Manager, at chris.ludwig@dcr.virginia.gov or 804-371-6206 to discuss arrangements for field work. A list of other individuals who are qualified to conduct inventories may be obtained from the USFWS.

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations, establishment/enhancement of riparian buffers with native plant species and maintaining natural stream flow. Due to the legal status of Small whorled pogonia, DCR also recommends coordination with USFWS to ensure compliance with protected species legislation. Due to the legal status of the Dwarf wedgemussel, DCR also recommends coordination with the U.S. Fish and Wildlife Service (USFWS) and the VDGIF, to ensure compliance with protected species legislation.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. Survey results should be coordinated with DCR-DNH and USFWS. Upon review of the results, if it is determined the species is present, and there is a likelihood of a negative impact on the species, DCR-DNH will recommend coordination with VDACS to ensure compliance with Virginia's Endangered Plant and Insect Species Act.

The Crow's Nest Natural Area Preserve has been documented within two miles of the project boundary. However, due to the scope of the activity proposed, DCR does not anticipate any negative impacts to the natural area preserve and associated natural heritage resources.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dgif.virginia.gov. The Rappahannock River, which has been designated by VDGIF as "Threatened and Endangered Species Waters" for the Green floater and the Dwarf wedgemussel, is within 2 miles of the project area. Additionally, this project is located within 2 miles of a documented occurrences of state listed animals. Therefore, DCR recommends coordination with VDGIF, Virginia's regulatory authority for the management and protection of these species to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570).

The remaining DCR divisions have no comments regarding the scope of this project. Thank you for the opportunity to comment.

CC: Amy Ewing, VDGIF
Troy Andersen, USFWS

Literature Cited

Fleming, G.P., K.D. Patterson, K. Taverna, and P.P. Coulling. 2011. The natural communities of Virginia: classification of ecological community groups. Second approximation. Version 2.4. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA.

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The Nature Conservancy. 1996. Biological and Conservation Data System. Arlington, Virginia, USA.

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Ware, D.M.E. 1991. Small whorled pogonia. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia.

From: Sari E. Rothrock
To: Nicholas Krause; Travis R. Comer
Subject: FW: Interstate 95 Express Lanes Extension Study
Date: Monday, December 05, 2016 10:19:37 AM

Hi Nick and Travis,

Wanted to be sure you two had seen this (response from DRPT regarding the scoping letter). If I receive information like this in the future, what is the best course of action? Would you prefer me to forward to one of you two, or is there a document I should help populate with information?

Thanks,
Sari

From: Smizik, Scott (VDOT) [mailto:Scott.Smizik@vdot.virginia.gov]
Sent: Monday, December 05, 2016 9:02 AM
To: Roseboom, Tim (DRPT) <Tim.Roseboom@drpt.virginia.gov>
Subject: RE: Interstate 95 Express Lanes Extension Study

Morning Tim –

I think we usually aim for 30 days, but given the holiday season, I suspect that will drag out a bit this time. I agree your study should be thoroughly referenced in ours. If you can point us to the final/public version, we can take a look and then perhaps set up a call to discuss.

Thanks

From: Roseboom, Tim (DRPT)
Sent: Monday, December 05, 2016 9:00 AM
To: Smizik, Scott (VDOT)
Subject: RE: Interstate 95 Express Lanes Extension Study

Thanks Scott. What's your deadline for comments? We're finishing up the 95/395 Transit/TDM study (we have a draft and will have a final by December 15). We'd like it referenced, if not incorporated, into the EA.

Tim Roseboom
Northern Virginia Transit Planning Manager
Department of Rail and Public Transportation
NoVA District Office
4975 Alliance Drive, Room 2E-436
Fairfax, Virginia 22030
O: 703-259-3241
C: 804-921-6851
tim.roseboom@drpt.virginia.gov
www.drpt.virginia.gov
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From: Smizik, Scott (VDOT)
Sent: Monday, December 05, 2016 8:23 AM
To: Roseboom, Tim (DRPT)
Subject: Interstate 95 Express Lanes Extension Study

Good morning –

Please see attached scoping letter for subject study. Thank you in advance for your cooperation and support in this effort.

Scott Smizik
Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219
Desk: (804) 371-4082
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Fax: (804) 786-7401
Scott.Smizik@VDOT.Virginia.gov

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

December 12, 2016

Krishna Potturi, PE
Virginia Department of Transportation
Fredericksburg District
Krishna.patturi@vdot.virginia.gov

RE: Interstate 95 Express Lanes Fredericksburg Extension Study, Prince William County and Fairfax, Virginia

Ms. Potturi:

This letter is in response to the scoping request for the above-referenced project.

As you may know, the Department of Environmental Quality, through its Office of Environmental Impact Review (DEQ-OEIR), is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act (NEPA) and responding to appropriate federal officials on behalf of the Commonwealth. Similarly, DEQ-OEIR coordinates Virginia's review of federal consistency documents prepared pursuant to the Coastal Zone Management Act which applies to all federal activities which are reasonably likely to affect any land or water use or natural resources of Virginia's designated coastal resources management area must be consistent with the enforceable policies Virginia Coastal Zone Management (CZM) Program.

DOCUMENT SUBMISSIONS

In order to ensure an effective coordinated review of the NEPA document and federal consistency documentation, notification of the NEPA document and federal consistency documentation should be sent directly to OEIR. We request that you submit one electronic to eir@deq.virginia.gov (10 MB maximum) or make the documents available for download at a website, file transfer protocol (ftp) site or the VITAShare file transfer system (https://vitashare.vita.virginia.gov). We request that the review of these two documents be done concurrently, if possible.

The NEPA document and the federal consistency documentation (if applicable) should include U.S. Geological Survey topographic maps as part of their information. We strongly encourage you to issue shape files with the NEPA document. In addition, project details should be adequately described for the benefit of the reviewers.

ENVIRONMENTAL REVIEW UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT: PROJECT SCOPING AND AGENCY INVOLVEMENT

As you may know, NEPA (PL 91-190, 1969) and its implementing regulations (Title 40, *Code of Federal Regulations*, Parts 1500-1508) requires a draft and final Environmental Impact Statement (EIS) for federal activities or undertakings that are federally licensed or federally funded which will or may give rise to significant impacts upon the human environment. An EIS carries more stringent public participation requirements than an Environmental Assessment (EA) and provides more time and detail for comments and public decision-making. The possibility that an EIS may be required for the proposed project should not be overlooked in your planning for this project. Accordingly, we refer to "NEPA document" in the remainder of this letter.

While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the preparation of the NEPA document. You should coordinate your scoping request with the following state agencies and those localities and Planning District Commissions affected by your project, including but not limited to:

Department of Environmental Quality:
- DEQ Regional Office*
- Air Division*
- Office of Wetlands and Stream Protection*
- Office of Local Government Programs*
- Division of Land Protection and Revitalization
- Office of Stormwater Management*

Department of Conservation and Recreation
Department of Health*
Department of Agriculture and Consumer Services
Department of Game and Inland Fisheries*
Virginia Marine Resources Commission*
Department of Historic Resources
Department of Mines, Minerals, and Energy
Department of Forestry
Department of Transportation

Note: The agencies noted with a star (*) administer one or more of the enforceable policies of the Virginia CZM Program.

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

Pursuant to the federal Coastal Zone Management Act of 1972, as amended, and its implementing regulations in Title 15, *Code of Federal Regulations*, Part 930, federal activities, including permits, licenses, and federally funded projects, located in Virginia's Coastal Management Zone or those that can have reasonably foreseeable effects on Virginia's coastal uses or coastal resources must be conducted in a manner which is consistent, to the maximum extent practicable, with the Virginia CZM Program.

Additional information on the Virginia's review for federal consistency documents can be found online at
http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview/FederalConsistencyReviews.aspx

DATA BASE ASSISTANCE

Below is a list of databases that may assist you in the preparation of a NEPA document:

- DEQ Online Database: Virginia Environmental Geographic Information Systems

  Information on Permitted Solid Waste Management Facilities, Impaired Waters, Petroleum Releases, Registered Petroleum Facilities, Permitted Discharge (Virginia Pollution Discharge Elimination System Permits) Facilities, Resource Conservation and Recovery Act (RCRA) Sites, Water Monitoring Stations, National Wetlands Inventory:
  - www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx

- DEQ Virginia Coastal Geospatial and Educational Mapping System (GEMS)

  Virginia's coastal resource data and maps; coastal laws and policies; facts on coastal resource values; and direct links to collaborating agencies responsible for current data:
  - http://128.172.160.131/gems2/

- DHR Data Sharing System

  Survey records in the DHR inventory:
  - www.dhr.virginia.gov/archives/data_sharing_sys.htm

- DCR Natural Heritage Search

  Produces lists of resources that occur in specific counties, watersheds or physiographic regions:
  - www.dcr.virginia.gov/natural_heritage/dbsearchtool.shtml

- DGIF Fish and Wildlife Information Service

  Information about Virginia's Wildlife resources:
  - http://vafwis.org/fwis/

- Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database: Superfund Information Systems

  Information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL:
  - www.epa.gov/superfund/sites/cursites/index.htm

- EPA RCRAInfo Search

  Information on hazardous waste facilities:
  - www.epa.gov/enviro/facts/rcrainfo/search.html

- EPA Envirofacts Database

EPA Environmental Information, including EPA-Regulated Facilities and Toxics Release Inventory Reports:

- www.epa.gov/enviro/index.html

- EPA NEPAssist Database

  Facilitates the environmental review process and project planning:
  http://nepaassisttool.epa.gov/nepaassist/entry.aspx

If you have questions about the environmental review process and/or the federal consistency review process, please feel free to contact me (telephone (804) 698-4204 or e-mail bettina.sullivan@deq.virginia.gov).

I hope this information is helpful to you.

Sincerely,

Bettina Sullivan, Program Manager
Environmental Impact Review and
Long-Range Priorities

APPENDIX C

List of Technical Reports

APPENDIX C: LIST OF TECHNICAL REPORTS

Air Quality Technical Report

Alternatives Technical Report

Cultural Resources Technical Report

Hazardous Materials Technical Report

Indirect and Cumulative Effects Technical Report

Natural Resources Technical Report

Noise Analysis Technical Report

Socioeconomics, Land Use, and Right-of-Way Technical Report

Traffic and Transportation Technical Report