

LOUDOUN COUNTY

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TECHNICAL REPORT

NATURAL RESOURCES

SUBMITTED PURSUANT TO 42 U.S.C. 4332(2)(C)

DULLES AIR CARGO, PASSENGER
& METRO ACCESS HIGHWAY

PREPARED BY

WR&A WHITMAN, REQUARDT & ASSOCIATES, LLP
3701 Pender Drive - Suite 210 Fairfax, VA 22030

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

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1.0 INTRODUCTION

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA) as the lead federal agency and the Federal Aviation Administration (FAA) as a cooperating agency, is evaluating options for a proposed Dulles Air Cargo, Passenger, and Metro Access Highway (DACPMAH), which is intended to address transportation needs west of the Washington Dulles International Airport (IAD) in Loudoun County, Virginia. Pursuant to the National Environmental Policy Act (NEPA) of 1969 and in accordance with FHWA regulations¹, VDOT is currently preparing a Revised Environmental Assessment (EA) to analyze reasonably foreseeable social, economic, and environmental consequences associated with the proposed DACPMAH. The purpose of this *Natural Resources Technical Report* is to support the analysis of environmental effects, with an assessment of the existing natural resources in the project vicinity and to identify the potential impacts associated with proposed project Build Alternatives (see **Section 2.1.2**). Within this Technical Report, potential project impacts are estimated and potential mitigation and compensation concepts are discussed. Identifying protected natural resources during the planning process will aid in evaluating alternatives based on natural resource considerations, and help to avoid and minimize impacts. This report has been prepared in accordance with the FHWA's Technical Advisory 6640.8A, the National Environmental Policy Act of 1969, and NEPA's implementing regulations.

1.1 PROJECT HISTORY AND OVERVIEW

In April 2012, the Metropolitan Washington Airports Authority (MWAA) announced its initiative to solidify IAD as a major east coast transportation hub. To advance this initiative, MWAA plans to expand airport facilities west of Runway 1L-19R on three areas identified as the Western Land Area (WLA), Airport Support Zone (ASZ), and General Aviation (GA) site, which together are comprised of approximately 1,000 acres of currently undeveloped land, herein referenced as the "Western Development Area". Within the Western Development Area, the WLA would consist of mixed general aviation support, cargo freight, commercial, and industrial development, while the ASZ would be limited to cargo facility infrastructure, and the GA would provide services for local aircraft and unscheduled flights. As part of the planned expansion, IAD would increase its freight capacity and nearly double the existing 540,000 square footage of operational cargo space (Board of Supervisors, 2012c). Freight forecasts indicate an anticipated growth in total freight activity at IAD by approximately 105 percent between 2010 and 2030, with international freight predicted to increase by more than 700 million pounds (Ricondo & Associates, 2010, p. 27). By 2040, the approximately 6 million square-foot Western Development Area would provide the additional cargo space necessary to accommodate this predicted freight growth. Emphasizing the increasing importance of this cargo expansion, MWAA has been soliciting interest for a major cargo distribution facility with operators such as FedEx and UPS as well as coordinating with Loudoun County to develop plans for a major aircraft manufacturing facility (MWAA, 2013).

In order to facilitate direct access to the expanded air cargo activities and Western Development Area, as well as provide general circulation within airport boundaries, several transportation portals were

¹ The National Environmental Policy Act (NEPA) and the US Department of Transportation, Federal Highway Administration's regulations for Environmental Impact and Related Procedures can be found at 42 USC § 433 1-4347., as amended, and 23 CFR § 771, respectively.

identified along VA Route 606 in the *Washington Dulles International Airport Access and Parking Study* (MWAA, 2004, p. 16-17). MWAA's Airport Layout Plan (ALP) includes reserved space for an interchange with VA Route 606 and internal road elements linking to the main passenger terminal area (MWAA, 2011). Planning for this internal public roadway network has occurred concurrently with the conceptual development of the western airport expansion. MWAA has indicated that this supporting roadway network is anticipated to be constructed as a two-lane facility by 2025, with plans for a four-lane expansion by 2040 (MWAA, 2013).

1.1.1 Metrorail Silver Line

MWAA is currently constructing a 23-mile extension of the existing Metrorail system, to be operated by the Washington Metropolitan Transit Authority (WMATA). MWAA included the Metrorail Silver Line in its long range planning for the airport² to provide a viable alternative connection and reduce travel times between downtown Washington, DC and the Dulles Corridor. The Metrorail Silver Line extension is planned to link the existing East Falls Church Metrorail Station with IAD, VA Route 606 at the Dulles Greenway, where a park and ride for express bus service is currently located, and Route 772 by 2018. Transit boardings are expected to be substantially higher than the existing corridor express buses due to the Metrorail's ability to run multiple train cars simultaneously (FTA, 2004). Furthermore, construction of the Metrorail stations would increase parking at the existing VA Route 606 Park and Ride from 750 spaces to 2,750 spaces and would introduce 3,300 spaces at the Route 772 station. Introduction of this service will create an increased demand on local roadway traffic west of IAD.

1.1.2 Loudoun County Land Use

The introduction of the Metrorail and IAD expansion is reflective of the changes and rapid growth that have occurred in Loudoun County in recent decades, particularly in the eastern most portion of the county. Under *Loudoun County's Revised Comprehensive Plan*, this Suburban Policy Area, which is bounded by the Potomac River to the north, Braddock Road to the south, the Fairfax County line to the east, and Goose Creek, property lines, roadways, and power line easements to the west, has been designated as the primary location for suburban-scale residential and nonresidential development. The Suburban Policy Area serves as a transitional zone between the suburban growth surrounding metropolitan Washington, DC and the traditionally more rural areas of Loudoun County. Since the 1990s, the Suburban Policy Area experienced an increase in population by approximately 128 percent and the construction of more than 25,000 new homes (Board of Supervisors, 2011).

Much of the growth has been concentrated in the Dulles Policy Subarea, which encompasses IAD and the areas immediately west of the airport, as evidenced by the 429 and 354 percent growth in population and housing units, respectively, since 2000. This is compared to 84 percent population and 76 percent housing unit growth overall within Loudoun County (Loudoun County Department of Management, 2012). Within this high growth Policy Subarea, several mixed-use and commercial developments are currently under development, including the Arcola Center, Dulles Landing, and Glascock Field at Stoneridge. As a result, Loudoun County has recently recommended to the Metropolitan Washington Council of Governments (MWCOG) that the area surrounding the US Route 50 / VA Route 606 interchange be designated as an Activity Center to be included in future regional forecasting. Activity

² Planning for future rail transit station at IAD included in the 1985 *Master Plan Update*, MWAA's most recent Master Plan on file (FAA, 1985, p. 135).

Centers serve as one of the guiding principles for land use plans by the localities which feed into the cooperative planning forecasts produced by MWCOG (Loudoun County Department of Planning, 2013).

1.2 PURPOSE AND NEED

The purpose and need for the DACPMAH is comprised of three distinct points, listed below and discussed in further detail in *Chapter 1 Purpose and Need* of the associated Revised EA document:

1. Enhance access to the planned Western Development Area at the Washington Dulles International Airport;
2. Relieve congestion on existing roadways to accommodate for increasing regional housing and commercial development to the west of IAD; and
3. Facilitate intermodal relationships, enabling the efficient movement of people to both IAD and the future Metrorail Silver Line extension.

1.3 DESCRIPTION OF THE STUDY AREA

The project study area for the proposed DACPMAH encompasses an approximate 3.5-mile diameter circle centered on Evergreen Mills Road (VA Route 621) between Gum Spring Road (VA Route 659) and Trade West Drive. As illustrated in **Figure 1-1**, the project study area is generally bounded by Creighton Road to the north, Providence Ridge Drive to the south, IAD property to the east, and Lenah Run to west. The project study area is centrally focused within the Dulles South community located in the southern region of Loudoun County.

In order to identify the environmental resources analyzed in this report, individual Study Corridors for each Build Alternative have been developed to identify the potential “footprint” of the proposed alternatives. These Study Corridors are substantially larger than the proposed roadway facilities for each Build Alternative, thus the inventory of environmental effects within each Study Corridor includes a larger magnitude of resources than would potentially be impacted by a Build Alternative, should one be selected. Specifically, the Study Corridors used for this environmental analysis are generally 1,000 feet wide along the mainlines, with circular study areas where interchange connections would be made. Due to the complexity of the interchange at Old Ox Road (VA Route 606) / Loudoun County Parkway (VA Route 607) / Future roadway into IAD, the radius interchange project study area is 2,000 feet, while the remaining interchange project study areas have a radius of 1,500 feet or less.

Since the Study Corridors are much larger than the proposed roadway facility, the typical sections for each alternative were used to determine a more refined right-of-way requirement, which was then applied along the entire length of each Build Alternative to obtain a conservative estimate for the overall impacts to the resources identified within each study corridor. These planning-level design assumptions were based on standard design principles and guidelines provided in the *VDOT Road Design Manual* (VDOT, 2005). This method provides a more reasonable estimate for impacts that may occur from the implementation of the proposed project, as opposed to assuming all of the environmental resources inventoried within the Study Corridors would be affected. However, these assumptions are not based on detailed design and the anticipated impacts to environmental resources would likely be minimized during advanced stages of engineering and design.

1.4 METHODS

Natural resources within this project study area were identified based on agency input through the scoping process and participating agency meetings, review of existing available scientific literature, Geographic Information System (GIS) databases and mapping, and field reconnaissance of the study area conducted in February and March of 2013. The following Federal, State, and local agencies were consulted for information regarding sensitive natural resources or other key environmental issues within the area

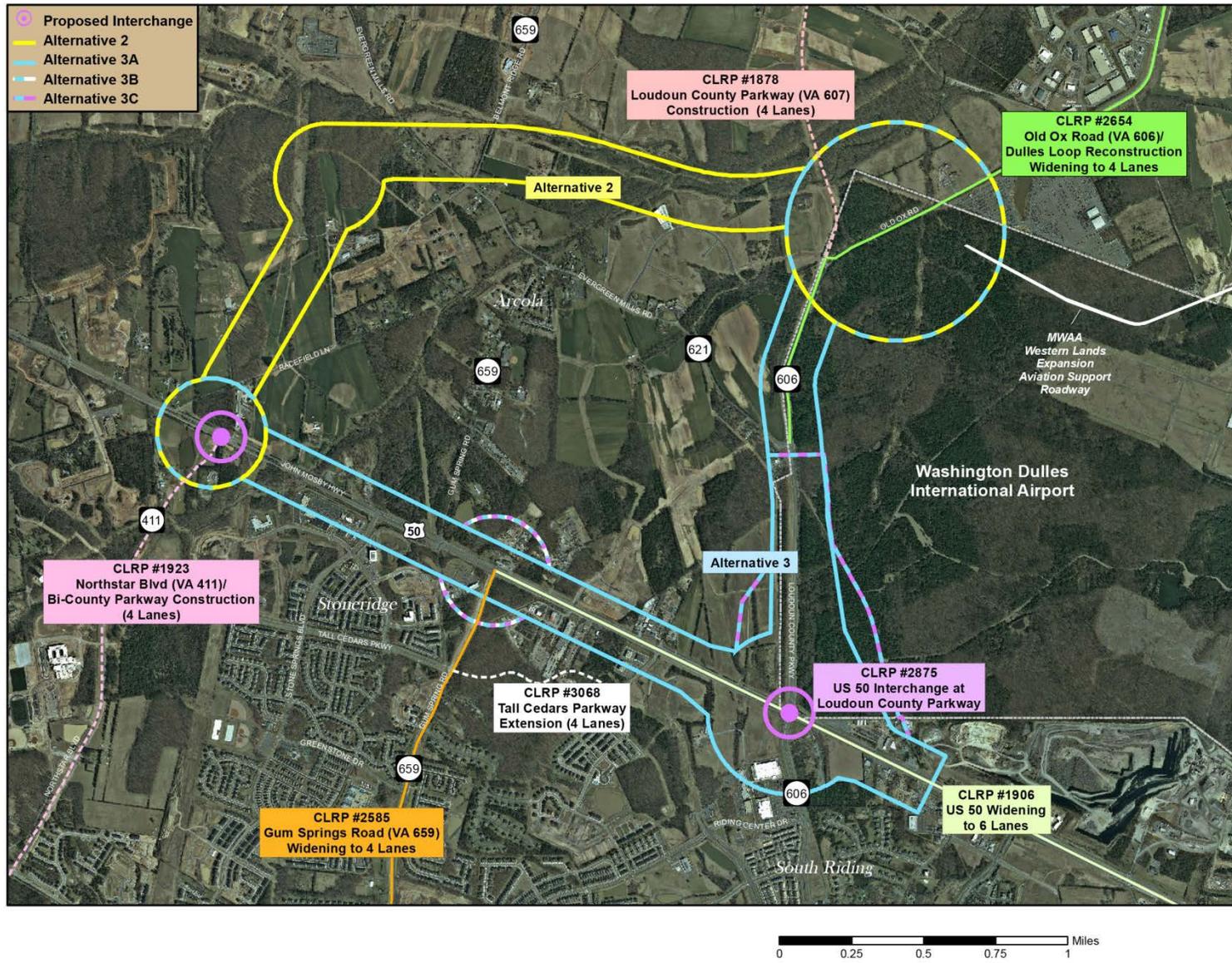
- Federal Aviation Administration
- Federal Emergency Management Agency, Region III
- Loudoun County Department of Planning
- Natural Resources Conservation Service
- Northern Virginia Regional Park Authority
- United States Army Corps of Engineers
- United States Department of Agriculture
- United States Department of the Interior
- United States Environmental Protection Agency
- United States Fish and Wildlife Service
- United States Forest Service
- Virginia Department of Conservation and Recreation
- Virginia Department of Environmental Quality
- Virginia Department of Forestry
- Virginia Department of Game and Inland Fisheries
- Virginia Department of Mines, Minerals and Energy
- Virginia Marine Resources Commission
- Virginia Outdoors Foundation

A more thorough discussion regarding data gathering sources and approach are presented within the discussion of each resource in **Section 3.0**.

2.0 ALTERNATIVES CONSIDERED FOR EVALUATION

In accordance with NEPA requirements, the five alternatives considered for the DACPMAH Location Study include one No Build Alternative and four Build Alternatives (**Figure 2-1**). Alternatives development was based on initial project scoping and screening efforts, which included public and agency involvement, consideration of environmental concerns, preliminary engineering issues, and comments received following publication of the May 2013 EA. Each alternative was evaluated with respect to its potential impacts and its ability to address the project's purpose and need.

Figure 2-1: No Build CLRP Projects and Proposed Build Alternatives



2.1 DESCRIPTION OF ALTERNATIVES

Alternatives carried forward for study are listed below and discussed in further detail in *Chapter 2 Alternatives* of the EA associated with this document.

2.1.1 Alternative 1- No Build Alternative

Consistent with the requirements of the NEPA and related FHWA guidelines, full consideration is given to the environmental consequences of taking no action to meet future travel demand (hereinafter referred to as the “No Build Alternative”). The No Build Alternative serves as a benchmark for comparison to the proposed project alternatives by providing a baseline condition with which to compare the improvements and consequences associated with each of the Build Alternatives. The No Build Alternative would include all planned and programmed transportation improvements in the study area that have been approved and adopted for implementation by 2040, as identified in the most recent *National Capital Region’s Financially Constrained Long-Range Plan (CLRP)*. Prepared by the National Capital Region Transportation Planning Board (TPB), which is the designated Metropolitan Planning Organization (MPO) for the Washington, DC region under the Metropolitan Washington Council of Governments (MWCOCG), the CLRP includes projected transit and traffic, demographic, and air quality conditions through the 2040 horizon year.

Under the No-Build Alternative, no additional roadway infrastructure, beyond those projects funded in the CLRP, are assumed to be in place to the west of the airport by 2040. The No-Build Alternative would not satisfy the identified needs of the project. It would not support economic development by improving future access to the western air cargo expansion plans at IAD, enhance traffic movements to and from the Silver Line metro stations, nor would it sustain economic growth throughout the study area.

For the purposes of this Natural Resource Technical Report, no environmental consequences were considered under the No Build Alternative. Instead, environmental effects have only been analyzed for the Build Alternatives, detailed in the descriptions that follow. Potential impacts associated with the No Build Alternative would be specifically analyzed and addressed during the associated planning and design of each respective project.

2.1.2 Alternative 2-Proposed New Location

Alternative 2 would originate at US Route 50, approximately 2.2 miles west of its existing intersection with the Loudoun County Parkway (Route 607), in the location where the Bi-County Parkway (VA Route 411) interchange is planned. Alternative 2 would connect to the proposed interchange allowing for all movements to and from US Route 50 and the proposed Bi-County Parkway (VA Route 411)³. From US Route 50, the proposed alternative would follow a new alignment located within the same corridor as Loudoun County’s proposed Northstar Boulevard, extending approximately one-mile northeast before turning due east south of Evergreen Mills Road (VA Route 621). The alignment would continue east for approximately 1.7 miles, with an overpass at Belmont Ridge Road (VA Route 659) and Evergreen Mills Road (VA Route 621) until intersecting with existing Old Ox Road (VA Route 606) / Loudoun County Parkway. This connection would consist of a full-access interchange with Old Ox Road (VA Route 606), the planned Loudoun County Parkway (VA Route 607) extension, and planned airport connector roads. Proposed Alternative 2 would be a limited access highway, specifically, with no direct access to adjoining properties. Instead, connections with arterial roadways would be provided via US Route 50, Bi-County Parkway, Old Ox Road (VA Route 606), planned extension of Loudoun County Parkway (VA Route 607) and the future airport connector roads.

2.1.3 Alternative 3- Improvements along US Route 50 and Old Ox Road

Alternative 3 would consist of improvements along existing US Route 50 and Old Ox Road (VA Route 606), generally extending between the planned US Route 50 interchange at Bi-County Parkway to the planned Loudoun County Parkway (VA Route 607) extension and the IAD connector roads. Within the Location Study Corridor for Alternative 3, four potential improvement options, described below, were studied independently for environmental resources and potential project impacts; however, the “footprints” of each of these Alternative 3 options remain nearly identical, with only a slight variation at the intersection of Gum Spring Road and US Route 50 and the exclusion of a northeast interchange study area where airport access would be provided to the south.

2.1.4 Alternative 3A-US Route 50 Elevated

Alternative 3A would be a 4-lane divided limited access principal arterial, on an aerial structure within the median of US Route 50. In order to construct the aerial structure, the existing US Route 50 median would need to be widened, resulting in the at-grade lanes for US Route 50 being shifted outward from the widened median. Upon returning to grade parallel to Loudoun County Parkway, Alternative 3A would run parallel to Loudoun County Parkway as a separated 4-lane divided principal arterial but at-grade instead of elevated.

Alternative 3A would originate at US Route 50 and the planned Bi-County Parkway interchange and provide full connections to the planned Bi-County Parkway (VA Route 411)³. Alternative 3A would provide access to the elevated highway at the interchange with the Bi-County Parkway for US Route 50 eastbound and Bi-County Parkway traffic and at the Loudoun County Parkway interchange for US Route 50 westbound. From the interchange at Bi-County Parkway (VA Route 411), Alternative 3A would follow along the US Route 50 alignment in an elevated section, within the roadway median. At the planned interchange with Loudoun County Parkway, the roadway would travel north over the Loudoun

³ If for any reason the Bi-County Parkway is not constructed, US Route 50 would remain a logical termini and the interchange between US Route 50 and the proposed DACPMAH would be designed accordingly.

County Parkway and return to grade on the east side of Old Ox Road (VA 606) / Loudoun County Parkway, on Dulles Airport property. From there the facility would extend parallel to Old Ox Road (VA Route 606) / Loudoun County Parkway approximately 1.7 miles to the planned airport connector roads. Flyover ramps would be provided along this portion of Alternative 3A to provide a connection from northbound Alternative 3A to northbound Loudoun County Parkway and from southbound Loudoun County Parkway to southbound Alternative 3A. A full-access interchange with Old Ox Road (VA Route 606), the planned Loudoun County Parkway (VA Route 607) extension, and planned airport connector roads is proposed.

2.1.5 Alternative 3B- Loudoun County: Countywide Transportation Plan

Alternative 3B would originate at the planned full-access interchange of US Route 50 and the Bi-County Parkway (VA Route 411)³. To meet Loudoun County's *Countywide Transportation Plan* (CTP) (Loudoun County, 2012a), which identifies US Route 50 as a six (6) lane freeway at this location, US Route 50 is proposed to be widened from four (4) lanes to six (6) lanes from the planned interchange of US Route 50 and Bi-County Parkway (VA Route 411) to Gum Springs Road (VA Route 659). At-grade access to all properties would be closed along US Route 50 from Bi-County Parkway to Loudoun County Parkway in order to provide direct airport access along this roadway. As a result, access to properties to the south would be provided from Tall Cedars Parkway via Gum Spring Road (VA Route 659). Access to properties to the north would be provided from a parallel frontage road connecting to Gum Springs Road (VA Route 659). A full access interchange at Gum Springs Road (VA Route 659) and US Route 50 would also be provided, in order to conform to Loudoun County's adopted CTP.

US Route 50 would continue as a limited access highway from Gum Spring Road (VA Route 659) to Old Ox Road (VA Route 606) / Loudoun County Parkway. A full access interchange would be provided at Old Ox Road (VA Route 606) / Loudoun County Parkway and US Route 50 where Alternative 3B would follow Old Ox Road (VA Route 606) / Loudoun County Parkway to the north. Under Alternative 3B, Old Ox Road (VA Route 606) / Loudoun County Parkway would be upgraded to an eight (8) lane limited access facility to match the Loudoun County CTP designation of the facility as a freeway. The Loudoun County CTP shows at-grade intersections at proposed Glascock Boulevard, Evergreen Mills Rd (VA Route 621) and Arcola Boulevard (VA Route 842). However, at grade intersections are generally not allowed within a limited access freeway. Therefore, Alternative 3B assumes a frontage road will be provided within the proposed corridor along Old Ox Road (VA Route 606) / Loudoun County Parkway in the southbound direction to provide limited access to and from Evergreen Mills Road (VA Route 621). The frontage road is anticipated to be for the southbound direction only. Alternative 3B would terminate as full-access interchange with Old Ox Road (VA Route 606), the planned Loudoun County Parkway (VA Route 607) extension, and planned airport connector roads. This proposed alternative would be a six(6) lane limited access facility along US Route 50 and an eight (8) lane limited access highway along Old Ox Road (VA Route 606) / Loudoun County Parkway with design speeds of 60 miles per hour.

2.1.6 Alternative 3C- US Route 50 Limited Access with Express Lanes in Median and Airport Access at US Route 50 / VA Route 606

In order to address suggestions to provide access to Dulles Airport by a southern entrance point at the planned interchange of US Route 50 and Loudoun County Parkway, Alternative 3C has been incorporated for study in this Revised EA. Alternative 3C would originate at the planned full-access interchange of US Route 50 and the planned Northstar Boulevard (VA Route 411) / Bi-County Parkway and extend along

US Route 50 to an interchange at Old Ox Road (VA Route 606) / Loudoun County Parkway / Dulles Airport property. At the eastern terminus, airport access would be provided into the southwest corner of Dulles Airport. The ramps between Alternative 3C and Dulles Airport would connect to the future perimeter road on MWAA property. According to MWAA, the future perimeter roads at Dulles Airport will ultimately allow traffic to reach planned expansion areas as well as the Main Terminal area. MWAA has confirmed that their ALP would be updated to reflect this link to the public roadway network.

Under Alternative 3C, access to and from the airport would be provided from both directions of US Route 50 and both directions of VA Route 606 / Loudoun County Parkway. Along US Route 50, Alternative 3C would consist of six through lanes (three in each direction), three interchanges along US Route 50 at Northstar Boulevard (VA Route 411) / Bi-County Parkway, Gum Springs Road, and Old Ox Road (VA Route 606) / Loudoun County Parkway, two auxiliary lanes (one in each direction connecting the ramps of the interchanges), and two dedicated lanes, separated by a concrete median, for traffic in and out of Dulles Airport (one in each direction). VA Route 606 would be widened to six lanes between its interchange with US Route 50 and where the Dulles Loop widening is expected to terminate. A frontage road would be included on the north side of US Route 50 in order to maintain access for residents and businesses along this corridor.

3.0 AFFECTED ENVIRONMENT

This chapter describes both the regulatory context and the physical, biological, and chemical conditions of the environment for natural resources within the DACPMAH study area. Transportation projects have the potential to greatly affect natural resources; therefore it is essential that the existing environmental conditions and potential project related impacts are identified and understood. The purpose of the following section is to identify and analyze the environmental consequences resulting from the DACPMAH. Resources discussed include streams, ponds, aquatic and terrestrial habitats, threatened and endangered species, conservation sites, wildlife, wetlands, water quality, and other sensitive aquatic or terrestrial sites such as sanctuaries, floodplains, riparian zones, and protected habitats.

As mentioned previously, the Study Corridors developed for each proposed Build Alternative and used in this assessment are approximately 1,000 feet wide along the mainlines, with circular study areas where interchange connections would be made. Due to the complexity of the interchange at Old Ox Road (VA Route 606) / Loudoun County Parkway (VA Route 607) / future roadway into IAD, the radius interchange project study area is 2,000 feet, while the remaining interchange project study areas have a radius of 1,500 feet or less.

The right-of-way requirements used to estimate potential environmental impacts are based on standard lane and shoulder widths, according to design principles and guidelines in the VDOT *Road Design Manual* (VDOT, 2005). The assumed right-of-way widths and span of the limited access facilities were applied along the entire length of each alternative to obtain a conservative estimate for the overall right-of-way requirements associated with each Build Alternative. Based on professional engineering judgment, this approximate area included considerations for access roads, roadway speeds and curvature. Where the planned CLRP interchanges (Bi-County Parkway / US Route 50 interchange as well as Loudoun County Parkway / US Route 50) are incorporated into the estimated right-of-way areas for each

Alternative, ten percent of the impacts included in the interchange study area was accounted for under this study, as additional impacts would presumably occur regardless of the proposed project's implementation.

3.1 AQUATIC RESOURCES

Water resources are regulated by the Environmental Protection Agency (EPA) and the DEQ in accordance with the Water Pollution Control Act (Clean Water Act) of 1972, which provides protection for waters of the United States (WOUS) (33 USC §1251et seq.). Surface waters in the project vicinity flow into either Broad Run or Elklick Run, both of which ultimately drain to the Potomac River and into the Chesapeake Bay. The United States Geological Survey (USGS) recognizes the project study area as part of both the Potomac River-Broad Run watershed, hydrological unit code (HUC) 0207000809, and the Bull Run, watershed, hydrological unit code HUC 0207001007. Within each watershed, the proposed Alternatives are specifically included within the subwatersheds of Broad Run-Lenah Run (HUC 020700080901) and Cub Run (HUC 020700100704).

3.1.1 Methodology

The inventory of WOUS in each Build Alternative, including wetlands, streams and open water, was conducted through a combination of desktop analysis and field verification. The desktop analysis included a review of existing mapping, generated from the United States Fish and Wildlife (USFWS) National Wetland Inventory (NWI), Loudoun County GIS, NRCS, and USGS databases, as well as an interpretation of aerial photography. Potential wetlands and streams were identified and mapped based on the desktop analysis. Field verifications of the potential wetlands and streams identified during the desktop analysis were conducted by experienced professional wetland delineators in February and March 2013. The wetland boundaries and streams were revised to reflect the results of these field verifications.

The inventory of aquatic resources in each Build Alternative allows for a comparison of the amounts and types of resources among the different corridors. In order to estimate the potential impact of the proposed project on these resources, a Planning Level estimate design was prepared. Engineering judgment was used to determine the anticipated width of the right-of-way along the entire length of the each Alternative corridor, including the interchanges. Resources within the Planning Level right-of-way limits are assumed to be representative of the potential impacts associated with the DACPMAH, as it progresses through more detailed design. Within the Planning Level right-of-way for the Bi-County Parkway / US Route 50 interchange as well as Loudoun County Parkway / US Route 50 interchange, only ten percent of the potential resource impacts were accounted for, as the remaining estimated impacts are assumed to be associated with the No Build Alternative.

It should be noted that the resource impacts reported are not based on detailed design, and would change during project design. The Planning Level Design estimate of impacts allows for an evaluation of the magnitude and severity of the potential impacts to aquatic resources. Detailed assessments of streams and wetlands would be required to determine impacts for permitting and mitigation.

3.1.2 Affected Environment

Watershed Descriptions

Surface waters in the project vicinity flow into either Broad Run or Elklick Run, and ultimately drain to the Potomac River and into the Chesapeake Bay. Within the Potomac River basin, the study area is

recognized by the USGS, in the *National Watershed Boundary Dataset* (USGS, 2013), as part of both the Middle Potomac-Catoctin subbasin, hydrological unit code (HUC) 02070008, and Middle Potomac-Anacostia-Occoquan subbasin, HUC 02070010. More specifically, these larger drainage areas are further delineated into smaller watersheds and subwatersheds. The watersheds and subwatersheds that are crossed by the proposed alternatives are detailed in the descriptions that follow.

Potomac River-Broad Run, HUC 020700809

Broad Run flows northeast towards its confluence with the Potomac River and drains the majority of the surface water in the Study Corridors. Comprised of approximately 89,519 acres, this watershed includes tributaries such as Lenah Run, South Fork Broad Run, and Cabin Branch. A portion of IAD property, Arcola, and the Brambleton community are encompassed within this watershed.

Within the Potomac River-Broad Run watershed, Alternatives 2, 3A, 3B, and 3C transect the smaller (16,912 acres) Broad Run-Lenah Run subwatershed, HUC 020700080901. This subwatershed begins at the head of the South Fork Broad Run and extends northeast to the confluence of Broad Run and Horsepen Run, near the Old Ox Road (VA Route 606) and Dulles Greenway (VA Route 267) interchange.

Bull Run, HUC 0207001007

A small portion of the Study Corridors for Alternatives 3A, 3B, and 3C intersect the northern reaches of the Bull Run watershed, which flows southeast into the Occoquan River. Major tributaries within this large (approximately 124,086 acres) watershed include Cub Run, Little Bull Run, and Lick Branch. The Bull Run watershed incorporates portions of Loudoun, Prince William, and Fairfax Counties.

The Cub Run subwatershed, HUC 020700100704, is centrally located within the Bull Run watershed, extending from IAD south to its confluence with Bull Run in the Bull Run Regional Park. This subwatershed encompasses a majority of the South Riding Community as well as the town of Centerville. Cub Run is fed from the northwest by Elklick Run, which transects Alternatives 3A, 3B, and 3C near the intersection of US Route 50 and the Loudoun County Parkway (VA Route 606).

Wetlands and Streams

Within each of these USGS delineated watersheds and subwatersheds, surface water drainage takes place through streams, ponds, and associated wetlands in the project vicinity.

Wetlands

Under the provisions of Executive Order 11990, *Protection of Wetlands*, each Federal agency must take action to minimize the destruction, loss, or degradation of wetlands and to preserve or enhance their natural values. Wetlands are defined as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (40 CFR §230.41(a)(1)). Wetlands are generally found in valleys, adjacent stream beds, and topographic depressions, but can also be located in higher elevation areas where seeps and springs occur. Wetlands provide valuable habitat for fish and wildlife; improve water quality; perform important hydrological functions, such as regulating storm flow; maintain food chain and nutrient cycling functions; serve socioeconomic roles; and may support rare and endangered species.

Preliminary information regarding the presence of wetlands was obtained from the USFWS’ NWI maps and inferences made based on USGS topographic maps and available aerial photography. Field investigations were required to verify the existence of wetlands in and around the Study Corridors. Based on this data, shapefiles were generated in GIS to calculate the total acreage of wetlands that are within each alternative. To classify identified wetlands, this report uses an abbreviated version of the classification system developed by the USFWS, which was derived from the *Classification of Wetland and Deepwater Habitats* (Cowardin et al., 1979).

Approximately 32 total acres of wetlands are located within both Alternatives 2 and 3A, while 33 acres were calculated within the Study Corridor for 3B and 16 acres were identified within Alternative 3C. . **Table 1** provides the breakdown of various wetland classifications within each Build Alternative and a description of each follows.

Table 1: Wetlands Identified within Build Alternatives and Planning Level Right-of-Way

Wetland Class	Description	Wetland Area (Acres)			
		Alt. 2	Alt. 3A	Alt. 3B	Alt. 3C
PEM	Palustrine Freshwater Emergent Wetland	11.6	5.5	5.7	1.9
PFO	Palustrine Freshwater Forested	18.2	25.5	25.9	13.1
PEM / PFO ¹	Palustrine Freshwater Emergent / Forested ¹	1.7	0.0	0.0	0.0
PSS	Palustrine Freshwater Scrub-Shrub	0.5	1.2	1.5	1.4
Total Wetlands		32.1	32.2	33.1	16.4

¹Area is considered to be a mix of forested and emergent wetlands, per the USFWS’ *Classification of Deepwater Habitats* (Cowardin et al., 1979).

Palustrine Freshwater Emergent (PEM) Wetland

The Emergent wetland cover type in the Palustrine System is usually dominated by perennial plants and is found in numerous areas throughout the Study Corridors in wet pastures, meadows, and hayfields, as well as stagnated ponds and low lying areas near streams, pipes, culverts, and ditches (Cowardin et al., 1979). The largest portion of PEM wetlands within the proposed alternatives are located along the northern edge of the Alternative 2 Study Corridor alignment, following along Broad Run. A review of the NRCS Web Soil Survey reveals soils associated with this wetland cover type include Albano, Bowmansville, Nestoria, and Sycoline series soils. Black willow (*Salix nigra*), red maple (*Acer rubrum*), common joe-pye weed (*Eupatorium fistulosum*), reed canary grass (*Phalaris arundinacea*), common monkey-flower (*Mimulus ringens*), ironweed (*Vernonia* spp.), and jewelweed (*Impatiens capensis*) are among the vegetation typically associated with these PEM wetlands.

Palustrine Freshwater Forested (PFO) Wetland

Forested wetlands are among the most common wetland cover in the Study Corridors, as well as in the United States. A large PFO wetland has been identified on IAD property along the eastern edge of the Study Corridor for Alternatives 3A and 3B, just south of the proposed Loudoun County Parkway / Old Ox Road / future Dulles Airport connector interchange. Soil associated with this wetland cover type is primarily comprised of Elbert series silty clay loams. Common plant species within this wetland class

include red maple, sycamore (*Platanus occidentalis*), black gum (*Nyssa sylvatica*), false nettle (*Boehmeria cylindrical*), and tall coneflower (*Rudbeckia laciniata*).

Near the confluence of the South Fork Broad Run and Broad Run, wetland cover types typical of both PEM and PFO classes were identified. The soil composition in this approximate 1.7 acre wetland area is primarily Bowmansville series soils.

Palustrine Freshwater Scrub-Shrub (PSS) Wetland

In the southwest portion of the DACPMAH Study Area, in the vicinity of the planned Bi-County Parkway / Northstar Boulevard interchange, a small area of PSS wetland has been identified surrounding the banks of a pond. Similarly, PSS wetland cover has also been mapped in the east-west portion of the Alternative 2 Study Corridor, where a small farm pond is located. Soils associated with these PSS wetland areas include Albano and Rowland soil series, respectively. Characteristic vegetation includes black willow (*Salix nigra*), sycamore, smartweeds (*Polygonum* spp.), and a variable mixture of grasses, sedges, and rushes.

In addition to the PEM, PFO, and PSS wetland cover areas, there is a compensatory mitigation area that has been identified, in association with the Brambleton community, along the northern border of Alternative 2. Located within the floodplain of Broad Run, on the north side of the river, this mitigation area is comprised of Rowland series soils. Of this approximately 30.4 acre mitigation site, just over six acres are included within the Alternative 2 Study Corridor.

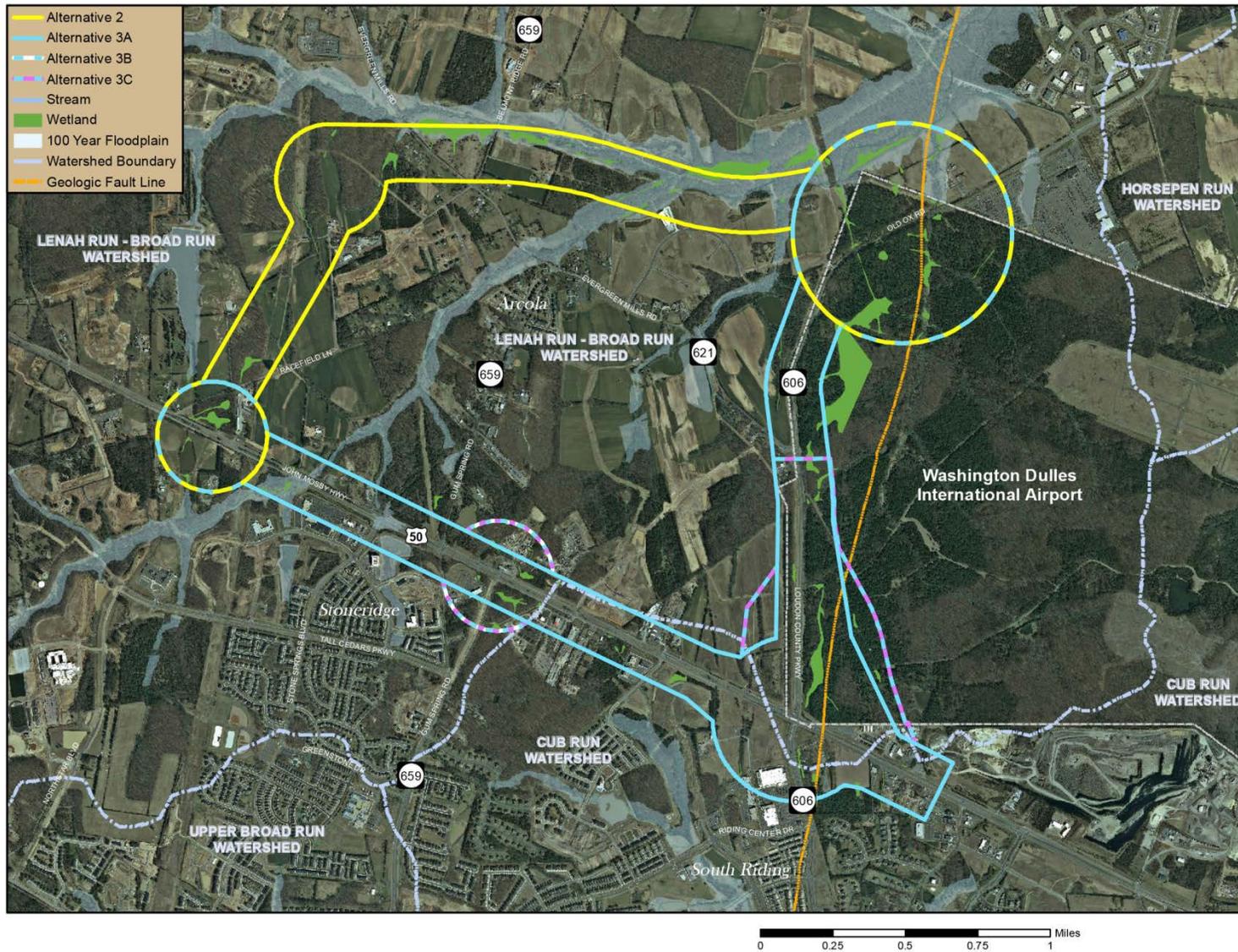
Streams

Within each of the USGS delineated watersheds and subwatersheds identified in the proposed project alternatives, surface water drainage takes place through numerous creeks and streams. Approximately ten named streams and unnamed tributaries, as well as several small intermittent streams, intersect the proposed alternatives. The named streams include Broad Run, South Fork Broad Run, Cabin Branch, and Elclick Run. The location of each stream within the Study Corridors is illustrated in **Figure 3-1**. The estimated linear feet of the named streams within each alternative Study Corridor, and their associated tributaries, are tabulated in **Table 2**, which follows.

Table 2: Lengths of Streams Identified within Proposed Build Alternatives

Streams	Stream Lengths by Alternative (linear feet)			
	Alt. 2	Alt. 3A	Alt. 3B	Alt. 3C
Broad Run	21,448	9,634	9,694	5,110
Cabin Branch	8,278	12,939	12,939	6,237
Elclick Run	0	3,195	3,195	2,906
Total Streams	29,725	25,768	25,828	14,253
Wild and Scenic Rivers	0	0	0	0
Virginia Scenic Rivers	0	0	0	0

Figure 3-1: Surface Waters



Alternative 2 contains approximately 29,725 linear feet of streams, which include the Northern and Southern Forks of Broad Run as well as a small portion of Cabin Branch near the northeastern project terminus. Alternatives 3A, 3B, and 3C contain approximately 25,768 linear feet, 25,828 linear feet, and 14,253 linear feet, respectively, of streams, as they intersect sections of South Fork Broad Run, portions of Cabin Branch, Ellick Run and some small tributaries. However, this inventory of stream lengths is based on the full extent of the Study Corridors established for each Build Alternative and any potential impacts will likely be substantially less, as the length of streams within the anticipated right-of-way area for each Alternative are smaller.

Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968 was enacted to preserve remarkable scenic, recreational, geological, fish and wildlife, historic, cultural or other similar values along certain rivers or segments of rivers. The National Wild and Scenic River System program, which is administered by the National Park Service (NPS), is intended to preserve the free-flowing condition of these rivers, to protect their water quality and promote the conservation of other resources. Eligible rivers or segments of rivers must be free of impoundments and be generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. At the state level, Virginia's Scenic Rivers Act protects rivers or sections of rivers, including their shorelines and natural environs, which possess scenic, recreational, or historic attributes or natural beauty. The Virginia Department of Conservation and Recreation (DCR) maintains a list of rivers that are designated as scenic in Virginia.

A review of the NPS database reveals that, of the approximately 49,950 miles of river in Virginia, there are no designated National Wild and Scenic Rivers, nor are there any Candidate Rivers listed on the *National Rivers Inventory* for Virginia (National Park Service [NPS], 2009). Therefore, there are no designated National Wild and Scenic Rivers within any of the proposed Build Alternatives. Likewise, none of the named streams within the proposed alternatives are designated on DCR's list as Virginia Scenic Rivers (Department of Conservation and Recreation [DCR], 2012).

Floodplains

In order to reduce the risk of flood loss and to minimize the impact of floods on human safety, while preserving the natural beneficial values of floodplains, Executive Order 11988, *Floodplain Management*, requires that Federally-aided projects provide an assessment of hazards for any action occurring within a floodplain and avoid long- and short-term adverse impacts associated with the occupancy and modification of floodplains wherever there is a practicable alternative. As defined by Executive Order 11988, a floodplain is the lowland area adjacent to a river, lake, or stream that may become inundated during a rare flooding occurrence. For planning purposes this area is considered to be the 100-year floodplain. Development in 100-year floodplains reduces the ability of these areas to detain floodwaters and thereby increase the likelihood of flooding and risk for properties downstream.

Information on floodplains within the project vicinity was obtained from the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), which indicates the presence of 100-year floodplains and boundaries of other hazardous flood-prone areas. Based on FEMA's FIRM, 100-year floodplains have been identified within the Build Alternatives. Specifically, Alternative 2 includes three streams with associated 100-year floodplains (approximately 112.5 acres), including Broad Run, Broad Run's South Fork, and an unnamed tributary of Broad Run. Comparatively, Alternative 3A and 3B

encompass a portion of the 100-year floodplain (approximately 58.2 acres) for South Fork Broad Run and one of its small unnamed tributaries. Alternative 3C includes approximately 15.1 acres of floodplain area, but does not include any portions of Broad Run's North Fork.

Water Quality

In compliance with reporting requirements of the Clean Water Act Section 303(d) (40 CFR §130.7(b)), the DEQ monitors streams for water quality. With the assistance of the DCR, the DEQ submits monitoring reports to the EPA in order to pinpoint surface waters that are in violation of criteria for clean water, established by the EPA, and considered impaired. In order to restore and maintain the water quality for impaired waters, Total Maximum Daily Load (TMDL) plans are developed to determine the total pollutant the stream can assimilate and still adhere to the standards. In DEQ's *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report*, water bodies are rated on their ability to "support" designated uses of the water by human or aquatic life. Impaired waters are designated as partially supporting or not supporting any of the five designated uses: aquatic life; fish consumption; shellfishing; swimming / recreation; and drinking water.

Of the water bodies within the proposed alternatives, Broad Run is listed as not supporting aquatic life and recreation as a result of impaired benthic-macroinvertebrates bioassessments as well as *Escherichia coli* bacteria excursions based on monitoring events in 2005, 2007, and 2009 (Virginia Department of Environmental Quality [DEQ], 2012).

3.1.3 Environmental Consequences

Wetlands

Approximately ten total acres of wetlands were located within the Planning Level Design right-of-way estimates for Alternative 2; 17 acres were identified within the Planning Level Design right-of-way for 3A; and 16 acres are included in the estimated right-of-way for Alternative 3B; and four acres of wetlands are expected to be impacted by the planning level right-of-way for Alternative 3C. Specifically, a review of wetlands within the estimated right-of-way for the intersection of Old Ox Road (VA Route 606), the planned Loudoun County Parkway (VA Route 607) extension, and planned airport connector roads indicates a large five acre PFO near the southern edge of the interchange bubble and an additional 2.5 acres of wetlands within the floodplain of Broad Run. The future design of the interchange would likely avoid both of these wetlands which is anticipated to reduce the total impacts by more than forty percent. Other similar opportunities to avoid or minimize impacts are likely along each of the proposed Alternatives and would be more fully developed as design progressed.

If a preferred Build Alternative is selected, all available measures will be taken to avoid and minimize wetland impacts. These measures could include, but are not limited to design modifications such as: alignment shifts to avoid or minimize impacts to wetlands; temporary and permanent stormwater management measures; bridging; reduction in the width of the median and fill slopes; alternative interchange designs; and the use of retaining walls through wetland areas. VDOT would make every practicable effort to avoid existing wetlands, particularly the mitigation site located just north of Broad Run.

VDOT may be required to provide compensation for any unavoidable wetland impacts, as a result of the proposed project and in accordance with Section 404 of the Clean Water Act (CWA) of 1972, where

required (33 USC §1344 et seq.). Based on the Planning Level Design estimates of potential impacts, the proposed project may require between 20 and 34 acres of wetland mitigation. As project design advances, formal wetland delineations will be performed, based on more defined project limits of disturbance, and a more detailed understanding of the potential for impacts and the specific quantity of mitigation required will be established. It is anticipated that this initial estimate of mitigation would be reduced during future design phases through avoidance and minimization.

Streams

Due to the linear nature of the proposed Build Alternatives, impacts are anticipated to a number of the streams that are traversed. A more detailed assessment of stream impacts would be performed following a formal jurisdictional delineation and further project design. As illustrated previously in **Table 2**, the similar stream lengths are contained within each Build Alternative.

Within the anticipated right-of-way area for each Alternative, the potential impacts to streams are drastically reduced from the overall stream lengths identified in each alternative Study Corridor. Approximately 8,700 linear feet of streams are within the Planning Level right-of-way for Alternative 2; 11,423 linear feet of streams are within the right-of-way for 3A; 12,065 linear feet are included in the right-of-way requirements for Alternative 3B; and 4,820 linear feet are included within the Planning Level right-of-way for Alternative 3C. Within interchange areas, only those stream channels that are culverted or relocated would be considered impacted.

All practicable measures would be taken to avoid and minimize impacts to streams, and other water bodies within each alternative. Minimization measures could include modifications during engineering and design such as alignment shifts to avoid or minimize impacts; the use of bridges instead of culverts; the use of retaining walls; temporary and permanent stormwater management measures; pipe arches and other bottomless structures for stream crossings; natural channel design for any relocation of channels; and natural channel design measures such as the use of log rollers and root masses for bank stabilization.

For unavoidable stream impacts, minimization and mitigation methods will be coordinated with the USACE, DEQ, and Virginia Marine Resources Commission (VMRC) as necessary to obtain any required permits. Based on the Planning Level Design estimates of potential impacts, the proposed project may require between 9,000 and 12,000 linear feet of stream mitigation. Detailed assessments of streams would be required to determine the specific quantity of mitigation required. It is anticipated that this initial estimate of mitigation would be reduced during future design phases through avoidance and minimization.

Floodplains

Only 26.5 acres, 31.1 acres, 29.1 acres, and 1.7 acres of floodplains are expected to be impacted by the anticipated right-of-way requirements associated with Alternative 2, 3A, 3B, and 3C, respectively. As the project moves forward in design, every effort would be made to avoid or minimize any potential impacts; significant encroachments are not anticipated.

As defined by the FHWA, any action occurring within the limits of the base flood plain is considered an encroachment (23 CFR §650.105(e)). However, encroachments resulting from the DACPMAH are not anticipated to be considered “significant encroachments” (23 CFR §650.105(q)) because of the following reasons:

- (1) *It would not pose a significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route.* The DACPMAH would facilitate improved traffic movement throughout the study area; therefore it is not anticipated to inhibit emergency response times for police, fire, and rescue services. It would also provide an additional evacuation route for residents of the Dulles Community, rather than eliminating one.
- (2) *It would not pose a significant flooding risk.* Compliance with applicable sections of VDOT's *Road and Bridge Specifications*, along with any other applicable state or federal stormwater management requirements, will be determined and implemented during project design to address concerns for stormwater runoff and increased downstream flooding. As the project design advances, a detailed hydraulic survey and study would be performed to determine the specific effects of stormwater discharges to ensure that no substantial increases to flooding would occur.
- (3) *No significant adverse impact on natural and beneficial floodplain values would occur.* VDOT would make every effort to avoid or minimize any potential impacts to floodplains in the Study Corridors as the project moves forward in design. For example, minimization measures for Alternative 2 may include shifting the alignment within the Study Corridor to avoid encroachment on the North Fork Broad Run floodplain. For both Alternatives 2 and 3, crossings of South Fork Broad Run would be designed to minimize floodplain encroachments and possible adverse impacts on natural and beneficial floodplain values, pursuant to 23 CFR §650.

Water Quality

Water quality impacts are not likely to occur as a result of the proposed DACPMAH alternatives due to very minor increases in pollutants washed from the road surface into receiving streams. Therefore, the DACPMAH would not inhibit the attainment of TMDL goals for Broad Run. As a result, the proposed project is also not expected to interfere with the attainment of downstream TMDL goals for the Chesapeake Bay. Pollutants may include grease, oil, metals, nutrients, nitrogen, deicing salts, roadside vegetation management chemicals, and suspended solids. Temporary and permanent stormwater management measures, including detention basins, vegetative controls, and other measures, would be implemented to minimize potential degradation of water quality. These measures would reduce or detain discharge volumes and remove many pollutants. The requirements and special conditions of any permits for work in and around surface waters would be incorporated into the construction contract documents. The construction contractor would be required to comply with those conditions and with pollution control measures specified in VDOT's *Road and Bridge Specifications* (2007).

3.2 WILDLIFE AND HABITAT

3.2.1 Methodology

Early in the planning process, VDOT began coordinating with agencies involved with the wildlife and general habitats encompassed by the proposed alternatives. Agencies that received scoping letters requesting their comments on the project in regards to natural resources are listed previously in **Section 1.4**. Scoping responses from the agencies served as a guideline for further work. Additionally, throughout March and April 2013, a number of online databases were explored in an effort to identify protected and critical habitat areas; these include the U.S. Fish and Wildlife Service's (USFWS) Online Information, Planning, and Conservation (IPaC) system, the Virginia Department of Game and Inland Fisheries' online database (VaFWIS), and the Virginia Department of Conservation and Recreation, Natural Heritage Program (DCR-DNH) database for Loudon County. This work was followed by further agency coordination, reviews of mapping resources, and site reconnaissance.

3.2.2 Affected Environment

The study area encompasses a wide diversity of both aquatic and terrestrial habitats. Major aquatic resources in the area include Cabin Branch and Broad Run streams. A variety of aquatic species, including bivalves, small fish, reptiles, amphibians, and aquatic birds are likely to reside in the surface water habitats within the study area. Broad Run is listed by DEQ as impaired indicating that it does not support the full range of benthic macro-invertebrates (i.e. aquatic insects) that would be expected for a healthy stream.

Both south and west of the study area, land uses primarily include transitional business and residential uses. Industrial and residential uses exist just north of the study area, with IAD to the immediate east. Presently, the proposed Alternatives traverse land with a variety of designations including industrial complexes, commercial developments and office spaces, planned mixed-use and housing developments, forested land, and open space. Located in a region that has experienced rapid population and employment growth in recent years and is expected to see increasingly more, this land is highly transitional; thus wildlife and habitat within the area are regularly changing.

Although urban land uses dominate terrestrial portions of each alternative, there are small areas containing shrubs and patches of woods that harbor wildlife species adapted to urban and semi-urban conditions; much of the terrestrial habitat is fragmented. Alternative 2 contains approximately 346 acres of forested habitat, including both the southwest and northeast interchanges. Alternative 3A contains approximately 451 acres of forested habitat, 3B approximately 435 acres of forested habitat, and 3C approximately 230 acres of forested habitat. This forested land and open space provide habitat for various wildlife species such as rabbits, eastern grey squirrels (*Sciurus carolinensis*), red fox (*Vulpes vulpes*), and a number of common bird species. White-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), beaver (*Castor canadensis*), Red-tailed Hawks (*Buteo jamaicensis*), Red-shouldered Hawks (*Buteo lineatus*), Eastern Bluebirds (*Sialia sialis*), Black Vulture (*Coragyps atratus*), Turkey Vulture (*Cathartes aura*), Blue Jay (*Cyanocitta cristata*), Canada Goose (*Branta canadensis*), Bufflehead (*Bucephala albeola*), and Mallard (*Anas platyrhynchos*) were seen during field assessment in the project vicinity.

Anadromous fish and trout waters are migration pathways, spawning grounds or nursery areas identified by VDGIF as having been used or having the potential to be used. Confirmed anadromous fish use areas are those waters where anadromous fish species have been observed and are known to exist. According to a December 2013 search of the VaFWIS online database (**Appendix A**), there are no anadromous fish waters or trout streams within a two-mile search radius of the study area.

Invasive species are non-native plant and animals that cause, or have the potential to cause, economic or ecological harm or harm to human health (Executive Order 13112, Invasive Species). State and local governments have also set up laws and regulations to prevent the spread of noxious weeds and plants deemed to be detrimental to crops, surface waters, including lakes, or other desirable plants, livestock, land, or other property to be injurious to public health or the economy. The proposed alternatives are located in an urbanizing area where invasive species are common.

VDGIF and USFWS are responsible for the conservation and management of the bald eagle (*Haliaeetus leucocephalus*) throughout Virginia. To provide consistent management of the bald eagle in Virginia, these agencies have developed general guidelines indicating the zones around eagle nests, night roosts, and shoreline use areas in which the provisions of various laws and their implementing regulations may apply. All proposed activities that may affect or result in the taking of a bald eagle in Virginia is evaluated by the VDGIF and USFWS on a case-by-case basis. A December 2013 search of the VaFWIS online database indicated that the project is not located within a Bald Eagle Concentration Area, Nesting Area or Roost.

Natural heritage resources are defined as habitats of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations. In a scoping letter response received by VDOT dated February 7, 2013, DCR stated that a search of its Biotics Data System for occurrences of natural heritage resources indicated that none exist within the study area. A copy of agency correspondence, including DCR's scoping response, is included in **Appendix B**.

Additionally, DCR noted that the Ticonderoga Farms Conservation Site is located approximately 3.25 miles southeast of the project study area. 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 (1-5, 1 being most significant) based on the rarity, quality, and number of element occurrences they contain. The Ticonderoga Farms Conservation Site has been ranked a "B5" site, indicating it is "of general significance". The natural heritage resources associated with the site include:

1. Purple Milkweed (*Asclepias purpurascens*)
2. Blue-hearts (*Buchnera americana*)

Other rare plants typically associated with prairie vegetation inhabit semi-open diabase glades in Virginia may occur on site if suitable habitat is present. Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Diabase flatrock, a hard, dark-colored volcanic rock, is found primarily in northern Virginia counties and is

located within the geologic formation known as the Triassic Basin. Where the bedrock is exposed, a distinctive community type of drought-tolerant plants occurs. Diabase flatrocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction. In northern Virginia, diabase supports other occurrences of global and state rare plant species.

3.2.3 Environmental Consequences

Because there are no anadromous fish waters, trout waters, bald eagle nests or roosts, benthic communities, or natural heritage resources within the vicinity of the project site, no direct impacts to these resources are anticipated to occur as a result of the proposed project. While DCR identified the Ticonderoga Farms Conservation Site as within the vicinity of the project study area, no impacts on the wildlife and habitat of the Conservation Farm are anticipated, due to its distance of approximately 3.25 miles from the proposed alternatives.

The project study area is located within the portion of Loudoun County underlain by Triassic bedrock. Diabase environments occur within the Triassic Basin and have been inventoried to the west of Route 28 between IAD and Route 7, just north of the project study area. Additional diabase habitat may exist within the project study area.

Under each of the proposed Build Alternatives for the DACPMAH (Alternatives 2, 3A, 3B, and 3C), impacts to wildlife and habitat would be anticipated due to right-of-way and construction requirements. Based on professional engineering judgment and predicted right-of-way requirements for the proposed DACPMAH, approximately 167 acres, 212 acres, 195 acres, and 66 acres of forested habitat are estimated to be cleared in association with each alternative, respectively. Plant and animal species that inhabit the project study corridor are consistent with wildlife species adapted to urban and semi-urban communities and could continue to inhabit the area. With the incorporation of best management practices, impacts to wildlife and habitat in the vicinity of the study area will be avoided to the greatest extent practicable. A more detailed assessment of impacts and minimization efforts would be performed during final design, once an alternative has been selected.

3.3 THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (ESA) provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The law requires federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or carry out actions that result in the destruction or adverse modification of designated critical habitat of such species. Under the ESA of 1973, any federal action that would likely result in a negative impact to federally protected plants and animals is subject to review by the USFWS. The USFWS and other wildlife resource agencies also exercise jurisdiction in accordance with the Fish and Wildlife Coordination Act.

The Commonwealth of Virginia, specifically VDCR and VDGIF, has the power to designate species within the state as threatened or endangered. Based solely on statewide populations, these designations do not consider total populations of a species throughout its geographic range. An endangered species is defined as one that is in danger of extinction throughout all or in a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future.

3.3.1 Methodology

Early in the planning process, VDOT began coordinating with agencies involved with federal and state listed species. Agencies that received scoping letters requesting their comments on the project in regards to natural resources are listed previously in **Section 1.4**. Scoping responses from the agencies served as a guideline for further work. Additionally, throughout December 2013, a number of online databases were explored in an effort to identify supplementary federal and state listed species; these include the USFWS Online IPaC system, the Virginia Department of Game and Inland Fisheries' online database (VaFWIS), and the DCR-DNH database for Loudon County. This work was followed by further agency coordination, reviews of mapping resources, and site reconnaissance.

3.3.2 Affected Environment

According to a December 2013 review of the aforementioned online databases, no federally-listed species are reported within the project study area. Additionally, no wildlife refuges or Critical Habitat were identified in the project vicinity.

In its response to VDOT's scoping letter, dated February 7, 2013, DCR-DNH stated that the project would not affect any documented state-listed plant or animal species. DCR-DNH noted that while its database does not indicate the presence of any federally-listed species in the project area, diabase in Northern Virginia does have the potential to support undocumented occurrences of global and state rare species. Due to the potential for the project site to support additional populations of natural heritage resources, DCR recommends an inventory of suitable habitat along each alternative, excluding the portion along Route 606.

The Virginia Department of Agriculture and Consumer Services (VDACS) is charged with the conservation, protection, and management of endangered and threatened species of plants and insects. VDOT cooperates with agencies and other organizations on the recovery, protection, or conservation of listed threatened or endangered plant and insect species. Under a Memorandum of Agreement established between VDACS and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. In a scoping letter response, dated February 7, 2013, DCR stated that the current activity will not affect any documented state-listed plants or insects.

The DCR-DNH database for the project area's subwatersheds was searched in December 2013 (see **Appendix C**). Although no federally-listed species were reported in the County, the search indicated that four state-threatened species have been confirmed to exist within Loudon County. This confirms the presence of the green floater (*Lasmigona subviridis*), wood turtle (*Glyptemys insculpta*), Loggerhead Shrike (*Lanius ludovicianus*), and the Upland Sandpiper (*Bartramia longicauda*), all of which were duly identified by the VaFWIS database and described below.

A December 2013 search of the VaFWIS database indicated that the project is not located within a Bald Eagle Concentration Area or near any known Eagle nests. A supplementary search of the USFWS's IPaC System (see **Appendix D**) indicated that no ESA-listed species or National Wildlife Refuges were found within the vicinity of the project. While there are no confirmed records of federally-listed threatened or endangered species within the vicinity of the study area, VaFWIS identified one (1) specie designated

State Endangered (SE), and seven (7) species with a State Threatened (ST) designation, which may occur within 2 miles of the project study area.. These statuses are defined as follows:

- **State Endangered Species (ST)** - species which are considered threatened within a particular state, but not within all states, and which therefore are not included on the national list of endangered and threatened species; state wildlife agencies are given the authority under the ESA to manage such species.
- **State Threatened Species (SE)** - species which are considered threatened within a particular state, but not within all states, and which therefore are not included on the national list of endangered and threatened species; state wildlife agencies are given the authority under the ESA to manage such species.

There are several state-list species, including the wood turtle, yellow lance, and brook floater, that potentially could occur in the larger streams found in the project area. The VaFWIS did identify potential habitat for the wood turtle along Broad Run, Ellick Run and Cabin Branch within the vicinity of the project. In addition, the migratory avian species listed by the state as Threatened (i.e. loggerhead strike, Henslow’s Sparrow, upland sandpiper) may occur in the agricultural fields and pastures in the project area.

Table 3 depicts the state listed threatened or endangered species that can be found within a 2-mile radius of the study area. In addition, brief, general descriptions of the 8 state listed threatened and endangered species that may occur within the study area and their habitat requirements are provided below.

Table 3: Federal and State Listed Species within a Two-Mile Radius of the Study Corridor

Common Name	Scientific Name	Status
Appalachian Grizzled Skipper	<i>Pyrgus wyandot</i>	ST
Brook Floater	<i>Alasmidonta varicosa</i>	SE
Green Floater	<i>Lasmigona subviridis</i>	ST
Henslow’s Sparrow	<i>Ammodramus henslowii</i>	ST
Loggerhead Shrike	<i>Lanius ludovicianus</i>	ST
Migrant Loggerhead Shrike	<i>Lanius ludovicianus migrans</i>	ST
Upland Sandpiper	<i>Bartramia longicauda</i>	ST
Wood Turtle	<i>Glyptemys insculpta</i>	ST

State Endangered (SE)

Brook Floater (Alasmidonta varicosa)

The Brook Floater is listed under Tier 2 of the Virginia Wildlife Action Plan with a “Very High Conservation Need” status. A species of freshwater mussel, the Brook Floater is non-migrant and found in Canada and the United States. Its habitat consists of creeks and small rivers where it is found among rocks in gravel substrates and in sand shoals. Fertilization occurs in summer and parasitic larvae are

released the following spring. Once born, the parasitic larvae attach themselves to fish for a period of time, before detaching and falling to the substrate, at which time the brook floater becomes a detritivore, feeding on decomposing plant and animal parts, as well as organic fecal matter. The brook floater is sensitive to sedimentation, flow alteration, and low oxygen conditions. The brook floater may exist within the project area's freshwater streams.

State Threatened (ST)

Appalachian Grizzled Skipper (*Pyrgus wyandot*)

The Appalachian Grizzled Skipper is listed under Tier 1 of the Virginia Wildlife Action Plan with a "Critical Conservation Need" status. A small brown, gray, and white butterfly, the Appalachian Grizzled Skipper is predominantly located in the northeastern portion of the United States. Usually found in openings near pine or oak forests, the butterflies tend to populate sparsely vegetated, often disturbed, barrens with exposed rock or soil. The Appalachian Grizzled Skipper is known to mate once a year in the months of April and May. The female lays her eggs on the underside of a host plant and the eggs typically hatch in eight to 10 days. Herbicide, pesticide, and succession have greatly reduced their population in recent years. The occurrence of suitable habitat indicates that Henslow's Sparrow may exist within the project.

Green Floater (*Lasmigona subviridis*)

The Green Floater is listed under Tier 2 of the Virginia Wildlife Action Plan and has a corresponding "Very High Conservation Need". This freshwater mussel is endemic to the freshwaters of the United States and can typically only reach 55 mm of length in adulthood. Green floaters are intolerant of strong currents and typically occur within the easternmost states in streams, small rivers, and canals of low-to-medium gradient with slow pools and fine gravel and sand bottoms. Mating season for the green floater occurs in August; larvae are released the following June. Larvae require fish hosts for dispersal before transforming into juveniles. The population of green floater found in the Potomac River is genetically distinct from populations found further south due to reproductive isolation and thus the two groups are managed as two separate conservation units. The green floater may exist within the freshwater streams of the project area.

Henslow's Sparrow (*Ammodramus henslowii*)

Henslow's Sparrow, among the smallest of sparrows, is a rust-colored songbird with a Tier 1 designation, indicating a "Critical Conservation Need". Henslow's sparrow is an obligate grassland species, historically found in the Midwest and Great Plains regions. The sparrow's breeding habitat generally includes shrubby, often moist fields, with dense cover. Henslow's sparrows have two broods each year, ranging in size from approximately three to five eggs per brood. These birds often nest in small colonies, kept low to the ground in a grassy location. The range and number of this species is rapidly decreasing largely due to habitat loss and destruction. Henslow's Sparrow may exist within the project area due to the occurrence of suitable habitat.

Loggerhead Shrike (*Lanius ludovicianus*)

The Loggerhead Shrike is a medium-sized songbird with a Tier 1 designation, indicating a "Critical Conservation Need". The bird's head and back are bluish-grey and its under parts are white; it has a large hooked bill. It is the only member of the shrike family endemic to North America. It nests in dense

trees and shrubs, adjacent to feeding areas and usually on roadsides, favoring a variety of land uses. Females lay four to eight eggs in a cup-shaped nest made of twigs and grass, which hatch in approximately 17 days. Shrikes are usually seen perched along roads on fences or utility lines, scanning for prey. They feed mainly on insects, but may eat any small mammal or reptile they can overpower as well. The population of the species has declined in much of its range, likely due to loss of suitable habitat and pesticide use. The occurrence of suitable habitat indicates that the Loggerhead Shrike may exist within the project.

Migrant Loggerhead Shrike (*Lanius ludovicianus migrans*)

The Migrant Loggerhead Shrike is listed under Tier 1 of the Virginia Wildlife Action Plan, indicating that it has a “Critical Conservation Need”. This Shrike is a short-distance to permanent migrant land bird, about 7 inches in length. This species has a heavy, hooked bill, a black mask, and a gray head and back with white hind parts. Migrant Loggerhead Shrikes formerly bred throughout the northeastern United States into New England; however, as successional fields have been reforested, this species has rapidly disappeared from former nesting areas throughout the northeast. The species is still relatively common in the western United States, but decreasing in the southeastern United States. During its spring and summer migration months it can be spotted as far south as California, though in ever decreasing numbers. The Migrant Loggerhead Shrike prefers open habitat characterized by short grasses, or bare ground with low shrubs and trees. Its prey consists of small songbirds, grasshoppers, and small rodents. Declines in population can be attributed to the introduction of pesticide contaminants, roadway mortality, and subtle habitat degradation. The degree of tolerance of disturbance of this species is still unknown. The occurrence of suitable habitat indicates that the Migrant Loggerhead Shrike may exist within the project.

Upland Sandpiper (*Bartramia longicauda*)

The Upland Sandpiper, also known as the “grass plover” or “upland plover” is a marbled brown and black bird with a white underside, and has a Tier 1 designation indicating a “Critical Conservation Need”. An adult is approximately 12” long with a 26” wingspan. Upland Sandpipers typically have a longer tail than other members of the Sandpiper family. Despite the name, sandpipers do not need water within their habitat; they prefer open country with tall grasses. Their true core range and habitat is within the northern Midwest United States. Upland sandpipers typically forage for food in fields. Their diet consists mainly of grasshoppers, crickets, beetles, moths, flies, centipedes, spiders, earthworms, and other common bugs. They occasionally eat grains and seeds as well. The sandpiper breeding season lasts throughout the summer months; nests are located on the ground in dense grass where a female will lay approximately four eggs. Upland sandpiper populations declined sharply in the late 19th century due to hunting, livestock grazing, and loss of prairie habitat. Controlled burns may benefit this species as they feed on low-growing plants that are accessible after a fire. The occurrence of suitable habitat indicates that the Upland Sandpiper may exist within the project.

Wood Turtle (*Glyptemys insculpta*)

The Wood Turtle, endemic to North America, is listed under Tier 1 of the Virginia Wildlife Action Plan, indicating a “Critical Conservation Need”. The wood turtle is found in most New England States, north into Canada, west into Michigan and Minnesota, and south to Virginia. It has a distinct pyramidal pattern on its upper shell and spends a great deal of time in or near the water, preferring shallow, clear streams with compacted and sandy bottoms. It can also be found in forests and grasslands, but will rarely be seen far from flowing water. It spends the winter in hibernation and the hottest parts of summer in a state of

animal dormancy and inactivity. The Wood Turtle is omnivorous and is capable of eating on land or in water. Despite many sightings and a seemingly large and diverse distribution, the wood turtle's declining population is threatened by an overabundance of predators that live within its habitat, such as raccoons, and inadvertent anthropogenic causes such as habitat destruction, illegal collection, and roadway mortality. When unharmed, this animal can live up to 40 years in the wild and even longer in captivity. The wood turtle may exist within the vicinity of the streams and wetlands of the project area.

3.3.3 Environmental Consequences

Early in the planning process, VDOT began studying the potential for populations of federal and state-listed species to exist within the study area. Additionally, VDOT coordinated with the appropriate agencies for species information. The sum of data collected helped to evaluate each of the project's alternatives with the goal of incurring the least adverse impacts on threatened and endangered species.

The project study area is located within the portion of Loudoun County underlain by Triassic bedrock. Diabase environments occur within the Triassic Basin and have been inventoried to the west of Route 28 between IAD and Route 7, just north of the project study area. Diabase flatrocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction. In northern Virginia, diabase may support other occurrences of global and state rare plant species. Diabase habitat may be impacted by the proposed project if it exists within the study area. Further geotechnical analysis will be conducted as project design advances, per the selection of a Build Alternative.

As no federally listed threatened and endangered plant or animal species were confirmed to exist within the project vicinity, none of the project alternatives are expected to affect federally listed threatened and endangered species. One (1) SE species and seven (7) ST species were identified by VaFWIS as potentially existing within or adjacent to the study area. VDOT cooperates with State authorities in an effort to identify and conserve State listed species whenever feasible. With the incorporation of best management practices, impacts to rare, threatened and endangered species that may be located in the vicinity of the project area will be avoided to the greatest extent practicable. A more detailed assessment of impacts and minimization efforts would be performed during final design, once an alternative has been selected.

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Appendix A: VaFWIS Search Report

Site Location

38,57,07.2 -77,30,58.4
is the Search Point

Show Position Rings

Yes No
1 mile and 1/4 mile at the Search Point

Show Search Area

Yes No
2 Search distance miles radius

Search Point is at map center

Base Map [Choices](#)
Topography

Map Overlay [Choices](#)
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous




[Refresh Browser Page](#)

Map Click **Pan**

Map Scale **In Zoom Out**

Screen Size **Small Size Big**

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N




Point of Search 38,57,07.2 -77,30,58.4
Map Location 38,57,07.2 -77,30,58.4

Select Coordinate System: Degrees, Minutes, Seconds Latitude - Longitude
 Decimal Degrees Latitude - Longitude
 Meters UTM NAD83 East North Zone
 Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 277156 and top 4319261. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

Map Overlay Legend

<p>T & E Waters</p>	<p>are from the United States Department of the Interior, United States Geological Survey. Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network. Shaded topographic maps are from TOPO! ©2006 National Geographic http://www.national.geographic.com/topo All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.</p>
<p> Federal  State</p>	<p>map assembled 2012-12-31 12:05:35 (qa/qc December 5, 2012 8:04 - tn=440924.0 dist=3218.688 I) \$poi=38.9520000 -77.5162222</p>
<p>Predicted Habitat WAP Tier I & II</p>	
<p> Aquatic  Terrestrial</p>	
<p>Trout Waters</p>	
<p> Class I - IV  Class V - VI</p>	
<p>Anadromous Fish Reach</p>	
<p> Confirmed  Potential</p>	
<p> Impediment</p>	
<p> Position Rings 1 mile and 1/4 mile at the Search Point</p>	
<p> 2 mile radius Search Area</p>	
<p>Bald Eagle Concentration Areas and Roosts</p>	
<p></p>	

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- [By Name](#)
- [By Land Management](#)
- [References](#)
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- [By Place Name](#)
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VaFWIS Initial Project Assessment Report Compiled on 12/31/2012, 11:54:36 AM

Known or likely to occur within a 2 mile radius around point 38,57,07.2 -77,30,58.4 in 107 Loudoun County, VA

[View Map of Site Location](#)

440 Known or Likely Species ordered by Status Concern for Conservation (displaying first 20) (20 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
030062	ST	I	Turtle, wood	Glyptemys insculpta		BOVA,Habitat
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
040379	ST	I	Sparrow, Henslow's	Ammodramus henslowii		BOVA
040093	FSST	II	Eagle, bald	Haliaeetus leucocephalus		BOVA
060081	ST	II	Floater, green	Lasmigona subviridis		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA
100166	FS	II	Skipper, Dotted	Hesperia attalus slossonae		BOVA
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA
030012	CC	IV	Rattlesnake, timber	Crotalus horridus		BOVA

040372	I	<u>Crossbill, red</u>	Loxia curvirostra	BOVA
040225	I	<u>Sapsucker, yellow-bellied</u>	Sphyrapicus varius	BOVA
040319	I	<u>Warbler, black-throated green</u>	Dendroica virens	BOVA
040306	I	<u>Warbler, golden-winged</u>	Vermivora chrysoptera	BOVA
040052	II	<u>Duck, American black</u>	Anas rubripes	BOVA
040213	II	<u>Owl, northern saw-whet</u>	Aegolius acadicus	BOVA
040105	II	<u>Rail, king</u>	Rallus elegans	BOVA
040320	II	<u>Warbler, cerulean</u>	Dendroica cerulea	BOVA
040266	II	<u>Wren, winter</u>	Troglodytes troglodytes	BOVA

To view **All 440 species** [View 440](#)

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=V

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (7 Reaches)

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aqu](#)

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
(20700081)	ST	030062	ST	I	<u>Turtle, wood</u>	Glyptemys insculpta	Yes
(20700101)	ST	030062	ST	I	<u>Turtle, wood</u>	Glyptemys insculpta	Yes
Broad Run (20700081)	ST	030062	ST	I	<u>Turtle, wood</u>	Glyptemys insculpta	Yes
Cabin Branch (20700081)	ST	030062	ST	I	<u>Turtle, wood</u>	Glyptemys insculpta	Yes
Elklick Run (20700101)	ST	030062	ST	I	<u>Turtle, wood</u>	Glyptemys insculpta	Yes
Lenah Run (20700081)	ST	030062	ST	I	<u>Turtle, wood</u>	Glyptemys insculpta	Yes
Stallion Branch (20700081)	ST	030062	ST	I	<u>Turtle, wood</u>	Glyptemys insculpta	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 12/31/2012 11:54:37 AM | 1449210 | report=IPA | searchType=R | lat= 3218.688 | pos= 38.57072 -77.30584
 PrintSize=64; AnalReous= 0.045118; HIX:AR= 0.039756; Iba= 0.031478; Buffer= 0.178125; County= 0.152455; Impediment= 0.02466; In= 0.222425; PublicLand= 0.039606; SppObs= 0.79745; TFWaters= 0.043777; TierReaches= 0.212975; TierTerrestrial= 0.058608; Total= 1.728233; Troid= 0.037712

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- Site tested using browsers Chrome 10+, Firefox 2+, IE 6+, Opera 9+, and Safari 4+ (FWISWEB1 December 31, 2012 11:54:38AM wrallp1440921)
- W3C HTML [validation](#) <BASE href="https://fwisweb1.dgif.virginia.gov/fwis/NewPages/">[VaFWIS_GeographicSelect_Options.asp](#)

Site Location

38,57,30.7 -77,32,49.5 is the Search Point

Show Position Rings

Yes No
1 mile and 1/4 mile at the Search Point

Show Search Area

Yes No
2 Search distance miles radius

Search Point is at map center

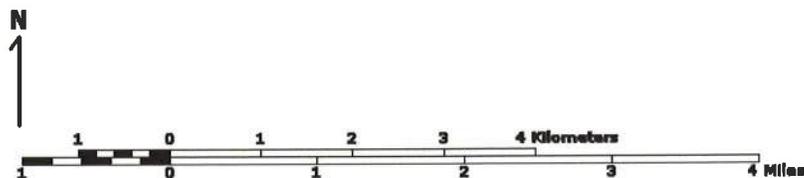
Base Map Choices

Topography

Map Overlay Choices

Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

Map Click **Pan** **In** **Zoom** **Out** Map Scale **Refresh Browser Page** Screen Size **Small** **Size** **Help**



Point of Search 38,57,30.7 -77,32,49.5

Map Location 38,57,30.7 -77,32,49.5

- Select Coordinate System:
- Degrees,Minutes,Seconds Latitude - Longitude
 - Decimal Degrees Latitude - Longitude
 - Meters UTM NAD83 East North Zone
 - Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

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 Federal	<p>map assembled 2012-12-31 12:03:10 (qa/qc December 5, 2012 8:04 - tn=440923.0 dist=3218.688 I) \$poi=38.9585278 -77.5470833</p>
 State	
Predicted Habitat WAP Tier I & II	
 Aquatic	
 Terrestrial	
Trout Waters	
 Class I - IV	
 Class V - VI	
Anadromous Fish Reach	
 Confirmed	
 Potential	
 Impediment	
 Position Rings 1 mile and 1/4 mile at the Search Point	
 2 mile radius Search Area	
Bald Eagle Concentration Areas and Roosts	
	

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VaFWIS Initial Project Assessment Report Compiled on 12/31/2012, 12:02:40 PM

Known or likely to occur within a 2 mile radius around point 38,57,30.7 -77,32,49.5 in 107 Loudoun County, VA

[View Map of Site Location](#)

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040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
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060081	ST	II	Floater, green	Lasmigona subviridis		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA
100166	FS	II	Skipper, Dotted	Hesperia attalus slossonae		BOVA
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA
030012	CC	IV	Rattlesnake, timber	Crotalus horridus		BOVA

040372		I	<u>Crossbill, red</u>	<i>Loxia curvirostra</i>	BOVA
040225		I	<u>Sapsucker, yellow-bellied</u>	<i>Sphyrapicus varius</i>	BOVA
040319		I	<u>Warbler, black-throated green</u>	<i>Dendroica virens</i>	BOVA
040306		I	<u>Warbler, golden-winged</u>	<i>Vermivora chrysoptera</i>	BOVA
040052		II	<u>Duck, American black</u>	<i>Anas rubripes</i>	BOVA
040213		II	<u>Owl, northern saw-whet</u>	<i>Aegolius acadicus</i>	BOVA
040105		II	<u>Rail, king</u>	<i>Rallus elegans</i>	BOVA
040320		II	<u>Warbler, cerulean</u>	<i>Dendroica cerulea</i>	BOVA
040266		II	<u>Wren, winter</u>	<i>Troglodytes troglodytes</i>	BOVA

To view All 440 species [View 440](#)

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=V

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Colonial Water Brd Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (5 Reaches)

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aqu](#)

Stream Name	Tier Species						View Map
	Highest TE *	BOVA Code, Status *, Tier **, Common & Scientific Name					
(20700081)	ST	030062	ST	I	<u>Turtle, wood</u>	<i>Glyptemys insculpta</i>	Yes
(20700101)	ST	030062	ST	I	<u>Turtle, wood</u>	<i>Glyptemys insculpta</i>	Yes
Broad Run (20700081)	ST	030062	ST	I	<u>Turtle, wood</u>	<i>Glyptemys insculpta</i>	Yes
Cabin Branch (20700081)	ST	030062	ST	I	<u>Turtle, wood</u>	<i>Glyptemys insculpta</i>	Yes
Lenah Run (20700081)	ST	030062	ST	I	<u>Turtle, wood</u>	<i>Glyptemys insculpta</i>	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 12/31/2012, 12:02:40 PM 14409210 report-IPA searchType=R Jnt= 3218 698 pos= 38.57307 77.32495
 PixSize=64; Anadromous=0.026291; BECAR=0.021601; Iltas=0.021662; Buffer=0.176717; County=0.042473; Impedments=0.025301; Int=0.212979; PublicLands=0.033867; SpgObs=0.351342; TFWaters=0.02441; EstReaches=0.088969; TierTerrestrial=0.046863; Total=0.921346; Truss=0.020098

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- W3C HTML [validation](#) <BASE href="https://fwisweb1.dgif.virginia.gov/fwis/NewPages/">[VaFWIS_GeographicSelect_Options.asp](#)

Site Location

38,56,38.6 -77,33,21.0
is the Search Point

Show Position Rings

Yes No
1 mile and 1/4 mile at the Search Point

Show Search Area

Yes No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous



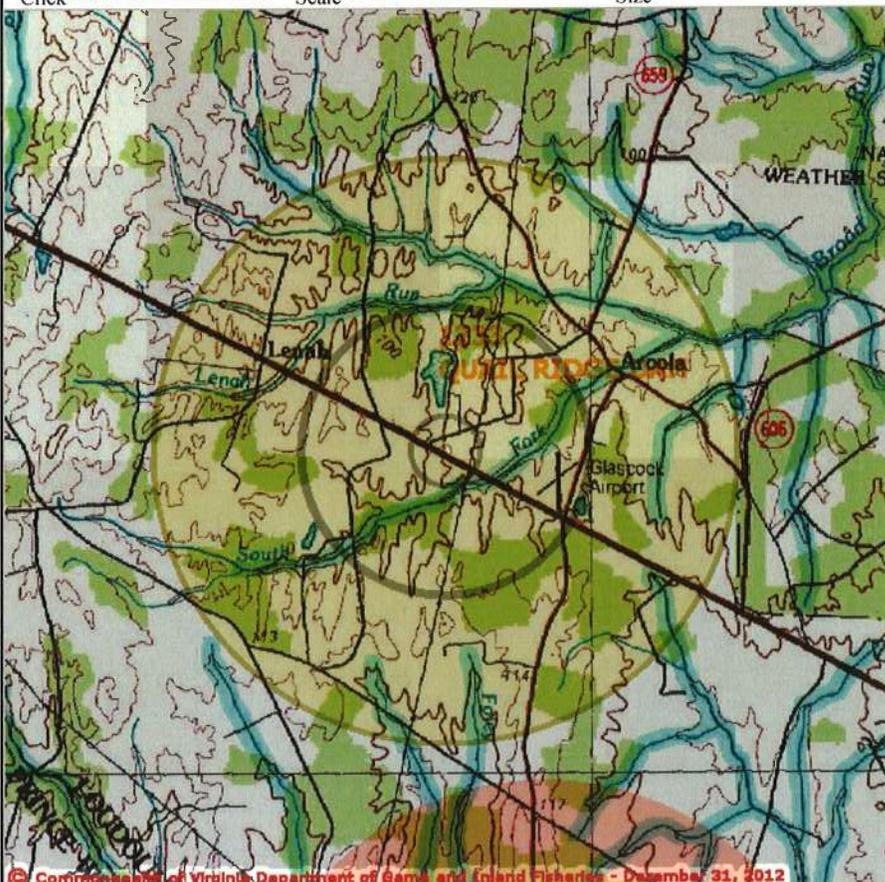

[Refresh Browser Page](#)

Map Click Pan In Out

Map Scale In Zoom Out

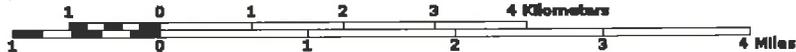
Screen Size Small Size Big

[Help](#)



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N

Point of Search 38,56,38.6 -77,33,21.0
Map Location 38,56,38.6 -77,33,21.0

Select Coordinate System: Degrees,Minutes,Seconds Latitude - Longitude
 Decimal Degrees Latitude - Longitude
 Meters UTM NAD83 East North Zone
 Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft terraservertusa.com](http://Microsoft.terraservertusa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 273698 and top 4318475. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

Map Overlay Legend

<https://fwisweb1.dgif.virginia.gov/maps/zMapFormJava.asp?autoscale=14&coord=LL&d...> 12/31/2012

T & E Waters	<p>are from the United States Department of the Interior, United States Geological Survey. Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network. Shaded topographic maps are from TOPO! ©2006 National Geographic http://www.national.geographic.com/topo All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.</p>
Federal	<p>map assembled 2012-12-31 12:07:58 (qa/qc December 5, 2012 8:04 - tn=440925.0 dist=3218.6881) \$poi=38.9440556 -77.5558333</p>
State	
Predicted Habitat WAP Tier I & II	
Aquatic	
Terrestrial	
Trout Waters	
Class I - IV	
Class V - VI	
Anadromous Fish Reach	
Confirmed	
Potential	
Impediment	
Position Rings 1 mile and 1/4 mile at the Search Point	
2 mile radius Search Area	
Bald Eagle Concentration Areas and Roosts	

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VaFWIS Initial Project Assessment Report Compiled on 12/31/2012, 12:07:43 PM

Known or likely to occur within a 2 mile radius around point 38,56,38.6 -77,33,21.0 in 107 Loudoun County, VA

[View Map of Site Location](#)

440 Known or Likely Species ordered by Status Concern for Conservation (displaying first 20) (20 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
030062	ST	I	Turtle, wood	Glyptemys insculpta		BOVA,Habitat
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
040379	ST	I	Sparrow, Henslow's	Ammodramus henslowii		BOVA
040093	FSST	II	Eagle, bald	Haliaeetus leucocephalus		BOVA
060081	ST	II	Floater, green	Lasmigona subviridis		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA
100166	FS	II	Skipper, Dotted	Hesperia attalus slossonae		BOVA
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA
030012	CC	IV	Rattlesnake, timber	Crotalus horridus		BOVA

040372		I	Crossbill, red	Loxia curvirostra	BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius	BOVA
040319		I	Warbler, black-throated green	Dendroica virens	BOVA
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040266		II	Wren, winter	Troglodytes troglodytes	BOVA

To view All 440 species [View 440](#)

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 ** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=V

Bat Colonies or Hibernacula: Not Known

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (5 Reaches)

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aqu](#)

Stream Name	Tier Species						View Map
	Highest TE *	BOVA Code, Status *	Tier **	Common & Scientific Name			
(20700081)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes
(20700101)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes
Broad Run (20700081)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes
Foley Branch (20700101)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes
Lenah Run (20700081)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 12/31/2012, 12:07:43 PM 14409250 report-IPA searchType= R data= 3218688 pos= 38,56,38.6, 77,33,21.0
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Appendix B: Agency Correspondence



COMMONWEALTH of VIRGINIA
Department of Game and Inland Fisheries

Doug Domenech
Secretary of Natural Resources

Robert W. Duncan
Director

March 8, 2013

Mr. Robert Iosco, Program Manager
VDOT NOVA District

via email: Robert.Iosco@vdot.virginia.gov

Re: Dulles Air Cargo, Passenger and Metro Access Highway

Dear Mr. Iosco,

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,

A handwritten signature in black ink that reads "Angela G. Weller".

Angela G. Weller
Environmental Services Section

MEMORANDUM

DATE: February 7, 2013
TO: Robert Iosco, VDOT
FROM: S. René Hypes, DCR-DNH
SUBJECT: Due February 7, 2013
R000-053-032, P101, Dulles Air Cargo, Passenger and Metro Access Highway

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 information currently in our files, the Ticonderoga Farms Conservation Site has been documented in the vicinity of the project area. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Ticonderoga Farms Conservation Site has been ranked as a B5 site, which indicates it is of general significance. The natural heritage resources associated with this site are:

<i>Asclepias purpurascens</i>	Purple Milkweed	G4G5/S2/NL/NL
<i>Buchnera americana</i>	Blue-hearts	G5/S1S2/NL/NL

Other rare plants typically associated with prairie vegetation inhabit semi-open diabase glades in Virginia may occur on site if suitable habitat is present. Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Diabase flatrock, a hard, dark-colored volcanic rock, is found primarily in northern Virginia counties and is located within the geologic formation known as the Triassic Basin. Where the bedrock is exposed, a distinctive community type of drought-tolerant plants occurs. Diabase flatrocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction (Rawinski, 1995).

In Northern Virginia, diabase supports other occurrences of global and state rare plant species: earleaf foxglove (*Agalinis auriculata*, G3/S1/NL/NL), downy phlox (*Phlox pilosa*, G5T5/S2/NL/NL) and marsh hedgenettle (*Stachys pilosa* var. *arenicola*, G5/S1/NL/NL). Please note, earleaf foxglove is currently tracked as a species of concern by the United States Fish and Wildlife Service (USFWS); however this designation has no official legal status.

Due to the potential for this site to support additional populations of these natural heritage resources, DCR recommends an inventory of suitable habitat in the proposed Alternative 2 and Alternative 3 areas, excluding the Route 606 corridor. With the survey results we can more accurately evaluate potential

impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

DCR-Division of Natural Heritage biologists are qualified and available to conduct inventories for rare, threatened, and endangered species. Please contact J. Christopher Ludwig, Natural Heritage Inventory Manager, at chris.ludwig@dcr.virginia.gov or 804-371-6206 to discuss arrangements for field work.

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 contact DCR for an update on this natural heritage information if a significant amount of time passes 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).

Thank you for the opportunity to comment on this project.

Iosco, Robert C. (VDOT)

From: Creed, Jordan (MRC)
Sent: Tuesday, January 22, 2013 8:57 AM
To: Iosco, Robert C. (VDOT)
Cc: Ellis, Charles (DEQ); Irons, Ellie (DEQ)
Subject: RE: Dulles Air Cargo Scoping
Attachments: VMRC_DullesAirCargoScopingReview.pdf

Attached please find our comments on the proposed project. Please let me know if you have any questions.

All my best,

Jordan Creed
Environmental Engineer
757.759.9753



Virginia Marine Resources Commission
2600 Washington Avenue
3rd Floor
Newport News, Virginia 23607
www.mrc.virginia.gov

From: Watkinson, Tony (MRC)
Sent: Thursday, January 17, 2013 6:43 PM
To: Creed, Jordan (MRC)
Subject: FW: Dulles Air Cargo Scoping

From: Fulcher, Valerie (DEQ)
Sent: Thursday, January 17, 2013 3:17 PM
To: Burstein, Daniel (DEQ); Narasimhan, Kotur (DEQ); Coe, Stephen (DEQ); Rhur, Robbie (DCR); Tignor, Keith (VDACS); Cason, Gladys (DGIF); Watkinson, Tony (MRC); odwreview (VDH); Kirchen, Roger (DHR); Spears, David (DMME); Kline, Everette (DOF); Evans, Gregory (DOF); gmg@novaregion.org; coadmin@loudoun.gov
Cc: Ellis, Charles (DEQ)
Subject: Dulles Air Cargo Scoping

Good afternoon—attached is a request for scoping comments on the following:

Dulles Air Cargo, Passenger, and Metro Access
Highway (Project Number R000-053-032, P101,
UPC 103929, Loudoun County

If you choose to make comments, please send them directly to the project sponsor (see attached) and copy the DEQ Office of Environmental Impact Review. We will coordinate a review when the NEPA document is completed.

If you have any questions regarding this request, please call Charlie at 804/698-4195; email Charles.Ellis@deq.virginia.gov

Valerie

Valerie A. Fulcher, CAP-OM, Executive Secretary Sr.

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

629 E. Main St., 6th Floor

Richmond, VA 23219

804/698-4330

804/698-4319 (Fax)

email: Valerie.Fulcher@deq.virginia.gov



COMMONWEALTH of VIRGINIA

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

Jack G. Travelstead
Commissioner

Douglas W. Domenech
Secretary of Natural Resources

January 22, 2013

Mr. Robert Iosco
Environmental Program Manager
VDOT Northern Virginia District
4975 Alliance Drive
Fairfax, Virginia 22030

Re: Dulles Air Cargo, Passenger and Metro Access
Highway (Project # R000-053-032, P101)

Dear Mr. Iosco:

We have reviewed the above-referenced project agency scoping letter for a proposed limited access highway between Route 50 and Washington Dulles International Airport in Loudoun County, Virginia.

The Marine Resources Commission, pursuant to Chapter 12 of Title 28.2 of the Code of Virginia, is responsible for issuing permits for encroachments in, on, or over state-owned submerged lands throughout the Commonwealth. Accordingly, authorization may be required from the Marine Resources Commission for projects that involve encroachments channelward of ordinary high water along nontidal rivers and streams, and below mean low water in tidal regions. We generally only require permits for encroachments on nontidal streams with a drainage area greater than five square miles or with an average in-stream flow of at least five cubic feet per second.

Based upon the information provided at this stage of planning we cannot determine if the proposed project will fall within our jurisdiction. The general project location is in nontidal-Virginia; therefore, should a waterway with a drainage area greater than five square miles be impacted during the development of the proposed limited access highway, a permit will be required from the Marine Resources Commission.

Thank you for the opportunity to comment on this project. Please do not hesitate to contact us if we may be of further assistance.

Sincerely,

A handwritten signature in black ink that reads "Jordan Creed".

Jordan Creed
Environmental Engineer

An Agency of the Natural Resources Secretariat
www.mrc.virginia.gov

Telephone (757) 247-2200 (757) 247-2292 V/TDD Information and Emergency Hotline 1-800-541-4646 V/TDD

Iosco, Robert C. (VDOT)

From: Evans, Gregory (DOF)
Sent: Thursday, February 07, 2013 11:03 AM
To: Iosco, Robert C. (VDOT)
Cc: Irons, Ellie (DEQ); Kline, Everette (DOF)
Subject: VDOF: Dulles Air Cargo Scoping comments
Attachments: DULLES-AIR-CARGO-SCOPING.PDF

Mr. Iosco:

I am writing on behalf of the Department of Forestry in response to the January 7, 2013 letter (attached) you sent to Ms. Iron's office at DEQ requesting scoping comments for the Dulles Air Cargo, Passenger, and Metro Access Highway project. DOF is a participating agency under DEQ's EIR review process and we appreciate your request for assistance in identifying potential environmental constraints and other relevant factors associated with the project.

The DOF's responsibility in evaluating proposed projects brought before state regulatory bodies is to identify the forest resources that may be impacted; provide assessments; and provide recommendations and comments pertaining to forest health, conservation, management and mitigation needs aimed at conserving Virginia's forest resources in keeping with state executive policies and/or as part of the federal consistency determination/certification process. In this regard, DOF responsibilities parallel FHWA's Eco-Logical ecosystems approach to developing infrastructure project guidance.

With regard to the Dulles project, an internal desk top analysis of the proposed study area conducted using the Virginia Tech InFOREST GIS based tool for obtaining data pertaining to land cover and ecosystem services notes the presence of tree cover over much of the area. Given the importance and value of this forestland for meeting water and air quality requirements as well as aesthetic and recreational needs, especially in an urban area like northern Virginia, DOF would request that the impact resulting from the loss of forestland be included as an element to be considered and addressed in the EA; and further, that a mitigation strategy focused on avoidance, minimization and replacement of forestland be included within the project's scope. DOF would be pleased to provide technical advice to assist VDOT in such an effort.

Thank you for the opportunity to comment.

Greg Evans

Greg Evans
Voluntary Mitigation Program Manager
Virginia Department of Forestry
900 Natural Resources Drive, Suite 800
Charlottesville, VA 229035
434-220-9020
gregory.evans@dof.virginia.gov
www.dof.virginia.gov

From: Fulcher, Valerie (DEQ)
Sent: Thursday, January 17, 2013 3:17 PM
To: Burstein, Daniel (DEQ); Narasimhan, Kotur (DEQ); Coe, Stephen (DEQ); Rhur, Robbie (DCR); Tignor, Keith (VDACS); Cason, Gladys (DGIF); Watkinson, Tony (MRC); odwreview (VDH); Kirchen, Roger (DHR); Spears, David (DMME); Kline, Everette (DOF); Evans, Gregory (DOF); gmg@novaregion.org; coadmin@loudoun.gov
Cc: Ellis, Charles (DEQ)
Subject: Dulles Air Cargo Scoping

Good afternoon—attached is a request for scoping comments on the following:

Dulles Air Cargo, Passenger, and Metro Access
Highway (Project Number R000-053-032, P101,
UPC 103929, Loudoun County

If you choose to make comments, please send them directly to the project sponsor (see attached) and copy the DEQ Office of Environmental Impact Review. We will coordinate a review when the NEPA document is completed.

If you have any questions regarding this request, please call Charlie at 804/698-4195; email Charles.Ellis@deq.virginia.gov

Valerie

Valerie A. Fulcher, CAP-OM, Executive Secretary Sr.
Department of Environmental Quality
Environmental Enhancement - Office of Environmental Impact Review
629 E. Main St., 6th Floor
Richmond, VA 23219
804/698-4330
804/698-4319 (Fax)
email: Valerie.Fulcher@deq.virginia.gov



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

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

January 17, 2013

Mr. Robert Iosco
Environmental Program Manager
VDOT Northern Virginia District
4975 Alliance Drive
Fairfax, Virginia 22030

RE: Dulles Air Cargo, Passenger, and Metro Access Highway (project number R000-053-032, P101, UPC 103929, Loudoun County)

Dear Mr. Iosco:

Thank you for your January 3, 2013 letter (received January 7) announcing the intent of the Department of Transportation (VDOT) to prepare an Environmental Assessment for the above-listed project and inviting our comments and consultation on the project.

PROJECT DESCRIPTION

According to your letter, VDOT is conducting a location study and preparing an Environmental Assessment for a proposed limited-access highway between U.S. Route 50 and the Washington Dulles International Airport in Loudoun County. The location study will analyze a corridor approximately 2.9 miles long between U.S. Route 50 and State Route 606 on Dulles Airport property, as well as alternatives that include:

- Widening Route 50 and Loudoun County Parkway to six lanes; and
- Limited-access highways between the planned Tri-County Parkway and Route 606 at the northwestern corner of the airport.

ENVIRONMENTAL REVIEW UNDER NATIONAL ENVIRONMENTAL POLICY ACT

The role of the Virginia Department of Environmental Quality (DEQ) in relation to environmental impact reviews is as follows. DEQ's Office of Environmental Impact Review (OEIR) coordinates Virginia's review of environmental documents (Environmental Assessment or Environmental Impact Statement) prepared pursuant to the National Environmental Policy Act and comment to the appropriate federal agency (in this case it would be the Federal Highway Administration) on behalf of the Commonwealth.

As you know, the National Environmental Policy Act (PL 91-190, 1969) (NEPA) and its implementing regulations (Title 40, *Code of Federal Regulations*, Parts 1500-1508) require draft and final Environmental Impact Statements (EISs) for federally funded undertakings which will or may give rise to significant impacts upon the human environment. EISs carry more stringent public participation requirements than Environmental Assessments (EAs) and provide more time and detail for comments and public decision-making. The possibility that an EIS may be required for this highway project should not be overlooked in your planning for the project. Accordingly, we refer to "NEPA document" in the remainder of this letter.

You also invite us to consult with VDOT and designate a contact person regarding potential effects of the project on historic properties and archaeological sites pursuant to section 106 of the National Historic Preservation Act. See the next part of this letter, after the agency listing.

PROJECT SCOPING AND AGENCY INVOLVEMENT

While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the preparation of the NEPA document. Accordingly, we are sharing our response to the letter with selected state and local Virginia agencies which have responsibilities bearing on the project you have described. These are likely to include the following:

- Department of Environmental Quality
- Department of Game and Inland Fisheries
- Department of Conservation and Recreation
- Department of Agriculture and Consumer Services
- Department of Health
- Marine Resources Commission
- Department of Housing and Community Development
- Department of Historic Resources
- Department of Mines, Minerals, and Energy
- Department of Forestry
- Northern Virginia Regional Commission
- Loudoun County.

The Department of Historic Resources, also known as the State Historic Preservation Office (SHPO), is the state agency responsible for consultation and expertise relating to the National Historic Preservation Act, section 106, and its implementing regulations at Title 36, *Code of Federal Regulations*, Part 800. We recommend that you contact the Department of Historic Resources (Roger Kirchen, telephone (804) 482-6091 or e-mail roger.kirchen@dhr.virginia.gov) to request consultation in this regard and to ensure that VDOT meets the requirements of section 106 concerning the proposed project.

INFORMATION ON WASTE MATERIALS and OTHER ISSUES

DEQ and other agencies maintain databases on hazardous materials. We are enclosing a copy of Appendix 10 (see below) of DEQ's most recent Environmental Impact Report Procedure Manual (dated July 2012) that lists databases and indicates their uses and contents. Questions on waste management may be directed to DEQ's Division of Land Protection and Revitalization (Steve Coe at 804-698-4029 or Stephen.Coe@deq.virginia.gov).

- DEQ Online Database: Virginia Environmental Geographic Information Systems

Information on Permitted Solid Waste Management Facilities, Impaired Waters, Petroleum Releases, Registered Petroleum Facilities, Permitted Discharge (Virginia Pollution Discharge Elimination System Permits) Facilities, Resource Conservation and Recovery Act (RCRA) Sites, Water Monitoring Stations, National Wetlands Inventory

- www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx

- DEQ Permit Expert

Helps determine if a DEQ permit is necessary

- www.deq.virginia.gov/permitexpert/

- DHR Data Sharing System

Survey records in the DHR inventory

- www.dhr.virginia.gov/archives/data_sharing_sys.htm

- DCR Natural Heritage Search

Produces lists of resources that occur in specific counties, watersheds or physiographic regions

- www.dcr.virginia.gov/natural_heritage/dbsearchtool.shtml

- DGIF Fish and Wildlife Information Service

Information about Virginia's Wildlife resources

- o <http://vafwis.org/fwis/>
- Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database: Superfund Information Systems

Information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL

 - o www.epa.gov/superfund/sites/cursites/index.htm
- EPA RCRAInfo Search

Information on hazardous waste facilities

 - www.epa.gov/enviro/facts/rcrainfo/search.html
EPA Envirofacts Database

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

 - o www.epa.gov/enviro/index.html
- EPA NEPAAssist Database

Facilitates the environmental review process and project planning

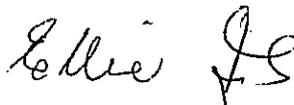
 - o <http://nepassisttool.epa.gov/nepassist/entry.aspx>

In order to ensure an effective coordinated review of environmental documents, OEIR typically require 18 copies. The submission may include 3 hard copies and 15 CDs or 3 hard copies and an electronic copy available for download at a website, file transfer protocol site or the VITAShare file transfer system (<https://vitashare.vita.virginia.gov>). We recommend that project details unfamiliar to people outside DMA be adequately described.

If you have questions about the environmental review process, please feel free to call me at (804) 698-4325 or Charles Ellis (804) 698-4321.

I hope this information is helpful to you.

Sincerely,



Ellie L. Irons, Program Manager
Environmental Impact Review

ec: Daniel Burstein, DEQ-NRO
Kotur S. Narasimhan, DEQ-DAPC
G. Stephen Coe, DEQ-DLPR
Roberta Rhur, DCR
Keith R. Tignor, VDACS
Amy M. Ewing, DGIF
Tony Watkinson, VMRC
Barry Mathews, VDH
Roger W. Kirchen, DHR
David Spears, DMME
Buck Kline, DOF
Greg Evans, DOF
G. Mark Gibb, NVRC
Tim Hemstreet, Loudoun County



RECEIVED

JAN 07 2013

DEQ-Office of Environmental
Impact Review

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

4975 Alliance Drive
Fairfax, VA 22030

GREGORY A. WHIRLEY
COMMISSIONER

January 3, 2013

Route Number: TBD

Project Number: R000-053-032, P101

UPC: 103929

County: Loudoun

iPM Project Description: Dulles Air Cargo, Passenger and Metro Access Highway

Project Limit—From: Route 50

Project Limit—To: Route 606/Dulles Airport

Mr. David K. Paylor, Director

ATTN: Ms. Ellie L. Irons, Program Manager

Virginia Department of Environmental Quality, Environmental Impact Review

P.O. Box 1105

Richmond, VA 23219

Dear Ms. Irons:

The Virginia Department of Transportation is conducting a Location Study and preparing an Environmental Assessment (EA) for a proposed limited access highway between Route 50 and the Washington Dulles International Airport in Loudoun County, Virginia. The proposed Dulles Air Cargo, Passenger and Metro Access Highway is intended to provide improved cargo freight and passenger access to the Washington Dulles International Airport, in an effort to support the expansion of the airport into an East Coast cargo hub and bring economic growth and employment to Loudoun County and Virginia. The enclosed map depicts the general location of the proposed roadway improvements.

In accordance with the requirements of the National Environmental Policy Act (NEPA) and other Federal and state laws and regulations, environmental studies evaluating the potential effects of the proposed project on natural, cultural, and human resources will be documented in an Environmental Assessment for this project. This study will analyze an approximately 2.9 mile limited access highway corridor between Route 50 and Route 606 on Washington Dulles International Airport property, as well as alternatives that include widening Route 50 and Loudoun County Parkway to six-lanes and limited access highways between the planned Tri-County Parkway and Route 606 at the northwestern corner of the airport.

This project is subject to Section 106 of the National Historic Preservation Act (16 U.S.C. 470f; 36 CFR 800.2(c)(3)), which entitles the Virginia Department of Environmental Quality (DEQ) to participate in consultation regarding the potential effects of the project on historic properties (typically historic buildings and districts; archaeological sites; battlefields). Information about Section 106 can be found at <http://www.achp.gov/usersguide.html>. Please let the Department know if DEQ has any information or concerns about historic properties potentially affected by this project, and if you wish to participate further in consultation to identify historic properties; assess project effects; and avoid, minimize, or mitigate any adverse effects. Please designate a Section 106 point of contact for DEQ.

As we develop the scope of studies to be conducted, we are requesting your written comments regarding the project to assist us in identifying potential environmental constraints and other relevant factors associated with the project. To avoid project delays, we would appreciate receiving your comments be returned no later than February 7, 2013.

Should you require additional information or have further questions about the project, please contact me at (703) 259-2764 or by email at Robert.Iosco@vdot.virginia.gov. Thank you very much for your assistance.

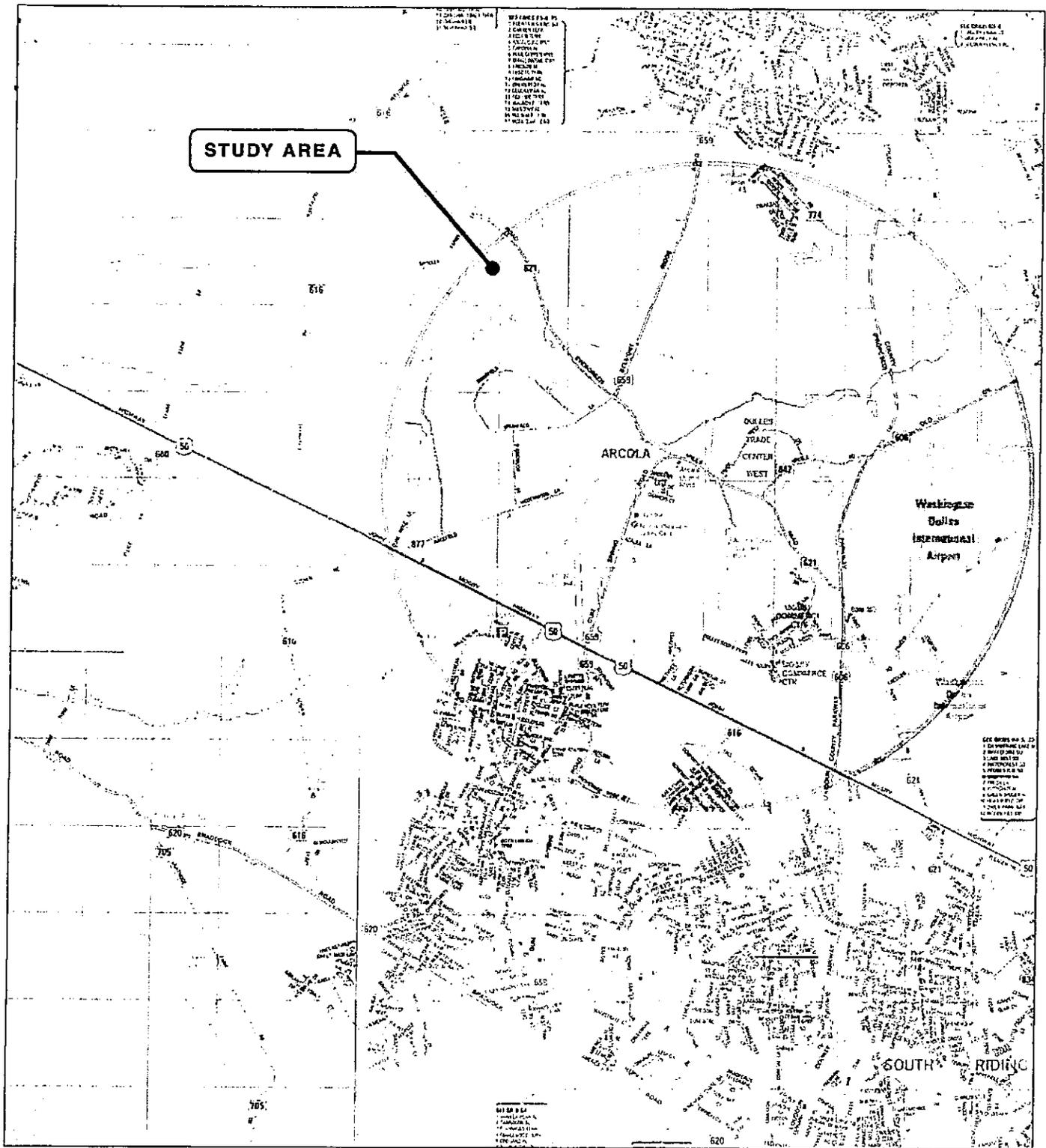
Sincerely,



Robert Iosco
Environmental Program Manager
VDOT NOVA District

Copy: Tom Fahrney, Project Manager
James Zeller, Residency Administrator
Steve Bates, District L&D Engineer
John Muse, VDOT NOVA District Environmental Manager

Enclosures: Project Location Map



DULLES AIR CARGO, PASSENGER AND METRO ACCESS HIGHWAY

VDOT Project Number: R000-053-032, P101 | UPC: 103929

Copyright ADC The Map People | Permitted Use Number 21002212



COMMONWEALTH of VIRGINIA

Department of Agriculture and Consumer Services

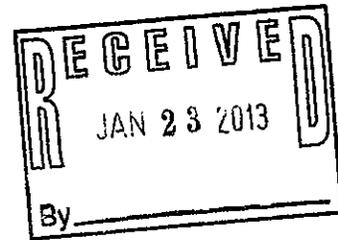
PO Box 1163, Richmond, Virginia 23218

Phone: 804/786-3501 • fax: 804/371-2945 • Hearing Impaired: 800/828-1120

www.vdacs.virginia.gov

Matthew J. Lohr
Commissioner

January 11, 2013



Mr. Robert Iosco
Environmental Program Manager
VDOT NOVA District
4975 Alliance Drive
Fairfax, VA 22030

Dear Mr. Iosco:

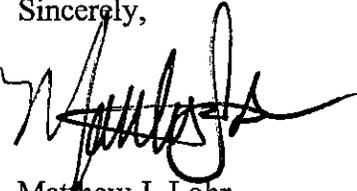
This is in response to your letter of January 3, 2013, concerning Project No. R000-053-032, P101. You indicate that your agency is conducting a location study and preparing an environmental assessment for a proposed limited access highway between Route 50 and the Washington Dulles International Airport in Loudoun County, Virginia.

You ask in your letter that VDACS share with your agency information or concerns about historic properties that could be affected by your project and, if VDACS wishes to participate further in consultation to identify historic properties to assist in assessing project effects and to help avoid, minimize or mitigate any adverse effects, to designate a Section 106 point of contact for VDACS. VDACS does not have information regarding historic properties to share and must decline your invitation to designate a Section 106 point of contact on historic resources.

In your letter you ask for a response to an enclosed questionnaire that requests information about existing or proposed agricultural and/or forestal districts, and other state or local programs, existing or proposed, to protect farmlands in the area of the project as well as any additional comments. VDACS, through the efforts of our Office of Farmland Preservation (OFP) located in our Division of Marketing and Development, works to promote farmland preservation in Virginia in cooperation with localities and the private sector. Concerning existing or proposed state programs for protecting farmland in Loudoun County, I am asking Kevin Schmidt of OFP to contact you directly with the latest information. Kevin's email address is kevin.schmidt@vdacs.virginia.gov. Regarding information about existing or proposed agricultural and/or forestal districts or other local programs, existing or proposed, to protect farmlands in the area of the project, I encourage you to contact officials in Loudoun County for this information.

Our agency works closely with the Department of Conservation and Recreation (DCR) in determining potential impact of proposed projects on state endangered and threatened plant and insect species. Through a Memorandum of Agreement between our agencies, DCR reviews these projects and submits comments on our behalf. Consequently, we defer to DCR's response to your inquiry. If after researching its database of natural resources, critical habitats and species locations, DCR finds that a project poses a potential adverse impact on an endangered or threatened plant or insect species, the appropriate information will be referred to this agency for further review and possible mitigation. Please note that requests of this nature should be sent to Rene Hypes at the DCR Division of Natural Heritage Project Review Program. Ms. Hypes can be reached at (804) 371-2708 or rene.hypes@dcr.virginia.gov.

Thank you for your letter. I hope this response to your requests will be helpful as you proceed with your environmental assessment.

Sincerely,

Matthew J. Lohr
Commissioner

cc: Sandra J. Adams, Deputy Commissioner
Andy Alvarez, Director, Division of Consumer Protection
Charles Green, Director, Division of Marketing and Development
Kevin Schmidt, Office of Farmland Preservation

Iosco, Robert C. (VDOT)

From: Creed, Jordan (MRC)
Sent: Tuesday, January 22, 2013 8:57 AM
To: Iosco, Robert C. (VDOT)
Cc: Ellis, Charles (DEQ); Irons, Ellie (DEQ)
Subject: RE: Dulles Air Cargo Scoping
Attachments: VMRC_DullesAirCargoScopingReview.pdf

Attached please find our comments on the proposed project. Please let me know if you have any questions.

All my best,

Jordan Creed
Environmental Engineer
757.759.9753



Virginia Marine Resources Commission
2600 Washington Avenue
3rd Floor
Newport News, Virginia 23607
www.mrc.virginia.gov

From: Watkinson, Tony (MRC)
Sent: Thursday, January 17, 2013 6:43 PM
To: Creed, Jordan (MRC)
Subject: FW: Dulles Air Cargo Scoping

From: Fulcher, Valerie (DEQ)
Sent: Thursday, January 17, 2013 3:17 PM
To: Burstein, Daniel (DEQ); Narasimhan, Kotur (DEQ); Coe, Stephen (DEQ); Rhur, Robbie (DCR); Tignor, Keith (VDACS); Cason, Gladys (DGIF); Watkinson, Tony (MRC); odwreview (VDH); Kirchen, Roger (DHR); Spears, David (DMME); Kline, Everette (DOF); Evans, Gregory (DOF); gmg@novaregion.org; coadmin@loudoun.gov
Cc: Ellis, Charles (DEQ)
Subject: Dulles Air Cargo Scoping

Good afternoon—attached is a request for scoping comments on the following:

Dulles Air Cargo, Passenger, and Metro Access
Highway (Project Number R000-053-032, P101,
UPC 103929, Loudoun County

If you choose to make comments, please send them directly to the project sponsor (see attached) and copy the DEQ Office of Environmental Impact Review. We will coordinate a review when the NEPA document is completed.

If you have any questions regarding this request, please call Charlie at 804/698-4195; email Charles.Ellis@deq.virginia.gov

Valerie

Valerie A. Fulcher, CAP-OM, Executive Secretary Sr.

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

629 E. Main St., 6th Floor

Richmond, VA 23219

804/698-4330

804/698-4319 (Fax)

email: Valerie.Fulcher@deq.virginia.gov



COMMONWEALTH of VIRGINIA

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

Jack G. Travelstead
Commissioner

Douglas W. Domenech
Secretary of Natural Resources

January 22, 2013

Mr. Robert Iosco
Environmental Program Manager
VDOT Northern Virginia District
4975 Alliance Drive
Fairfax, Virginia 22030

Re: Dulles Air Cargo, Passenger and Metro Access
Highway (Project # R000-053-032, P101)

Dear Mr. Iosco:

We have reviewed the above-referenced project agency scoping letter for a proposed limited access highway between Route 50 and Washington Dulles International Airport in Loudoun County, Virginia.

The Marine Resources Commission, pursuant to Chapter 12 of Title 28.2 of the Code of Virginia, is responsible for issuing permits for encroachments in, on, or over state-owned submerged lands throughout the Commonwealth. Accordingly, authorization may be required from the Marine Resources Commission for projects that involve encroachments channelward of ordinary high water along nontidal rivers and streams, and below mean low water in tidal regions. We generally only require permits for encroachments on nontidal streams with a drainage area greater than five square miles or with an average in-stream flow of at least five cubic feet per second.

Based upon the information provided at this stage of planning we cannot determine if the proposed project will fall within our jurisdiction. The general project location is in nontidal-Virginia; therefore, should a waterway with a drainage area greater than five square miles be impacted during the development of the proposed limited access highway, a permit will be required from the Marine Resources Commission.

Thank you for the opportunity to comment on this project. Please do not hesitate to contact us if we may be of further assistance.

Sincerely,

A handwritten signature in black ink that reads "Jordan Creed".

Jordan Creed
Environmental Engineer

An Agency of the Natural Resources Secretariat
www.mrc.virginia.gov

Telephone (757) 247-2200 (757) 247-2292 V/TDD Information and Emergency Hotline 1-800-541-4646 V/TDD

Appendix C: DCR-DNH Database Search

Natural Heritage Resources by County

Your Search Criteria:
 Loudoun County(ies)
 Taxonomic Group:
 Search run: 12-31-2012

Click highlighted scientific names below to go to NatureServe report. [Search Menu](#)

Scientific Name	Common Name	<u>Global Rank</u>	<u>State Rank</u>	<u>Federal Status</u>	<u>State Status</u>	Last Year Observed
Loudoun						
AQUATIC NATURAL COMMUNITY						
NB-Middle Potomac-Catoctin First Order Stream	NB-Middle Potomac-Catoctin First Order Stream	G2G3	S2S3			2011
NP-Middle Potomac-Anacostia-Occoquan Second Order Stream	NP-Middle Potomac-Anacostia-Occoquan Second Order Stream	G2G3	S2S3			2011
NP-Middle Potomac-Anacostia-Occoquan Third Order Stream	NP-Middle Potomac-Anacostia-Occoquan Third Order Stream	G2	S2			2011
NP-Middle Potomac-Catoctin First Order Stream	NP-Middle Potomac-Catoctin First Order Stream	G3G4	S3S4			2011
NP-Middle Potomac-Catoctin Fourth Order Stream	NP-Middle Potomac-Catoctin Fourth Order Stream	G1G2	S1S2			2011
NP-Middle Potomac-Catoctin Second Order Stream	NP-Middle Potomac-Catoctin Second Order Stream	G2G3	S2S3			2011
NP-Middle Potomac-Catoctin Third Order Stream	NP-Middle Potomac-Catoctin Third Order Stream	G2	S2			2011
BIRDS						
<u>Bartramia longicauda</u>	Upland Sandpiper	G5	S1B		LT	1989
<u>Dolichonyx oryzivorus</u>	Bobolink	G5	S1B			2009
<u>Lanius ludovicianus</u>	Loggerhead Shrike	G4	S2B,S3N		LT	June
<u>Rallus elegans</u>	King Rail	G4	S2B,S3N			1989
BIVALVIA (MUSSELS)						
<u>Lampsilis cariosa</u>	Yellow Lampmussel	G3G4	S2			2010
<u>Lasmigona subviridis</u>	Green Floater	G3	S2		LT	2010
CRUSTACEA (AMPHIPODS ISOPODS & DECAPODS)						
<u>Stygobromus biggersi</u>	Bigger's Cave Amphipod	G2G4	S1S2			2000

LEPIDOPTERA (BUTTERFLIES & MOTHS)

<u>Hesperia attalus slossonae</u>	Dotted Skipper	G3G4T3	SH		1940
<u>Speyeria idalia</u>	Regal Fritillary	G3	S1		2006

ODONATA (DRAGONFLIES & DAMSELFLIES)

<u>Stylurus notatus</u>	Elusive Clubtail	G3	S1		1975
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REPTILES

<u>Glyptemys insculpta</u>	Wood Turtle	G3	S2	LT	2010
----------------------------	-------------	----	----	----	------

SIGNIFICANT CAVES

Significant cave	Significant Cave	G3	SNR		2000
------------------	------------------	----	-----	--	------

TERRESTRIAL NATURAL COMMUNITY

Acer (nigrum, saccharum) - Tilia americana / Asimina triloba / Jeffersonia diphylla - Caulophyllum thalictroides Forest	Central Appalachian / Piedmont Basic Mesic Forest (Twinleaf - Blue Cohosh Type)	G4G5	S4		2011
Acer rubrum - Fraxinus americana - Fraxinus nigra - (Betula alleghaniensis) / Veratrum viride - Carex bromoides Forest	Central Appalachian Basic Seepage Swamp	G3	S3		2003
Acer rubrum - Nyssa sylvatica / Ilex verticillata - Vaccinium fuscatum / Osmunda cinnamomea Forest	Central Appalachian Low-Elevation Acidic Seepage Swamp	G2	S2		1994
Acer saccharum - Tilia americana / Staphylea trifolia / Dryopteris marginalis - (Impatiens pallida) Forest	Central Appalachian / Piedmont Low-Elevation Rich Boulderfield Forest	G3G4	S2S3		2011
Betula lenta - Quercus montana / Parthenocissus quinquefolia Woodland	Central Appalachian Acidic Boulderfield Woodland	G4	S3S4		2006
Fraxinus americana - Juniperus virginiana / Opuntia humifusa - Talinum teretifolium - Polygonum tenue Wooded Herbaceous Vegetation	Northern Piedmont Mafic Barren	G1	S1		1991
Hydrangea arborescens / Sedum ternatum - Polypodium virginianum Shrubland	Piedmont / Mountain Mafic / Calcareous Cliff	G3	S1?		2006
Quercus alba - Quercus rubra - Carya alba / Cornus florida / Vaccinium stamineum / Desmodium nudiflorum Forest	Piedmont Acidic Oak - Hickory Forest	G4G5	S4S5		2011
Quercus montana - Quercus rubra / Hamamelis virginiana Forest	Central Appalachian Dry-Mesic Chestnut Oak - Northern Red Oak Forest	G5	S4		2010
Quercus palustris - Quercus bicolor / Viburnum prunifolium / Leersia virginica - Impatiens capensis Forest	Piedmont Upland Depression Swamp (Pin Oak - Swamp White Oak Type)	G2	S1		2011

VASCULAR PLANTS

<u><i>Arabis shortii</i></u>	Short's Rockcress	G5	S2	1995
<u><i>Asclepias purpurascens</i></u>	Purple Milkweed	G5?	S2	2003
<u><i>Buchnera americana</i></u>	Blue-hearts	G5?	S1S2	2004
<u><i>Carex cristatella</i></u>	Crested Sedge	G5	S2	ND
<u><i>Carex decomposita</i></u>	Epiphytic Sedge	G3G4	S2	1953
<u><i>Cerastium arvense ssp. velutinum</i></u>	A Field Chickweed	G5T4?	S2?	2006
<u><i>Echinocystis lobata</i></u>	Wild Mock-cucumber	G5	SH	1934
<u><i>Erythronium albidum</i></u>	White Trout-lily	G5	S2	1999
<u><i>Geum aleppicum</i></u>	Yellow Avens	G5	SH	1936
<u><i>Hasteola suaveolens</i></u>	Sweet-scented Indian-plantain	G4	S2	2010
<u><i>Lythrum alatum</i></u>	Winged-loosestrife	G5	S2	1994
<u><i>Maianthemum stellatum</i></u>	Starflower False Solomon's-seal	G5	S2?	1991
<u><i>Oligoneuron rigidum var. rigidum</i></u>	Stiff Goldenrod	G5T5	S2	1989
<u><i>Platanthera peramoena</i></u>	Purple Fringeless Orchid	G5	S2	1979
<u><i>Poa palustris</i></u>	Fowl Bluegrass	G5	S1S2	1953
<u><i>Prunus nigra</i></u>	Canada Plum	G4G5	S1	2005
<u><i>Quercus prinoides</i></u>	Dwarf Chinquapin Oak	G5	S1	1968
<u><i>Rorippa sessiliflora</i></u>	Stalkless Yellowcress	G5	S1	1999
<u><i>Salix exigua</i></u>	Sandbar Willow	G5	S1	1960
<u><i>Symphotrichum shortii</i></u>	Short's Aster	G5	S1	1995
<u><i>Valeriana pauciflora</i></u>	Valerian	G4	S2	1936
<u><i>Vitis rupestris</i></u>	Sand Grape	G3	S1?	1994

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

Need Additional Information? For more detailed information on locations of Natural Heritage Resources submit an [information request](#).

Want to Contribute? If you have information on locations of natural heritage resources, please fill out and submit a [rare species sighting form](#)

Copyright VA Natural Heritage Program. 2001-2002.

Return to the [Database Search page](#)

Natural Heritage Resources by 6th Order Subwatershed

Your Search Criteria: PL17,
Taxonomic Group:
Search run: 12-31-2012

Click highlighted scientific names below to go to NatureServe report. [Search Menu](#)

Your search did not return any records. Please use your back button to search again.

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

Need Additional Information? For more detailed information on locations of Natural Heritage Resources submit an [information request](#).

Want to Contribute? If you have information on locations of natural heritage resources, please fill out and submit a [rare species sighting form](#)

Copyright VA Natural Heritage Program. 2001-2002.

Return to the [Database Search page](#)

Appendix D: USFWS IPaC Search



U.S. Fish and Wildlife Service

Natural Resources of Concern

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

VIRGINIA ECOLOGICAL SERVICES FIELD OFFICE

6669 SHORT LANE

GLOUCESTER, VA 23061

(804) 693-6694

<http://www.fws.gov/northeast/virginiafield/>

Project Name:

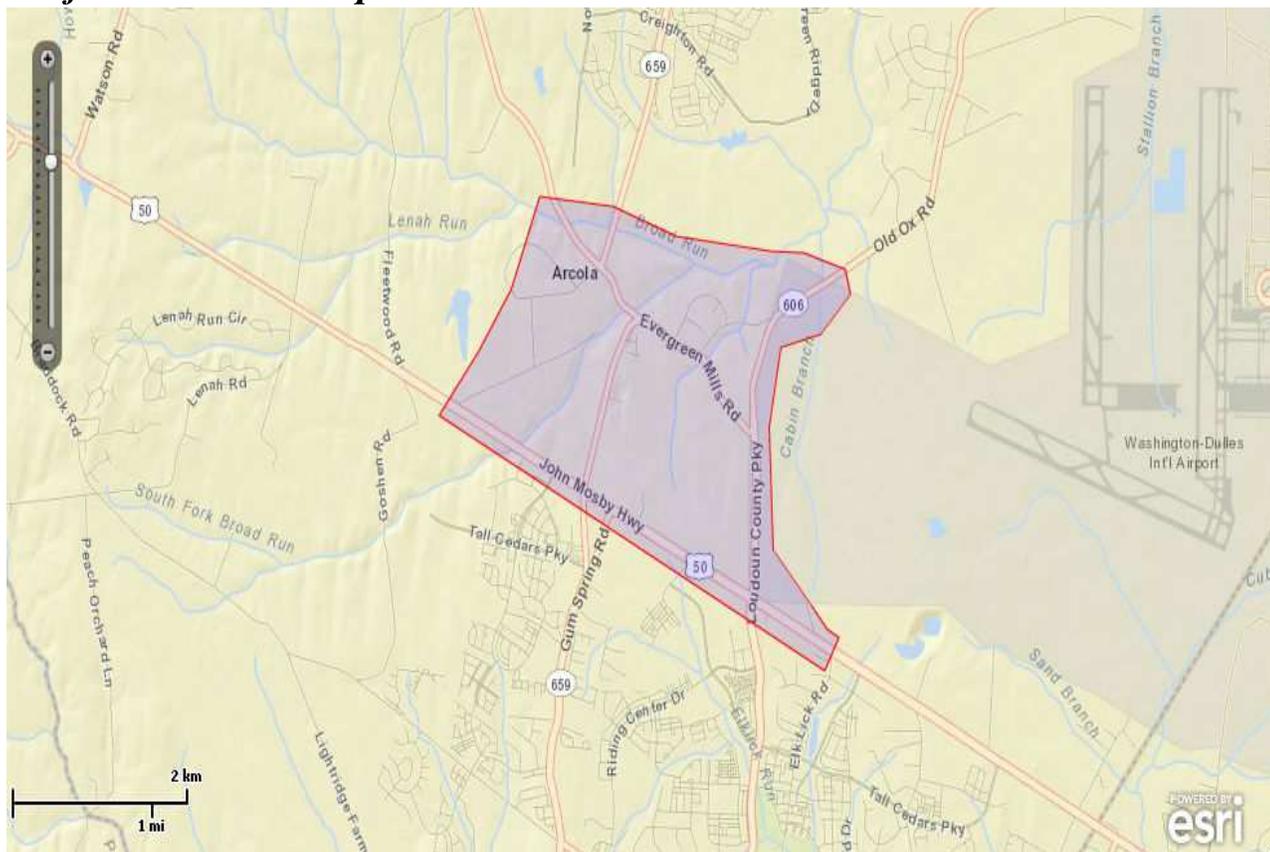
Dulles Air Cargo Passenger and Metro Access Highway



U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Location Map:



Project Location Measurements:

Area : 2710.0 ac.

Length : 10.2 mi.

Project Counties:

Loudoun, VA



Natural Resources of Concern

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-77.5605119 38.9440405, -77.5551989 38.9492472, -77.5509074 38.9541933, -77.5471309 38.9616551, -77.5373462 38.9608476, -77.5289348 38.9584449, -77.5162318 38.9572435, -77.5119403 38.95711, -77.5064471 38.9557752, -77.5057605 38.9537728, -77.5097087 38.9505689, -77.5150302 38.9495009, -77.5165666 38.9431059, -77.5160602 38.9332119, -77.5109103 38.9286717, -77.5088504 38.9268021, -77.5073054 38.9261343, -77.5091937 38.9234634, -77.5605119 38.9440405)))

Project Type:

Transportation

Endangered Species Act Species List ([USFWS Endangered Species Program](#)).

There are no listed species found within the vicinity of your project.

Critical habitats within your project area:

There are no critical habitats within your project area.

FWS National Wildlife Refuges ([USFWS National Wildlife Refuges Program](#)).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds ([USFWS Migratory Bird Program](#)).

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act (16 U.S.C. 703). Bald eagles and golden eagles receive additional protection under the [Bald and Golden Eagle Protection Act](#) (16 U.S.C. 668). The Service's [Birds of Conservation Concern \(2008\)](#) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

Migratory bird information is not available for your project location.



Natural Resources of Concern

NWI Wetlands ([USFWS National Wetlands Inventory](#)).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

The following wetlands intersect your project area:

Wetland Types	NWI Classification Code	Approximate Acres
Freshwater Pond	PUBF	0.098234
Freshwater Forested/Shrub Wetland	PFO1/SS1A	1.858064
Freshwater Pond	PUBFh	0.251793
Freshwater Forested/Shrub Wetland	PFO1A	0.347056
Freshwater Pond	PUBF	0.236698
Freshwater Forested/Shrub Wetland	PFO1/SS1A	1.49172
Freshwater Pond	PUBHh	1.673688
Freshwater Forested/Shrub Wetland	PFO1A	0.511153
Freshwater Forested/Shrub Wetland	PFO1A	2.035878
Freshwater Emergent Wetland	PEM1Ch	0.791768
Freshwater Forested/Shrub Wetland	PFO1A	1.007895
Freshwater Pond	PUBHh	2.816552
Freshwater Pond	PUBHh	1.982731
Freshwater Forested/Shrub Wetland	PSS1A	0.66263
Freshwater Pond	PUBFx	0.225979
Freshwater Forested/Shrub Wetland	PFO1A	0.565871
Freshwater Pond	PUBHx	0.364196
Other	PUSCh	0.322161
Freshwater Forested/Shrub Wetland	PSS1/EM1A	1.659755
Freshwater Pond	PUBHh	4.239336
Freshwater Pond	PUBHh	3.341065



U.S. Fish and Wildlife Service

Natural Resources of Concern

Freshwater Pond	PUBHh	0.842584
Freshwater Forested/Shrub Wetland	PEO1A	0.956379
Freshwater Pond	PUBFx	0.098221
Freshwater Pond	PUBHh	0.741128
Freshwater Pond	PUBHh	0.979406
Freshwater Forested/Shrub Wetland	PSS1A	1.760235
Freshwater Pond	PUBHx	0.653322
Freshwater Emergent Wetland	PEM1A	0.186971
Freshwater Pond	PUBHh	0.88185



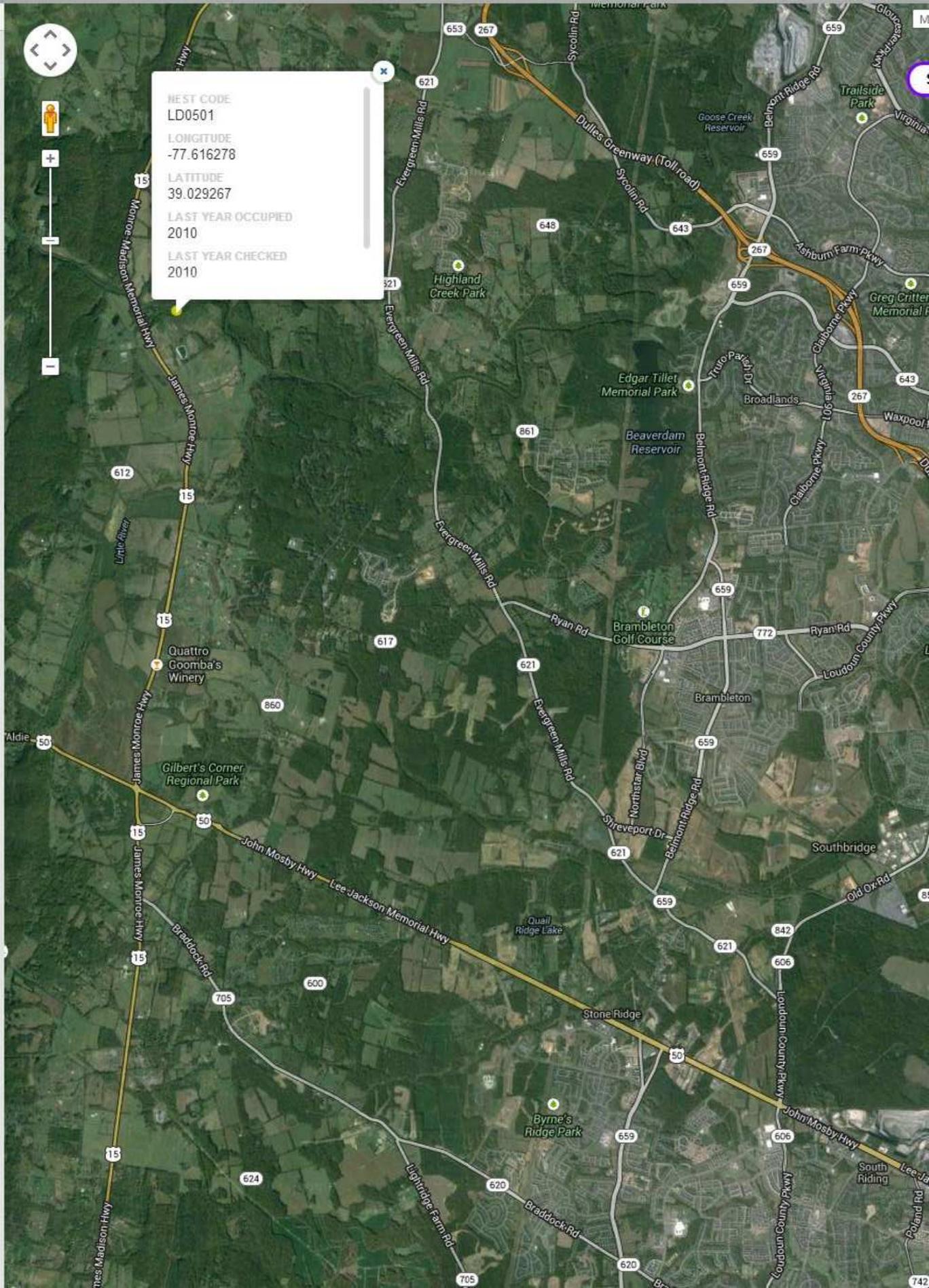
nts
nt data CCB has on
e nest locations in
Data is largely from two
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and spring of all
s of the lower
ke Bay and other
t bodies of water.
ground survey data is
ded.

ts Buffer 330'
ts Buffer 660'

Waterbirds 2003
Waterbirds 2008
ke Bay Herons 2013

ke Bay Osprey Nests
6

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NEST CODE
LD0501

LONGITUDE
-77.616278

LATITUDE
39.029267

LAST YEAR OCCUPIED
2010

LAST YEAR CHECKED
2010

