ROUTE 7
WIDENING
FAIRFAX COUNTY

REVISED **ENVIRONMENTAL ASSESSMENT**

NOVEMBER 2017

VDOT

U.S. Department of Transportation
Federal Highway Administration

7 ROUTE 7 CORRIDOR IMPROVEMENTS VDOT

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1.1 STUDY AREA

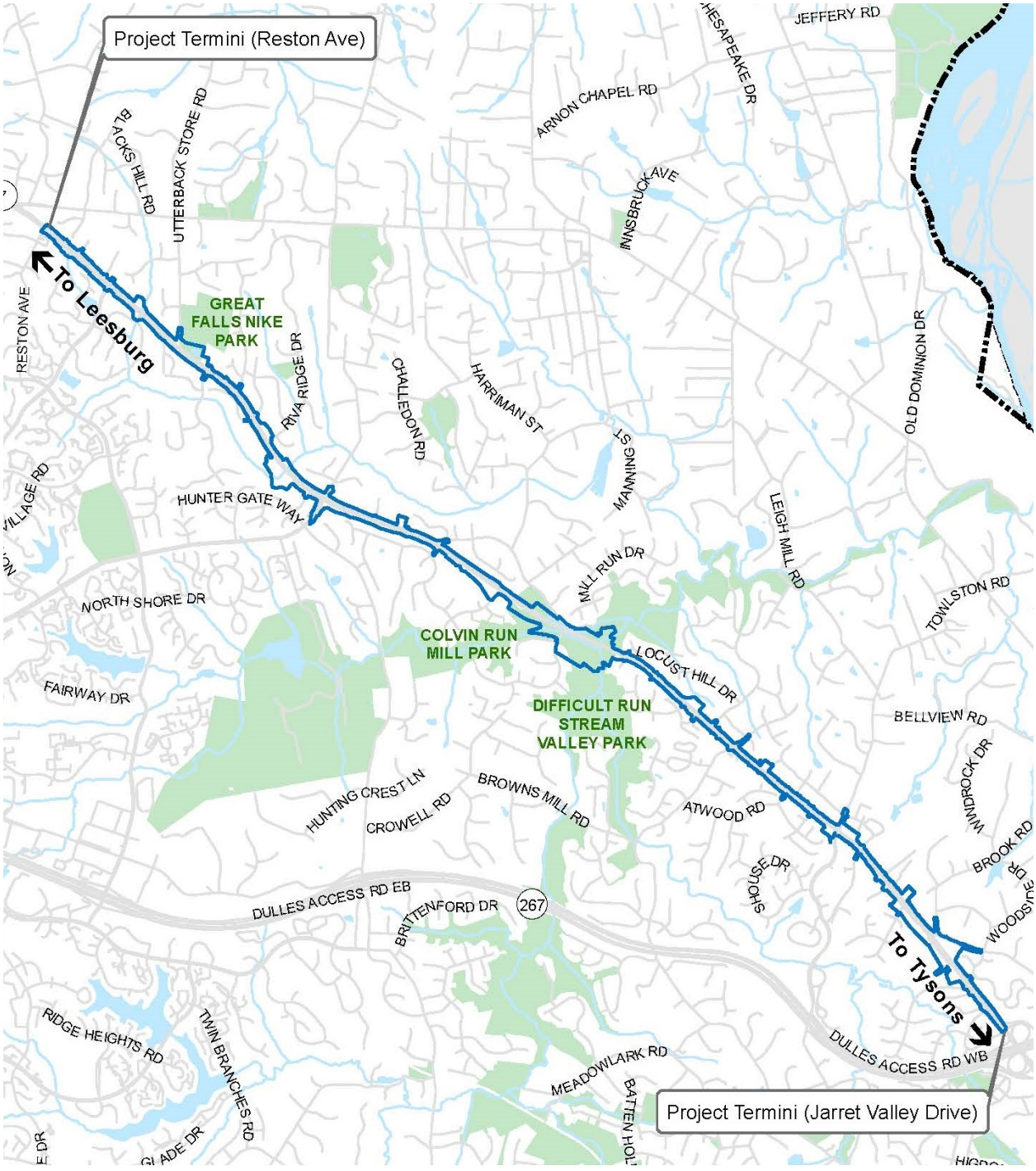
The Virginia Department of Transportation (VDOT) in coordination with the Federal Highway Administration (FHWA) is evaluating improvements along a seven mile section of Leesburg Pike (Route 7) between Reston Avenue and Jarrett Valley Drive in Fairfax County, Virginia (herein referenced as "the study area"). The improvements consist of widening from four to six lanes from Reston Avenue to the west approach of the bridge over the Dulles Toll Road to match and tie into existing six lane sections of roadway. The proposed roadway will provide an additional lane in each direction with the widening to the inside median where possible. A raised median, multi-purpose trail and turn lanes at intersections are also proposed. A bridge replacement is proposed for the Difficult Run stream crossing with the wider typical section. The study area is bounded by Reston Avenue to the west and Dulles Toll Road to the east (Figure 1: Project Location Map).

1.2 HISTORY

The widening of the Route 7 corridor from four to six lanes west of Tysons Corner to the Fairfax County line has been contemplated in Fairfax County's Comprehensive Plan since 1975. The Fairfax County Parkway (Route 286) interchange at Route 7 was completed in 1999 and included the widening of Route 7 between the Loudoun and Fairfax County line to Rolling Holly Drive. In 2016, a one-mile section of Route 7 was widened between Rolling Holly Drive and Reston Avenue. Currently VDOT is widening Route 7 for a half of a mile between Jarrett Valley Drive and Tyco Road, which includes the replacement of the bridge deck over Dulles Airport Access Highway and Toll Road (Route 267) with construction expected to be completed in Spring 2018.

Currently, the widening of this section of Route 7 from four to six lanes is included in Fairfax County's *Comprehensive Plan 2013 Edition (as amended)* for Transportation (Fairfax County, 2017c). The County's interest in improving safety and capacity along Route 7 is also found in the County's *Third Four Year Transportation Program (FY2013-FY2016)* and the *FY2015-FY2020 Transportation Project Priorities (TPP)* (Fairfax County, 2017c and 2014d). This project has long been a part of the Metropolitan Washington Council of Governments (the Region's Metropolitan Planning Organization) *Constrained Long Range Plan (CLRP)* and the *Transportation Improvement Plan (TIP)*. In addition to being included in this regional plan, the Northern Virginia Transportation Authority's regional transportation plan entitled *TransAction 2040* designates the Dulles/VA 7 corridor as their top corridor for improvements (NVTA, 2012). This project is also included in VDOT's *2025 State Highway Plan* (VDOT, 2005). This plan is included as part of the *2035 Virginia Surface Transportation Plan Update* (VDRPT, 2013).

Figure 1: Project Location Map



1.3 NEED

1.3.1 Existing Conditions

The need for this project is based on existing and future capacity and access management deficiencies. Route 7 is classified as an Urban Principal Arterial with a design speed of 60 miles per hour in the project area.

The existing corridor is a four lane roadway with approximately 24-feet of asphalt pavement with a grass median of varying width separating the east and west bound lanes and 6-foot paved shoulders. Multiple side streets, private entrances and business entrances are located along the project corridor. Throughout the corridor, intersections are un-signalized as well as signalized with designated right and left turn lanes.

Based on these previous studies, there are two existing deficiencies that would be addressed by the proposed project: capacity and access management.

1.3.1.a Capacity

The 2011 average daily traffic (ADT) volume was approximately 46,000 vehicles per day (VPD) from Reston Avenue to Difficult Run and approximately 54,000 VPD from Difficult Run to Dulles Toll Road. Daily Service Volumes (DSV), based on the geometrics of the existing roadway (pavement widths, shoulders, radius of curve, sight distance, etc.), represent the acceptable traffic volume for a segment of roadway. **Table 1** includes a comparison of the Route 7 calculated DSV and the measured average daily traffic (ADT) of the existing year (2011) and indicates the existing roadway geometrics are currently overcapacity by 31.4% - 54.3% of the DSV.

Table 1: Existing (2011) Capacity Deficiencies

Route 7 Segment	DSV	Existing 2011 ADT	% Overcapacity
Reston Avenue to Diffcult Run	35,000 VPD	46,000 VPD	31.4%
Difficult Run to Dulles Toll Road	35,000 VPD	54,000 VPD	54.3%

[1]The existing traffic data was collected in 2011. Traffic counts were obtained in 2015 at the intersection of Route 7 and Lewinsville Road and were found to be consistent with the 2011 data. Therefore, the 2011 traffic data was used to project the 2040 design year traffic volumes.

The Alternative Intersection Analysis and Design Report dated May 2015 analyzed traffic volumes and delays to determine the Intersection Level of Service (LOS) at the signalized intersections within the study area. As presented in **Table 2**, the 2010 Highway Capacity Manual (HCM) characterizes Intersection LOS by "control delay" which quantifies the increase in travel time due to traffic signal control.

Table 2: Signalized Intersection LOS Criteria

Control Delay (s/veh)	Level of Service (LOS)
≤ 10	A
> 10-20	B
> 20-35	C
> 35-55	D
> 55-80	E
> 80	F

A summary of the LOS descriptions are as follows:

- LOS A describes operations with a control delay of 10 seconds per vehicle (s/veh) or less. This level is typically assigned when progression is exceptionally favorable or the cycle length is very short. Most vehicles arrive during the green indication and travel through the intersection without stopping.
- LOS B describes operations with control delay between 10 and 20 s/veh. This level is typically assigned when progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
- LOS C describes operations with control delay between 20 and 35 s/veh. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued/stopped vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
- LOS D describes operations with control delay between 35 and 55 s/veh. This level is typically assigned when progression is ineffective or cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
- LOS E describes operations with control delay between 55 and 80 s/veh. This level is typically assigned when progression is unfavorable and the cycle length is long. Individual cycle failures are frequent.
- LOS F describes operations with control delay exceeding 80 s/veh. This level is typically assigned when progression is very poor and the cycle length is long. Most cycles fail to clear the queue.

Table 3 summarizes the Existing 2011 AM and PM Delay and corresponding LOS for the signalized intersections along Route 7 as reported in the Alternative Intersection Analysis and Design Report dated May 2015.

Table 3: Existing (2011) AM/PM Delay and LOS at Signalized Intersections

Signalized Intersection	Existing 2011 AM		Existing 2011 PM	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Reston Parkway	17.0	B	99.0	F
Utterback Store Road	16.3	B	35.8	D
Baron Cameron Avenue/Springvale Road	78.9	E	82.0	F
Delta Glen Court/Colvin Run Road (West)	21.3	C	47.0	D
Carpers Farm Way/Colvin Run Road (East)	46.8	D	29.8	C
Beulah Road/Forestville Drive	31.9	C	22.9	C
Towlston Road	18.0	B	19.4	B
Lewinsville Road	28.2	C	32.0	C
Dulles Toll Road WB Off-Ramp/Jarrett Valley Drive	51.5	D	8.4	A

1.3.1.b Access Management

As documented in the Safety Assessment from February 2013, the study corridor is a divided facility with at-grade intersections. Median openings are located at all of the signalized intersections and at most of the un-signalized intersections. Most properties along Route 7 have direct access to the corridor. Access management of the study corridor directly affects the safety performance of the study corridor.

1.3.2 Future Conditions – 2040 No-Build

Growth rates for traffic volumes on this segment of Route 7 were determined examining the Transportation Planning Board 2010 CLRP models with Cooperative Land Use Forecasts Round 8.0, the Statewide Planning System (SPS) and historical traffic trends. All analyses indicated a traffic growth rate of 1.6% per year from Existing year 2011 through the Design year 2040.

1.3.2.a Capacity

The 2040 average daily traffic (ADT) volumes were projected to be 73,000 vehicles per day (VPD) from Reston Avenue to Difficult Run and 86,000 VPD from Difficult Run to Dulles Toll Road. As shown in **Table 4**, if capacity improvements are not incorporated, Route 7 is projected to be overcapacity in the design year (2040) by 108.6% - 145.7% of the DSV (see Table 4: 2040 No-Build Capacity Deficiencies).

Table 4: 2040 No-Build Capacity Deficiencies

Route 7 Segment	DSV	2040 ADT	% Overcapacity
Reston Avenue to Diffcult Run	35,000 VPD	73,000 VPD	108.6%
Difficult Run to Dulles Toll Road	35,000 VPD	86,000 VPD	145.7%

The Alternative Intersection Analysis and Design Report analyzed traffic volumes and delays to determine the Intersection Level of Service (LOS) at the signalized intersections within the study area. **Table 5** compares the Existing (2011) and Future (2040) No-Build AM and PM Delay and LOS for the signalized intersections along Route 7.

Table 5: Existing (2011) vs. Future (2040) No-Build AM/PM Delay at Signalized Intersections

	AM				PM			
	Existing 2011		2040 No-Build		Existing 2011		2040 No-Build	
Signalized Intersection	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Reston Parkway	17.0	B	100.2	F	99.0	F	90.6	F
Utterback Store Road	16.3	B	107.9	F	35.8	D	105	F
Baron Cameron Avenue/Springvale Road	78.9	E	236	F	82.0	F	113.6	F
Delta Glen Court/Colvin Run Road (West)	21.3	C	156.2	F	47.0	D	36	D
Carpers Farm Way/Colvin Run Road (East)	46.8	D	137.1	F	29.8	C	21.3	C
Beulah Road/Forestville Drive	31.9	C	97.6	F	22.9	C	47.6	D
Towlston Road	18	B	60.2	E	19.4	B	59	E
Lewinsville Road	28.2	C	82.5	F	32.0	C	72	E
Dulles Toll Road WB Off-Ramp/Jarrett Valley Drive	51.5	D	46.8	D	8.4	A	35.4	D

1.3.2.b Access Management

Existing access management deficiencies would not be addressed under the future no-build conditions. Additional traffic, delays and development along Route 7 would worsen the already poor access management situation, resulting in more traffic delays and safety issues.

1.4 SAFETY

The Safety Assessment dated February 2013 documents 911 reported crashes at intersections and on segments along the corridor from 2006 to 2010. These crashes involved a total of 1,947 vehicles and 2,011 occupants which resulted in two fatalities and 466 injuries. As a result, the estimated property damage associated with these crashes is $5,101,385 and the estimated societal cost is $47,300,028. The Safety Assessment documents that the predominant type of collision along this corridor is rear-end crashes due to congestion and queuing. While safety is not a need in the context of this Environmental Assessment, reducing congestion and improving access management should improve overall safety of the corridor.

1.5 SUMMARY

To summarize, the purpose and need for the proposed improvements is to:

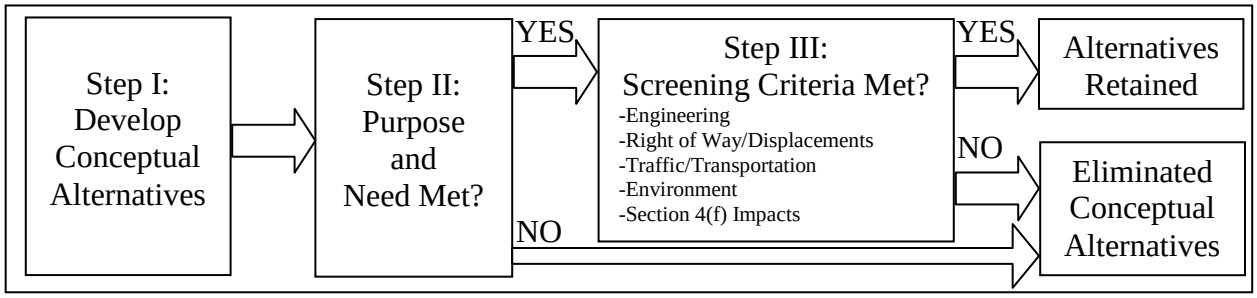
- Address capacity deficiencies resulting from existing and future traffic demand.
- Address access management deficiencies.

2.1 INTRODUCTION

This section discusses the range of alternatives considered, including the No-Build Alternative and the Build Alternative. This section also describes the basis for the alternatives and options being either eliminated or carried forward for detailed analysis in this document. The No-Build Alternative was retained for detailed study and serves as a baseline for comparison. A preferred Build Alternative has been identified and is described in detail.

The flowchart below illustrates the steps in the alternatives development and screening process. This process involved identifying a range of alternatives initially and then narrowing the options to a preferred Build Alternative for detailed consideration.

Alternatives Development and Screening Process



2.2 ALTERNATIVES ELIMINATED FROM DETAILED STUDY

Through the alternatives screening process, two alternatives were not retained for further consideration and not carried forward for detailed study. **Table 6** lists the alternatives eliminated and the basis for their elimination.

Table 6: Alternatives Eliminated

Alternative	Basis for Elimination
Transportation System Management (TSM) Alternative	"TSM" generally means implementation of relatively low-cost actions to improve efficiency of existing transportation systems. Examples include traffic controls, signal synchronization, turn lanes, parking management, access management, operations modifications, flexible work hours, van pools, transit scheduling, bicycle and pedestrian improvements, modifying driver behavior with incentives, pricing, or restrictions. Although such actions are important elements in the overall transportation plan for any urbanized area, there are none that would meet the identified needs for this project because they would not address the capacity and access management deficiencies.
Mass Transit Alternative	This alternative would increase mass transit service in the study area. The travel hazards along Route 7 mostly stem from the uncontrolled access points and the current and future carrying capacity issues. Increasing the use of mass transit will not solve the capacity and access management problems nor would it substantially reduce the congestion and capacity deficiencies. Since it does not meet the project purpose or need, the Mass Transit Alternative has been eliminated from further study.

2.3 ALTERNATIVES CARRIED FORWARD

2.3.1 No-Build

The No-Build Alternative would retain the existing Route 7 roadway and associated intersections/interchanges in their present configuration, and allow for routine maintenance and safety upgrades. This alternative assumes no major improvements to the Route 7 corridor with the exception of previously committed projects, including projects currently programmed and funded in VDOT Fiscal Year (FY) 2018-2023 Six-Year Improvement Program (SYIP), the Metropolitan Washington Council of Governments (MWCOG) for the National Capital Region Constrained Long Range Plan (CLRP) 2016, and Fairfax County Department of Transportation Capital Projects.

2.3.2 Build Alternative

The proposed project would provide an additional lane on each side of the existing roadway for a total of six 11-foot lanes with curb and gutter divided with a 16-foot raised median. Turn lane lengths would also be improved to meet the full American Association of State Highway Transportation Officials (AASHTO) requirements for deceleration and storage to eliminate backups into through lanes. Unsignalized median crossovers not meeting signal warrants would either be closed or converted to median left turn lanes.

In addition, the following improvements are proposed for the corridor:

- There are a number of substandard vertical curves that do not meet the required lengths for stopping sight distance and the roadway's design speed; substandard vertical curves would be corrected to meet the required design speeds;
- Intersection sight distance at the Trap Road/Route 7 intersection is substandard; the Build Alternative would configure the intersection to a right in/right out from the existing full access intersection to prohibit unsafe traffic movements;
- The Utterback Store Road intersection with Route 7 would be reconfigured to eliminate the existing severe skew;
- The project would replace the existing bridge over Difficult Run with a new structure to eliminate flooding issues experienced with the existing structure;
- 10-foot wide shared use paths would be provided along the westbound and eastbound lanes creating a continuous pedestrian route for the entire corridor; and,
- Protected signalized pedestrian movements would be provided at all signalized intersections.

2.3.3 Ability to Meet Purpose and Need

The Build Alternative would provide additional traffic capacity and implement access management from Reston Avenue to the west approach of the bridge over Dulles Toll Road (see **Figure 1**), as described below.

2.3.3.a Capacity

In the Design year 2040, the Build Alternative's wider typical section and improved turn lane lengths substantially decrease the AM and PM intersection delays from those of the No-Build Alternative. As presented in **Table 7**, The Build Alternative also achieves a more desirable AM and PM intersection LOS (all between A and C, except for one D) than the No-Build Alternative (primarily F).

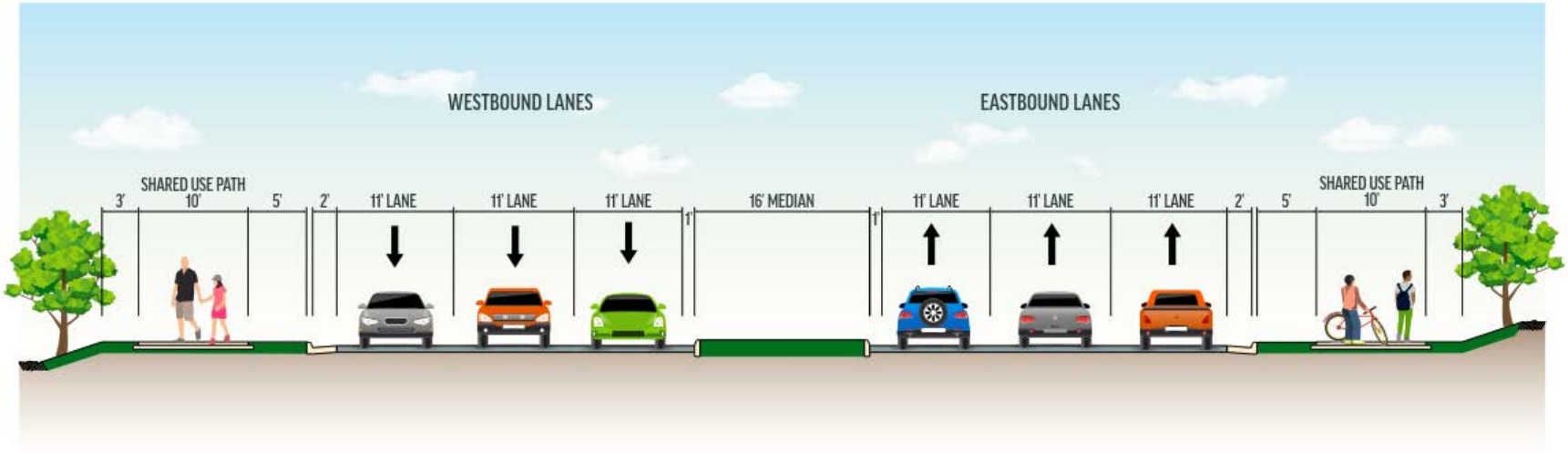
Table 7: Future No-Build (2040) vs. Future Build (2040) AM/PM Delay and LOS at Signalized Intersections

Signalized Intersection	2040 AM				2040 PM			
	No-Build		Build		No-Build		Build	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Reston Parkway	100.2	F	23.9	C	90.6	F	21.5	C
Utterback Store Road	107.9	F	12.1	B	105.0	F	19.2	B
Baron Cameron Avenue/Springvale Road	236.0	F	19.8	B	113.6	F	37.7	D
Delta Glen Court/Colvin Run Road (West)	156.2	F	8.5	A	36.0	D	10.1	B
Carpers Farm Way/Colvin Run Road (East)	137.1	F	17.1	B	21.3	C	25.0	C
Beulah Road/Forestville Drive	97.8	F	20.6	C	47.6	D	22.7	C
Towlston Road	60.2	E	19.4	B	59.0	E	26.9	C
Lewinsville Road	82.5	F	30.2	C	72.0	E	26.3	C
Dulles Toll Road WB Off-Ramp/Jarrett Valley Drive	46.8	D	4.3	A	35.4	D	5.3	A

2.3.3.b Access Management

Access management deficiencies would be addressed for the un-signalized median cross overs not meeting signal warrants. A number of these would be closed, while the remaining would be converted to median left turn lanes. These changes eliminate traffic from side roads making unprotected movements across multiple lanes of traffic. Service drives would be constructed as needed for access to driveways/entrances and to complete connections.

Figure 2: Typical Section



3.1 OVERVIEW OF ENVIRONMENTAL CONSEQUENCES

Social, economic, physical and natural resources have the potential to be affected during transportation projects. Therefore, existing environmental conditions and potential impacts are important to identify and understand. An Inventory Area was developed to identify resources proximal to the Build Alternative retained for study and inform its design. None of the alternatives considered would be anticipated to actually impact all of the resources inventoried in this area; instead the identification of these resources allows for flexibility to reduce or avoid impacts as the design advances, providing knowledge of the consequences of potential design changes. Potential environmental impacts associated with the Build Alternative were estimated based on the Build Alternative's limits of disturbance (LOD). This LOD has been estimated for alternative comparison purposes and decision-making during the National Environmental Policy Act (NEPA) process, and would be further refined as design advances.

Table 8 summarizes the environmental conditions within the Study Area and, where applicable, summarizes the estimated environmental impacts to those resources for the No-Build Alternative and Build Alternatives.

Table 8: Summary of Environmental Conditions and Potential Impacts

Environmental Resource	Resource Summary	Potential Environmental Impact	
		No-Build Alternative	Build Alternative
Land Use	The land use along this section of Route 7 is primarily low-density/suburban neighborhood residential, with large tracts of parkland and institutional uses with few commercial areas. Within the vicinity of the study area there are several designated development centers, as designated by Fairfax County, including the Tysons Corner Urban Center, Reston and its associated Transit Station Areas (TSA), and the McLean Community Business Center (CBC). The proposed project is in conformance with the Fairfax County Comprehensive Plan and would support the future growth planned for the development centers. Relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended, 1987) would be provided.	No impacts anticipated	One residential acquisition, 19.92 acres would be converted to transportation use

Environmental Resource	Resource Summary	Potential Environmental Impact	
		No-Build Alternative	Build Alternative
Socioeconomics	Based on the 2011-2015 American Community Survey 5-Year Estimates, Environmental Justice populations have been identified within the project area. One residential building would be displaced by the project. The Stage I Relocation Assistance Report identified the property owner as belonging to a minority group. The displaced persons would receive all benefits that they are eligible for under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended, 1987). Additionally, the Build Alternative would require temporary and permanent acquisition along the corridor from properties belonging to both minority populations and non-minority populations. However, since the Build Alternative would be on an existing alignment, property impacts have been minimized in comparison to a new alignment. The addition of lanes, added facilities for cyclists and pedestrians, and intersection and other improvements along Route 7 would enhance roadway safety, provide additional travel choices, and provide additional travel capacity, providing benefits to all populations, including minority populations. Project-related beneficial and adverse effects would be fairly distributed among both minority populations and non-minority populations. For additional information refer to***Socioeconomic and Land Use Technical Report***.	No impacts anticipated	There would be no disproportionately high and adverse effects to minority populations

Environmental Resource	Resource Summary	Potential Environmental Impact	
		No-Build Alternative	Build Alternative
Parks and Recreation	Fairfax County Park Authority (FCPA) lands within the project area include Colvin Run Mill Park, Great Falls Nike Park, and Difficult Run Stream Valley Park. Minimization/mitigation efforts for the minor use of FCPA lands have been coordinated with FCPA to obtain final concurrence that the temporary occupancy, permanent easement, and fee taking, based upon current design information and the commitment on the part of VDOT to protect the park property, follow the proposed revised mitigation to minimize harm, and follow FCPA's design requirements, impacts to park property will not adversely affect activities, features, and attributes of the park. This concurrence does not constitute an endorsement of the project or conveyance of any temporary or permanent interests in or access to parklands. This concurrence is provided with the understanding that further design information is to be provided to FCPA by VDOT during project development and that further consultation with FCPA will be undertaken by VDOT to ensure, prior to granting of any temporary or permanent property interests, that harm to park property by the proposed project will be minimized and the conditions upon which this concurrence is based have not changed. The FHWA intends to make findings of de minimis impact pursuant to Section 4(f) of the U.S. Department of Transportation Act of 1966 for the minor involvement with of FCPA lands. There are no Section 6(f) properties within the project area. For additional information refer to ***Socioeconomics and Land Use Technical Report***.	No impacts anticipated	Permanent and temporary easements from three parks, as follows: *Colvin Run Mill Park* • 0.15 acres right of way • 1.0 acres permanent easement • 1.15 acres temporary easement *Great Falls Nike Park* • 0.48 acres right of way • 0.03 acres permanent easement • 0.25 acres temporary easement *Difficult Run Stream Valley Park* • 1.05 acres right of way • 0.86 acres permanent easement • 3.78 acres temporary easement

Environmental Resource	Resource Summary	Potential Environmental Impact	
		No-Build Alternative	Build Alternative
Cultural Resources	Additional coordination with the Virginia Department of Historic Resources (VDHR) resulted in a determination of No Adverse Effect pursuant to Section 106 of the National Historic Preservation Act with the following conditions: Noise barriers will not be located within the National Register eligible limits of historic properties; any noise barriers adjacent to the Colvin Run Mill and Colvin Run Historic District historic properties will utilize architectural/aesthetic treatments; VDOT commits to limiting the removal of existing trees for noise barriers as much as possible in areas adjacent to historic properties; and to ensure that the noise barrier design remains consistent with the No Adverse Effect determination, VDOT will provide final noise wall plans to DHR and consulting parties once they become available. FHWA intends to make findings of de minimis impact pursuant to Section 4(f) of the U.S. Department of Transportation Act of 1966 for the minor involvement with land from the Hunter Mill Road Historic District (VDHR ID 029-5180), Colvin Run Mill (VDHR ID 029-0008/029-5462-0001), the Colvin Run Mill Historic District (VDHR ID 029-5462), and Andrews School (Lyons House) (VDHR ID 029-5303).	No impacts anticipated	Permanent and temporary easements from three parks is, as follows: *Colvin Run Miller's House* - No Effect *Hunter Mill Road Historic District* - No Adverse Effect *Andrews Chapel School/Lyons House* - No Adverse Effect *Colvin Run Mill* - No Adverse Effect *Colvin Run Historic District* - No Adverse Effect *Alexandria/Leesburg Turnpike roadbed* - No Effect **Overall Project** - No Adverse Effect
Air Quality	This project is located within a Moderate Ozone Nonattainment area, a Fine Particulate Matter (PM2.5) Nonattainment area, and a volatile organic compounds (VOC) and oxides of nitrogen (NOx) Emissions Control Area. For additional information refer to ***Air Quality Analysis***.	No violation of NAAQS	
Noise	A preliminary noise analysis was performed for	Noise Receptors (No.)	

Environmental Resource	Resource Summary	Potential Environmental Impact	
		No-Build Alternative	Build Alternative
	the project. Under the Design year 2040 Build conditions, a total of 205 receptors (173 residencies, 13 cemetery grid units, 15 proposed trail units, one soccer field (two units), two playgrounds (seven grid units), and one historic site) are predicted to experience noise impacts. Noise barriers were evaluated and preliminarily determined to be both feasible and reasonable. Further study is required during Final Design to refine the abatement options consistent with design refinements and will be documented in the Final Noise Analysis and Technical Report. For additional information refer to ***Preliminary Noise Analysis***.	n/a	205
Waters of the U.S.	Approximately 22.23 acres of wetlands and 10,800 linear feet of regulated stream channels (including 2,208 linear feet of piped stream) have been identified within the Study Area. The Build Alternative would impact streams and wetlands (see **Section 3.2**).	Stream Impacts (linear feet)	
		0	3,185
		Wetlands (acres)	
		0	2.15
Water Quality	A portion of Difficult Run (533 linear feet) within the Study Area is classified as impaired (PCB in fish tissue). No TMDLs occur within the Study Area. The Build Alternative would have limited direct impacts on water quality. For additional information refer to ***Natural Resources Technical Report***.	No substantial impacts	Temporary, minimal construction-related impacts
Floodplains	The Study Area contains 50 acres of 100-year floodplain, 0 acres of floodway, and 0 acres of 500-year floodplain. Encroachments on Federal Emergency Management Agency (FEMA)-designated floodplains would be minimal for the Build Alternative; federal regulation and VDOT design parameters would minimize potential effects to floodplains (see **Section 3.3**).	100-Year Floodplain (acres)	
		0	17.5

Environmental Resource	Resource Summary	Potential Environmental Impact	
		No-Build Alternative	Build Alternative
Threatened, Endangered, and Special Status Species	Three Federally listed species (rusty patched bumblebee, northern long eared bat, and yellow lance) have not been documented in the Study Area but could occur in the Study Area based on predictive modeling. One State listed species (wood turtle) was documented in the Study Area in 2002. Further coordination with agencies and final Section 7 effect determinations would be conducted as the design of the project progresses. For additional information refer to ***Natural Resources Technical Report***.	No impacts anticipated	
Terrestrial Wildlife and Habitat	The Build Alternative would primarily impact areas already heavily disturbed by existing development and road infrastructure. Wildlife found within the Study Area are adapted to the disturbed and degraded habitat. The Build Alternative would not add impediments to use of the habitat by wildlife. Noise barriers may be placed adjacent to the road, but would not impede wildlife movement any more than the existing road. For additional information refer to ***Natural Resources Technical Report***.	No impact	Minimal impacts to already heavily disturbed and degraded habitat
Aquatic Biology	The Fairfax County Stream Protection Baseline Study was identified as the best available data source relevant to the Study Area. Three monitoring stations are located within or close to the Study Area (Colvin Run, Piney Run, and Difficult Run). Benthic Macroinvertebrate Community Integrity scored "poor" in Colvin Run and "good" for both Difficult Run and Piney Run. Aquatic Habitat scored "poor" for all three stations. Fish Taxa Richness scored "high" for Colvin Run, "moderate" for Difficult Run, and "low" for Piney Run. The Build Alternative would result in minimal impacts from loss of stream channel, temporary construction impacts, and operation of the road. The impacts would be largely offset through implementation of best management practices and stabilization of Colvin Run, which is currently unstable and eroding. For additional information refer to ***Natural Resources Technical Report***.	Minimal Impacts	Minimal impacts

Environmental Resource	Resource Summary	Potential Environmental Impact	
		No-Build Alternative	Build Alternative
Farmlands	The study area is not subject to the Farmland Protection Policy Act because the entire study area is located within a Census urbanized area. The project does not require coordination for impacts to agricultural and forestal districts because the impacts are below the minimum threshold established by § 15.2-4313 of the Code of Virginia. For additional information refer to ***Natural Resources Technical Report***.	No impact	Minimal impacts
Hazardous Materials	A Phase I Hazardous Materials Investigation identified six properties for additional investigations. A Phase II Hazardous Materials Investigation of selected properties discovered petroleum-contaminated soil within the proposed R/W adjacent to a former Exxon station located at 10516 Leesburg Pike. Naturally occurring asbestos is documented along or near Route 7. Special Provisions for petroleum-contaminated soil and naturally occurring asbestos will be included in the Contract.	Sites will be managed and handled in accordance with federal, state, and local procedures	

*The acquisition of property and the relocation of residents, businesses, farms, and non-profit organizations will be conducted in accordance with all applicable Federal laws, regulations and requirements, including but not limited to, 23 CFR Part 710, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and its implementing regulations found in 49 CFR Part 24. All persons displaced on Federally-assisted projects will be treated fairly, consistently, and equitably so that they do not suffer disproportionate injuries as a result of projects that are designed for the benefit of the public as a whole. Relocation resources will be available to all residential and business relocatees without discrimination.

3.2 WATERS OF THE U.S.

The study area is located within the Middle Potomac-Catoctin sub-basin (Hydrologic Unit Code [HUC] 02070008) and Difficult Run sub-watershed (020700081004) within the larger Potomac River Basin. Several named perennial streams pass through or in close proximity to the study area, including Dog Run, Piney Run, Colvin Run, Difficult Run, and Bridge Branch. All of the streams within the study area ultimately flow to the Potomac River.

VDOT conducted a wetland delineation in July 2015 and obtained a Preliminary Jurisdictional Determination (PJD) from the U.S. Army Corps of Engineers on March 23, 2017. Approximately 22.23 acres of wetlands were delineated within the study area, including 13.73 acres of palustrine forested (PFO) wetlands, 3.21 acres of palustrine scrub-shrub (PSS) wetlands, 2.74 acres of palustrine emergent (PEM) wetlands, and 2.55 acres of palustrine open water (POW) wetlands.

Approximately 10,800 linear feet of regulated stream channels were delineated within the study area, including 7,666 linear feet of perennial channel (R2/R3), 774 linear feet of

intermittent channel (R4), 152 linear feet of ephemeral channel (R6), and 2,208 linear feet of piped streams. The streams within the study area are confined by Route 7 and have very little riparian buffer. No jurisdictional ditches were identified.

Delineated streams and wetlands are depicted on **Figure 3**. For additional information on streams and wetlands within the study area, refer to ***Natural Resources Technical Report***.

The Build Alternative would result in impacts to approximately 2.15 acres of wetlands (including 1.60 acres of PFO wetland, 0.12 acres of PSS wetland, 0.40 acres of PEM wetland, and 0.03 acres of PUB wetland (i.e., ponds) and approximately 3,185 linear feet of stream (including 2,769 linear feet of perennial stream (R2/R3) and 416 linear feet of intermittent stream (R4)).

Primary impacts to streams and wetlands resulting from roadway construction would likely include discharges of fill material for culverted stream crossings, bridge approaches and abutments, stream relocations, stormwater management basin outfalls, and roadway cut/fill slopes. Secondary effects would likely include stormwater discharge from the widened roadway and right-of-way and shading at bridge crossings.

Throughout project development, VDOT refined a number of design elements in order to avoid and minimize impacts to wetlands and streams. Design refinements included lane width reduction, median width reduction, use of retaining walls, horizontal and vertical roadway alignment shifts, multi-use path and safety buffer width reduction, minimization of the typical section of relocated stream channels, and stormwater management basin location. Overall, design refinements resulted in impact reductions to 4.41 acres of wetlands and 239 linear feet of stream.

Should the project advance, impacts to wetlands and streams would be avoided and minimized to the maximum extent practicable as part of the Section 404/401 permitting process. Compensatory mitigation for permanent impacts to streams and wetlands would be developed, as required, during the Section 404/401 permitting process in coordination with the appropriate state and federal agencies. For additional information, refer to ***Natural Resources Technical Report***.

3.3 FLOODPLAINS

The study area contains approximately 50 acres of 100-year floodplain, 0 acres of floodway, and 0 acres of 500-year floodplain. Floodplains within the study area are depicted on **Figure 4**. These 100-year floodplains are associated with Difficult Run, Colvin Run, and Piney Run. The remaining 245 acres within the study area are designated as Zone X (areas outside of the 500-year floodplain) (United States Department of Homeland Security, 2017).

The Build Alternative would impact approximately 17.5 acres of 100-year floodplain, 0 acres of floodway, and 0 acres of 500-year floodplain. Floodplain impacts would occur directly adjacent to Route 7, and are the result of fill required for the addition of a third lane.

Figure 3: Delineated Streams and Wetlands within the Study Area

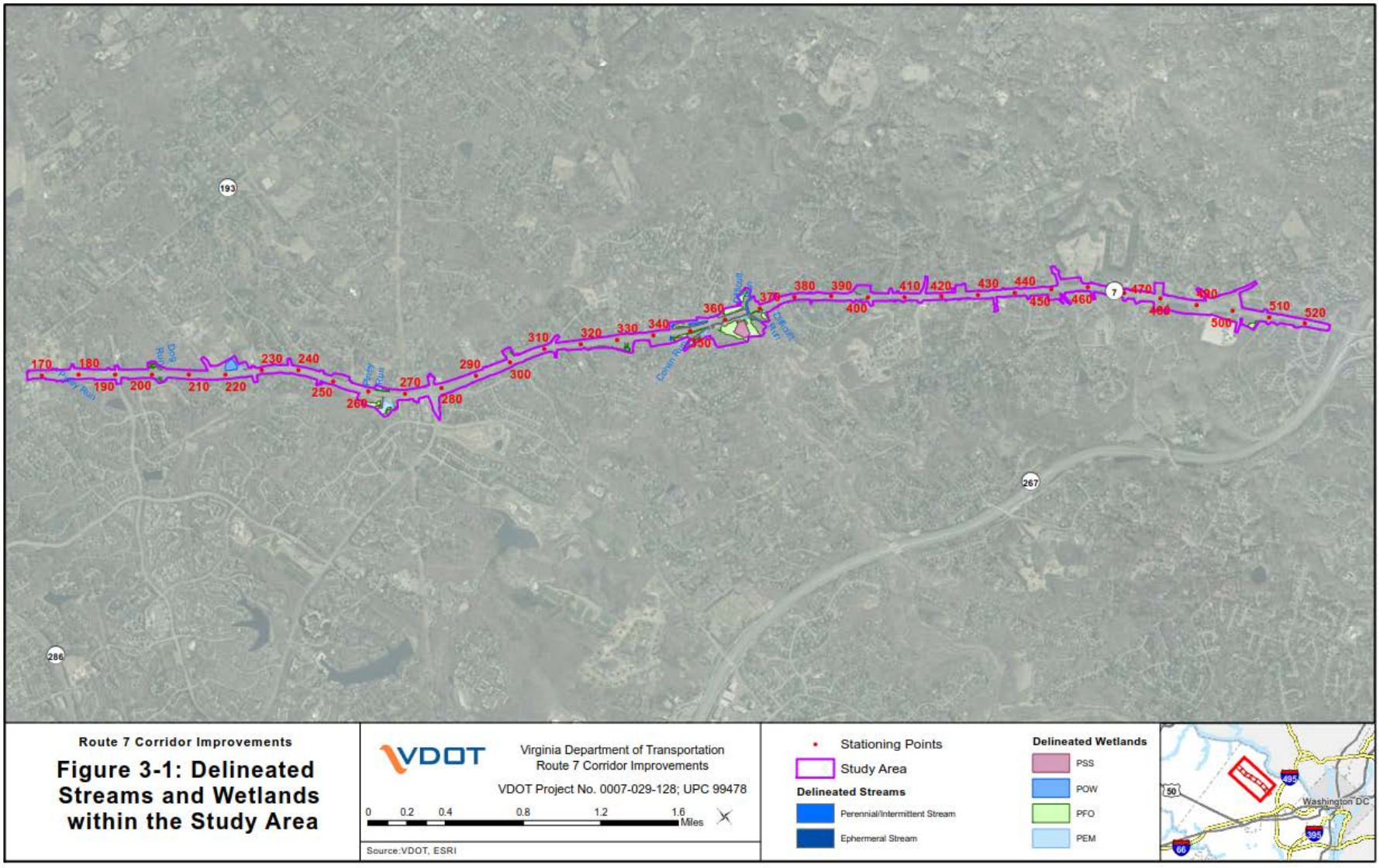
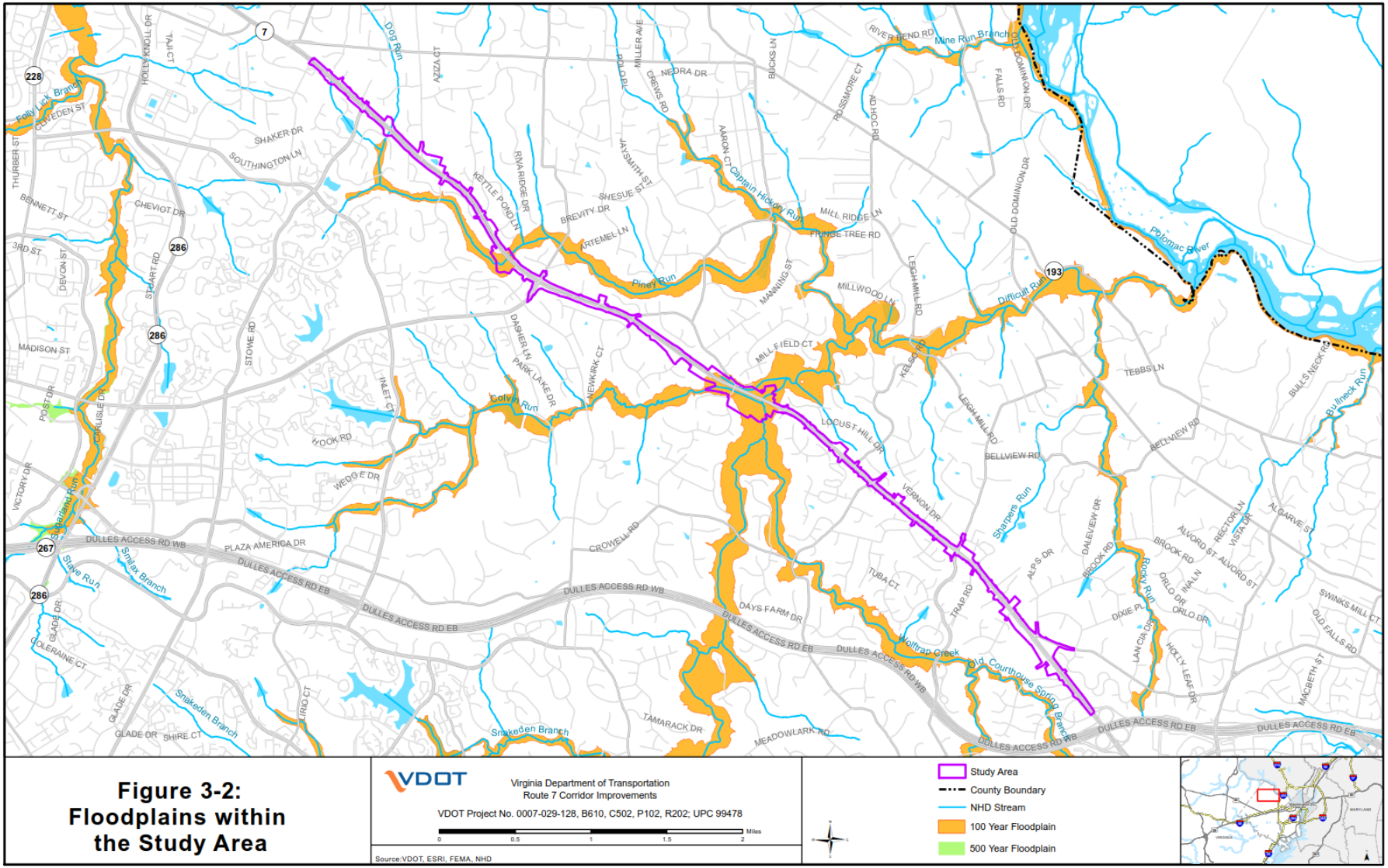


Figure 4: Delineated Streams and Wetlands within the Study Area



Consequently, the proposed floodplain impacts are in an area in which floodplains are already impacted by Route 7. During final design, a hydrologic and hydraulic analysis would be required by VDOT to provide adequate design of the hydraulic openings of culverts and proper conveyance of floodwaters to minimize potential impacts to the floodplain and floodplain hazards. In the case of the Difficult Run crossing, the hydraulic opening would be expanded and therefore, the proposed floodplain conditions would be better than existing conditions. For additional information, refer to ***Natural Resources Technical Report***.

3.4 CONSTRUCTION

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

3.4.1 Water Quality

During construction, non-point source pollutants could possibly enter groundwater or surface water from stormwater runoff. To minimize these impacts, appropriate erosion and sediment control practices will be implemented in accordance with VDOT's most current *Road and Bridge Specifications*. These specifications also prohibit contractors from discharging any contaminant that may affect water quality. In the event of accidental spills, the contractor is required to immediately notify all appropriate local, state, and federal agencies and to take immediate action to contain and remove the contaminant.

3.4.2 Air

Air quality impacts from construction, consisting of emissions from diesel-powered construction equipment, burning of debris, fugitive dust, and the use of cutback asphalt (particularly during the months of April through October), would be temporary. This project would comply with all applicable local, state, and federal regulations, including the Virginia Environmental Regulation 9 VAC 5-130 regarding open burning restrictions, 9 VAC 5-50, Article 1 regarding fugitive dust precautions, and 9 VAC 5-45, Article 7 regarding cutback asphalt restrictions. To control dust, measures would be taken to minimize exposed earth by stabilizing with grass, mulch, pavement, or other cover as early as possible. Other measures will be implemented per VDOT's most current *Road and Bridge Specifications* to minimize air pollution.

3.4.3 Noise

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 impacts from these activities. VDOT's *Road and Bridge Specifications* establish construction noise limits and the contractor would be required to conform to this specification to reduce any impacts of construction noise.

3.4.4 Solid Waste and Hazardous Materials

All solid waste material resulting from clearing and grubbing, demolition, or other construction operations would be removed from the project and disposed of in an appropriate manner. If contaminated soils are encountered during construction, VDOT would develop and implement

appropriate procedures for their proper management and coordinate the removal, disposal, and/or treatment of the soil, as necessary. If contaminated groundwater is encountered during construction, VDOT would implement appropriate specifications for proper management and treatment of the water, as necessary.

3.4.5 Late Discoveries

During construction, should the discovery of archaeological, paleontological, or rare mineralogical articles occur, work would be suspended immediately. VDOT's *Road and Bridge Specifications* establish the protocol that would be followed should a "late discovery" occur.

3.5 INDIRECT EFFECTS

The Council on Environmental Quality (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" (40 CFR 1508.8(b)). 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 1508.8(b)). For the purposes of this EA, the methodology followed for analyzing indirect effects is prescribed in the National Cooperative Highway Research Program (NCHRP) Report 466, *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects* (TRB, 2002). The indirect effects analysis relies on planning judgment that is described in the NCHRP 25-25 program, Task 22, *Forecasting Indirect Land Use Effects on Transportation Projects* (TRB, 2007). For additional information refer to ***Indirect and Cumulative Effects Technical Report*** for a more detailed discussion of the methodology for analysis of indirect effects.

<u>No-Build Alternative</u>

Under the No-Build Alternative, increased traffic delays, congestion, and the lack of improved bicycle and pedestrian access would have an adverse indirect effect on community facilities, businesses, and residents. Proximity effects associated with the existing facility, including noise, air quality, and visual intrusions would continue to affect parks, historic resources, and wildlife. Potential indirect effects could be associated with petroleum from vehicles, and salt or chemicals due to road maintenance.

No induced growth would be expected as a result of the No-Build Alternative. The Indirect and Cumulative Effects (ICE) Study Areas and surrounding locality is already highly developed and built-out with mature infrastructure.

<u>Build Alternative</u>

Indirect effects to neighborhood cohesion, community facilities, environmental justice populations, bike paths and recreational resources, and economics from the Build Alternative are expected to be minor during construction. Construction could cause temporary noise impacts, and increased travel times within the area, and increased emergency vehicle response times. However, the Build Alternative would have long-term beneficial effects such as reduced travel time and increased travel reliability. The Build Alternative would also provide an alternate transportation mode choice by providing better bicycle and pedestrian passage

between communities, residents, neighborhoods and businesses, and safer interactions between motor vehicles and bicycles/pedestrians.

Potential indirect effects to waters, wetlands, and water quality could result from increased stormwater runoff due to increases in impervious surfaces. Implementation of strict erosion and sediment control and stormwater measures during construction would minimize permanent and temporary impacts to waters, wetlands and water quality, and thereby minimize indirect effects as well. Potential indirect effects to floodplains could occur if fill is placed into floodplains, changing the flood flow elevations. However, the proposed replacement of the existing Difficult Run Bridge would increase the hydraulic opening and would, therefore, improve floodplain connectivity and would potentially lower upstream flood flow elevations. All construction activities would be designed to ensure that culverts and bridges are adequately sized and do not impede floodwater passage.

Indirect effects to wildlife and threatened, endangered, and special status species could be related to increased noise, human activity, dust associated with construction, potential for animal-vehicle collisions, potential for oil spills, potential for introduction of invasive species, changes in vegetative composition due to changes in light and hydrologic regimes, and loss of habitat. New stormwater facilities and stormwater regulations would reduce or neutralize impacts to aquatic habitat. Since the Build Alternative would be on an existing alignment, habitat and wildlife corridor fragmentation is not expected to be an indirect effect. Existing culvert and bridge crossings would allow for the continued passage of wildlife beneath Route 7. The proposed replacement of the existing Difficult Run Bridge would allow for continued wildlife movement, aiding aquatic and terrestrial organism passage beneath the road. During construction, the contractor would adhere to VDOT's Road and Bridge Specifications manual, Chapter 40 of Title 3.2 of the Code of Virginia, Virginia Administrative Code (VAC) 2VAC-5-390-20, and other applicable regulations to prevent the introduction and establishment of invasive species.

The Build Alternative could have an adverse short-term indirect effect on historic resources by altering access and increasing congestion during construction. However, once the construction is complete, the Build Alternative would have a long-term beneficial indirect effect on the historic resources by improving visitors' ability to access the historic resources through reduced congestion, as well as an alternate transportation mode.

The ICE Study Areas and surrounding locality are built-out with mature infrastructure. Since the Build Alternative would not contribute to any conditions conducive to induced growth including transportation on new alignment, land use progression, or largely new infrastructure or economic advances that are not already planned in the ICE Study Areas, no induced growth would be expected as a result of the Build Alternative.

3.6 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/or would likely occur as a result of any action or influence, including effects of a federal activity (Environmental Protection Agency (EPA), 1999). The cumulative effects analysis is based on the five-part evaluation process outlined in Fritiofson v. Alexander, 772 dF.2d 1225 (5th Cir. 1985), as described in FHWA's Guidance: *Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process* (FHWA, 2014). Refer to ***Indirect and Cumulative Effects Technical Report*** for a more detailed discussion on methodology for analysis of cumulative effects.

Many of the past actions that have contributed to the baseline for this analysis occurred as part of the residential and mixed used development. This development transformed a rural landscape into a suburban/urban environment, resulting in a loss of wildlife habitat and species, impacts to wetlands, streams, and floodplains; and increased levels of air and water pollution. Much of the development does not have any associated stormwater management facilities, since many of the areas were developed before stormwater management requirements were in place. The original development also formed the basis for the substantial level of population growth the region experienced. In association with this growth came an increase in employment and investment in the ICE Study Areas.

The ICE Study Area underwent a period of rapid urban development from the 1970s to the 1990s. Large residential neighborhoods, such as the Lake Anne and Lake Fairfax Park developments, were constructed in the vicinity of Route 7 during this time period. Outside of the Route 7 residential development, many mixed use retail/office/residential centers were established, such as Reston, Tysons, Vienna, Oakton, and Fair Lakes. Residences, schools, golf courses, and other community facilities associated with these centers were established surrounding these centers.

While the developments typically avoided stream corridors, many developments were constructed on the forested area adjacent to the streams, reducing the acreage of natural ecosystems associated with the streams (USGS, 2017b). The remaining natural areas are now largely restricted to the major stream corridors, which have received higher levels of protection since the 1980s.

<u>No-Build Alternative</u>

The No-Build Alternative would likely have a minor adverse cumulative effect on communities, businesses, and the population that lives along or that uses the Route 7 corridor due to increased congestion. Increased congestion could potentially cause residential and business relocations away from traffic congestion and air and noise impacts.

Since its initial construction, Route 7 has undergone many improvements and widenings, which have included updating associated stormwater facilities. However, there are still sections lacking any stormwater management features or the features are outdated and would not be improved under the No-Build Alternative. Existing untreated or poorly treated stormwater runoff would continue.

Under the No-Build Alternative, increased traffic delays would negatively affect the accessibility to the identified historic resources.

Build Alternative

The Build Alternative would widen an existing roadway and update bicycle and pedestrian facilities in a highly developed area that has been previously disturbed, limiting the effects of converting other land uses and limiting indirect effects to neighborhoods, community facilities, and environmental justice populations. Although this area has experienced land use conversions and increases in population in the past, these improvements would have a moderate beneficial cumulative impact by improving capacity of the roadway, possibly relieving congestion, and providing an alternate mode of transportation for residents to access other neighborhoods and community facilities. The Build Alternative could have short-term minor adverse effects while the roadway and shared use path are under construction. However, the short-term beneficial effect of more jobs and associated expenditures resulting from the Build Alternative is expected to benefit the local communities.

The Build Alternative's impacts to waters, wetlands, and water quality; floodplains, wildlife habitat; and threatened, endangered, and special status species would contribute to the cumulative effects that have occurred in the past to natural resources within the study area; however, the effects should be minimized by implementation of best management practices and compensatory mitigation. Construction and post-construction of the Build Alternative would potentially contribute to minor, localized increases in pollutants and nutrients causing impairment to waterways. Since construction of the Build Alternative would upgrade and replace current stormwater management systems, implementation of the Build Alternative could improve roadway runoff water quality from current conditions.

Damage or loss of historic resources was far more prevalent from actions that occurred prior to the NHPA of 1966. The NHPA of 1966 combined with the establishment of historic resource protection objectives established at the local planning level, such as the Fairfax's Architectural Review Board and the History Commission, have reduced the rates of impacts to historic resources. However, conflicts between the protection of historic properties and development and transportation continue to occur. While the Build Alternative would affect two historic resources and two historic districts, the cumulative effects for the Build Alternative are not anticipated to be substantial with the protections provided by the Section 106 process for federal actions and by the plan review process by Fairfax's Architectural Review Board and the History Commission for other projects. In summary, past and present actions have affected the current state of socioeconomic, natural, and historic resources within the associated ICE Study Areas, and future actions would continue to affect these resources irrespective of this project. However, since the region is already highly developed, cumulative effects of the Build Alternative are expected to be minimal. Additionally, current regulatory requirements and planning practices are helping to avoid or minimize the contribution of present and future actions to adverse cumulative effects for socioeconomic, natural, and historic resources.

4.1 AGENCY COORDINATION

During the process of preparing this document, the federal, state, and local agencies listed below were consulted to obtain pertinent information and to identify key issues regarding potential environmental impacts. All comments have been reviewed and evaluated as part of the preparation for this document.

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- U.S. Department of Agriculture, Natural Resources Conservation Service
- Virginia Department of Conservation and Recreation
- Virginia Department of Environmental Quality – Air, Water and Waste Divisions
- Virginia Department of Forestry
- Virginia Department of Game and Inland Fisheries
- Virginia Department of Health
- Virginia Department of Historic Resources
- Virginia Marine Resources Commission
- Virginia Outdoors Foundation
- Fairfax County Department of Health
- Fairfax County Department of Housing and Community Development
- Fairfax County Department of Transportation
- Fairfax County Economic Development Authority
- Fairfax County Fire and Rescue Department
- Fairfax County Local Bay Act Coordinator
- Fairfax County Park Authority
- Fairfax County Public Schools
- Fairfax County Water Authority
- Northern Virginia Soil and Water Conservation District
- Bethel Washington Primitive Baptist Church
- McLean Bible Church, Tysons Campus
- Providence Baptist Church

Coordination has been ongoing with the U.S. Army Corps of Engineers and the Environmental Protection Agency (EPA) regarding the impacts to waters of the U.S. and wetlands. VDOT will continue to coordinate with these agencies throughout project development to ensure avoidance and minimization of these impacts have occurred to the greatest extent practicable and to obtain the necessary water quality permits prior to construction.

4.2 PUBLIC INVOLVEMENT

Multiple public involvement activities for this project have occurred since 2012, including two project newsletters issued in December 2015 and May 2016. Public meetings were held on November 28, 2012, November 6, 2013, June 24, 2014, September 24, 2015 and June 16, 2016. In addition, community briefings have been held with the following individual homeowner associations (HOA) and community groups:

- Route 7 Corridor Improvements Project Working Group
- Wolf Trap Woods Homes Association
- Woodside Estates HOA
- Carrington HOA
- Carpers Farm HOA
- Brandermill Estates HOA
- Piney Run HOA
- Ascot HOA
- Coventry Springs HOA
- Lewinsville Coalition
- Great Falls Citizens Association
- Brandermill HOA
- Colvin Meadow Estates HOA
- Great Falls Crossing HOA
- Ciara Estates HOA
- Shaker Woods HOA
- Colvin's Landing Community Association
- Wolftrap Meadows HOA
- Colvin's Glen Citizens Association
- Middleton HOA
- Bradley Oaks HOA
- Towlston Meadow HOA
- Shouse Village HOA
- Shain Court Community
- Hawthorne at Great Falls HOA
- Old Ash Grove Community
- Great Falls Crossing HOA
- Cedar Chase at Great Falls HOA
- Lockmeade HOA
- Great Falls Glen HOA

Specific details about previous public involvement activities, including project newsletters, can be found at http://www.connectroute7.org/learn_more/documents.asp.

VDOT held a Location and Design Public Hearing for this project on November 15, 2016. The purpose of the hearing was to present the preliminary project design and findings of this Environmental Assessment (EA), provide a discussion forum between the public and project team, and obtain input and comments from the community. In addition, there was a minimum of a 30-day public comment period following notice of availability of the EA on November 2, 2016, and substantive comments were addressed. Any comments received during the public hearing and public comment period will become part of the public hearing record.

APPENDIX A

LIST OF TECHNICAL REPORTS

Socioeconomic and Land Use Technical Report
Alternative Analysis
Air Quality Analysis
Preliminary Noise Analysis
Natural Resource Technical Report
Indirect and Cumulative Effects Technical Report

APPENDIX B
AGENCY COORDINATION

From:	Okorn, Barbara
To:	Campbell, Bryan (VDOT)
Cc:	Allen-Grimes, Alice
Subject:	Route 7 Widening Environmental Assessment
Date:	Thursday, April 06, 2017 9:32:24 AM

Bryan,
thank you for the opportunity to review the Environmental Assessment (EA) and the additional information regarding the stream relocation. We appreciate the efforts you made to continue close coordination on this project.

- While we understand the Transportation System Management (TSM) alternative does not meet the project's needs, we suggest these actions be considered along with the build alternative.

- It is unclear if no response from USFWS regarding threatened and endangered species is in fact concurrence. We suggest documentation of coordination be provided in the EA.

- Are potential impacts associated with noise barriers considered in this EA? We suggest that these impacts be evaluated and presented.

- Additional information should be provided related to the handling provisions for the petroleum-contaminated soils and naturally occurring asbestos.

- Avoidance and minimization efforts to the natural and human environment should continue as the project moves forward. In addition, we suggest that mitigation opportunities for unavoidable impacts be included in the EA.

- The EA does not include a description or assessment of resources (aquatic, historic, terrestrial) and technical reports are not provided. We suggest that this information be included in the EA.

- Based on your request for comments related to the stream relocation alternatives and the Least Environmentally Damaging Preferred Alternative (LEDPA), baseline information should be provided that characterizes the biological, physical, and chemical functions of the resources within the study area. This information is necessary to fully evaluate the potential direct and indirect impacts from the various alternatives to determine the LEDPA. EPA recommends the applicant utilize an approved Functional Assessment Methodology and provide supporting documentation, such as the assessment forms and supplemental narratives related to the analysis. Once the additional information on resource characterization is analyzed, the applicant should consider the environmental impacts and any loss of resources as part of the LEDPA determination and evaluating appropriate mitigation.
- We suggest additional information be provided related to flooding events since it appears there are currently flooding issues in the project area.

- We suggest a comprehensive assessment of the study area to identify areas of Environmental Justice concern be provided. The assessment and identification of such

areas will assist in identifying any potential local project related impacts. Consideration should be given to the assessment of impacts related to fugitive dusts, truck traffic, noise vibration, and other project related activities to the areas of potential Environmental Justice concern.

- Tables with demographic data, and maps showing proximity of at-risk populations to work areas would be helpful.

- As part of the project's stormwater management strategy (for both water quality and quantity) VDOT proposes to construct 10 wet ponds and one dry pond. Considering the siting of these basins in developed areas and the lack of natural infrastructure connectivity and predation, it appears that mosquitos production could be an issue. We suggest this be considered in the design.

- The project precludes all innovative stormwater green infrastructure that promote increasing time of concentration and infiltration by using such measures as Bio-swales, dry swales, the use of impervious pavers in park and ride lots, rain gardens, bio-retention cells and planters. VDOT has excluded these stormwater controls because the drainage are greater than 5 acres. It is unclear whether VDOT considered a series of stormwater green infrastructure measures to meet the 5 acre drainage area restriction, ie a combination of control measures.

- Generally, EPA does not recommend the use of waters of the U.S., (WOUS) to treat WOUS as in stormwater management. Stormwater management basins are proposed as part of the project proposal, with multiple basins proposed in WOUS. Dog Run, Piney Run, Difficult Run, and Colvin Run are all listed on Virginia's 303(d) list of impaired waters for various uses. Direct impacts to these resources may cause secondary impacts, such as altered hydrology and impacts to water quality, which should be evaluated along with any alternatives.

We look forward to working with you as the project moves forward in the NEPA and 404 phases. We suggest additional meetings with VDOT, COE and the state to discuss the stream relocation and impacts to other Waters of the U. S. Please let me know if you have any questions.

Thanks, Barb

Barbara Okorn
USEPA Region III (3EA30)
1650 Arch Street
Phila, PA 19103

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804) 786-6124

MEMORANDUM

DATE: April 22, 2014

TO: Regina Newman, VDOT

FROM: Roberta Rhur, Environmental Impact Review Coordinator

SUBJECT: DCR 14-008, VDOT 0007-029-128, P102, R202, C502, Rt. 7 Widening

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.

According to the information currently in our files, this site is located within the Difficult Run – Stream Valley Park Conservation 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. Difficult Run – Stream Valley Park Conservation Site has been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resource of concern at this site is:

Glyptemys insculpta	Wood turtle	G3/S2/NL/LT

The Wood turtle ranges from southeastern Canada, south to the Great Lake states and New England. In Virginia, it is known from northern counties within the Potomac River drainage (NatureServe, 2009). The Wood turtle inhabits areas with clear streams with adjacent forested floodplains and nearby fields, wet meadows, and farmlands (Buhlmann et al., 2008; Mitchell, 1994). Since this species overwinters on the bottoms of creeks and streams, a primary habitat requirement is the presence of water (Mitchell, 1994).

Threats to the wood turtle include habitat fragmentation, urbanization, and automobile or farm machinery mortality (Buhlmann et al., 2008). Please note that the Wood turtle is currently classified as threatened by the Virginia Department of Game and Inland Fisheries (VDGIF).

In addition, the Potomac River – Yellow Falls Stream Conservation Unit (SCU) is located downstream from 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 Potomac River – Yellow Falls SCU has been given a biodiversity ranking of B3, which represents a site of high significance. The natural heritage resources associated with this site are:

Gomphus fraternus	Midland clubtail	G5/S2/NL/NL
	Aquatic Natural Community	G2/S2/NL/NL
	Aquatic Natural Community	G3/S3S4/NL/NL

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. They are also sensitive to alterations that result in poor water quality, aquatic substrate changes, and thermal fluctuations.

The documented Aquatic Natural Communities are 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 Communities are significant on multiple levels. First, these streams are 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. These stream reaches also hold a "Healthy" stream designation per the INSTAR Virtual Stream Assessment (VSS) score. This score assesses the similarity of these streams to ideal stream conditions of biology and habitat for this region. Lastly, these streams contribute to high Biological Integrity at the watershed level (6^{th} order) based on number of native/non-native, pollution-tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

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

Furthermore, Difficult Run has been designated by the VDGIF as a "Threatened and Endangered Species Water" for the Wood turtle.

To minimize adverse impacts to the aquatic ecosystems 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 Wood turtle, DCR also recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570).

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

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. The current activity will not affect any documented state-listed plants or insects.

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 Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov). According to the information currently in our files, Nichols Run, Sugarland Run and an Unnamed Tributary of Potomac River 2, which have been designated by the Virginia Department of Game and Inland Fisheries (VDGIF) as a "Threatened and Endangered Species Water", are in the vicinity of the project site. The species associated with these T & E Waters is the Wood turtle. Therefore, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, 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

Literature Cited

Buhlmann, K, T. Tuberville, and W. Gibbons. 2008. Turtles of the southeast. University of Georgia Press. Athens, GA. 252 pp.

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From: Lewis-Cheatham, Sonya (DEQ)
Sent: Tuesday, May 13, 2014 2:03 PM
To: Newman, Regina K. , E.I.T. (VDOT)
Subject: RE: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

The Virginia Department of Environmental Quality (DEQ), Air Quality Division, offers the following comments concerning the proposed improvement and widening of Route 7 from Reston Avenue to the bridge over the Dulles Toll Road in Fairfax County. The proposal includes widening a 6.9 mile section of Route 7 to 6 lanes in order to reduce congestion; adding a 10-foot multipurpose trail on each side; replacing a bridge at the Difficult Run stream crossing; and utilizing alternative intersection design as necessary to improve intersection operation.

Fairfax County is currently not meeting the federal National Ambient Air Quality Standard (NAAQS) for ozone and is classified as a marginal ozone nonattainment area. In the past, this jurisdiction was also not meeting the NAAQS for fine particulate matter (PM 2.5). The monitored air quality in the vicinity for PM 2.5 has subsequently improved but Northern Virginia, currently remains classified as a federal fine particulate matter nonattainment area. In addition, by state regulation, these jurisdictions are also considered volatile organic compound (VOCs) and oxides of nitrogen (NOx) emission control areas. Hence, DEQ recommends that emissions of volatile organic compounds, oxides of nitrogen, and fine particulate matter are minimized. The State air pollution regulations that may be applicable to the proposed project are listed below.

§ Fugitive Dust and Emission Control (9 VAC 5-50-60 et seq.)
§ Open Burning Restrictions (9 VAC 5-130-10 et seq.)
§ Cut-back Asphalt Usage Restriction (9 VAC 5-45-760 et seq.)

Please contact me at Sonya.Lewis-Cheatham@deq.virginia.gov if there are any questions. Thank you for providing the Virginia Department of Environmental Quality, Air Quality Division, the opportunity to comment on the above-referenced project

Sonya Lewis-Cheatham
Office of Air Data Analysis and Planning Virginia Department of Environmental Quality

-----Original Message-----
From: Newman, Regina K. , E.I.T. (VDOT)
Sent: Wednesday, April 09, 2014 2:40 PM
To: Lewis-Cheatham, Sonya (DEQ); Holma, Marc (DHR)
Subject: FW: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

VDOT requests your review of the Route 7 widening project in Fairfax County. Please forward your comments by May 1, 2014 to be incorporated into the Environmental Assessment.

Thanks,

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
Fax: 804-698-4019 - TDD (804) 698-4021
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

April 25, 2014

Ms. Regina Newman
VDOT UPC ID 52328
Project Environmental Review Request

Dear Ms. Newman:

On April 9, 2014, the Department of Environmental Quality received the project review request email regarding the proposed Route 7 widening project in Fairfax County. DEQ's Division of Land Protection and Revitalization (DLPR) staff has reviewed your email and submittal and has the following comments concerning the waste issues associated with this project:

Solid and hazardous waste issues were not addressed in the submittal. The Waste Division staff conducted a cursory review of its data files to identify waste sites that could impact or be impacted by the proposed construction and road improvements.

General Review recommendations: When the environmental impact report is written or compiled, it should include an environmental investigation on and near the property to identify any hazardous waste sites or issues. The report author should analyze the data in the web-based Waste Division databases to determine if the project would affect or be affected by any sites identified in the databases. These are the CERCLA Facilities and Hazardous Waste Facilities databases.

CERCLA Facilities Database
A list of active and archived CERCLA (EPA Superfund Program) sites.

Hazardous Waste Facilities Database
A list of hazardous waste generators, hazardous waste transporters, and hazardous waste storage and disposal facilities. Data for the CERCLA Facilities and Hazardous Waste Facilities databases are periodically downloaded by the Waste Division from U.S. EPA's website.

Accessing the DEQ Databases:

The report author should access this information on the DEQ website at http://www.deq.virginia.gov/Programs/LandProtectionRevitalization/ReportsPublications/OriginalReports.aspx. Scroll down to the databases which are listed under Real Estate Search Information heading.

The ***Superfund information*** will be listed by clicking on the Search EPA's CERCLIS database tab and opening the file. Click on the locality box, click on sort, then click on Datasheet View. Scroll to the locality of interest. ***A quick search by DEQ Staff showed no Cerclis site in zip code 22180.***

The ***hazardous waste*** information can be accessed by clicking on the Hazardous Waste Facility tab. Go to the Geography Search section and fill in the name of the city or county and VA in the state block, and hit enter. The hazardous waste facilities in the locality will be listed. ***A quick search by DEQ Staff showed 89 RCRA sites in zip code 22180, with no RCRA site in close proximity to the project corridor.***

This database search will include most waste-related site information for each locality. In many cases, especially when the project is located in an urban area, the database output for that locality will be extensive.

DEQ's Virginia Geographical Information Systems (VEGIS) database can be accessed at the following web address: http://www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx. Through VEGIS's search options, you can identify by address (zip code) FUD sites, VRP sites, and Petroleum Release sites in the area of the proposed project. ***A quick search by DEQ Staff showed no solid waste sites (SWs), formerly used defense sites (FUDS), or voluntary remediation project sites (VRPs) in close proximity to the project site. The search identified two petroleum release/contamination sites in close proximity to the project corridor:***

1. ***ID# 19963140 – Mobil 16BA4, 10510 Leesburg Pike, Vienna, VA 22180. Event Date: 7/20/2006. Status: Closed.***
2. ***ID# 19911492 – E.E. Lyons Construction, 9325 Leesburg Pike, Vienna, VA 22180. Event Date: 3/6/2007. Status: Closed.***

Please note that the DEQ's petroleum contamination (PC) case files may identify petroleum releases that should be evaluated by the project engineer or manager to establish the exact location of the release and the nature and extent of the petroleum release and the potential to impact the proposed project. The facility representative should contact the DEQ's Northern Virginia Regional Office at 703-583-3900 (Tank Program) for further information and the administrative records of the PC cases which are determined to be in close proximity to the proposed project.

GENERAL COMMENTS:

Soil, Sediment, and Waste Management

Any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state

laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-81); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 CFR Part 107.

Asbestos and/or Lead-based Paint

Also, all structures being demolished/renovated/ removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-80-640 for ACM and 9VAC 20-60-261 for LBP must be followed. Questions may be directed to Ms. Kathryn Persyzk in DEQ's Northern Virginia Regional office 703-583-3856.

Pollution Prevention – Reuse - Recycling

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Steve Coe at (804) 698-4029.

COMMONWEALTH of VIRGINIA

Molly J. Ward
Secretary of Natural Resources

Department of Game and Inland Fisheries

Robert W. Duncan
Executive Director

April 17, 2014

Regina Newman – Environmental Specialist
VDOT

via email: Regina.Newman@VDOT.Virginia.gov

Re: VDOT Project 0007-029-128, P102, R202, C502: UPC# 52328
Route 7 widening project in Fairfax County

Dear Ms. Newman:

We appreciate your interest in submitting your project(s) for review by VDGIF to ensure the protection of sensitive wildlife resources during project development. Unfortunately, due to staffing limitations, we are unable to review pre-applications or scoping documents submitted to our Department. Please note that lack of a response from VDGIF does not constitute a "no comment" response, nor does it imply support of the project or associated activities. It simply means that VDGIF is unable to review your pre-application submittal.

To review your project site for the location of wildlife resources under our jurisdiction, including threatened and endangered wildlife, we recommend accessing the Virginia Fish and Wildlife Information System (VAFWIS) at http://vafwis.org/fwis/.

If you 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 to any applications or documents you may submit for your project to state or federal permitting agencies.

Sincerely,

Mrs. Gladys D. Cason

Gladys D. Cason
Environmental Services Section

July 3, 2014

Ms. Regina K. Newman, EIT
National Environmental Policy Act Specialist
Commonwealth of Virginia Department of Transportation
4219 Campbell Avenue
Lynchburg, Virginia 24501

Reference: Route 7 Widening Project Environmental Scoping Comments
VDOT # 0007-029-128, P102, R202, C502; UPC 52328

Dear Ms. Newman,

Thank you for providing the Fairfax County Department of Transportation (FCDOT) the opportunity to participate in the Environmental Assessment process for the referenced project. Thank you also for allowing an extension of the comment due date.

FCDOT has been actively working on this project with VDOT, as well as with fellow Fairfax County agencies, for many years and is pleased to see the recent progress that has been made to implement it. FCDOT's comments regarding this project, and the answers to your specific questions, are provided below or included as separate enclosures. The comments below reflect input from the Planning Division, including Heritage Resources staff, of the Fairfax County Department of Planning and Zoning (DPZ), as well as the Stormwater Planning Division of the Fairfax County Department of Public Works and Environmental Services (DPWES). We understand that the Fairfax County Park Authority has responded directly to you, as well.

Ecological Resource Impacts

- The Environmental Assessment (EA) should identify the locations and magnitudes of any wetland and/or stream impacts that will occur, as well as efforts that will be taken to minimize and mitigate for such impacts. Where there will be stream crossings, FCDOT requests that VDOT coordinate with the Stormwater Planning Division of DPWES regarding stream/outfall stabilization.

- To support local ordinances and policies , FCDOT requests that the EA identify the extent of impacts to Resource Protection Areas (per the Chesapeake Bay Preservation Ordinance) and Environmental Quality Corridors (per the Comprehensive Plan) and efforts that will be taken to minimize those impacts. Of particular interest are the

Fairfax County Department of Transportation
4050 Legato Road, Suite 400
Fairfax, VA 22033-2895
Phone: (703) 877-5600 TTY: 711
Fax: (703) 877-5723
www.fairfaxcounty.gov/fcdot

Colvin Run and Difficult Run stream valleys (at and west of the Leesburg Pike crossing of Difficult Run), and how the road widening and associated intersection changes (at Colvin Run Road and Carpers Farm Way) will be designed to minimize adverse impacts.

- It is recommended that impacts to streams and wetlands be mitigated as close to the project (and within the watershed) to the greatest extent possible, when and where impacts are unavoidable.

- The EA should identify whether there may be impacts to rare, threatened or endangered species or rare vegetated communities. If impacts are present, please keep FCDOT informed as to the manner in which these impacts will be mitigated.

- We request that the EA identify impacts to tree cover that would result from the project as well as design efforts that will be pursued to minimize and mitigate those impacts.

Watershed Management Plan

- The project falls within the Difficult Run watershed. The Stormwater Planning Division of the DPWES should be contacted for information regarding any SWM projects identified in the Difficult Run Watershed Management Plan that may relate to the Route 7 widening project and whether there may be opportunities to incorporate any of these projects within the project scope (e.g., for stormwater management or mitigation purposes). The contact at SWM Planning is: Ms. LeAnne Astin; leanne.astin@fairfaxcounty.gov; (703)324-5879

Stormwater Runoff

- The EA documentation should identify the stormwater runoff impacts (both volume/quantity and quality) that would result from the proposed construction, as well as the additional impervious cover that would result from the project. Efforts should be pursued to minimize additional impervious cover consistent with the project's purpose and need. Stormwater management plans should be discussed within the documentation. Early coordination with the Stormwater Planning Division is recommended on stormwater management designs.

- Stormwater management best management practices should be used to manage and detain runoff as close to the source as possible. Low Impact Development (LID) techniques and practices should be pursued as much as possible to reduce stormwater runoff pollution and facilitate infiltration at the source. Toward that end, consideration should be given to the extent to which it may be possible to convey stormwater runoff

into bio-filtration or other practices (perhaps in the highway median) that would infiltrate stormwater runoff into the ground. In areas where conventional stormwater management ponds are to be used, it is recommended that these be designed with enhanced pollutant removal features such as micro-pools and wetland vegetation to optimize water quality benefits. Again, coordination with the Stormwater Planning Division is recommended.

Highway Noise

- The EA should identify all noise-sensitive uses near the highway and identify both the existing and projected levels of highway noise that affect/will affect these uses. The EA should also identify potential noise mitigation needs/locations where noise barriers will be installed. Conceptual examples of noise barriers (if available) should be provided.

Air Quality

- The EA should identify whether the proposed project would increase or reduce carbon monoxide concentrations at potential "hot spots". The relationship between the proposed project and regional air quality planning efforts should be discussed.

Heritage and Cultural Resources

- The attached map titled *Rt 7 Potential Impact Locations* includes the location of heritage resource sites that will need to be evaluated for potential National Register eligibility. National Register listed properties will need to be identified. For any National Register eligible or listed property the potential effect of the Route 7 widening project will need to be determined. Adverse effect on any eligible or listed properties will require mitigation.
- Due to the variety of fields of expertise involved, it is difficult to name a single point of contact as a Consulting Party to represent Fairfax County in the Section 106 process. We suggest the following three points of contact within the Fairfax County government:
  - Ms. Linda Cornish-Blank, Department of Planning & Zoning; Linda.Blank@fairfaxcounty.gov; 703-324-1241
  - Ms. Elizabeth Crowell, Park Authority Elizabeth.Crowell@fairfaxcounty.gov , 703-534-3881
  - Mr. Douglas Miller, Department of Transportation Douglas.Miller@fairfaxcounty.gov; 703-877-5750

Project Design

FCDOT strongly encourages the use of Context Sensitive Solutions (CSS) in the design of this facility, particularly in the vicinity of historic resources. For example, the design of the bridge over Difficult Run and/or nearby sound walls could be designed so as to reflect the architectural theme of the nearby Colvin Mill. The same could be true for other features along the corridor. If successful, this CSS approach could be a model for future large scale projects in Fairfax County.

Public Involvement

- VDOT has done a commendable job to date in soliciting public input regarding the design of this project. FCDOT would like to see a similar level of effort in the preparation of the EA, and is willing to assist in this effort.

- A public outreach effort should also be made with regard to properties affected by the storm water management facilities that will be required for this project. The potential SWM facilities should be identified early in the process and affected neighborhoods should be informed in advance of the draft EA being made available for public comment.

- Both the FCDOT and the Fairfax County Heritage Resources staff express our appreciation for VDOT's outreach to the Fairfax County Park Authority regarding Colvin Run Mill (a National Register of Historic Places property), as well as to the public in general. We encourage the continuation of this effort.

- Colvin Run Mill is located in a Fairfax County Historic Overlay District (HOD). The Fairfax County Board of Supervisors established the HOD and appointed the Architectural Review Board (ARB) members, who are responsible for project review within the HODs, The ARB chairman is extending an invitation to VDOT to make a presentation on the Route 7 widening project at an upcoming ARB meeting and has asked that VDOT contact ARB staff administrator at linda.blank@fairfaxcounty.gov to schedule the presentation.

Thank you again for providing this opportunity to comment. We look forward to continuing to work with VDOT as this project moves forward.

Sincerely,

Tom Biesiadny
Director

Cc:
Ms. Nick Roper, VDOT
Mr. John Muse, VDOT
Mr. Eric Teitelman, FCDOT
Ms. Karyn Moreland, FCDOT
Mr. Michael Guarino, FCDOT
Ms. Smitha Chellappa, FCDOT
Mr. Douglas Miller, FCDOT
Mr. Noel Kaplan, DPZ
Mr. Fred Rose, DPWES
Ms. LeAnne Astin, DPWES
Ms. Linda Cornish-Blank, DPZ
Ms. Sandra Stallman, FCPA
Mr. Andy Galusha, FCPA

Enclosures
- Completed Community Resources questionnaire
- Excerpt from Fairfax County Transportation Plan Map
- Agricultural/Forestal District Map, TM 12-4
- Agricultural/Forestal District Map, TM 19-1
- Map of Rt 7 Potential Impact Locations

COMMUNITY RESOURCES QUESTIONNAIRE

July 3, 2014

Route Number: 7
State Project Number: 0007-029-128, P102, R202, C502
UPC: 52328
Town/City/County: Fairfax County
iPM Project Description: Route 7 – Widen to 6 lanes
Project Limits: From Reston Avenue
To West Approach of Bridge over Dulles Toll Road

1. Do you anticipate or are you aware of any organized opposition to the proposed project?

   There are several groups of citizens in the area that wish to have an "alternative" road configuration (e.g., HOV lanes, BRT facilities, dedicated bus lanes, etc.) constructed. These alternative configurations were studied by VDOT and were not found to be feasible. The project, as currently proposed, includes the addition of a single general purpose lane in each direction, with associated bicycle and pedestrian facilities, as well as intersection and median crossover improvements. This configuration is in conformance with the Fairfax County Comprehensive Plan, and is the configuration supported by the County of Fairfax. The project is being designed so as not to preclude future HOV lanes.

2. Are there existing or planned mass transit options for this corridor?

   There is existing bus service (Connector Route 574) that currently operates in the corridor between Baron Campbell Parkway and Tyco Road every 60 minutes, seven days a week. Upon the opening of Phase 1 of the Silver Line, this service will increase to every 40 minutes, seven days a week. There are no current plans to further increase the level of service on Route 574, due to the low density of housing development in the area, and thus the low demand for transit along the corridor.

3. Will the proposed project disrupt a community or its planned development?

   Other than temporary disturbances associated with any highway construction project, and some changes in access patterns, we are not aware of any community disruptions that will be caused by this project. The project, as currently envisioned, is in conformity with the Fairfax County Comprehensive Plan, and will support the future growth planned for the Tysons area.

4. What are the existing and proposed zonings for this area? Will the proposed project be compatible with the county planning?

   The zoning along this 6+ mile corridor varies greatly, from agricultural to dense commercial. However, the project as currently envisioned in in conformity with the

Fairfax County Comprehensive Plan, and will support the future growth planned for the Tysons area.

5. Is the proposed project consistent with community goals, such as proposed land use?

   Yes. See comments above.

6. Are there any agricultural/forestal districts within the proposed project boundaries?

   Yes, there are two areas with Agricultural/Forestal District designation along the project corridor. Please consult the enclosed copies of the zoning map (Tax Map sheets 12-4 and 19-1) for the locations of these AFDs.

7. Has the project area been included in any county historical research?

   Yes. There are numerous historic sites along the corridor, the most significant of which is the NRHP-listed Colvin Run Mill. This site, as well as many other sites, is generally shown on the enclosed historic resources map that was provided by the Heritage Resources staff of the Fairfax County Department of Planning and Zoning. These sites will need to be evaluated for potential NRHP eligibility.

8. Are there any existing or planned recreational sites within the project area?

   Yes. The Fairfax County Park Authority has submitted a separate comment letter to your office regarding the existing and planned recreational areas along the corridor.

9. Is the proposed project endorsed by the Board of Supervisors and in the county comprehensive plan?

   Yes. As noted above, the currently proposed project is in conformity with the comprehensive plan as adopted by the Fairfax County Board of Supervisors. An excerpt from the Transportation Plan Map of the Fairfax County Comprehensive Plan, showing the project corridor, is enclosed for your reference.

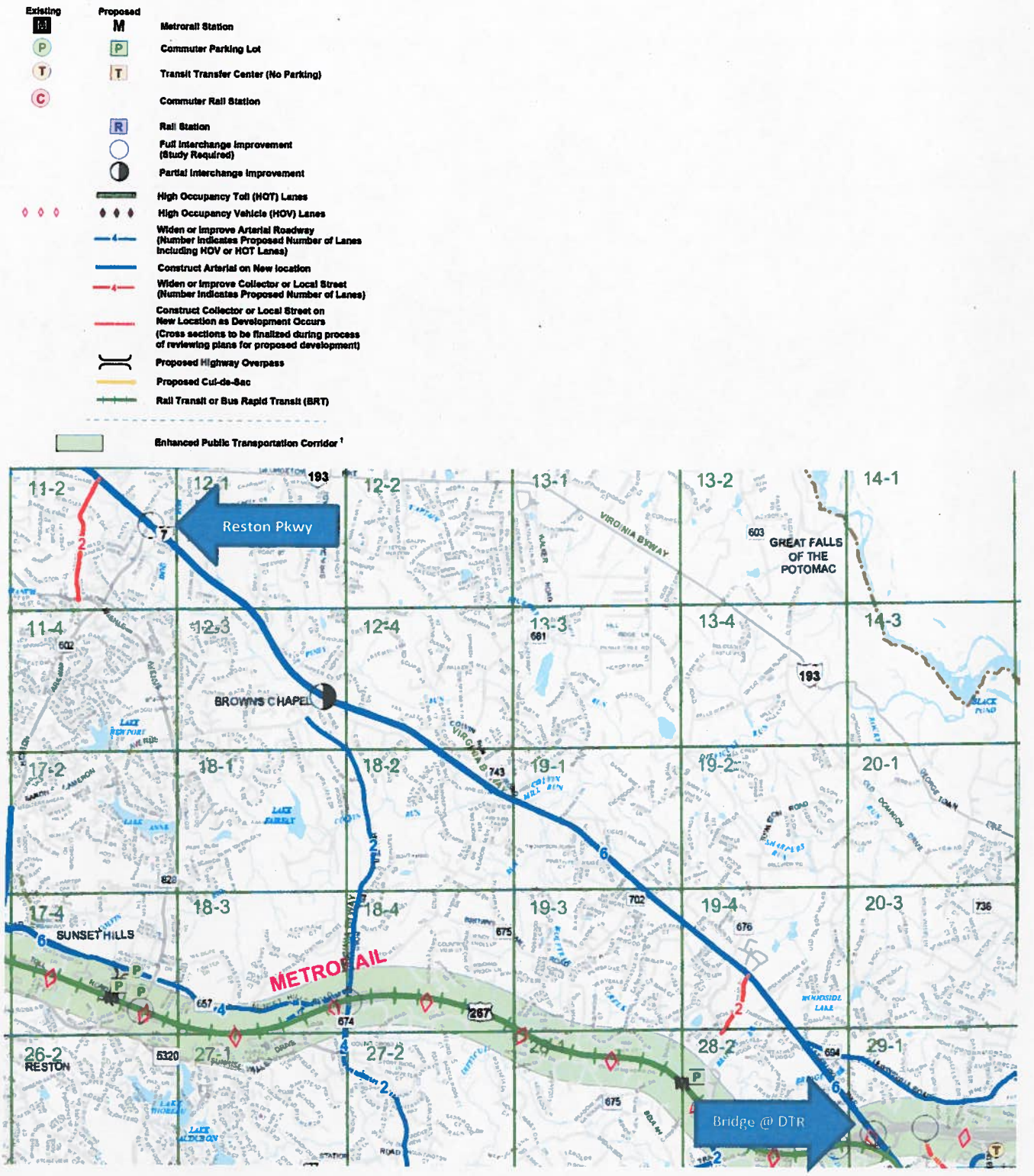
Any other comments you wish to make on the project are appreciated.

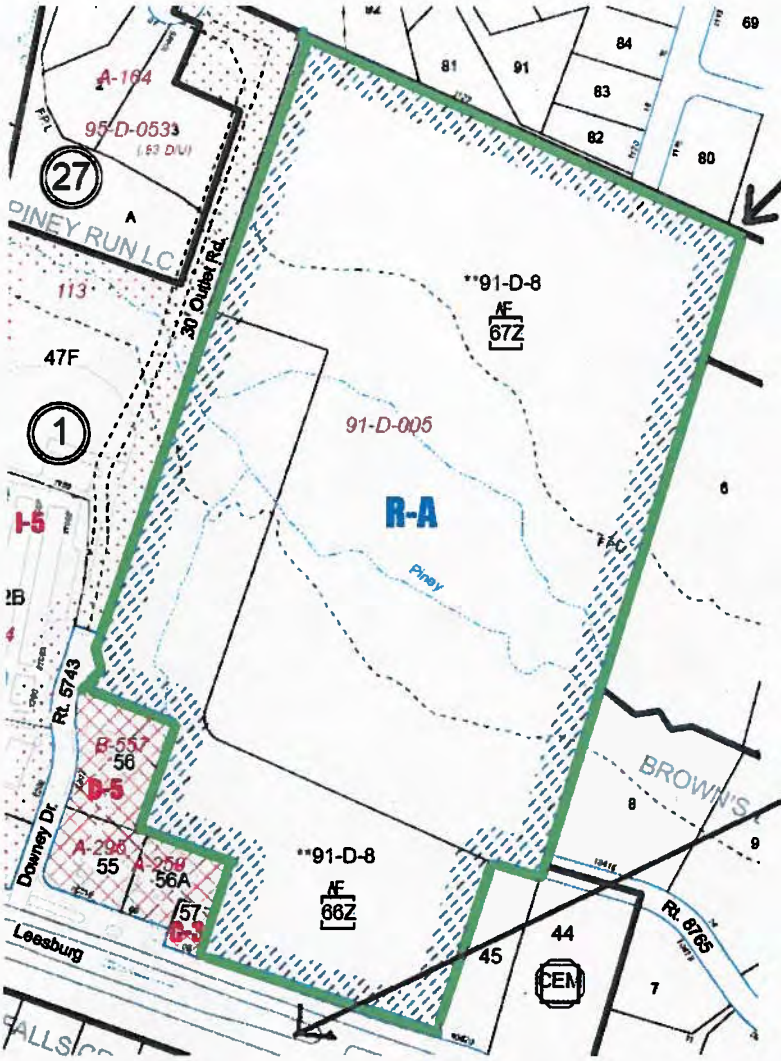
_____ _____

Date Name and Title

Excerpt from Fairfax County Transportation Plan Map – Adopted Comprehensive Plan

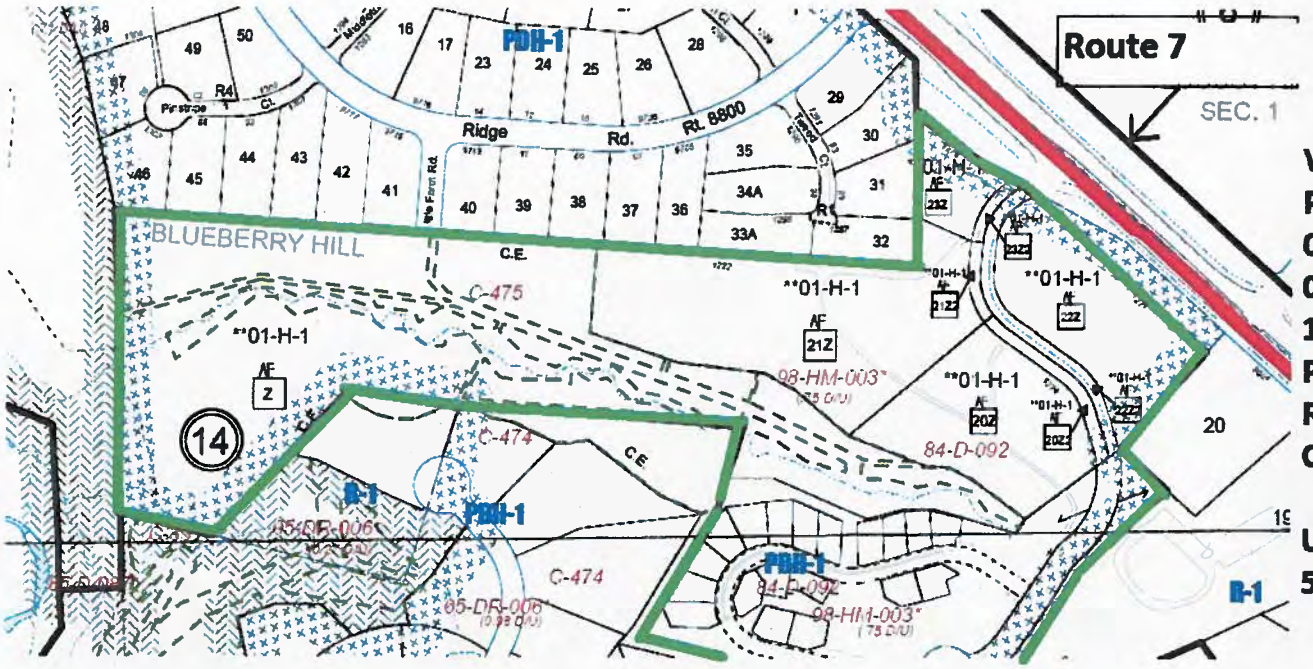
http://www.fairfaxcounty.gov/maps/images/maps/handouts/pdf07/transplanmap.pdf





Agricultural/Forestal District boundaries for environmental scoping comments

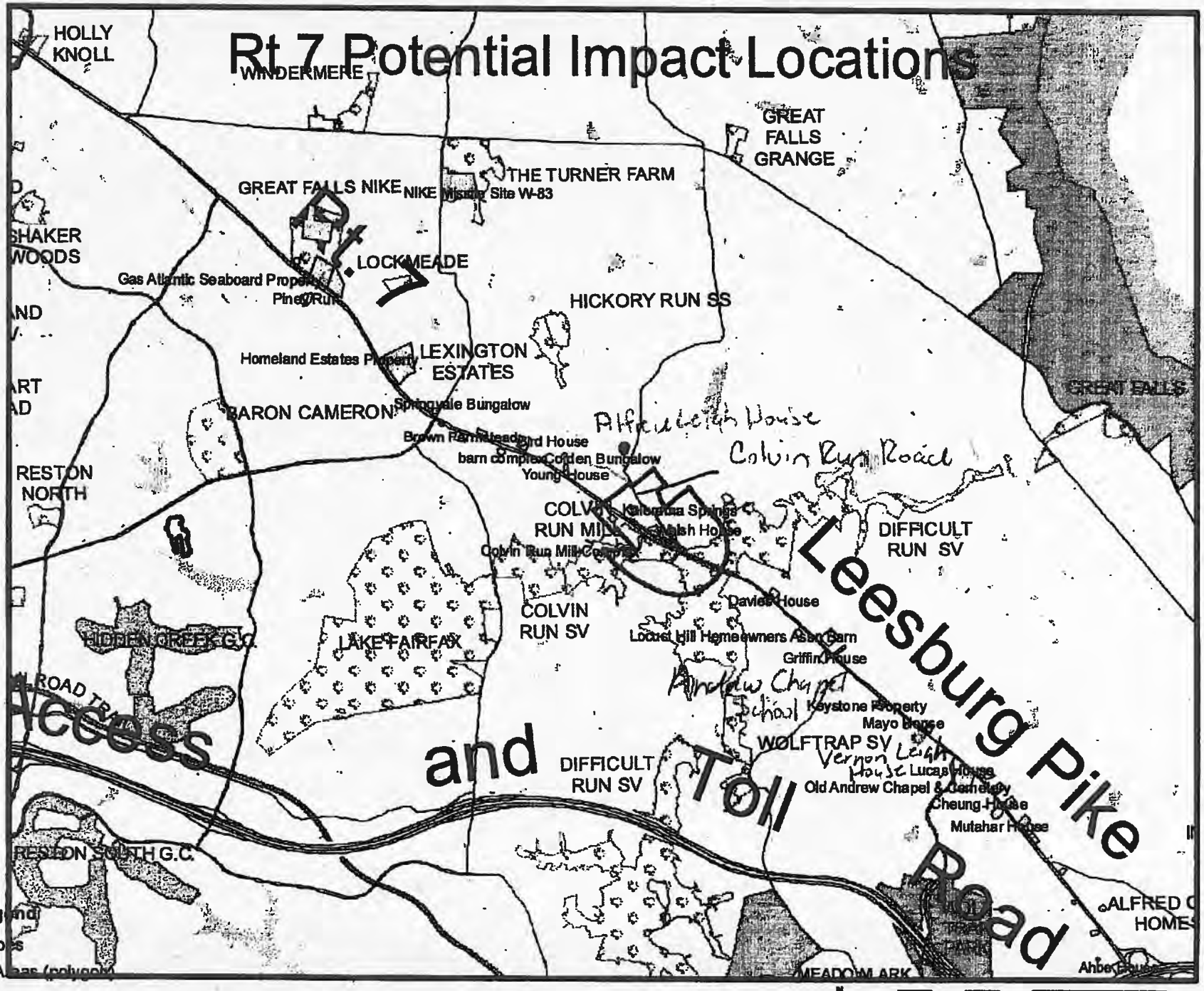
6/5/2014



Ag/Forest District outlined in green above. Tax Map quad # 19-1

Agricultural/Forestal District boundaries

6/5/2014


Rt 7 Potential Impact Locations
HOLLY KNOLL
WINDERMERE
GREAT FALLS GRANGE
THE TURNER FARM
GREAT FALLS NIKE
NIKE Missile Site W-83
SHAKER WOODS
LOCKMEADE
Gas Atlantic Seaboard Property
Pine Run
HICKORY RUN SS
Homeland Estates Property
LEXINGTON ESTATES
GREAT FALLS
BARON CAMERON
Springvale Bungalow
Brown Farmstead and House
barn complex
Golden Bungalow
Young House
Alfred Leigh House
Colvin Run Road
RESTON NORTH
COLVIN RUN MILL
Colvin Run Mill Complex
DIFFICULT RUN SV
Leesburg Pike
Davies House
COLVIN RUN SV
Locust Hill Homeowners Assn Barn
Griffin House
HIDDEN CREEK G.C.
LAKE FAIRFAX
Access
and
Toll
Road
Keystone Property
Mayo House
WOLFTRAP SV
Vernon Leigh House
Lucas House
Old Andrew Chapel & Cemetery
Cheung House
Mutahar House
DIFFICULT RUN SV
RESTON SOUTH G.C.
ALFRED C HOMES
MEADOWLARK
Legend
Rt 7 shapes
Historic Areas (polygon)
Highways
N
W
E
0
1,875
3,750
7,500
Feet

From: Addo-Ayensu, Gloria [Gloria.Addo-Ayensu@fairfaxcounty.gov]
Sent: Thursday, April 17, 2014 11:02 AM
To: Newman, Regina K. , E.I.T. (VDOT)
Cc: Sheehan, Pieter Anthony
Subject: FW: VDOT - STATE PROJECT NO 0007-029-128,P102,R202,C502
Attachments: 2014_04_16_08_44_50.pdf

Dear Ms. Newman,

The following are our comments to your questions related to potential environmental impacts associated with the proposed State project (0007-029-128,P102,R202,C502) in Fairfax County Virginia.

1) Any potential contamination of a public water supply system due to the proposed project;

Please contact Fairfax County Water Authority (www.fcwa.org). A contact person is Tracie Kammer Goldberg (tgoldberg@fairfaxwater.org).

2) Any adverse effects of the proposed project on local ground water or on designation of a critical groundwater management area;

There are many drinking water wells in the project area. The Fairfax County Health Department can provide an approximate location of these wells from a GIS overlay. There are no designated critical groundwater management areas in the purposed project to our knowledge.

3) Any adverse effects of the proposed project on local sanitary facilities, such as a public sewer system or private septic fields.

Information related to local public sewerage system contact Fairfax County Department of Public Works and Environmental Services (www.fairfaxcounty.gov/dpwes). The project area has many homes served by individual onsite sewage disposal systems (private septic fields). The Fairfax County Health Department can provide an approximate location of these.

If you need any additional information or have any questions, please feel free to contact Pieter Sheehan at 703-246-2205 or via email at Pieter.Sheehan@fairfaxcounty.gov.

Thank you,
Gloria

Gloria Addo-Ayensu, MD, MPH
Director of Health
Fairfax County Health Department
10777 Main Street #203
Fairfax, VA 22030
(703) 246-2479

From: Stonefield, Jerry [Jerry.Stonefield@fairfaxcounty.gov]
Sent: Thursday, May 01, 2014 3:55 PM
To: Newman, Regina K. , E.I.T. (VDOT)
Subject: Route 7 widening Environmental Assessment of State Project Number: 0007-029-128, P102, R202, C502

Dear Regina Newman,

This is in response to your letter to me regarding the Environmental Assessment currently being prepared by VDOT for the proposed improvements to a 6.9 mile segment of Route 7 (Leesburg Pike), from the intersection with Reston Avenue to the bridge over the Dulles Airport Access Road. In the letter, you requested comments by May 1.

We want to thank you for the opportunity to provide comments, and appreciate the common concern for potential environmental impacts. We are diligently coordinating among numerous County departments and agencies to provide a consolidated list of comments from the County. Unfortunately, we have not been able to finalize our comments by the requested deadline. We respectfully request additional time to submit our comments.

Since I am writing, I would like to take just a moment to share some initial observations:

Based on the County map of Chesapeake Bay Preservation Areas, the proposed road segment crosses or is contiguous to at least eight (8) perennial streams and/or their associated Resource Protection Areas (RPAs). Please note that the County includes all land areas that are not within RPAs as Resource Management Areas. Public Roads may be an exempt use in the RPA under the County Chesapeake Bay Preservation Ordinance if certain conditions are met, including but not limited to, providing erosion and sediment controls, Stormwater management, water quality protection, and the optimization of the road alignment and design, consistent with other applicable requirements, to prevent or otherwise minimize encroachment in the RPA and adverse effect on water quality.

In addition, the County includes major floodplain areas as a buffer component, when determining the extent of the RPA. The County defines major floodplain (in the Zoning Ordinance) to include inundated areas adjacent to streams having a drainage area greater than 360 acres. This is in addition to all Special Flood Hazard Areas as shown on the Flood Insurance Rate Map. Any physical improvements that would change the floodplain could impact the RPA and should be coordinated with the County. In addition, changes to the SFHA must be coordinated with the Federal Emergency Management Agency (FEMA) to revise the Flood Insurance Rate Map as warranted.

There is also an indication on some county maps that there are Conservation Easements on properties adjacent to the existing ROW. Although I haven't done any title search, if the easements were dedicated to the County for water quality credit purposes, any widening of the ROW which would necessitate vacation of these easements would have to provide additional water quality to compensate for the vacation.

Again, we appreciate your understanding and thank you in advance for your patience, as we continue to prepare our comments. If you have any questions, please feel free to contact me.

Jerry Stonefield
Site Code Research & Development Branch
Code Development & Compliance Division
Land Development Services
Department of Public Works and Environmental Services
(703) 324-1791 (voice)

From: Traci Kammer Goldberg [tgoldberg@fairfaxwater.org]
Sent: Monday, April 21, 2014 3:02 PM
To: Newman, Regina K. , E.I.T. (VDOT)
Cc: Gregory Prelewicz; Robert Cotten
Subject: RE: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

Regina,

Thank you for the opportunity to comment. This project is located outside of the source water area draining to Fairfax Water's Corbalis Water Treatment Plant. The project is also located outside of the primary source water area for the Washington Aqueduct, which provides finished water to some customers within the area served by Fairfax Water. This project is located entirely within the Difficult Run watershed, which drains to the Potomac River. As with other land-disturbing activities, appropriate erosion and sediment-control measures should be utilized to minimize water quality impacts on the Potomac River.

Please feel free to contact me if you have any questions or need anything further.

Sincerely,

Traci Kammer Goldberg, P.E.
Manager, Planning
Fairfax Water
8560 Arlington Boulevard
Fairfax, VA 22031
(703) 289 – 6302
tgoldberg@fairfaxwater.org

-----Original Message-----
From: Newman, Regina K. , E.I.T. (VDOT)
[mailto:Regina.Newman@VDOT.Virginia.gov]
Sent: Wednesday, April 09, 2014 3:19 PM
To: Traci Kammer Goldberg
Subject: FW: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

Good Afternoon Ms. Goldberg,

Mr. Milgrim from Fairfax County mentioned you may be able to review the Route 7 widening project in Fairfax County and provide comments regarding any potential contamination of a public water supply system due to the proposed project. Please provide your comments by May 1, 2014 to be incorporated into the Environmental Assessment.

Thanks,

Regina K. Newman, EIT
Virginia Department of Transportation

Lynchburg District l Environmental Specialist
Office: 434.856.8328 ITCM: 1685
Fax: 434.947.2190
Regina.Newman@VDOT.Virginia.gov

-----Original Message-----
From: Milgrim, John [mailto:John.Milgrim@fairfaxcounty.gov]
Sent: Wednesday, April 09, 2014 1:10 PM
To: Newman, Regina K. , E.I.T. (VDOT)
Cc: Roadcap, Dwayne (VDH); Sheehan, Pieter Anthony; Joye, Adrian
Subject: FW: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

Ms. Newman

These are answers to the comments and concerns questions related to potential environmental impacts associated with the proposed project in Fairfax County Virginia.

1) Any potential contamination of a public water supply system due to the proposed project;

Please contact Fairfax County Water Authority (www.fcwa.org). A contact person is Tracie Kammer Goldberg (tgoldberg@fairfaxwater.org).

2) Any adverse effects of the proposed project on local ground water or on designation of a critical groundwater management area;

There are many drinking water wells in the project area. The Fairfax County Health Department can provide an approximate location of these wells from a GIS overlay. There are no designated critical groundwater management areas in the purposed project to our knowledge.

3) Any adverse effects of the proposed project on local sanitary facilities, such as a public sewer system or private septic fields.

Information related to local public sewerage system contact Fairfax County Department of Public Works and Environmental Services (www.fairfaxcounty.gov/dpwes). The project area has many homes served by individual onsite sewage disposal systems (private septic fields). The Fairfax County Health Department can provide an approximate location of these.

If you have further questions please let me know.
John

John M. Milgrim, R.E.H.S.
Program Manager
Division of Environmental Health
703-246-8457
John.Milgrim@FairfaxCounty.gov

-----Original Message-----
From: Roadcap, Dwayne (VDH) [mailto:Dwayne.Roadcap@vdh.virginia.gov]
Sent: Wednesday, April 09, 2014 10:18 AM
To: Milgrim, John
Cc: Newman, Regina K. , E.I.T. (VDOT)
Subject: FW: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

John,

Would you mind following up on this?

Thank you,

Dwayne

-----Original Message-----
From: Regina.Newman@Vdot.Virginia.Gov [mailto:Regina.Newman@Vdot.Virginia.Gov]
Sent: Wednesday, April 09, 2014 9:40 AM
To: Roadcap, Dwayne (VDH)
Subject: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

VDOT requests your review of the Route 7 widening project in Fairfax County.
Please forward your comments by May 1, 2014 to be incorporated into the Environmental Assessment.

Thanks,
Regina Newman

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
1934 Deyerle Ave., Suite A
Harrisonburg, VA 22801

Telephone: 540/434-1404
Fax: 540/434-1519

Regina K. Newman, EIT
National Environmental Policy Act Specialist
Virginia Department of Transportation
4219 Campbell Avenue
Lynchburg, VA 24501

April 11, 2014

Subject: State Project #: 0007-029-128, P102, R202, C502

Ms. Newman,

Please find attached to this letter the Soils Resources Questionnaire and a Soils Report for the above subject project in Fairfax County, Virginia. Also, when the time comes to complete the Farmland Conversion Impact Rating form (NRCS-CPA-106) for the subject project I would be the one to send that form to. If you have any additional questions concerning the soil resources in this project area, please do not hesitate in contacting me.

Sincerely,

Don Flegel
Area 1 Soil Resource Specialist

Attachment

SOILS RESOURCES QUESTIONNAIRE

April 7, 2014

Route Number: 7
State Project Number: 0007-029-128, P102, R202, C502
UPC: 52328
Town/City/County: Fairfax County
iPM Project Description: Route 7 – Widen to 6 lanes
Project Limits: From Reston Avenue
To West Approach of Bridge over Dulles Toll Road

1. What are the soil types in the project area? Are they highly erosive? What are the drainage classifications of the soils in the project area?
   SEE ATTACHED SOILS REPORT

2. Are there any unusual problems regarding siltation or erosion in the project area? If so, what recommendations do you have for alleviating the problems?
   NO

3. Are there any foreseeable problems regarding reseeding or landscaping at the project site?
   NO

4. Do you anticipate any detrimental impact of the proposed project on groundwater resources?
   NO

5. Do you anticipate any adverse effect of the proposed project on flooding?
   MINIMAL

6. Are there any existing or proposed agricultural and/or forest districts or any other state or local programs to protect farmlands in the area of the project?
   DO NOT KNOW OF ANY

7. Are prime farmlands or hydric soils located within the project site?
   SEE ATTACHED SOILS REPORT

Any other comments you wish to make on the project are appreciated.

APRIL 11, 2014
Date

DON FLEBER
~~District Conservationist~~
AREA SOIL SCIENTIST

United States Department of Agriculture

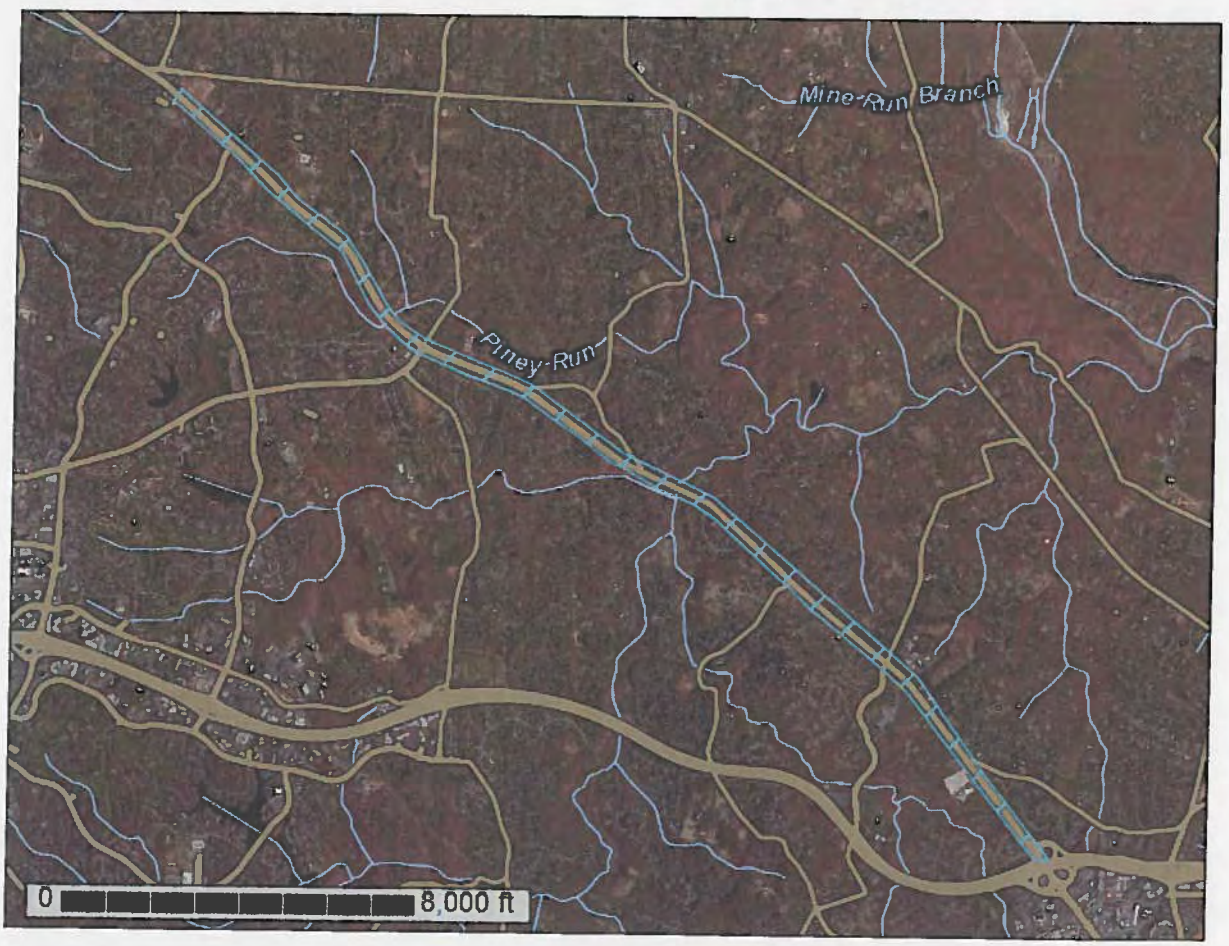
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Fairfax County, Virginia

State Project #: 0007-029-128, P102, R202, C502



April 11, 2014

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

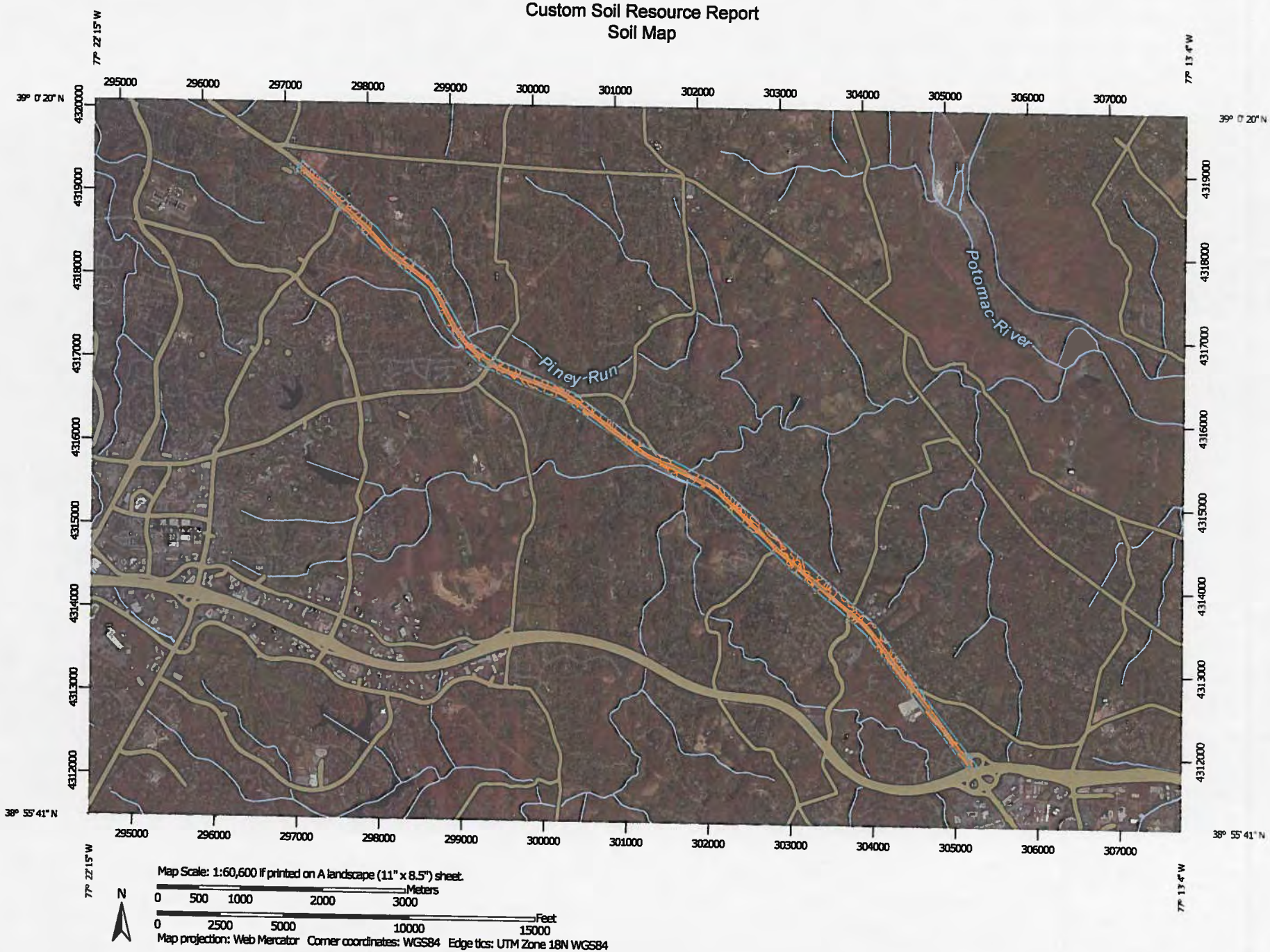
for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Fairfax County, Virginia
Survey Area Data: Version 11, Dec 11, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 14, 2011—Nov 7, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Fairfax County, Virginia (VA059)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6D	Barkers Crossroads-Rhodhiss-Rock outcrop complex, 15 to 25 percent slopes	0.8	0.2%
29A	Codorus silt loam, 0 to 2 percent slopes, occasionally flooded	11.4	2.9%
30A	Codorus and Hatboro soils, 0 to 2 percent slopes, occasionally flooded	9.5	2.4%
38B	Fairfax loam, 2 to 7 percent slopes	0.8	0.2%
38C	Fairfax loam, 7 to 15 percent slopes	0.0	0.0%
39B	Glenelg silt loam, 2 to 7 percent slopes	15.2	3.9%
39C	Glenelg silt loam, 7 to 15 percent slopes	20.3	5.2%
39D	Glenelg silt loam, 15 to 25 percent slopes	10.4	2.7%
39E	Glenelg silt loam, 25 to 45 percent slopes	3.2	0.8%
49A	Hatboro silt loam, 0 to 2 percent slopes, frequently flooded	1.6	0.4%
50	Hattontown silt loam, 0 to 25 percent slopes	1.0	0.2%
54C	Hattontown-Jackland-Haymarket complex, 7 to 15 percent slopes	1.1	0.3%
67B	Kingstowne-Beltsville complex, 2 to 7 percent slopes	2.2	0.6%
78B	Meadowville loam, 2 to 7 percent slopes	4.9	1.3%
93B	Sumerduck loam, 2 to 7 percent slopes	6.8	1.7%
95	Urban land	124.8	32.1%
99	Urban land-Hattontown complex	6.2	1.6%
101	Urban land-Wheaton complex	7.8	2.0%
102	Wheaton loam, 2 to 25 percent slopes	4.1	1.1%
103A	Wheaton-Codorus complex, 0 to 2 percent slopes	10.7	2.8%
104B	Wheaton-Fairfax complex, 2 to 7 percent slopes	5.9	1.5%
105B	Wheaton-Glenelg complex, 2 to 7 percent slopes	52.2	13.4%

Fairfax County, Virginia (VA059)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
105C	Wheaton-Glenelg complex, 7 to 15 percent slopes	60.6	15.6%
105D	Wheaton-Glenelg complex, 15 to 25 percent slopes	18.2	4.7%
107B	Wheaton-Meadowville complex, 2 to 7 percent slopes	6.9	1.8%
108B	Wheaton-Sumerduck complex, 2 to 7 percent slopes	1.3	0.3%
W	Water	1.1	0.3%
Totals for Area of Interest		**389.1**	**100.0%**

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

AOI Inventory

This folder contains a collection of tabular reports that present a variety of soil information. Included are various map unit description reports, special soil interpretation reports, and data summary reports.

Map Unit Description (Brief, Generated) (State Project #: 0007-029-128, P102, R202, C502)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous

areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated) (State Project #: 0007-029-128, P102, R202, C502)

Fairfax County, Virginia

Map Unit: 6D—Barkers Crossroads-Rhodhiss-Rock outcrop complex, 15 to 25 percent slopes

Component: Barkers Crossroads (45%)

The Barkers Crossroads component makes up 45 percent of the map unit. Slopes are 0 to 45 percent. This component is on interfluves on piedmonts. The parent material consists of mine spoil or earthy fill derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Rhodhiss (25%)

The Rhodhiss component makes up 25 percent of the map unit. Slopes are 15 to 25 percent. This component is on interfluves on piedmonts. The parent material consists of residuum weathered from mica schist and/or residuum weathered from granite and/or residuum weathered from gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Component: Rock Outcrop (20%)

Generated brief soil descriptions are created for major soil components. The Rock Outcrop is a miscellaneous area.

Map Unit: 29A—Codorus silt loam, 0 to 2 percent slopes, occasionally flooded

Component: Codorus (85%)

The Codorus component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on piedmonts. The parent material consists of alluvium derived from igneous, metamorphic and sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 15 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Component: Hatboro (5%)

Generated brief soil descriptions are created for major components. The Hatboro soil is a minor component.

Map Unit: 30A—Codorus and Hatboro soils, 0 to 2 percent slopes, occasionally flooded

Component: Codorus (55%)

The Codorus component makes up 55 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on piedmonts. The parent material consists of alluvium derived from igneous, metamorphic and sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 15 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Component: Hatboro (35%)

The Hatboro component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on piedmonts. The parent material consists of alluvium derived from igneous and metamorphic rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Map Unit: 38B—Fairfax loam, 2 to 7 percent slopes

Component: Fairfax (80%)

The Fairfax component makes up 80 percent of the map unit. Slopes are 2 to 7 percent. This component is on hillslopes on piedmonts. The parent material consists of fluviomarine deposits over residuum. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map Unit: 38C—Fairfax loam, 7 to 15 percent slopes

Component: Fairfax (80%)

The Fairfax component makes up 80 percent of the map unit. Slopes are 7 to 15 percent. This component is on hillslopes on piedmonts. The parent material consists of fluviomarine deposits over residuum. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map Unit: 39B—Glenelg silt loam, 2 to 7 percent slopes

Component: Glenelg (85%)

The Glenelg component makes up 85 percent of the map unit. Slopes are 2 to 7 percent. This component is on interfluves on piedmonts. The parent material consists of residuum weathered from mica schist and/or residuum weathered from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map Unit: 39C—Glenelg silt loam, 7 to 15 percent slopes

Component: Glenelg (85%)

The Glenelg component makes up 85 percent of the map unit. Slopes are 7 to 14 percent. This component is on interfluves on piedmonts. The parent material consists of residuum weathered from mica schist and/or residuum weathered from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of

72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map Unit: 39D—Glenelg silt loam, 15 to 25 percent slopes

Component: Glenelg (85%)

The Glenelg component makes up 85 percent of the map unit. Slopes are 14 to 25 percent. This component is on interfluves on piedmonts. The parent material consists of residuum weathered from mica schist and/or residuum weathered from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map Unit: 39E—Glenelg silt loam, 25 to 45 percent slopes

Component: Glenelg (85%)

The Glenelg component makes up 85 percent of the map unit. Slopes are 25 to 45 percent. This component is on interfluves on piedmonts. The parent material consists of residuum weathered from mica schist and/or residuum weathered from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map Unit: 49A—Hatboro silt loam, 0 to 2 percent slopes, frequently flooded

Component: Hatboro (85%)

The Hatboro component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on piedmonts. The parent material consists of alluvium derived from igneous and metamorphic rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Map Unit: 50—Hattontown silt loam, 0 to 25 percent slopes

Component: Hattontown (100%)

The Hattontown component makes up 100 percent of the map unit. Slopes are 0 to 25 percent. This component is on interfluves on basins. The parent material consists of mine spoil or earthy fill derived from basalt and/or mine spoil or earthy fill derived from diabase. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map Unit: 54C—Hattontown-Jackland-Haymarket complex, 7 to 15 percent slopes

Component: Hattontown (45%)

The Hattontown component makes up 45 percent of the map unit. Slopes are 0 to 25 percent. This component is on interfluves on basins. The parent material consists of mine spoil or earthy fill derived from basalt and/or mine spoil or earthy fill derived from diabase. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Jackland (23%)

The Jackland component makes up 23 percent of the map unit. Slopes are 7 to 15 percent. This component is on interfluves on basins. The parent material consists of residuum weathered from diabase. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is very high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 15 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Haymarket (22%)

The Haymarket component makes up 22 percent of the map unit. Slopes are 7 to 15 percent. This component is on interfluves on basins. The parent material consists of residuum weathered from diabase. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in

the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Elbert (5%)

Generated brief soil descriptions are created for major components. The Elbert soil is a minor component.

Map Unit: 67B—Kingstowne-Beltsville complex, 2 to 7 percent slopes

Component: Kingstowne (45%)

The Kingstowne component makes up 45 percent of the map unit. Slopes are 0 to 15 percent. This component is on marine terraces on coastal plains. The parent material consists of Earthy fill of fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 40 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Beltsville (40%)

The Beltsville component makes up 40 percent of the map unit. Slopes are 2 to 7 percent. This component is on hills on piedmonts. The parent material consists of eolian deposits over fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Map Unit: 78B—Meadowville loam, 2 to 7 percent slopes

Component: Meadowville (85%)

The Meadowville component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on piedmonts. The parent material consists of local alluvium over residuum weathered from schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 44 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map Unit: 93B—Sumerduck loam, 2 to 7 percent slopes

Component: Sumerduck (85%)

The Sumerduck component makes up 85 percent of the map unit. Slopes are 2 to 7 percent. This component is on drainageways on piedmonts. The parent material consists of alluvium derived from schist and/or alluvium derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Hatboro (2%)

Generated brief soil descriptions are created for major components. The Hatboro soil is a minor component.

Map Unit: 95—Urban land

Component: Urban Land (95%)

Generated brief soil descriptions are created for major soil components. The Urban Land is a miscellaneous area.

Map Unit: 99—Urban land-Hattontown complex

Component: Urban land (50%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Hattontown (49%)

The Hattontown component makes up 49 percent of the map unit. Slopes are 0 to 25 percent. This component is on interfluves on basins. The parent material consists of mine spoil or earthy fill derived from basalt and/or mine spoil or earthy fill derived from diabase. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map Unit: 101—Urban land-Wheaton complex

Component: Urban land (50%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Wheaton (49%)

The Wheaton component makes up 49 percent of the map unit. Slopes are 2 to 25 percent. This component is on interfluves on piedmonts. The parent material consists of mine spoil or earthy fill derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map Unit: 102—Wheaton loam, 2 to 25 percent slopes

Component: Wheaton (100%)

The Wheaton component makes up 100 percent of the map unit. Slopes are 2 to 25 percent. This component is on interfluves on piedmonts. The parent material consists of mine spoil or earthy fill derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map Unit: 103A—Wheaton-Codorus complex, 0 to 2 percent slopes

Component: Wheaton (45%)

The Wheaton component makes up 45 percent of the map unit. Slopes are 2 to 15 percent. This component is on interfluves on piedmonts. The parent material consists of mine spoil or earthy fill derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Codorus (40%)

The Codorus component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on piedmonts. The parent material consists of alluvium derived from igneous, metamorphic and sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 15 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Component: Hatboro (5%)

Generated brief soil descriptions are created for major components. The Hatboro soil is a minor component.

Map Unit: 104B—Wheaton-Fairfax complex, 2 to 7 percent slopes

Component: Wheaton (45%)

The Wheaton component makes up 45 percent of the map unit. Slopes are 2 to 15 percent. This component is on interfluves on piedmonts. The parent material consists of mine spoil or earthy fill derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Fairfax (40%)

The Fairfax component makes up 40 percent of the map unit. Slopes are 2 to 7 percent. This component is on hillslopes on piedmonts. The parent material consists of fluviomarine deposits over residuum. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map Unit: 105B—Wheaton-Glenelg complex, 2 to 7 percent slopes

Component: Wheaton (45%)

The Wheaton component makes up 45 percent of the map unit. Slopes are 2 to 15 percent. This component is on interfluves on piedmonts. The parent material consists of mine spoil or earthy fill derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement

in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Glenelg (40%)

The Glenelg component makes up 40 percent of the map unit. Slopes are 2 to 7 percent. This component is on interfluves on piedmonts. The parent material consists of residuum weathered from mica schist and/or residuum weathered from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map Unit: 105C—Wheaton-Glenelg complex, 7 to 15 percent slopes

Component: Wheaton (45%)

The Wheaton component makes up 45 percent of the map unit. Slopes are 2 to 25 percent. This component is on interfluves on piedmonts. The parent material consists of mine spoil or earthy fill derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Glenelg (40%)

The Glenelg component makes up 40 percent of the map unit. Slopes are 7 to 14 percent. This component is on interfluves on piedmonts. The parent material consists of residuum weathered from mica schist and/or residuum weathered from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map Unit: 105D—Wheaton-Glenelg complex, 15 to 25 percent slopes

Component: Wheaton (45%)

The Wheaton component makes up 45 percent of the map unit. Slopes are 2 to 25 percent. This component is on interfluves on piedmonts. The parent material consists

of mine spoil or earthy fill derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria.

Component: Glenelg (40%)

The Glenelg component makes up 40 percent of the map unit. Slopes are 14 to 25 percent. This component is on interfluves on piedmonts. The parent material consists of residuum weathered from mica schist and/or residuum weathered from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map Unit: 107B—Wheaton-Meadowville complex, 2 to 7 percent slopes

Component: Wheaton (46%)

The Wheaton component makes up 46 percent of the map unit. Slopes are 2 to 15 percent. This component is on interfluves on piedmonts. The parent material consists of mine spoil or earthy fill derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Meadowville (44%)

The Meadowville component makes up 44 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on piedmonts. The parent material consists of local alluvium over residuum weathered from schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 44 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map Unit: 108B—Wheaton-Sumerduck complex, 2 to 7 percent slopes

Component: Wheaton (45%)

The Wheaton component makes up 45 percent of the map unit. Slopes are 2 to 15 percent. This component is on interfluves on piedmonts. The parent material consists of mine spoil or earthy fill derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Sumerduck (40%)

The Sumerduck component makes up 40 percent of the map unit. Slopes are 2 to 7 percent. This component is on drainageways on piedmonts. The parent material consists of alluvium derived from schist and/or alluvium derived from phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Hatboro (2%)

Generated brief soil descriptions are created for major components. The Hatboro soil is a minor component.

Map Unit: W—Water

Component: Water (100%)

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Land Classifications

This folder contains a collection of tabular reports that present a variety of soil groupings. The reports (tables) include all selected map units and components for each map unit. Land classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Prime and other Important Farmlands (State Project #: 0007-029-128, P102, R202, C502)

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands (State Project #: 0007-029-128, P102, R202, C502)

Prime and other Important Farmlands–Fairfax County, Virginia		
Map Symbol	**Map Unit Name**	**Farmland Classification**
6D	Barkers Crossroads-Rhodhiss-Rock outcrop complex, 15 to 25 percent slopes	Not prime farmland
29A	Codorus silt loam, 0 to 2 percent slopes, occasionally flooded	Not prime farmland
30A	Codorus and Hatboro soils, 0 to 2 percent slopes, occasionally flooded	Not prime farmland
38B	Fairfax loam, 2 to 7 percent slopes	All areas are prime farmland
38C	Fairfax loam, 7 to 15 percent slopes	Farmland of statewide importance
39B	Glenelg silt loam, 2 to 7 percent slopes	All areas are prime farmland
39C	Glenelg silt loam, 7 to 15 percent slopes	Farmland of statewide importance
39D	Glenelg silt loam, 15 to 25 percent slopes	Farmland of statewide importance
39E	Glenelg silt loam, 25 to 45 percent slopes	Not prime farmland
49A	Hatboro silt loam, 0 to 2 percent slopes, frequently flooded	Not prime farmland
50	Hattontown silt loam, 0 to 25 percent slopes	Not prime farmland
54C	Hattontown-Jackland-Haymarket complex, 7 to 15 percent slopes	Not prime farmland
67B	Kingstowne-Beltsville complex, 2 to 7 percent slopes	Not prime farmland
78B	Meadowville loam, 2 to 7 percent slopes	All areas are prime farmland
93B	Sumerduck loam, 2 to 7 percent slopes	All areas are prime farmland
95	Urban land	Not prime farmland
99	Urban land-Hattontown complex	Not prime farmland
101	Urban land-Wheaton complex	Not prime farmland
102	Wheaton loam, 2 to 25 percent slopes	Not prime farmland
103A	Wheaton-Codorus complex, 0 to 2 percent slopes	Not prime farmland
104B	Wheaton-Fairfax complex, 2 to 7 percent slopes	Not prime farmland
105B	Wheaton-Glenelg complex, 2 to 7 percent slopes	Not prime farmland

Prime and other Important Farmlands–Fairfax County, Virginia		
Map Symbol	**Map Unit Name**	**Farmland Classification**
105C	Wheaton-Glenelg complex, 7 to 15 percent slopes	Not prime farmland
105D	Wheaton-Glenelg complex, 15 to 25 percent slopes	Not prime farmland
107B	Wheaton-Meadowville complex, 2 to 7 percent slopes	Not prime farmland
108B	Wheaton-Sumerduck complex, 2 to 7 percent slopes	Not prime farmland
W	Water	Not prime farmland

Hydric Soil List - All Components (State Project #: 0007-029-128, P102, R202, C502)

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by

each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components (State Project #: 0007-029-128, P102, R202, C502)

Hydric Soil List - All Components–VA059-Fairfax County, Virginia					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
6D: Barkers Crossroads-Rhodhiss-Rock outcrop complex, 15 to 25 percent slopes	Barkers Crossroads	15-90	Interfluves	No	—
	Rhodhiss	10-90	Interfluves	No	—
	Rock Outcrop	10-30	—	—	—
29A: Codorus silt loam, 0 to 2 percent slopes, occasionally flooded	Codorus	65-95	Flood plains	No	—
	Hatboro	5	Flood plains	Yes	2
30A: Codorus and Hatboro soils, 0 to 2 percent slopes, occasionally flooded	Codorus	15-90	Flood plains	No	—
	Hatboro	10-95	Flood plains	Yes	2
38B: Fairfax loam, 2 to 7 percent slopes	Fairfax	35-90	Hillslopes	No	—
38C: Fairfax loam, 7 to 15 percent slopes	Fairfax	35-90	Hillslopes	No	—
39B: Glenelg silt loam, 2 to 7 percent slopes	Glenelg	70-95	Interfluves	No	—
39C: Glenelg silt loam, 7 to 15 percent slopes	Glenelg	65-90	Interfluves	No	—
39D: Glenelg silt loam, 15 to 25 percent slopes	Glenelg	60-90	Interfluves	No	—
39E: Glenelg silt loam, 25 to 45 percent slopes	Glenelg	20-90	Interfluves	No	—
49A: Hatboro silt loam, 0 to 2 percent slopes, frequently flooded	Hatboro	50-95	Flood plains	Yes	2
50: Hattontown silt loam, 0 to 25 percent slopes	Hattontown	100	Interfluves	No	—
54C: Hattontown-Jackland-Haymarket complex, 7 to 15 percent slopes	Hattontown	20-95	Interfluves	No	—
	Jackland	15-50	Interfluves	No	—
	Haymarket	15-50	Interfluves	No	—
	Elbert	5	Drainageways	Yes	2
67B: Kingstowne-Beltsville complex, 2 to 7 percent slopes	Kingstowne	15-90	Marine terraces	No	—
	Beltsville	15-90	Hills	No	—
78B: Meadowville loam, 2 to 7 percent slopes	Meadowville	70-90	Drainageways	No	—

Hydric Soil List - All Components--VA059-Fairfax County, Virginia					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
93B: Sumerduck loam, 2 to 7 percent slopes	Sumerduck	65-95	Drainageways	No	—
	Hatboro	2	Flood plains	Yes	2
95: Urban land	Urban Land	90-100	—	—	—
99: Urban land-Hattontown complex	Urban land	40-90	—	—	—
	Hattontown	40-90	Interfluves	No	—
101: Urban land-Wheaton complex	Urban land	40-90	—	—	—
	Wheaton	40-90	Interfluves	No	—
102: Wheaton loam, 2 to 25 percent slopes	Wheaton	100	Interfluves	No	—
103A: Wheaton-Codorus complex, 0 to 2 percent slopes	Wheaton	10-95	Interfluves	No	—
	Codorus	15-90	Flood plains	No	—
	Hatboro	5	Flood plains	Yes	2
104B: Wheaton-Fairfax complex, 2 to 7 percent slopes	Wheaton	15-95	Interfluves	No	—
	Fairfax	15-90	Hillslopes	No	—
105B: Wheaton-Glenelg complex, 2 to 7 percent slopes	Wheaton	15-95	Interfluves	No	—
	Glenelg	15-90	Interfluves	No	—
105C: Wheaton-Glenelg complex, 7 to 15 percent slopes	Wheaton	15-95	Interfluves	No	—
	Glenelg	15-90	Interfluves	No	—
105D: Wheaton-Glenelg complex, 15 to 25 percent slopes	Wheaton	15-95	Interfluves	No	—
	Glenelg	15-90	Interfluves	No	—
107B: Wheaton-Meadowville complex, 2 to 7 percent slopes	Wheaton	15-90	Interfluves	No	—
	Meadowville	15-90	Drainageways	No	—
108B: Wheaton-Sumerduck complex, 2 to 7 percent slopes	Wheaton	15-95	Interfluves	No	—
	Sumerduck	15-95	Drainageways	No	—
	Hatboro	2	Flood plains	Yes	2
W: Water	Water	100	—	Unranked	—

From: Milgrim, John [John.Milgrim@fairfaxcounty.gov]
Sent: Wednesday, April 09, 2014 1:10 PM
To: Newman, Regina K. , E.I.T. (VDOT)
Cc: Roadcap, Dwayne (VDH); Sheehan, Pieter Anthony; Joye, Adrian
Subject: FW: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review
Attachments: VDH_-_sewage_and_water_services.pdf; Rte_7_location_map.pdf

Ms. Newman

These are answers to the comments and concerns questions related to potential environmental impacts associated with the proposed project in Fairfax County Virginia.

1) Any potential contamination of a public water supply system due to the proposed project;
Please contact Fairfax County Water Authority (www.fcwa.org). A contact person is Tracie Kammer Goldberg (tgoldberg@fairfaxwater.org).

2) Any adverse effects of the proposed project on local ground water or on designation of a critical groundwater management area;
There are many drinking water wells in the project area. The Fairfax County Health Department can provide an approximate location of these wells from a GIS overlay. There are no designated critical groundwater management areas in the purposed project to our knowledge.

3) Any adverse effects of the proposed project on local sanitary facilities, such as a public sewer system or private septic fields.
Information related to local public sewerage system contact Fairfax County Department of Public Works and Environmental Services (www.fairfaxcounty.gov/dpwes). The project area has many homes served by individual onsite sewage disposal systems (private septic fields). The Fairfax County Health Department can provide an approximate location of these.

If you have further questions please let me know.
John

John M. Milgrim, R.E.H.S.
Program Manager
Division of Environmental Health
703-246-8457
John.Milgrim@FairfaxCounty.gov

-----Original Message-----
From: Roadcap, Dwayne (VDH) [mailto:Dwayne.Roadcap@vdh.virginia.gov]
Sent: Wednesday, April 09, 2014 10:18 AM
To: Milgrim, John
Cc: Newman, Regina K. , E.I.T. (VDOT)

Subject: FW: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

John,

Would you mind following up on this?

Thank you,

Dwayne

-----Original Message-----
From: Regina.Newman@Vdot.Virginia.Gov [mailto:Regina.Newman@Vdot.Virginia.Gov]
Sent: Wednesday, April 09, 2014 9:40 AM
To: Roadcap, Dwayne (VDH)
Subject: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

VDOT requests your review of the Route 7 widening project in Fairfax County. Please forward your comments by May 1, 2014 to be incorporated into the Environmental Assessment.

Thanks,
Regina Newman

From: Dufore, Ezekiel (VDH)
Sent: Wednesday, April 30, 2014 11:37 AM
To: Newman, Regina K. , E.I.T. (VDOT)
Cc: Soto, Roy (VDH)
Subject: UPC 52328 | Route 7 - Widen to 6 Lanes

Project #: 0007-029-128, P102, R202, C502
UPC #: 52328
Location: Fairfax County

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to public drinking water sources (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems must be verified by the local utility.

No public groundwater wells are within a 1 mile radius of the project site.

The following public surface water intakes are located within a 5 mile radius of the project site: The Fairfax County Potomac River Intake is located approximately 4.4 miles from the project site

The project is not within Zone 1 (up to 5 miles into the watershed) or Zone 2 (greater than 5 miles into the watershed) of any public surface water sources.

There are no apparent impacts to public drinking water sources due to this project.

Ezekiel Dufore
Office of Drinking Water
Virginia Department of Health
James Madison Building
109 Governor Street
Richmond, VA 23219
(w) 804-864-7201
ezekiel.dufore@vdh.virginia.gov

From: Owen, Randy (MRC)
Sent: Thursday, April 24, 2014 6:09 AM
To: Newman, Regina K. , E.I.T. (VDOT)
Subject: RE: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

Please be advised that the Commission, pursuant to Section 28.2-1200 et seq of the Code of Virginia, has jurisdiction over any encroachments in, on, or over the beds of the bays, ocean, rivers, streams, or creeks which are the property of the Commonwealth. Accordingly, if any portion of the subject project involves any encroachments channelward of ordinary high water along natural rivers and streams above the fall line or mean low water below the fall line, a permit may be required from our agency. Any jurisdictional impacts will be reviewed by VMRC during the monthly IACM (Interagency Coordination Meeting) or via the Joint Permit Application process. Thank you for the opportunity to comment.

-----Original Message-----
From: Regina.Newman@Vdot.Virginia.Gov [mailto:Regina.Newman@Vdot.Virginia.Gov]
Sent: Wednesday, April 09, 2014 2:38 PM
To: salewis-sheatham@deq.virginia.gov; Coe, Stephen (DEQ); OMalley, Nina (DEQ); ProjectReview (DGIF); odwreview (VDH); marc.homa@dhr.virginia.gov; Owen, Randy (MRC); Hallock-Solomon, Michael (VOF)
Subject: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

VDOT requests your review of the Route 7 widening project in Fairfax County. Please forward your comments by May 1, 2014 to be incorporated into the Environmental Assessment.

Thanks,
Regina. Newman

From: Hallock-Solomon, Michael (VOF)
Sent: Monday, April 14, 2014 3:05 PM
To: Newman, Regina K. , E.I.T. (VDOT)
Cc: Little, Martha (VOF)
Subject: RE: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

Ms. Newman,

The Virginia Outdoors Foundation has reviewed the project referenced above. As of 14 April 2014, there are not any existing nor proposed VOF open-space easements in the project's immediate vicinity.

Please contact VOF again for further review if the project area changes significantly or if this project does not begin within 24 months. Thank you for considering conservation easements.

Thanks,
Mike

Mike Hallock-Solomon, AICP
GIS/IT Specialist
Virginia Outdoors Foundation
(804) 371-0114 voice
(804) 225-3236 fax

-----Original Message-----
From: Regina.Newman@Vdot.Virginia.Gov [mailto:Regina.Newman@Vdot.Virginia.Gov]
Sent: Wednesday, April 09, 2014 2:38 PM
To: salewis-sheatham@deq.virginia.gov; Coe, Stephen (DEQ); OMalley, Nina (DEQ); ProjectReview (DGIF); odwreview (VDH); marc.homa@dhr.virginia.gov; Owen, Randy (MRC); Hallock-Solomon, Michael (VOF)
Subject: VDOT Project 0007-029-128, P102, R202, C502; UPC 52328; Environmental Review

VDOT requests your review of the Route 7 widening project in Fairfax County. Please forward your comments by May 1, 2014 to be incorporated into the Environmental Assessment.

Thanks,
Regina. Newman

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

March 23, 2017

PRELIMINARY JURISDICTIONAL DETERMINATION

Northern Virginia Regulatory Section
NAO-2014-01572 (Route 7)

Virginia Department of Transportation
Attn: Mr. Bryan Campbell
4975 Alliance Drive
Fairfax, Virginia 22030

Dear Mr. Campbell:

This letter is in regard to your request for a verification of a preliminary jurisdictional determination for waters of the U.S. (including wetlands) on property known as the Route 7 Widening – Reston Ave to Jarett Valley Drive, located on an approximately 287.0 acre parcel 3 miles west of McLean and 2.5 miles west of Great Falls in Fairfax County, Virginia.

The maps entitled "Route 7 Widening (Reston Ave to Jarett Valley Drive)", by the Virginia Department of Transportation dated December 16, 2015 and May 4, 2016 (*copies enclosed)* provide the location of waters and/or wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*, and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation and the presence of an ordinary high water mark.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the

determination, or you may request and obtain an approved jurisdictional determination. “This preliminary jurisdictional determination and associated wetland delineation map may be submitted with a permit application.”

Enclosed is a copy of the “Preliminary Jurisdictional Determination Form”. Please review the document, sign, and return one copy to Ms. Theresita Crockett-Augustine either via email (**theresita.m.crockett-augustine@usace.army.mil**) or via standard mail to US Army Corps of Engineers, Northern Virginia Field Office at 18139 Triangle Plaza, Suite 213, Dumfries, Virginia 22026 within 30 days of receipt and keep one for your records. This delineation of waters and/or wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date.

If you have any questions, please contact Ms. Theresita Crockett-Augustine at (703) 221-9736 or **theresita.m.crockett-augustine@usace.army.mil**.

Sincerely,

Theresita Crockett-Augustine
Environmental Scientist
Northern Virginia Regulatory Section

Enclosures

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

April 17, 2017

SUBJECT: Route 7 Widening, Fairfax County; NAO-2014-1572

Virginia Department of Transportation
Mr. Bryan Campbell
Water Resources Specialist
4975 Alliance Drive
Fairfax, VA 22030

Dear Mr. Campbell:

This letter is in response to your request for input from the Norfolk District Corps of Engineers (USACE) on the proposed widening of Route 7 from Reston Avenue to Jarret Valley Drive in Fairfax County, Virginia. Thank you for coordinating the Environmental Assessment (EA) prepared by the Federal Highway Administration (FHWA) and the Virginia Department of Transportation (VDOT). We are not commenting herein on the EA or its content, but rather on the current concept for the project. We have a number of concerns and questions regarding the project, which we outline below.

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). All of the alternatives you have looked at and presented to us will require USACE authorization. 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.

You met with representatives of USACE and DEQ and other stakeholders in February 2016 to discuss the project. You acquired a verification of the limits of USACE jurisdiction in the project area in March 2017. USACE and the Virginia Department of Environmental Quality (DEQ) met with you on March 28, 2017 for an overview of the project and the alternatives that have been evaluated, and a discussion of the project schedule. You have indicated that this project will be further developed and constructed by a Design-Build contractor, who will also serve as the applicant for permits.

We are concerned that the project as presented is projected to impact wetlands and streams for stormwater management (SWM) facilities. If an application is submitted that includes such impacts, there must be a thorough analysis of other alternative locations and configurations for SWM that do not impact waters of the US. Alternative sites should include those not acquired or intended for acquisition for the project. We understand that the final analysis for noise walls has not been completed, but that it is anticipated that noise walls will be proposed. If the proposed locations of noise walls will impact wetlands, streams, or other waters of the US, then an analysis must also be conducted of alternative locations, designs (such as attaching the walls to pilings rather than on foundations in jurisdictional areas), and configurations for the walls. The applicant should recognize that USACE may or may not agree with their conclusions regarding the practicability of alternative locations and designs for SWM and noise walls; coordination with USACE is recommended once the applicant has conducted these comparative analyses.

Our primary concern in reviewing the information you provided at the March meeting and in the EA is the plan to relocate Colvin Run by moving it into an existing forested wetland. Based on the information, we do not see justification for the projected impacts of over four acres of wetlands at that location for that purpose. It does not appear that a preliminary LEDPA has yet been developed; missing in the analysis to date is a clear effort to balance impacts to the array of resources in the project area – historic and recreational as well as aquatic. The following additional analyses of alternatives and avoidance and minimization measures need to be conducted in order for us to consider the project further, and must be addressed if an application is submitted to USACE for the project:

1. Widen more to the north side: We understand that there are historic resources/Section 4f properties on the north side of Route 7 in the area of Colvin Run. Part of the information submitted notes that land cannot be taken from Section 4f resources unless the taking will have a de minimis impact or "There is no feasible and prudent avoidance alternative to the use of land and the action includes all possible planning to minimize harm to the property resulting from such use." It should be recognized that if USACE cannot agree that a proposal is the LEDPA and thus cannot issue a permit for that proposal, the proposal is ergo not feasible. USACE may well determine that eliminating further widening to the north and proposing extensive impacts to the forested wetland on the south is not a permittable project.

   The JMT Memorandum dated February 2016 states that Alternative 6, which would direct some of the Colvin Run flow to the north side of the road would result in "massive" impacts to the environment, and references are made to potential impacts to wetlands. These impacts are not quantified, and it is unknown whether impacts to aquatic resources would be more or less than those proposed on the south side for the relocation of Colvin Run. Slide 33 of the

March presentation suggests that wetlands are much more extensive on the south side of the road. Any comparative analysis of alternatives should include the estimated area of wetland impacts of options, not general references to wetland impacts. We disagree with the statement on Slide 52 that the impacts to the south cannot be avoided because shifting to the north would have impacts to existing waters of the US, as those impacts are not estimated as they are on the south of the road.

The Memorandum says that diverting flow to the north side of the road would flood the stream valley 5000-6000 feet upstream. It also states that diverting the flow would "likely" result in "major" flooding of Route 674 and present a "serious" threat to surrounding properties. However, it is unclear the extent to which such effects have been evaluated or are likely.

We are not suggesting that all or a majority of the widening be on the north side of Route 7; however, it appears that there is more opportunity to balance impacts by shifting more of the widening to the north.

2. Reduce width and/or combine shared use paths and Cross Country Trail: The typical section indicates a 10' wide shared use path on both sides along the widened Route 7. In addition, in the vicinity of Colvin Run, there is a Cross Country Trail, which is shown as 20' wide. In order to better balance impacts to resources, there needs to be an analysis of reducing the width of both paths and the trail through areas of aquatic resources, particularly in the area of Colvin Run. The necessity for all three pathways through this area also needs to be evaluated. One measure to reduce impacts would be to combine the path and the trail on the south side of Route 7. We understand that the plan is for the path to go on top of the new Difficult Run Bridge and the trail to go under it. That plan could still go forward, with the combined path/trail diverging into separate pathways as it approaches the bridge. Again, any part of the paths that can be more narrow or combined to reduce the total footprint will serve to allow more space for the relocated Colvin Run channel closer to the road and reduce wetland impacts, better balancing impacts.

3. Reduce the median: The typical section in the EA indicates a median that "varies 16'-42'." It is not clear what is the proposed width of the median in the area of Colvin Run. The applicant needs to evaluate reducing the median in width through such measures as using a concrete barrier with shoulders. Consideration should be given both to options that would not require a waiver or exemption from FHWA and those that would.

4. Place the Trail on the ground above the box culvert: We note that the typical section for Alternative 5 does not show the trail on top of box culvert. Placing the trail and/or the trail/path on top of the box culvert should be evaluated to reduce

the footprint of impacts. If there are engineering or structural reasons for not doing so, then they should be clearly identified.

5. Place the relocated stream in a riprap-lined channel: In early coordination, USACE suggested verbally to VDOT that they assess placing the relocated stream in a more-or-less straight channel and in a box culvert, to reduce impacts to the forested wetlands. VDOT and their consultant evaluated these options as Alternatives 4, and 5. However, in looking at a channel, only a concrete-lined channel was evaluated. There should be an analysis of a rip-rap lined channel, which was the suggestion of USACE. Compared to a concrete channel, a riprap channel may be less costly and easier to maintain, provide better sediment capacity, better serve to slow higher flows in storm events, and create more opportunity for micro-habitats for some aquatic organisms.

6. Assess a combination of open channel, riprap-lined channel, and box culvert: On the south side, in order to relocate the channel as needed for the widening and to accommodate any required path/trail, we need to see a detailed, thorough analysis of a combination alternative in order to minimize impacts to the forested wetlands adjacent to Colvin Run. To develop this option, the applicant needs to evaluate including some open channel, some riprap-lined channel, and a box culvert, with the path/trail located on top of the box culvert where feasible to further reduce the footprint. Site constraints (including the existing wetlands), roadway geometric requirements, and trail/path requirements should all be considered in developing this option. An option that keeps the channel as close to Route 7 as practicable will reduce not only the direct effects to the wetlands, but also indirect effects to the hydrology of this perched system. Based on the information provided, an alternative that incorporates these measures for channel relocation as well as widening more to the north side than currently proposed appears to offer the best alternative for balancing impacts to all resources while reducing costs over a box culvert for the full length of the relocated channel.

In order to compare the alternatives, we need more detailed information. For some of the comparisons provided to date, general statements are made about environmental impacts being “extremely high” or “wide-scale,” “likely” flooding problems, utilities that “may” need to be relocated and the “potential” cost of such relocations, without information to support those statements. We can agree that if an alternative is clearly not practicable for a specific reason, then we do not need details about all the other reasons it might also not be practicable. However, general descriptions about impacts that might occur are not sufficient to make a practicability determination or to reasonably compare alternatives. We also need illustrations that clearly show the location of all resources addressed in an alternatives analysis. For example, using all of the information provided to date, including the EA, the limits of historic and Section 4f properties in the area north of Route 7 near Colvin Run is not obvious, which complicates our ability to consider the analysis.

Regardless of the option that moves forward, if the Cross Country Trail is available for equestrian uses, then a plan for containing runoff must be incorporated unless Colvin Run is located in a box culvert. Even if Colvin Run is in a box culvert, there is concern about the same polluting effect to Difficult Run with the trail located under the bridge and across that stream. Because of the potential for water pollution resulting from horse droppings, some sort of containment system needs to be in place.

As suggested above, we have concerns about indirect effects to the forested wetlands on the south side of Route 7. VDOT has indicated that this is a perched wetland system, and that a stream relocation can incorporate clay liners or similar measures to minmize impacts to the hydrology of that system. However, the effectiveness of such an approach would be questionable, as buffers would be planted with woody vegetation. Roots of trees and shrubs in the buffer may well puncture the liner, and over time, any liner may become completely ineffective due to multiple punctures. Future activities, such as any necessary untility additions or maintence, could also impact such a liner. It would be very difficult to predict the extent to which drainage of the perched wetland could occur. If any proposal goes forward that encroaches into that wetland, USACE may well require additional wetland compensation for potential extensive impacts to the wetland hydrology.

Regarding mitigation, we question the statement made with regard to certain options in the alternatives analysis that they "would not meet the intent of the project to mitigate for permanent impacts to jurisdictional waters" or do not "meet" mitigation requirements. We do not see anything in the project purpose that suggests that part of the "intent" of the project is to restore or create any wetlands or streams for mitigation purposes. While that may be a goal for economic reasons, it does not appear to be an intent of the project. Relocation options were considered in light of how well they meet the USFWS Stream Functional Pyramid or targeted benefits for stream restoration. The widening of Route 7 is not a stream restoration project. The site of Colvin Run along Route 7 would almost certainly not be approved for an independent stream restoration mitigation project, such as a mitigation bank, because of the extent of impacts to the existing forested wetlands to implement a design. While we understand the importance of reconnecting a stream with a floodplain and incorporating natural channel design to the extent practicable in a stream restoration project, this roadway project is not a stream restoration project. What is important is to identify an option that minimizes any relocation of streams, and that minimizes impacts for any unavoidable stream relocation. Given the extent of forested wetland impacts that would occur if the channel is relocated, and given that the wetlands are a "perched" system that could experience extensive indirect impacts to hydrology even with a carefully engineered design for the new channel/floodplain, it appears unlikely that USACE will agree that attempting a natural channel design relocation on the south side of Route 7 (similar to what is depicted in Alternatives 1 & 2) will be acceptable. There may be some opportunity for partial "self-mitigation" credit as part of a design that better balances impacts to all

resources, but that will have to be assessed once an acceptable alternative has been identified. USACE gives priority to the purchase of credits from mitigation banks for providing required compensatory mitigation.

The minutes of the February meeting include a statement by VDOT's consultant that for permittee-responsible mitigation, such as a self-mitigating stream relocation, "a bond is typically not required on VDOT projects…VDOT has not been required to post bonds on other compensation projects." Perhaps the consultant was unaware that the project would be developed as a Design-Build project with the contractor as the applicant/permittee. Financial assurances are required for construction, monitoring and maintenance, and long-term management when the applicant/permittee is anyone other than VDOT, regardless of the extent to which VDOT is involved in funding or other aspects of a project prior to submittal of an application. See the "Memorandum of Agreement (MOA) Between the Norfolk District Corps of Engineers (USACE) and the Virginia Department of Transportation (VDOT) to Document Actions Followed on VDOT Compensatory Mitigation Sites to Comply with Long term Management Requirements (33 CFR 332.7(d))" signed in 2015 for further explanation. The Design-Build contractor should be made aware of these requirements and address them when considering compensatory mitigation options and costs.

Thank you for the opportunity to provide comments and recommendations. We are happy to meet with VDOT and/or the Design-Build contractor to discuss the alternatives analysis. Please contact Alice Allen-Grimes at alice.w.allen-grimes@usace.army.mil or telephone 757-201-7219 if you have any questions.

Sincerely,

Kimberly A. Prisco-Baggett

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

cc:
Federal Highway Administration, Richmond, ATTN: Mr. John Simkins
Environmental Protection Agency, Philadelphia
Virginia Department of Environmental Quality, Richmond
Virginia Department of Transportation, Richmond

Campbell, Bryan (VDOT)

From: OMalley, Nina (DEQ)
Sent: Tuesday, January 12, 2016 5:25 PM
To: Campbell, Bryan (VDOT)
Cc: Bronson, Regena D NAO
Subject: RE: Colvin Run Relocation

Hey Bryan,

While I appreciate that VDOT is seeking regulatory opinions early in the design process, I believe more information is needed in order to inform and confirm a final opinion on the stream relocation options.

Additional information recommended:

- USM Assessment and photographs of Colvin Run
- Existing hydrologic inputs for the stream channel and adjacent wetlands. Are the wetlands toe of slope seep driven?
- Evidence that the "fine grained alluvial sediments within and along the Colvin Run floodplain," settled there due to historic anthropogenic actions in the watershed, as opposed to natural sedimentation over time.
- Consider alternate locations for the stream relocation that reduce wetland impacts, while still allowing the required floodplain width and average water surface slope. Could the stream be constructed in the area of the proposed stormwater impoundment and cross-country trail? Would this option still provide room for the full floodplain needed to ensure stream channel stability and minimization of shear stresses in the stream channel?
- Brief conceptual plan, potentially for both options, with initial plan view, profile, and cross-sections (include the whole floodplain area and vacated channel in the cross-sections, so we can get a better picture of the total amount of cut-fill);
- Conceptual existing, reference, and proposed stream channel geomorphic parameters for each option;
- Consider and discuss potential secondary wetland impacts: In each stream relocation scenario, what will happen to the adjacent forested and scrub/shrub wetlands that are not cut down to the new floodplain?

Nina E. O'Malley
Department of Environmental Quality
Office of Wetlands and Water Protection
P.O. Box 1105
Richmond, Va. 23218

804-698-4067

Campbell, Bryan (VDOT)

From: Schul, Hannah (DEQ)
Sent: Friday, May 26, 2017 10:01 AM
To: Campbell, Bryan (VDOT)
Subject: RE: Route 7 Corridor Improvements, Faifax County

Hi Bryan,

At this time I do not have additional comments. Alice's letter encompassed many of the concerns both the Corps and DEQ have at this stage. It's great to hear you are bringing a consultant in for the project. I look forward to the site visit (I believe Alice said June 22nd was chosen) so we can see the current conditions of the site and the constraints we are working with. I will speak with Sarah Woodford, our stream specialist/mitigation coordinator, and see if she has any interest in attending the site visit. Her expertise could be very helpful in determining the preferred alternative.

Thanks and have a great long weekend!

Hannah Schul
VWP Permitting Specialist

Office of Wetlands and Stream Protection
Department of Environmental Quality
629 E. Main Street
Richmond, VA 23219

804-698-4074
Hannah.Schul@deq.virginia.gov

From: Campbell, Bryan (VDOT)
Sent: Thursday, May 25, 2017 12:36 PM
To: Schul, Hannah (DEQ)
Subject: Route 7 Corridor Improvements, Faifax County
Importance: High

Hey Hannah,

Hope you had a great week out of the office. I was just curious if you had finished compiling & composing your comments for the route 7 project. We are revising our EA document and preparing a separate document to address concerns by the regulatory agencies. We have taken steps to bring on a consultant to assist us with these tasks and anticipate kickoff meeting to bring them up to speed on the project next week. We would really appreciate receipt of your comments, preferably by the end of the week or beginning of next week so we have them to discuss in our kickoff meeting with our consultant. Please feel free to contact me with any additional questions or further clarification regarding this matter.

Much appreciated,

Bryan Campbell | Water Resources Specialist | Virginia Department of Transportation | **4975 Alliance Drive, Fairfax, VA 22030** | Bryan.Campbell@VDOT.Virginia.gov | 703.259.2774 (office)

From:	Virginia Field Office, FW5
To:	Campbell, Bryan (VDOT)
Subject:	Confirmation of Project Receipt Re: Route 7 Widening project submittal for review and concurrence
Date:	Tuesday, August 02, 2016 2:04:30 PM

Thanks for submitting your online project package. We will review your package within 30 days of receipt. If you have submitted an online **project review request letter**, expect our response within 30 days. If you have submitted an online **project review certification letter**, you will typically not receive a response from us since the certification letter is our official response. However, if we have additional questions or we do not concur with your determinations, we will contact you during the review period.

Adams, Melinda K.

From: Kleopfer, John (DGIF) [John.Kleopfer@dgif.virginia.gov]
Sent: Friday, August 19, 2011 9:39 AM
To: Adams, Melinda K.; Aschenbach, Ernie (DGIF)
Cc: Iosco, Robert C.; West, Don L.
Subject: RE: T&E Project Review Request
Attachments: WOTU_Flyer_102610.pdf; WOTU_ESSGuidanceToVDOT_10262010a.pdf; WOTU_FieldObsForm_102610.pdf

There does appear to be wood turtle habitat present. Attached are standard VDOT documents to protect wood turtles.

John (J.D.) Kleopfer
Wildlife Bureau Biologist/Herpetologist
3801 John Tyler Memorial Hwy.
Charles City, Va. 23030
804-829-6703
"Go Green, Eat Deer"

From: Adams, Melinda K. [mailto:Melinda.Adams@VDOT.Virginia.gov]
Sent: Friday, August 19, 2011 8:57 AM
To: Kleopfer, John (DGIF); Aschenbach, Ernie (DGIF)
Cc: Iosco, Robert C. (VDOT); West, Don L. (VDOT)
Subject: FW: T&E Project Review Request

John,
Attached are the photos of the bridge/stream in question. Let me know if you have any questions and please confirm that you received this email.

Thanks,
~Melinda

Melinda Adams
| Water Resources Specialist |
| **V**irginia **D**epartment **o**f **T**ransportation |
| NOVA Environmental Division |
|**Office: 703-259-2774** |

From: Adams, Melinda K.
Sent: Monday, August 01, 2011 3:04 PM
To: Kleopfer, John (DGIF); Aschenbach, Ernie (DGIF)
Cc: Iosco, Robert C.; West, Don L.
Subject: RE: T&E Project Review Request

John,
Attached are some photos of the stream and an associated tributary (Colvin Run) that are at the Leesburg Pike (Route 7) over Difficult Run. Let me know if you need additional pictures or any additional information.

Thanks,
~Melinda

Melinda Adams
| Water Resources Specialist |

| Virginia Department of Transportation | NOVA Environmental Division |
| Office: 703-259-2774 |

From: Kleopfer, John (DGIF) [mailto:John.Kleopfer@dgif.virginia.gov]
Sent: Thursday, July 28, 2011 1:08 PM
To: Adams, Melinda K.; Aschenbach, Ernie (DGIF)
Cc: Iosco, Robert C.; West, Don L.
Subject: RE: T&E Project Review Request

Don,
Is this the same project we looked at several years ago? If not, please submit a few photos of the stream for evaluation.

John (J.D.) Kleopfer
Wildlife Bureau Biologist/Herpetologist
3801 John Tyler Memorial Hwy.
Charles City, Va. 23030
804-829-6703
"Go Green, Eat Deer"

From: Adams, Melinda K. [mailto:Melinda.Adams@VDOT.Virginia.gov]
Sent: Wednesday, July 20, 2011 3:07 PM
To: Aschenbach, Ernie (DGIF); Kleopfer, John (DGIF)
Cc: Iosco, Robert C. (VDOT); West, Don L. (VDOT)
Subject: T&E Project Review Request

Good Afternoon,
I wanted to submit a request for a project review for T&E Species for a section of the Route 7 Widening Project, detailed below. The DGIF database showed the presence of wood turtle within the project limits at the Difficult Run crossing.

The project is a roadway widening project on Route 7 between Reston Ave and Dulles Toll Road in Fairfax, VA. The proposed roadway will provide an additional lane on each side of the existing roadway (the additional lane will be on the median side where possible) for a total of six, 12' lanes with curb and gutter, divided with a 16' raised grass median, 12' turn lanes at intersections, and a 10' multipurpose asphalt trail on each side. The project length is 6.9 miles. The existing vertical profiles of westbound and eastbound Route 7 will be held where possible to reduce impacts to surrounding properties. A bridge is proposed at Difficult Run, a major stream crossing, and stream relocations Colvin Mill Run and Colvin Run, and some other wetland and stream impacts. Additionally, several pipe or culvert installations or replacements will occur throughout the corridor to handle both perennial and stormwater flows.

As the project is rather long, I have divided the project into 3 segments (see attached topographic maps).

Please let me know, if you need any additional information.
Thank you,
~Melinda

<< File: CenterTopo52328.pdf >> << File: EasternTopo52328.pdf >> << File: WesternTopo52328.pdf >>

Melinda Adams
| Water Resources Specialist |
| Virginia Department of Transportation | Environmental Division | 4975 Alliance Drive, Fairfax, VA 22030
| Office: 703-259-2774 |

M E M O R A N D U M

DATE: November 7, 2014

TO: Bryan Campbell, VDOT

FROM: Alli Baird, DCR-DNH

SUBJECT: Due November 7, 2014
0007-029-128, B610, C502, P102, R202, Rt. 7 Widening

The Department of Conservation and Recreation (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.

According to the information currently in our files, this site is located within the Difficult Run – Stream Valley Park Conservation 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. Difficult Run – Stream Valley Park Conservation Site has been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resource of concern at this site is:

Glyptemys insculpta	Wood turtle	G3/S2/NL/LT

The Wood turtle ranges from southeastern Canada, south to the Great Lake states and New England. In Virginia, it is known from northern counties within the Potomac River drainage (NatureServe, 2009). The Wood turtle inhabits areas with clear streams with adjacent forested floodplains and nearby fields, wet meadows, and farmlands (Buhlmann et al., 2008; Mitchell, 1994). Since this species overwinters on the bottoms of creeks and streams, a primary habitat requirement is the presence of water (Mitchell, 1994).

Threats to the wood turtle include habitat fragmentation, urbanization, and automobile or farm machinery mortality (Buhlmann et al., 2008). Please note that the Wood turtle is currently classified as threatened by the Virginia Department of Game and Inland Fisheries (VDGIF).

In addition, the Potomac River – Yellow Falls Stream Conservation Unit (SCU) is located downstream from 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 Potomac River – Yellow Falls SCU has been given a biodiversity ranking of B3, which represents a site of high significance. The natural heritage resources associated with this site are:

Gomphus fraternus	Midland clubtail	G5/S2/NL/NL
	Aquatic Natural Community	G2/S2/NL/NL
	Aquatic Natural Community	G3/S3S4/NL/NL

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. They are also sensitive to alterations that result in poor water quality, aquatic substrate changes, and thermal fluctuations.

The documented Aquatic Natural Communities are 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 Communities are significant on multiple levels. First, these streams are 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. These stream reaches also hold a "Healthy" stream designation per the INSTAR Virtual Stream Assessment (VSS) score. This score assesses the similarity of these streams to ideal stream conditions of biology and habitat for this region. Lastly, these streams contribute to high Biological Integrity at the watershed level (6^{th} order) based on number of native/non-native, pollution-tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

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

Furthermore, Difficult Run has been designated by the VDGIF as a "Threatened and Endangered Species Water" for the Wood turtle.

To minimize adverse impacts to the aquatic ecosystems 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 Wood turtle, DCR also recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570**)**.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

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. The current activity will not affect any documented state-listed plants or insects.

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.

All VDOT projects on state-owned lands must comply with the Virginia Erosion & Sediment Control (ESC) Law and Regulations, the Virginia Stormwater Management (SWM) Law and Regulations, the most current version of the DCR approved VDOT Annual ESC and SWM Specifications and Standards, and the project-specific ESC and SWM plans. [Reference: VESCL §10.1-560, §10.1-564; VESCR §4VAC50-30 et al; VSWML §10.1-603 et al; VSWMR §4VAC-3-20 et al].

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 Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov). According to the information currently in our files, Nichols Run, Sugarland Run and an Unnamed Tributary of Potomac River 2, which have been designated by the Virginia Department of Game and Inland Fisheries (VDGIF) as a "Threatened and Endangered Species Water", are in the vicinity of the project site. The species associated with these T & E Waters is the Wood turtle. Therefore, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570**)**.

Thank you for the opportunity to comment on this project.

Cc: Amy Ewing, VDGIF

Literature Cited

Buhlmann, K, T. Tuberville, and W. Gibbons. 2008. Turtles of the southeast. University of Georgia Press. Athens, GA. 252 pp.

Hoffman, R. 1991. Arthropods. Pp. 173 in: K. Terwilliger (ed.), Virginia's Endangered Species: proceedings of a symposium. The McDonald and Woodward Publishing Company, Blacksburg, VA.

Mitchell, J. C. 1994. Reptiles of Virginia. Smithsonian Institution Press, Washington. pp. 88-91.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: April 8, 2010).

Thorpe, J.H., and A.P. Covich. 1991. Ecology and Classification of North American Freshwater Invertebrates. Academic Press, Inc., San, Diego, California.

CONCURRENCE

Project: Route 7 Improvements, VDOT Project No.: 0007-029-128, B610, C502, P102, R202; UPC 52328; VDHR File: 2003-1006

The Virginia Department of Historic Resources (DHR) concurs with the Virginia Department of Transportation's (VDOT's):

1) Definition of the project's Area of Potential Effects (APE);

2) Efforts to identify historic properties;

3) Recommendations that:

- The portion of site **44FX0958** located within the Area of Potential Effects for the project does not have the potential to yield important information related to the potential significance and NRHP-eligibility of the site as a whole.
- Newly recorded archaeological sites **44FX3762, 44FX3763 and 44FX3764** are recommended not eligible for the NRHP in relation to Criterion D (Criteria A, B, and C do not apply).
- Previously identified sites **44FX1117** and **44FX1346** are recommended not eligible for the NRHP in relation to Criterion D (Criteria A, B, and C do not apply).
- Sites **44FX1254** (029-5307) and **44FX1249** (029-5285) have been previously determined not eligible for the NRHP, and no change is recommended by VDOT;
- The Colvin Run Mill (**029-0008**) is listed on the NRHP under Criteria A and C. No change is recommended by VDOT;
- The Colvin Run Miller's House (**029-0023)** was previously determined by DHR to be eligible as a contributing resource to Colvin Run Mill (029-0008), and was determined to be not individually eligible. No change is recommended by VDOT;
- The Hunter Mill Road Historic District (**029-5180**) was previously determined eligible for the NRHP by the DHR. No change is recommended by VDOT;
- The Lyons House (**029-5305**) was previously determined individually eligible by DHR. No change is recommended by VDOT;
- The Colvin Run Historic District (**029-5462**) was previously determined eligible by DHR. No change is recommended by VDOT;
- Portion of the Alexandria/Leesburg Turnpike road trace (**029-5960**) is recommended not eligible individually, but is eligible for the NRHP as a contributing resource to the Colvin Run Historic District;
- The following architectural resources have been previously determined not individually eligible for the NRHP by DHR: **029-0079; 029-5116; 029-5200; 029-5281; 029-5283; 029-5284; 029-5285; 029-5286; 029-5287; 029-5288; 029-5289; 029-5290; 029-5291; 029-5292; 029-5293; 029-5294; 029-5295; 029-5296; 029-5297; 029-5298; 029-5299; 029-5300; 029-5303; 029-5304; 029-5306; 029-5307; 029-5308;** and **029-5310.** No change is recommended by VDOT; and
- The following newly recorded architectural resources are recommended not individually eligible for the NRHP: **029-5893; 029-5894; 029-5895; 029-5896; 029-5897; 029-5898; 029-5899; 029-5900; 029-5901; 029-5902; 029-5903; 029-**

5904; 029-5905; 029-5906; 029-5907; 029-5908; 029-5909; 029-5910; 029-5912; and **029-5913**.

4) Determination that the project is not located within the American Battlefield Protection Program's (ABPP) identified potentially National Register (PotNR) eligible battlefields.

Ms. Julie V. Langan
Director, Virginia Department of Historic Resources
Virginia State Historic Preservation Officer

26 OCT 15
Date

2003-1006

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

February 19, 2016

Northern Virginia Regulatory Section
NAO-2014-01572 (Difficult Run and Colvin Creek)

Ms. Irene Rico
Division Administrator
Federal Highway Administration
Post Office Box 10249
Richmond, Virginia 23240-0249

Dear Ms. Rico:

Many projects proposed by the Virginia Department of Transportation (VDOT) and funded by Federal-Aid Highway Funds managed by the Federal Highway Administration (FHWA) require permits from the Corps of Engineers. These projects are subject to compliance with Section 106 of the National Historic Preservation Act of 1966.

According to 36 CFR 800.2(a) (2):

> *"…If more than one Federal agency is involved in an undertaking, some or all [of] the agencies may designate a lead Federal agency, which shall identify the appropriate official to serve as the agency official who shall act on their behalf, fulfilling their collective responsibilities under section 106. Those Federal agencies that do not designate a lead Federal agency remain individually responsible for their compliance with this part."*

Pursuant to the above provision, the FHWA (Virginia Division) is hereby designated as the lead federal agency to fulfill the collective Federal responsibilities under Section 106 for the following undertaking, which FHWA has determined will have an adverse effect on historic resources:

Route 7 Road Improvement in Fairfax Co., VA
VDOT project # 0007-029-128, B610, C502, P102, R202

The Norfolk District Corps of Engineers (USACE) authorizes FHWA to conduct Section 106 coordination on its behalf. Any Memorandum of Agreement prepared by FHWA under 36 CFR 800.6 should include the following clause in the introductory text:

> *"WHEREAS, pursuant to Section 10 and/or Section 404 of the Clean Water Act, a Department of the Army permit will likely be required from the Corps of*

Engineers for this project, and the Corps has designated FHWA as the lead federal agency to fulfill federal responsibilities under Section 106; and "

In addition, USACE hereby authorizes FHWA to conduct coordination on its behalf for the 7 mile segment of Route 7 project in accordance with Section 7 of the Endangered Species Act.

Should you have any questions, you may contact Regena Bronson at 540-548-2838 or regena.d.bronson@usace.army.mil.

Sincerely,

Tucker Smith
Chief, Northern Virginia
Regulatory Section

Cc:

Virginia Department of Historic Resources, Richmond
Virginia Department of Transportation, Salem
Virginia Department of Transportation, Richmond

Sincerely,

Raymond Ezell, RPA
District Archaeologist

Enclosure

cc: /file 52328

cc: Ms. Linda Blank, Fairfax County
Ms. Elizabeth Crowell, Fairfax County Park Authority
Mr. Steve Smith, The Historical Society of Fairfax County
Mr. Mike Henry, Colvin Run Mill Historic Site
Mr. Robert 'Bob' Lundegard, Friends of Colvin Run Mill
Mr. Steve Hull, History Committee, Hunter Mill Defense League
Mr. John Simkins, Federal Highway Administration
Ms. Alice Allen-Grimes, US Army Corps of Engineers

CONCURRENCE

VDOT Project: 0007-029-128, B610, C502, P102, R202; UPC 52328 (Route 7 Improvements); VDHR File: 2003-1006

The Virginia Department of Historic Resources (DHR) concurs with the Virginia Department of Transportation's (VDOT) determination that:

1) the supplemental Phase I archaeological survey did not identify any resources eligible for the National Register of Historic Places;
2) the undertaking will have **No Adverse Effect** upon 029-0008 (Colvin Run Mill); 029-5180 (Hunter Mill Road Historic District); 029-5305 (Andrews Chapel School/Lyons House); and 029-5462 (Colvin Run Historic District); and
3) the undertaking will have **No Effect** upon 029-0023 (Colvin Run Miller's House), contributing to 029-0008 and 029-5960 (Alexandria/Leesburg Turnpike road trace), contributing to the Colvin Run Historic District.

Ms. Julie V. Langan
Director, Virginia Department of Historic Resources
Virginia State Historic Preservation Officer

20 MAY 16
Date

2003-1006

CONCURRENCE

VDOT Project: 0007-029-128, B610, C502, P102, R202; UPC 52328 (Route 7 Improvements); VDHR File: 2003-1006

The Virginia Department of Historic Resources (DHR) concurs with the Virginia Department of Transportation's (VDOT) determination that:

1) the supplemental Phase I architectural survey identified two previously unidentified resources, **029-6067 and 029-6068**;
2) architectural resource **029-6068** (southern segment of a relict road trace) is not eligible for the National Register individually nor as a contributing element to any historic district in relation to Criteria A, B, C, or D;
3) architectural resource **029-6067** (northern segment of a relict road trace) is not eligible for the National Register individually in relation to Criteria A, B, C, or D; however the road trace segment is eligible under Criterion A as a contributing resource to the Colvin Run Historic District (029-5462); and
4) the undertaking will avoid impacts to and have **No Effect** upon resource 029-6067 (northern relict road trace segment).

Ms. Julie V. Langan
Director, Virginia Department of Historic Resources
Virginia State Historic Preservation Officer

6 OCT 16
Date

2003-1006

CONCURRENCE

VDOT Project: 0007-029-128, B610, C502, P102, R202; UPC 52328 (Route 7 Improvements); VDHR File: 2003-1006

The Virginia Department of Historic Resources (DHR) concurs with the Virginia Department of Transportation's (VDOT) recommendation that by implementing the following conditions, the previous **No Adverse Effect** determination made for this project is still valid;

1) Noise barriers will not be located within National Register eligible limits of historic properties; any noise barriers adjacent to the Colvin Run Mill (029-0008) and Colvin Run Historic District (029-5462) historic properties will utilize architectural/aesthetic treatments; and VDOT commits to limiting the removal of existing trees for noise barriers as much as possible in areas adjacent to historic properties.

2) the VDOT will provide final noise wall plans once they become available to the DHR and consulting parties to ensure that the noise barrier design remains consistent with this No Adverse Effect determination.

Ms. Julie V. Langan
Director, Virginia Department of Historic Resources
Virginia State Historic Preservation Officer

17 April 17
Date

2003-1006

ROUTE 7 WIDENING - FAIRFAX COUNTY

VDOT

U.S. Department of Transportation
Federal Highway Administration

ROUTE 7 CORRIDOR IMPROVEMENTS
VDOT