

LOUDOUN COUNTY

PROJECT NUMBER: R000-053-032, P101; UPC NO. 103929

FEDERAL PROJECT NUMBER: STP-5A01(454)



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

Table of Contents

1.0	INTRODUCTION	1
1.1	PROJECT HISTORY AND OVERVIEW	1
1.1.1	Metrorail Silver Line.....	2
1.1.2	Loudoun County Land Use	2
1.2	PURPOSE AND NEED	3
1.3	DESCRIPTION OF THE STUDY AREA.....	3
1.4	METHODS	4
2.0	ALTERNATIVES CONSIDERED FOR EVALUATION.....	4
2.1	DESCRIPTION OF ALTERNATIVES CARRIED FORWARD	4
2.1.1	Alternative 1: No Build Alternative.....	5
2.1.2	Alternative 2-Proposed New Location.....	5
2.1.3	Alternative 3- Improvements along US Route 50 and Old Ox Road.....	5
2.1.4	Alternative 3A-US Route 50 Elevated.....	6
2.1.5	Alternative 3B – Loudoun County: Countywide Transportation Plan.....	6
3.0	AFFECTED ENVIRONMENT	7
3.1	AQUATIC RESOURCES.....	7
3.1.1	Methodology	8
3.1.2	Affected Environment.....	8
3.1.3	Environmental Consequences	12
3.2	WILDLIFE AND HABITAT.....	14
3.2.1	Methodology	14
3.2.2	Affected Environment.....	15
3.2.3	Environmental Consequences	16
3.3	THREATENED AND ENDANGERED SPECIES.....	17
3.3.1	Methodology	17
3.3.2	Affected Environment.....	18
3.3.3	Environmental Consequences	21
4.0	REFERENCES	23

List of Tables

Table 1: Wetlands Identified within Location Study Corridors.....	10
Table 2: Lengths of Streams Identified within Location Study Corridors.....	11
Table 3: Federal and State Listed Species within a Two-Mile Radius of the Study Corridor	19

List of Figures

Figure 1: Project Study Area.....	3a
Figure 2: CLRP Planned Roadway Improvements and Location Study Corridors.....	5a
Figure 3: Alternative 2 Location Study Corridor and Anticipated Right-of-Way	5b
Figure 4: Alternative 3A Location Study Corridor and Anticipated Right-of-Way	6a
Figure 5: Alternative 3B Location Study Corridor and Anticipated Right-of-Way	6b
Figure 6: Aquatic Resources.....	8a

Appendices

- Appendix A: VaFWIS Search Report
- Appendix B: Agency Correspondence
- Appendix C: DCR-DNH Database Search
- Appendix D: USFWS IPaC Search

1.0 INTRODUCTION

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA) as the lead federal agency, is evaluating solutions to 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 an Environmental Assessment (EA) to analyze the potential social, economic, and environmental consequences associated with the proposed Dulles Air Cargo, Passenger, and Metro Access Highway (DACPMH). 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 facilities and 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). The 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 identified along VA Route 606 in the *Washington Dulles International Airport Access and Parking Study*

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 § 4332(c), as amended, and 23 CFR § 771, respectively.

(MWAA, 2004, p. 16-17). MWAA's 2011 Airport Land Use Plan (ALUP) 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 Dulles Air Cargo, Passenger and Metro Access Highway (DACPMAH) is comprised of three distinct points, listed below and discussed in further detail in *Chapter 1 Purpose and Need*, Sections 1.3.1-1.3.3, of the associated Environmental Assessment document:

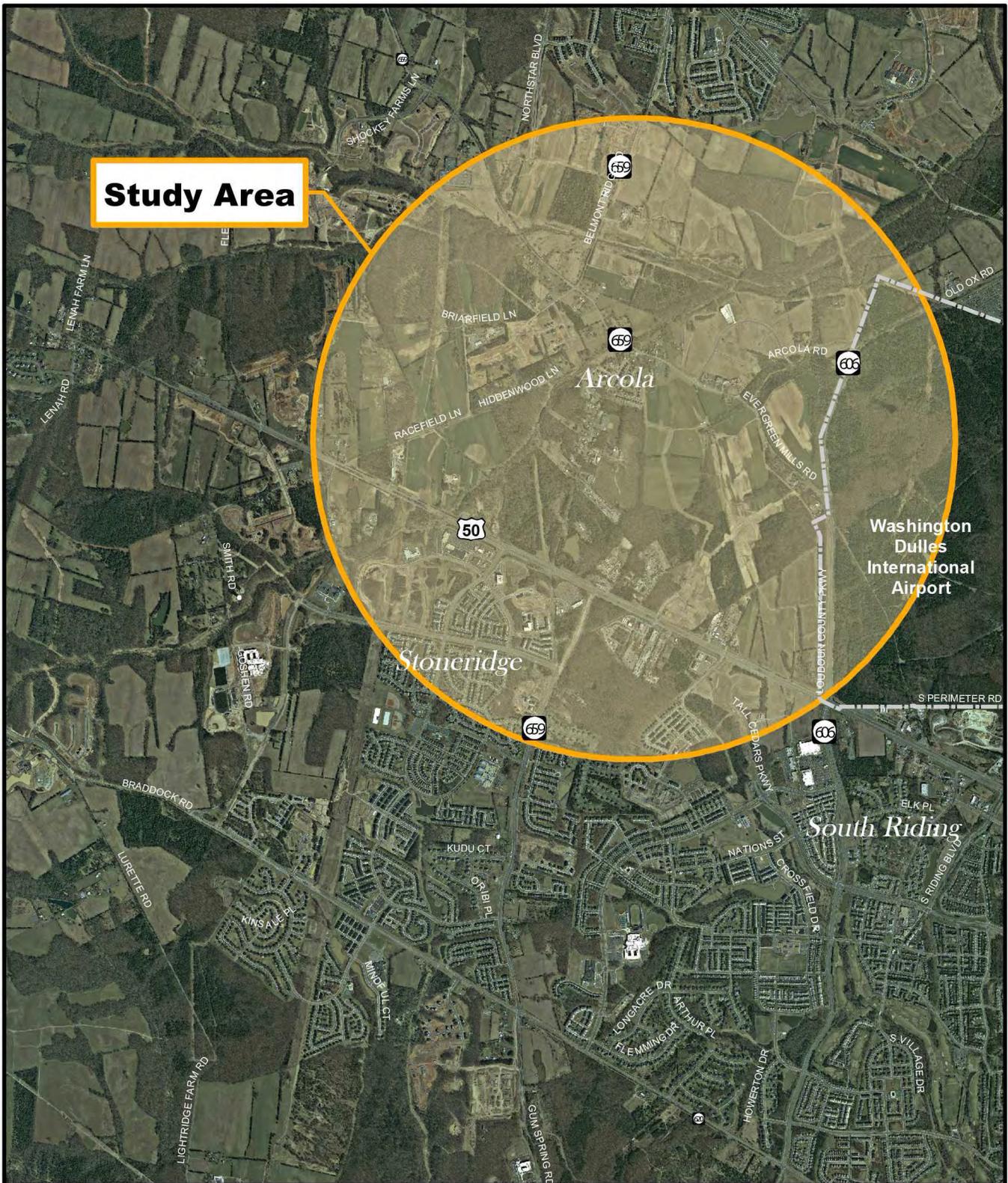
1. Enhance planned western access to Dulles International Airport;
2. Relieve congestion on existing roadways to accommodate for increasing regional housing and commercial development to the west of IAD; and
3. Facilitate intermodal relationships, enabling the efficient movement of people to both IAD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

1.3 DESCRIPTION OF THE STUDY AREA

The project study area for this evaluation 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**, 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, focusing on the Dulles South area located in the southern region of Loudoun County.

In order to identify the environmental resources analyzed in this report, Location Study Corridors for each Build Alternative have been developed to identify the project “footprint”. These Location Study Corridors are substantially larger than the proposed roadway facilities for each Build Alternative, thus the inventory of environmental effects, within each Location Study Corridor, includes a larger magnitude of resources than would potentially be impacted by a Build Alternative, should one be selected. Specifically, the Location Study Corridors used for this environmental analysis are generally 1,000 feet wide along the mainlines, with circular project 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.

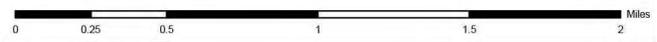
Since the Location Study Corridors are much larger than the proposed roadway facility, the typical sections for each Alternative were used to determine a more refined right-of-way requirement, which was then applied along the entire length of each Location Study Corridor to obtain a conservative estimate for the overall right-of-way requirements. 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 maximum impacts that may occur as opposed to assuming all of the environmental resources inventoried within the Location Study Corridors would be affected. However, these assumptions are not based on detailed design and the anticipated impacts to environmental resources would be subject to change if a Preferred Alternative were to be selected and project design completed.



Study Area

Figure 1
Project Study Area

Source: Loudoun County



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 four alternatives considered for the DACPMAH Location Study include one No Build Alternative and three Build Alternatives. Alternatives development was based on initial project scoping and screening efforts, which included public and agency involvement, consideration of environmental concerns, and preliminary engineering issues. Each alternative was evaluated with respect to its potential impacts and its ability to address the project's purpose and need.

2.1 DESCRIPTION OF ALTERNATIVES CARRIED FORWARD

Alternatives carried forward for study are listed below and discussed in further detail in *Chapter 2 Alternatives Considered*, Section 2.1, of the EA associated with this document.

For the purposes of identifying environmental resources potentially affected by the proposed alternatives, Location Study Corridors have been developed to identify the project "footprint". These Study Corridors are used as study boundaries to help inventory the existing environmental issues associated with the proposed project. This method provides a conservative estimate for maximum impacts that may occur in order to allow for flexibility in final design, eliminating the need for further environmental analysis. However, these assumptions do not imply the selection of a Preferred Alternative nor do they reflect the completion of any design detail.

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)* (**Figure 2**). 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 (MWCOC), the CLRP includes projected transit and traffic, demographics, and air quality conditions through the 2040 horizon year.

Under the No-Build Alternative, no additional roadway infrastructure above and beyond the CLRP projects would be realized to the west of the airport. 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, as depicted in **Figure 3**. 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). From US Route 50, the proposed alternative would extend 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. Proposed Alternative 2 would be a limited access highway, specifically, with no direct access to adjoining properties. 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 consists of making improvements along existing US Route 50 and Old Ox Road (VA Route 606) from the future US Route 50 interchange at Bi-County Parkway to a proposed full-access interchange with Old Ox Road (VA Route 606), the planned Loudoun County Parkway (VA Route 607) extension, and future IAD connector roads. Within the Location Study Corridor for Alternative 3, two

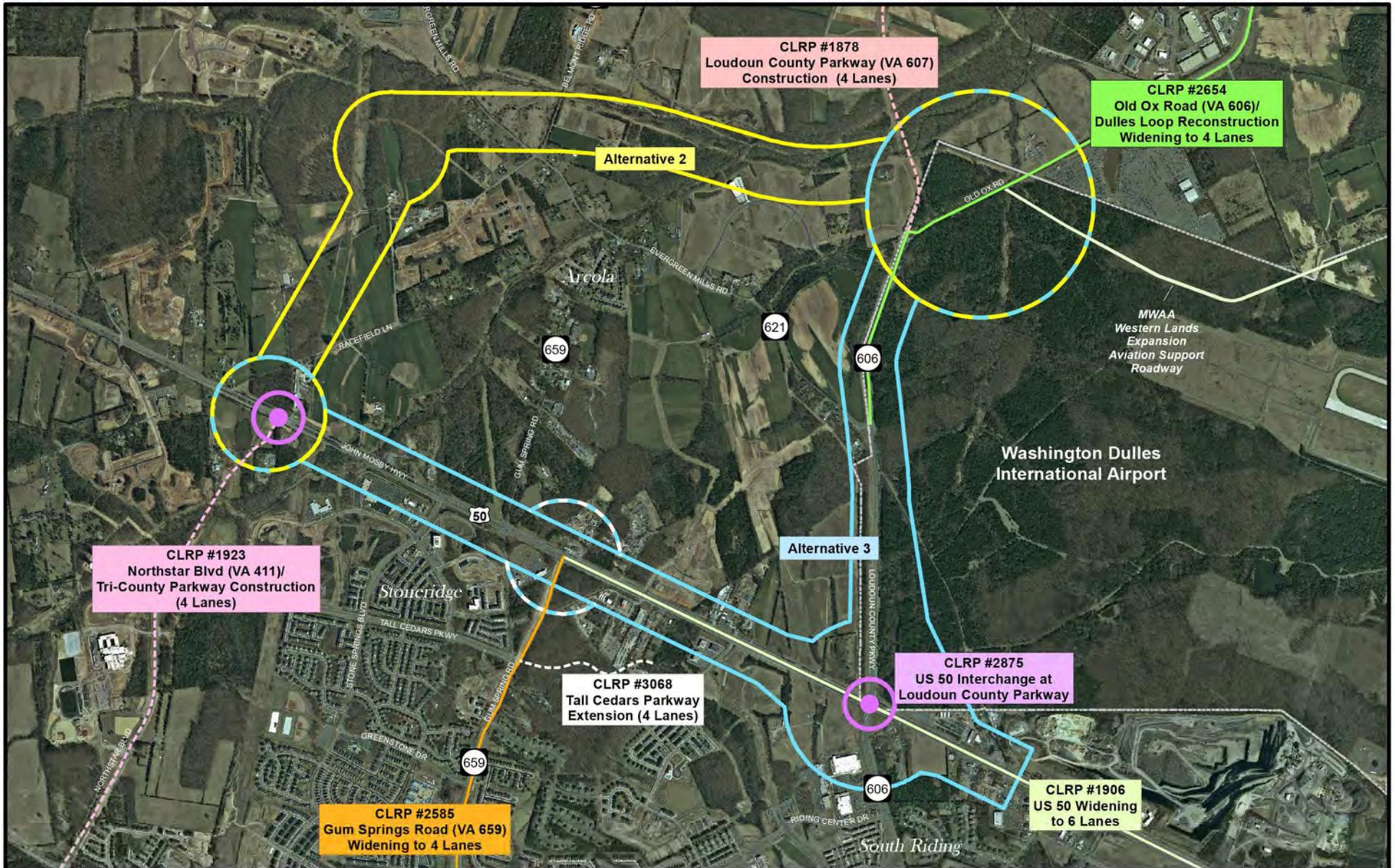
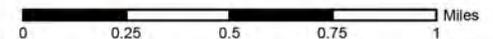


Figure 2
 CLRP Planned Roadway Improvements
 and Location Study Corridors

-  Proposed Interchange
-  Alternative 2
-  Alternative 3A
-  Alternative 3B



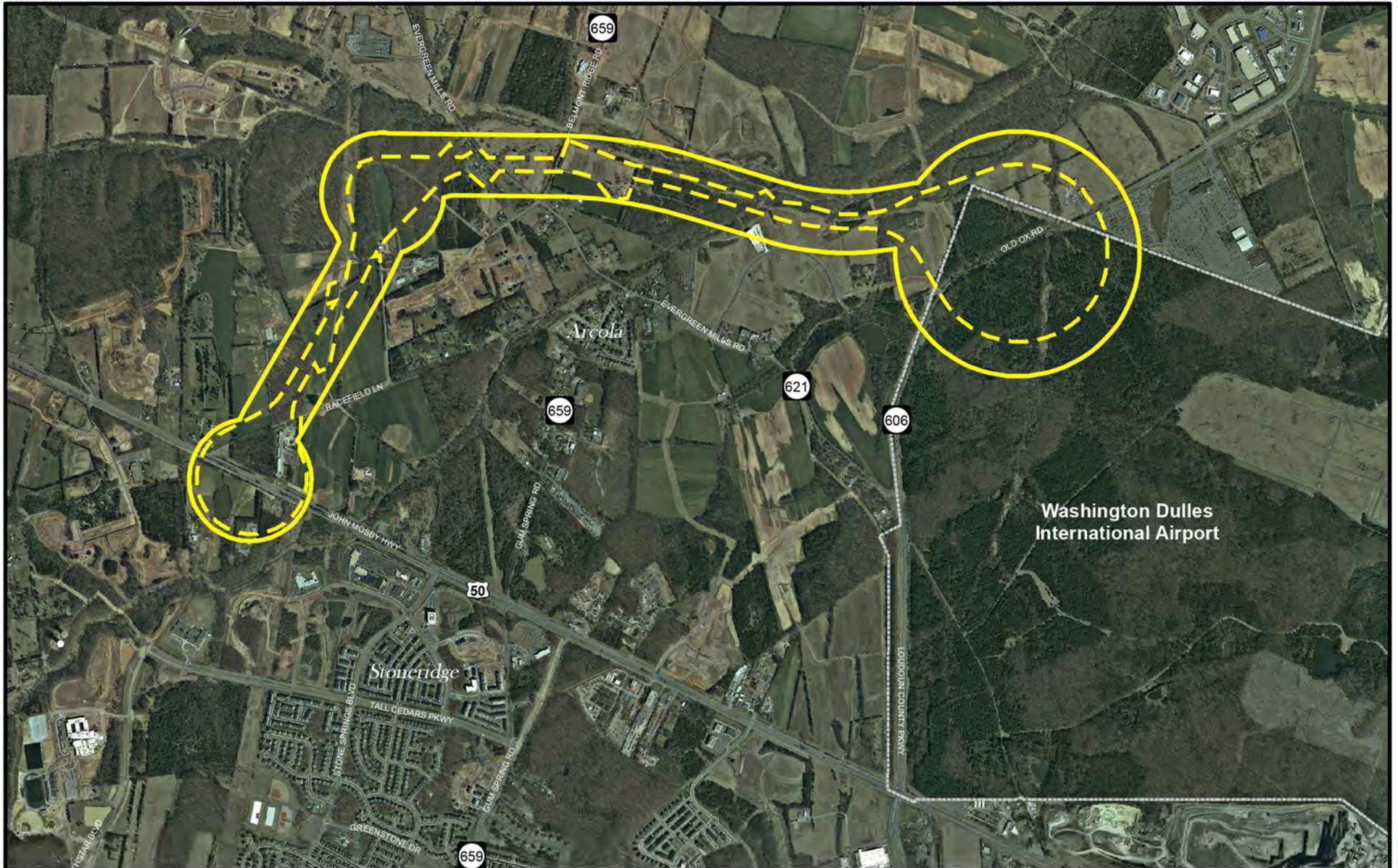
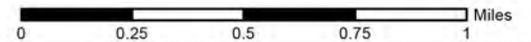


Figure 3
Alternative 2
Location Study Corridor

- Alternative 2
- - - Anticipated Right of Way
- - - Airport Boundary



potential improvements, described below, were studied independently for traffic, noise and air quality; however, the footprint of the Location Study Corridor for Alternative 3 remained identical for the purpose of analyzing direct impacts (i.e. historic properties, natural resources, relocations, land use, etc.).

2.1.4 Alternative 3A-US Route 50 Elevated

Alternative 3A (**Figure 4**) would be a 4-lane divided limited access principal arterial, on an aerial structure within the median of US Route 50. 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 Bi-County Parkway (VA Route 411). Proposed Alternative 3A would provide access to US Route 50 westbound and from US Route 50 eastbound only. 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 future interchange with Loudoun County Parkway, the roadway would travel north over the Loudoun County Parkway and return to grade on the east side of Old Ox Road (VA 606) / Loudoun County Parkway, on Dulles Airport property. Alternative 3A would provide a connection to US Route 50 eastbound and from US Route 50 westbound at this future interchange. From there, the facility would extend parallel to Old Ox Road (VA Route 606) / Loudoun County Parkway approximately 1.7 miles to the future airport connector roads.

2.1.5 Alternative 3B – Loudoun County: Countywide Transportation Plan

Alternative 3B (**Figure 5**) would originate at the planned full-access interchange of US Route 50 and the Bi-County Parkway (VA Route 411). To meet Loudoun County's *Countywide Transportation Plan* (CTP) (Loudoun County, 2012a), 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 to meet the limited access requirements. Access to properties to the south would be provided from Tall Cedars Parkway. Access to properties to the north would be provided from a parallel frontage road accessed from 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.

A full access interchange would be provided at Old Ox Road (VA 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) with the proposed freeway facility. Alternative 3B assumes a frontage road will be provided within the proposed Study 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 future airport connector roads. This proposed alternative would be a six(6) lane

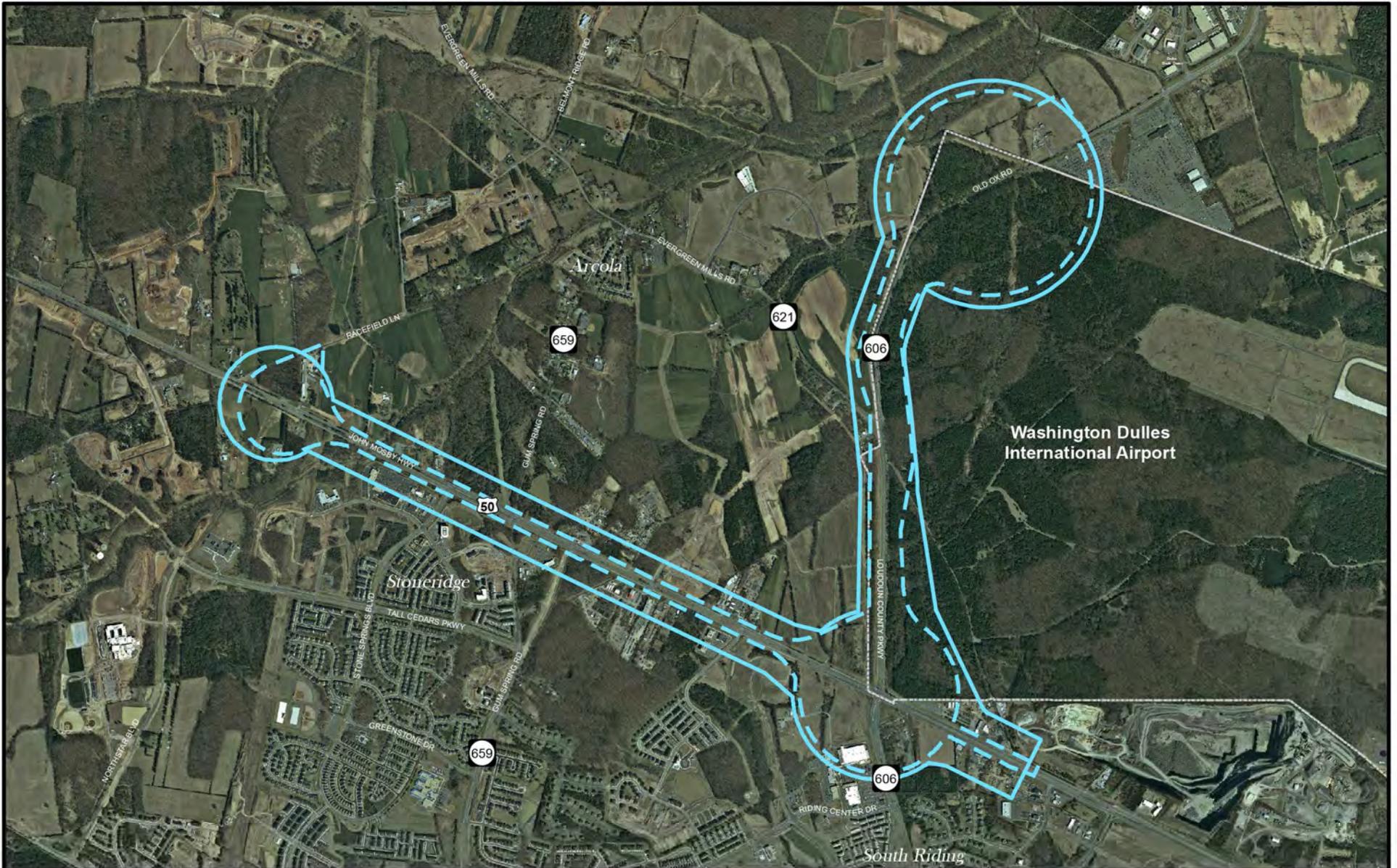
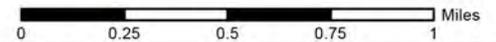


Figure 4
 Alternative 3A
 Location Study Corridor

- Alternative 3A
- - - Anticipated Right of Way
- Airport Boundary



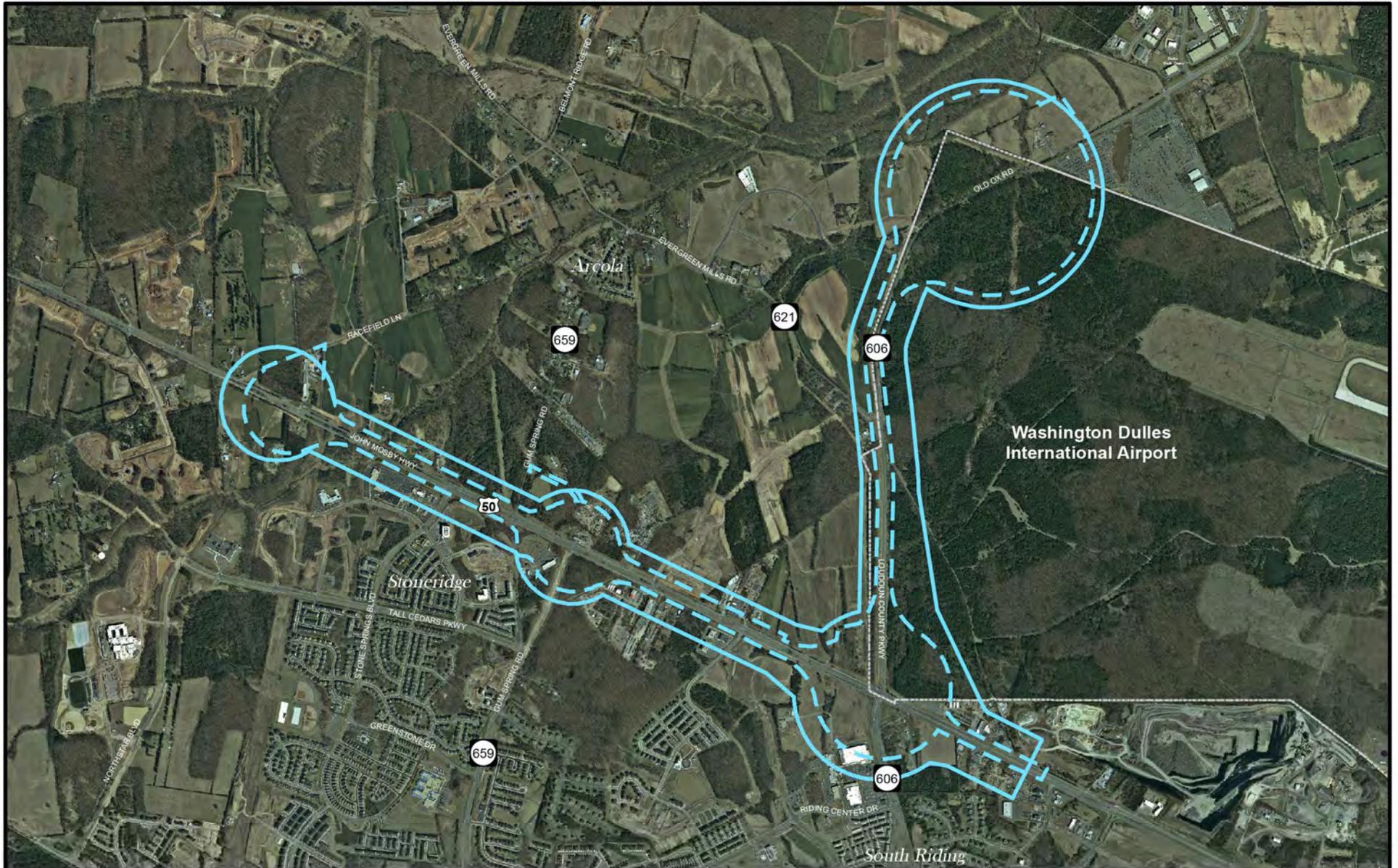


Figure 5
 Alternative 3B
 Location Study Corridor

- Alternative 3B
- - - Anticipated Right of Way
- - - - - Airport Boundary



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.

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.

The Location Study Corridors used in this assessment are approximately 1,000 feet wide along the mainlines, with circular study areas where interchange connections would be made. The radius of the largest circular study area, for the intersection at Old Ox Road is 2,000 feet, while the remaining intersection 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 Location Study Corridor 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 US Environmental Protection Agency (EPA) and the US Army Corps of Engineers (USACE) in accordance with the Clean Water Act (CWA) of 1972, which provides protection for waters of the United States (WOUS) (33 USC §1251 et seq.). WOUS can generally be defined as all navigable waters and waters that have been or can be used for interstate or foreign commerce, their tributaries, and waters that, if impacted could affect the former. WOUS include streams, rivers, lakes, and natural ponds, as well as adjacent wetlands (33 CFR §328.3). Under Section 404 of the CWA (33 USC §1344), the discharge of dredged or fill material into WOUS is unlawful unless appropriate and practicable steps have been taken to avoid, minimize, or compensate for any adverse effects associated with the discharge and a permit is granted. The EPA, USACE, the US Coast Guard (USCG), the Virginia Department of Environmental Quality (DEQ), and the Virginia Marine Resources Commission (VMRC) all issue permits for various activities in, under, and over WOUS.

3.1.1 Methodology

In order to determine the potential effects of the proposed DACPMAH on WOUS and other water bodies, surface waters were identified based on a review of available aerial photography, topographic maps produced by the US Geological Survey (USGS) (USGS, 2010), information obtained from the US Fish and Wildlife (USFWS) National Wetland Inventory (NWI) database (USFWS, 2013), and Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) (FEMA, 2001). The analysis of potential project effects on aquatic resources focused within the Location Study Corridors of each alternative, as previously described in **Section 1.3**.

In February and March 2013, field investigations followed these initial desktop reviews to confirm the existence of potential streams, wetlands, and floodplains within the Location Study Corridors. A formal wetland and stream delineation was not conducted, as a more detailed field review of aquatic resources will be performed during advanced stages of project design. Additional regulatory context and specific methodologies used for the current analyses of aquatic resources are described in the respective discussions of affected environment that follow.

Illustrated in **Figure 6**, an inventory of aquatic resources within each of the Location Study Corridors has been generated to allow for a relative comparison among the Build Alternatives of the potential impacts related to the DACPMAH. The Study Corridors are substantially larger than the proposed roadway facility, thus the inventory includes a greater magnitude of resources than would potentially be impacted by a Build Alternative, should one be selected. The final design and permitting process will include the completion of detailed delineations and assessments of streams and wetlands, to allow for a precise determination of impacts and mitigation requirements. The permitted impacts would be substantially reduced from the magnitude of resources identified in the inventory of Location Study Corridors.

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 DACPMAH Location Study Corridors 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, the Location Study Corridors for Alternatives 2, 3A, and 3B 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

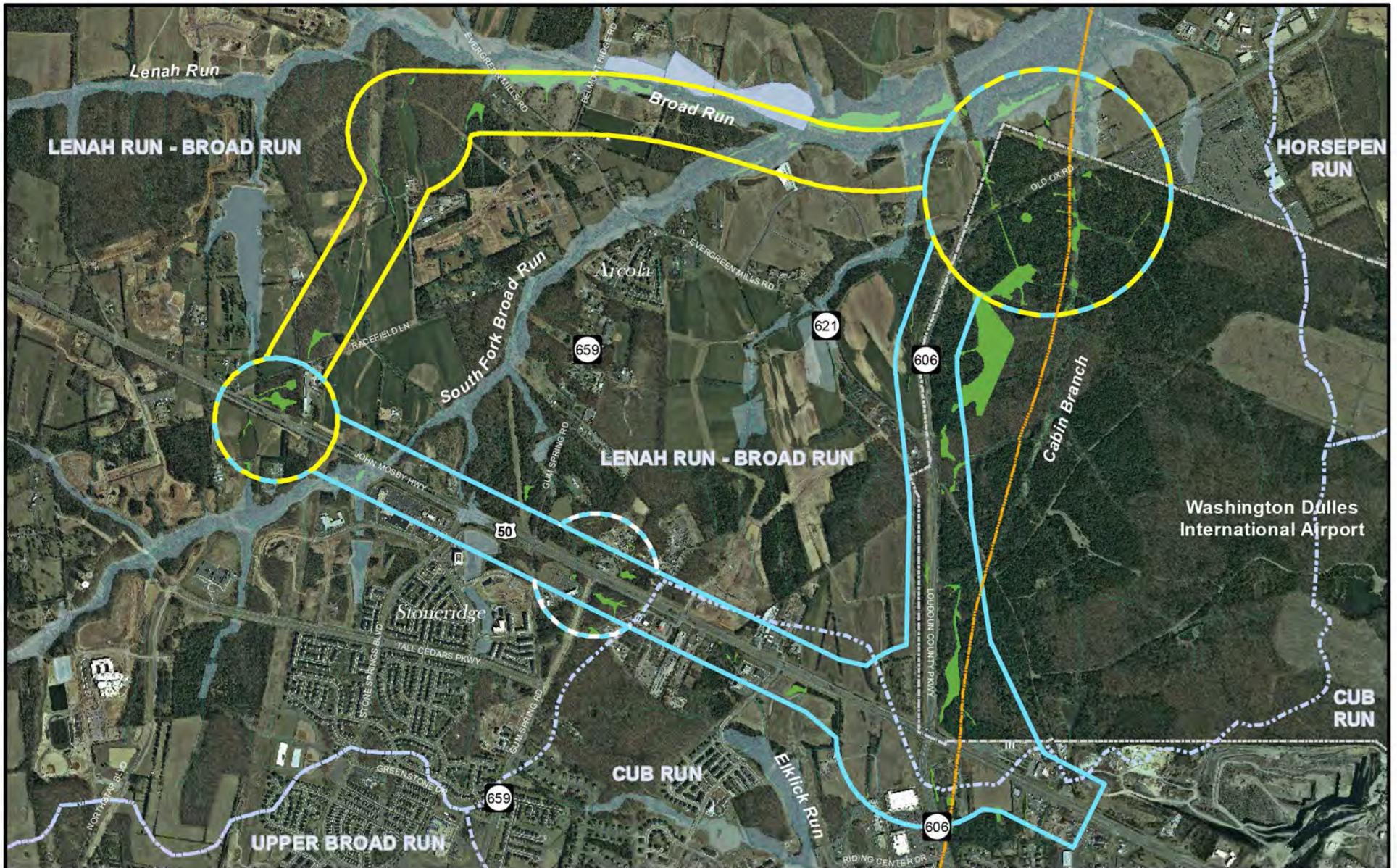
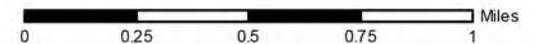


Figure 6

Aquatic Resources within the Location Study Corridors

- | | |
|---------------------|---------------------|
| Stream | Geologic Fault Line |
| Watershed Boundary | Alternative 2 |
| Wetland | Alternative 3A |
| 100 Year Floodplain | Alternative 3B |
| Mitigation Area | |



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 and 3B intersects 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 the Location Study Corridor for Alternative 3 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 the Location Study Corridors. 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).

Within the combined Location Study Corridors for the proposed DACPMAH, a total of 97 acres of wetlands have been identified. All of the wetlands included within the Study Corridors have been identified under the Palustrine System, which includes nontidal wetlands dominated by trees, shrubs, and herbaceous vegetation. Of these wetland areas within the Location Study Corridors, approximately 23 acres are classified as Palustrine Freshwater Emergent (PEM) wetlands, 70 acres are considered Palustrine Freshwater Forested (PFO) wetlands, just under two acres combine both PEM and PFO wetland cover, and three acres are classified as Palustrine Freshwater Scrub-Shrub (PSS). **Table 1**

provides the breakdown of various wetland distinctions within the Locations Study Corridors and a description of each follows.

Table 1: Wetlands Identified within Location Study Corridors

Wetland Class	Description	Wetland Area (Acres)		
		Alt. 2	Alt. 3A	Alt. 3B
PEM	Palustrine Freshwater Emergent Wetland	11.6	5.5	5.7
PFO	Palustrine Freshwater Forested	18.2	25.5	25.9
PEM/PFO	Palustrine Freshwater Emergent Forested	1.7	0.0	0.0
PSS	Palustrine Freshwater Scrub-Shrub	0.5	1.2	1.5
Total Wetlands		32.1	32.2	33.1
Anticipated Impact to Wetlands*		10.3	17.2	16.1

*Based on professional engineering judgment and predicted right of way requirements. Assumes 10% of right-of-way acquisition at Bi-County Parkway / US Route 50 interchange as well as Loudoun County Parkway / US Route 50 interchange and excludes MWAA owned property along VA Route 606. Subject to change upon development of project design.

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 DACPMAH Location Study Corridors 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 Location 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 corner of the DACPMAH Location Study Corridors, 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 the Location Study Corridor for 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 Location Study Corridors 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 Location Study Corridors. In total, approximately 81,321 linear feet of streams and 21 acres of ponds are located within the Location Study Corridors. The named streams include Broad Run, South Fork Broad Run, Cabin Branch, and Elklick Run. The location of each stream crossing within the Study Corridors is illustrated in **Figure 6** and the estimated linear feet of the named streams, and their associated tributaries, within each alternative Study Corridor is tabulated in **Table 2**, which follows.

Table 2: Lengths of Streams Identified within Location Study Corridors

Streams	Stream Lengths in Location Study Corridors (linear feet)		
	Alt. 2	Alt. 3A	Alt. 3B
Broad Run	21,448	9,634	9,694
Cabin Branch	8,278	12,939	12,939
Elklick Run	0	3,195	3,195
Total Streams	29,725	25,768	25,828
Wild and Scenic Rivers	0	0	0
Virginia Scenic Rivers	0	0	0

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 in the Location Study Corridors. Likewise, none of the

named streams within the DACPMAH Location Study Corridors 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 Location Study Corridors. Specifically, the Alternative 2 Study Corridor 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, the Alternative 3 Study Corridor encompasses a portion of the 100-year floodplain (approximately 58.2 acres) for South Fork Broad Run and one of its small unnamed tributaries.

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 DACPMAH Location Study Corridors, 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

Within the anticipated right-of-way area for each Build Alternative, the potential impacts to wetlands are drastically reduced from the overall wetland areas identified in each Location Study Corridor. Approximately 10.3 total acres of wetlands were located within the right-of-way for Alternative 2; 17.2

acres were identified within the right-of-way for 3A; and 16.1 acres are included in the right-of-way requirements for Alternative 3B. In addition, an approximately 6.3 acre mitigation site is encompassed by the Location Study Corridor for Alternative 2.

If a preferred Build Alternative is selected, all available measures will be taken to avoid and minimize wetland impacts. These measures could include design modifications such as minor alignment shifts, use of steeper fill slopes, and changes in roadway cross sections. 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.). Wetland compensation can take several forms, ranging from construction of new wetlands to enhancement of existing wetlands.

Streams

Due to the linear nature of the Location Study Corridors, 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 current Location Study Corridors contain similar stream lengths for each 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 Location Study Corridor. approximately 8,700 linear feet of streams are within the right-of-way for Alternative 2; 11,423 linear feet of streams are within the right-of-way for 3A; and 12,065 linear feet are included in the right-of-way requirements for Alternative 3B.

All practicable measures would be taken to avoid and minimize impacts to streams, and other water bodies within the Location Study Corridors. Minimization measures could include modifications during engineering and design such as minor alignment shifts to avoid or minimize impacts, the use of bridges instead of culverts, and the use of retaining walls. VDOT will compensate for unavoidable impacts to streams through the purchase of stream mitigation credits or conducting stream restoration, as part of the permitting process with the regulatory agencies.

Floodplains

Only 26.5, 31.1, and 29.1 acres of floodplains are expected to be crossed by the anticipated right-of-way requirements associated with Alternative 2, 3A and 3B, respectively. As the project moves forward in design, every effort will be made to avoid or minimize any potential impacts and 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 applicable sections of VDOT Road and Bridge Specification 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. 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 found within the Study Corridors. 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.

Extensive development characterizes the majority of the terrestrial area surrounding the proposed project. 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 project Location Study Corridors 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 the Study Corridor, 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. The Alternative 2 Location Study Corridor contains approximately 346.09 acres of forested habitat, including both the southwest and northeast interchanges. Alternative 3A Location Study Corridor contains approximately 420.54 acres of forested habitat, and 3B approximately 434.53 acres 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 March 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 Study Corridor is 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 the 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 March 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 as B5 site, which indicates 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 Location Study Corridors.

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, and 3B), minor impacts to wildlife and habitat would be anticipated due to potential right of way and construction requirements. Based on professional engineering judgment and predicted right-of-way requirements for the proposed DACPMAH, approximately 166.6, 212.4, and 195.5 acres are anticipated to potentially 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. Plant species cleared from the study area would be gradually repopulated from other nearby individuals, and animal species which leave the impacted area during construction would likely return when construction is complete. 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 March and April 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 Loudoun County. This work was followed by further agency coordination, reviews of mapping resources, and site reconnaissance.

3.3.2 Affected Environment

According to a March 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 Location Study Corridor, 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 Loudon County was searched in March 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. These include 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 March 2013 search of the VaFWIS database indicated that the project is not located within a Bald Eagle Concentration Area or Roost. The database identified no anadromous fish waters, no bald eagle nests, and no trout streams within a 2-mile radius of the study area. 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) species designated State Endangered (SE), and seven (7) species with a State Threatened (ST) designation known or likely to be found within or adjacent to the study area. These statuses are defined as follows:

- **State Endangered 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.
- **State Threatened 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.

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.

4.0 REFERENCES

- Board of Supervisors (2011, March 15 Amended). *Loudoun County Revised General Plan*. Leesburg, VA: Loudoun County Government. Retrieved March 20, 2013 from http://www.loudoun.gov/documents/43/724/726/727/Revised%20General%20Plan%20Amended%20through%2003-15-2011_201210050943266741.pdf.
- Board of Supervisors (2012, May 2 Amended). *2010 Revised Countywide Transportation Plan*. Leesburg, VA: Loudoun County Government. Retrieved February 26, 2013 from: http://www.loudoun.gov/documents/43/724/737/CTP%20amended%20for%20web_201205221331533451.pdf.
- Board of Supervisors (2012, November 7). *Economic Development Committee Report / Air Cargo – Support for North-South Corridor*. Leesburg, VA: Loudoun County Government. Retrieved February 26, 2013 from http://www.loudoun.gov/documents/11/1336/7529/10919/Item%2021d%20-Air%20Cargo-%20Support%20for%20Southern%20Corridor_201211050705343867.pdf.
- Cowardin, Lewis M., Carter, V., Golet, F.C., & LaRoe, E.T. (1979). *Classification of Wetlands and Deepwater Habitats of the United States*. Washington, DC: US Department of the Interior, Fish and Wildlife Service. Retrieved February 22, 2013 from: <http://www.npwrc.usgs.gov/resource/wetlands/classwet/>.
- Department of Conservation and Recreation (2012, March 13). *Virginia Scenic Rivers*. Richmond, VA: Department of Conservation and Recreation, Recreation Planning. Retrieved February 26, 2013 from: http://www.dcr.virginia.gov/recreational_planning/documents/srlist.pdf.
- Department of Environmental Quality (2012, March 26). Draft 2012 305(b)/305(d) Water Quality Assessment Integrated Report. Richmond, VA: Department of Environmental Quality, Office of Water Monitoring and Assessment. Retrieved February 27, 2013 from: <http://www.deq.state.va.us/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/2012305b303dIntegratedReport.aspx>.
- Environmental Laboratory (January, 1987). *Corps of Engineers Wetland Delineation Manual*. Vicksburg, MS: US Army Corps of Engineers, Waterways Experiment Station. Retrieved from <http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf>.
- Federal Aviation Administration Metropolitan Washington Airports. (1985, September). *Master Plan Update: Washington Dulles International Airport*. San Francisco, CA: Peat, Marwick, Mitchell & Co., Airport Consulting Services.
- Federal Emergency Management Agency (2001, July 5). *Flood Rate Insurance Map: Loudoun County, Virginia and Incorporated Areas*. Map Number 51107C0360 D. Washington, DC: Federal Emergency Management Agency.

- Federal Transit Administration (2004, December). *Dulles Corridor Metrorail Project Final Environmental Impact Statement and Section 4(f) Evaluation*. Retrieved April 12, 2013 from: http://www.dullesmetro.com/community/impact_report.cfm.html.
- Loudoun County Department of Management (2012, September 26). *Loudoun County Round 8.1 MWCOG Cooperative Forecasts: Planning Subarea File Layout*. Leesburg, VA: Loudoun County Department of Planning. Retrieved March 25, 2013 from: http://www.loudoun.gov/documents/43/10332/10341/10358/Loudoun%20County%20Planning%20Subarea%20Estimates%202000%20to%202012%20-%20Sept26_2012_201211131403250753.pdf.
- Loudoun County Department of Transportation and Capital Infrastructure. (2013, February). *90-Day passenger counts-Loudoun County to Rosslyn, Pentagon & Washington DC*. Leesburg, VA. Retrieved April 12, 2013 from: <http://www.loudoun.gov/index.aspx?nid=229>
- Metropolitan Washington Airports Authority (2004, December). *Washington Dulles International Airport Access and Parking Study Final Report*. Washington, DC: Planning Department, Engineering Division.
- Metropolitan Washington Airports Authority (2009, August 29). *Initial Investment for Development of Western IAD (Northwest Area Public Access Roadway)*. Presentation.
- Metropolitan Washington Airports Authority (2012, December 6). *Dulles International Airport: Economic Engine for Virginia*. Presentation at 2012 Governor's Transportation Conference. Retrieved January 15, 2013 from <http://www.dmv.virginia.gov/vatransportationconference/presentations/thursday/session5b/dulles.pdf>.
- Metropolitan Washington Airports Authority (2012, December). *Dulles 50th Anniversary*. Retrieved January 14, 2013 from http://www.mwaa.com/file/Dulles_50th_8-pager.pdf.
- Metropolitan Washington Airports Authority, Fairfax County, and Loudoun County. (2012, October 5). *Fiscal Years 2013 & 2014 Letter of Interest to US Department of Transportation TIFIA Credit Program*. Letter to Ray LaHood. Retrieved April 12, 2013 from: http://www.loudoun.gov/documents/45/2218/TIFIA%20Letter%20of%20Interest%2010-05-12_201210051421272814.pdf
- Metropolitan Washington Airports Authority. (2013, February 15). *Environmental Assessment of Dulles Air Cargo, Passenger, and Metro Access Highway: Road Network Plan and Implementation at Washington Dulles International Airport*. Letter to Thomas W. Fahrney.
- National Park Service (2009, February 27). *National Rivers Inventory – Virginia Segments*. Philadelphia, PA: National Park Service, Rivers, Trails & Conservation Assistance. Retrieved February 26, 2013 from: <http://www.nps.gov/nrcr/programs/rtca/nri/states/va.html>.
- Ricondo & Associates, Inc. (2010, January). *Washington Dulles International Airport: Cargo Area Study*. Washington, DC: Metropolitan Washington Airports Authority.

Transportation Planning Board (2012, July 18). *The Financially Constrained Long-Range Transportation Plan for the National Capital Region*. Retrieved on March 8, 2013 from <http://www.mwcog.org/clrp/>.

United States Environmental Protection Agency (April 16, 2013). *Summary of the Endangered Species Act*. Washington, DC: US Environmental Protection Agency. Retrieved March 08, 2013 from: <http://www2.epa.gov/laws-regulations/summary-endangered-species-act>.

US Fish and Wildlife Service (2013, March 22). *National Wetlands Inventory-Wetlands Mapper*. Washington, DC: US Department of the Interior, US Fish and Wildlife Service. Accessed February 28, 2013 from: <http://www.fws.gov/wetlands/Wetlands-Mapper.html>.

US Fish and Wildlife Service (2013, March 10). *Information, Planning, and Conservation System*. Washington, DC: US Department of the Interior, US Fish and Wildlife Service. Accessed March 10, 2013 from: <http://ecos.fws.gov/ipac/>.

US Geological Survey (2010). *Arcola Quadrangle, Virginia, 7.5-minute series*. Reston, VA: US Department of the Interior, US Geological Survey.

US Geological Survey (2010). *Herdon Quadrangle, Virginia, 7.5-minute series*. Reston, VA: US Department of the Interior, US Geological Survey.

US Geological Survey (2013). National Map Viewer. Reston, VA: US Department of the Interior, US Geological Survey. Accessed February 26, 2013 from: <http://viewer.nationalmap.gov/viewer/>.

Virginia Department of Conservation and Recreation (2013). *Virginia Natural Heritage Database Search of Loudoun County*. Accessed April 17, 2013 from: <https://vanhde.org/species-search>.

Virginia Department of Game and Inland Fisheries (2013). *Virginia Fish and Wildlife Information Service (VaFWIS)*. Accessed April 17, 2013 from: <http://vafwis.org/fwis/index.asp>.

Appendix A: VaFWIS Search Report

Observations reported or potential habitat occurs within a **3 mile radius around point 38,57,04.6 -77,31,48.8**
in **107 Loudoun County, VA**

[View Map of Site Location](#)

462 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 25) (25 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name
060006	SE	II	Floater, brook	Alasmidonta varicosa
030062	ST	I	Turtle, wood	Glyptemys insculpta
040129	ST	I	Sandpiper, upland	Bartramia longicauda
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus
040379	ST	I	Sparrow, Henslow's	Ammodramus henslowii
100155	FSST	I	Skipper, Appalachian grizzled	Pyrgus wyandot
060081	ST	II	Floater, green	Lasmigona subviridis
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans
100248	FS	I	Fritillary, regal	Speyeria idalia idalia
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus
100154	FS	II	Butterfly, Persius duskywing	Erynnis persius persius
100166	FS	II	Skipper, Dotted	Hesperia attalus slossonae
060029	FS	III	Lance, yellow	Elliptio lanceolata
030063	CC	III	Turtle, spotted	Clemmys guttata
030012	CC	IV	Rattlesnake, timber	Crotalus horridus
040372		I	Crossbill, red	Loxia curvirostra
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius
040319		I	Warbler, black-throated green	Dendroica virens
040306		I	Warbler, golden-winged	Vermivora chrysoptera
040052		II	Duck, American black	Anas rubripes
040213		II	Owl, northern saw-whet	Aegolius acadicus
040105		II	Rail, king	Rallus elegans
040320		II	Warbler, cerulean	Dendroica cerulea

040304		II	Warbler, Swainson's	Limnothlypis swainsonii
040266		II	Wren, winter	Troglodytes troglodytes

To view **All 462 species** [View 462](#)

* 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=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams

N/A

Impediments to Fish Passage (1 records)

[View Map of All Fish Impediments](#)

ID	Name	River	View Map
1233	QUAIL RIDGE DAM	TR-BROAD RUN	Yes

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 (10 Reaches)

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

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
Beaverdam Creek (20700081)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes
Broad Run (20700081)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes
Cabin Branch (20700081)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes
Elklick Run (20700101)	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
Sand Branch (20700101)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes
Stallion Branch (20700081)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Virginia Breeding Bird Atlas Blocks (8 records)

[View Map of All Query Results](#)
[Virginia Breeding Bird Atlas Blocks](#)

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	

50204	Arcola, CE	41		IV	Yes
50203	Arcola, CW	44		IV	Yes
50202	Arcola, NE	43		IV	Yes
50201	Arcola, NW	45		IV	Yes
50206	Arcola, SE	72	ST	I	Yes
51203	Herndon, CW	29		IV	Yes
51201	Herndon, NW	47	ST	I	Yes
51205	Herndon, SW	49		IV	Yes

Public Holdings:

N/A

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
107	Loudoun	438	FSST	I

USGS 7.5' Quadrangles:

Arcola
Herndon

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
PL14	Goose Creek-Big Branch	57	FSST	I
PL17	Broad Run-Lenah Run	49	FSST	I
PL18	Horsepen Run	60	FSST	I
PL42	Upper Bull Run	67	FSSE	I
PL45	Cub Run	68	FSST	I

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 hedgesettle (*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 NEPAssist 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

cc: 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.

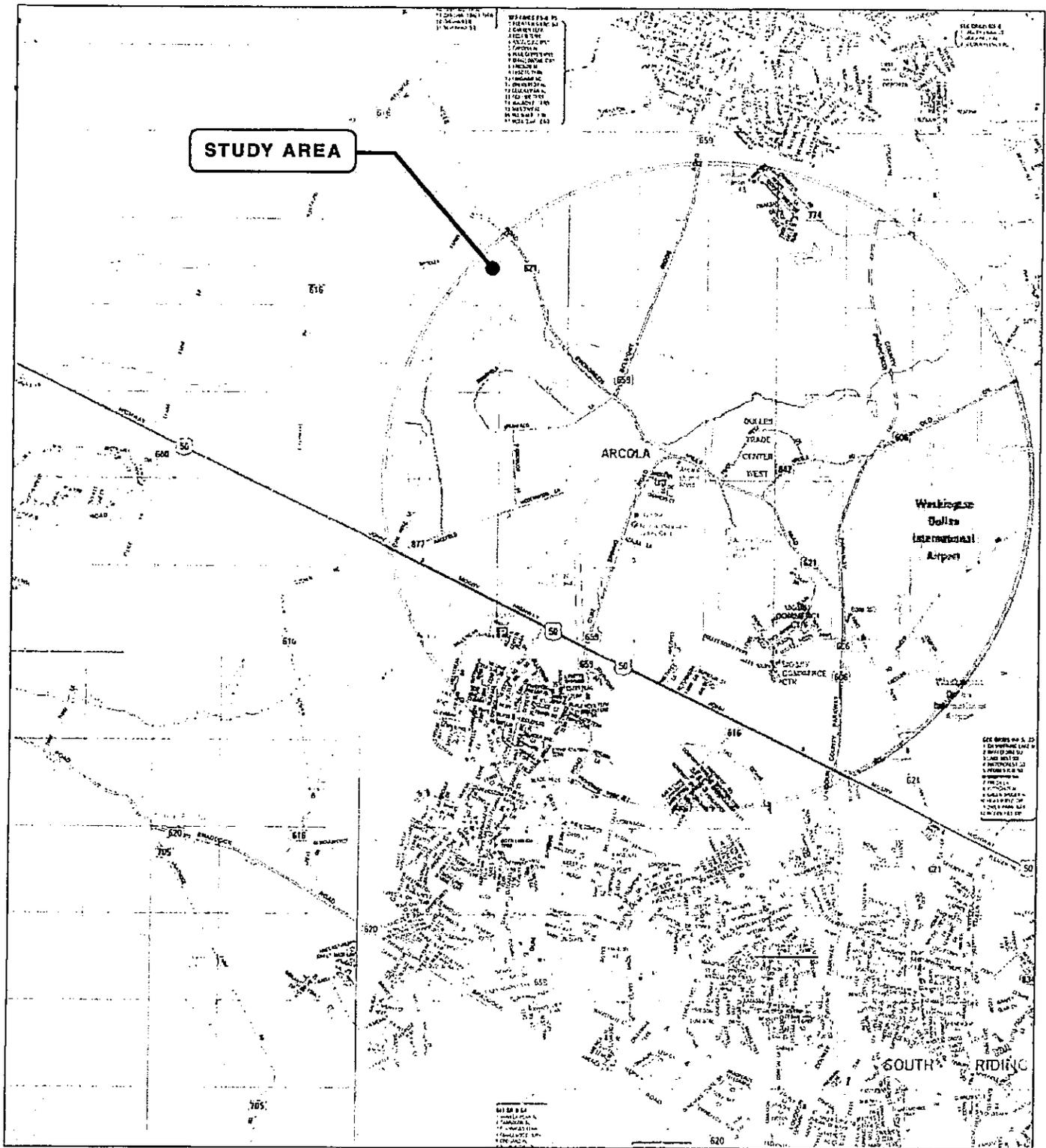
Sincerely,



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

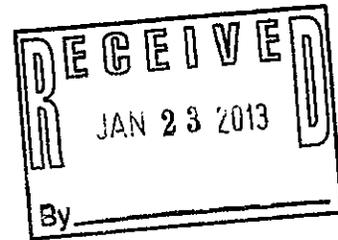
PO Box 1163, Richmond, Virginia 23218

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.

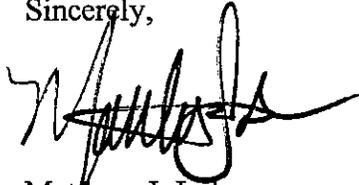
You ask in your letter that VDACS share with your agency information or concerns about historic properties that could be affected by your project and, if VDACS wishes to participate further in consultation to identify historic properties to assist in assessing project effects and to help avoid, minimize 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,

A handwritten signature in black ink, appearing to read 'Matthew J. Lohr', written over a horizontal line.

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

Your Criteria

Taxonomic Group: Select All

Global Conservation Status Rank: Select All

State Conservation Status Rank: Select All

Federal Legal Status: Select All

State Legal Status: Select All

County: Loudoun

Search Run: 5/3/2013 15:09:50 PM

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences
Loudoun BIRDS						
Upland Sandpiper	Bartramia longicauda	G5	S1B		LT	4
Loggerhead	Lanius	G4	S2B,S3N		LT	30

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences
Shrike	Iudovicianus					
BIVALVIA (MUSSELS)						
Green Floater	Lasmigona subviridis	G3	S2		LT	64
REPTILES						
Wood Turtle	Glyptemys insculpta	G3	S2		LT	43

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.

For Additional Information on locations of Natural Heritage Resources please submit an [information request](#).

To Contribute information on locations of natural heritage resources, please fill out and submit a [rare species sighting form](#).

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:

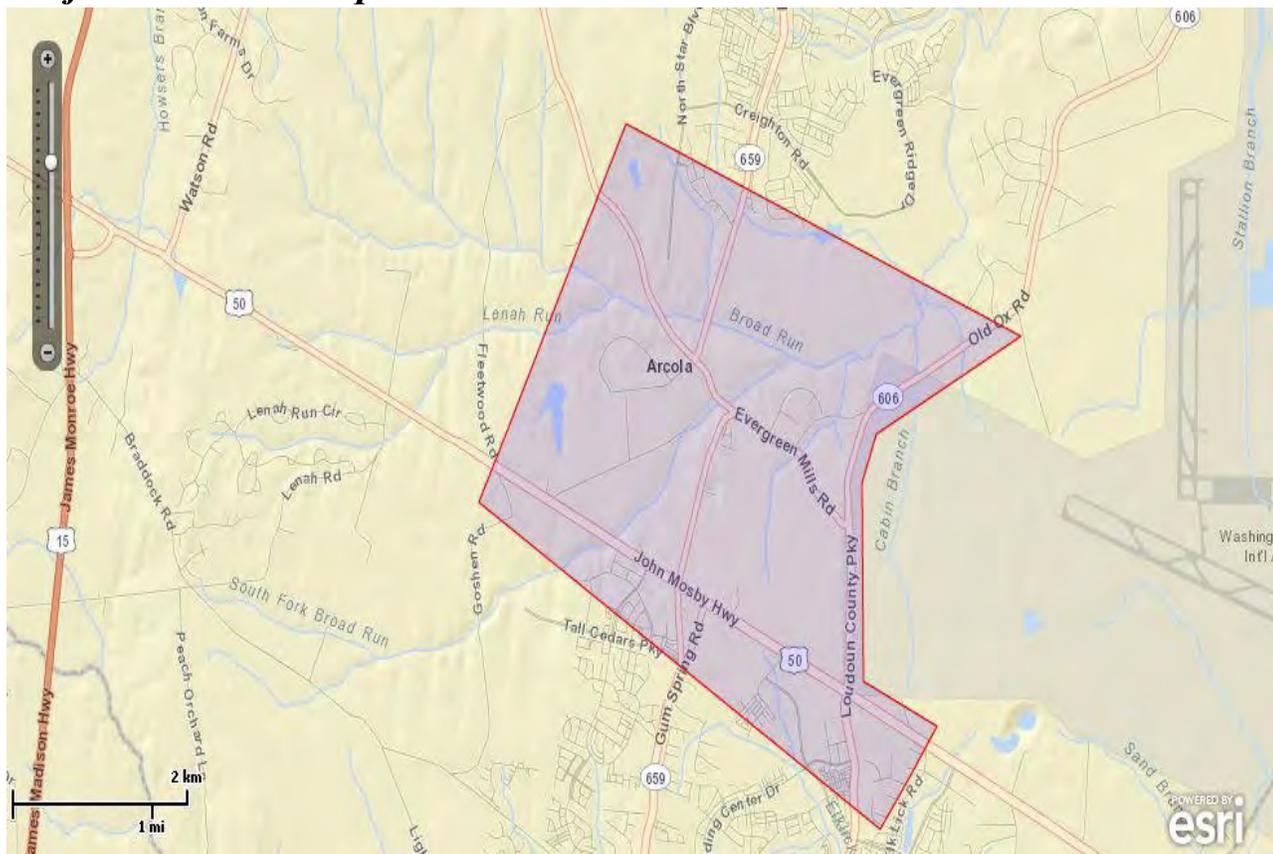
Dulles Air Cargo, Passenger and Metro Access Highw



U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Location Map:



Project Counties:

Loudoun, VA

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

MULTIPOLYGON (((-77.5482839 38.9750708, -77.4957556 38.9579868, -77.5149816 38.9501107, -77.5168699 38.9462391, -77.5166983 38.9302165, -77.5069136 38.9266109, -77.5103468 38.922738, -77.5144667 38.9183306, -77.5678619 38.944637, -77.5633987 38.9514457, -77.5482839 38.9750708)))

Project Type:

Transportation



Natural Resources of Concern

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

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

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.).

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	0.230849
Freshwater Pond	PUBFh	0.251793



Natural Resources of Concern

Freshwater Forested/Shrub Wetland	PFOIA	0.347056
Freshwater Pond	PUBFh	0.347383
Freshwater Pond	PUBHh	1.362484
Freshwater Pond	PUBHh	0.997593
Freshwater Pond	PUBF	0.236698
Freshwater Emergent Wetland	PEMIC	0.1839
Freshwater Forested/Shrub Wetland	PFOI/SS1A	1.49172
Freshwater Pond	PUBFh	0.166854
Freshwater Pond	PUBHh	1.673688
Freshwater Pond	PUBHx	0.490427
Freshwater Forested/Shrub Wetland	PFOIA	0.511153
Freshwater Pond	PUBHh	1.018184
Freshwater Forested/Shrub Wetland	PFOIA	2.035878
Freshwater Emergent Wetland	PEMICH	0.791768
Other	PUSCh	0.145419
Freshwater Pond	PUBFh	0.098208
Freshwater Forested/Shrub Wetland	PFOIA	1.007895
Freshwater Pond	PUBHh	2.816552
Freshwater Pond	PUBHh	1.982731
Freshwater Pond	PUBHh	0.647221
Freshwater Pond	PUBHh	0.242672
Freshwater Forested/Shrub Wetland	PSS1A	0.66263
Freshwater Pond	PUBFx	0.287259
Freshwater Pond	PUBFx	0.21906
Freshwater Pond	PUBFx	0.225979
Freshwater Forested/Shrub Wetland	PFOIA	0.565871
Freshwater Pond	PUBHx	0.364196
Freshwater Pond	PUBFx	0.203816
Other	PUSCh	0.322161
Freshwater Pond	PUBHh	4.239336
Freshwater Pond	PUBHh	3.341065
Freshwater Pond	PUBHh	0.842584
Freshwater Forested/Shrub Wetland	PFOIA	0.956379
Freshwater Pond	PUBFx	0.098221
Freshwater Pond	PUBHh	0.247479
Freshwater Pond	PUBHh	3.205491



U.S. Fish and Wildlife Service

Natural Resources of Concern

Freshwater Pond	PUBHh	0.741128
Freshwater Pond	PUBFx	0.101251
Freshwater Pond	PUBHh	8.77795
Freshwater Pond	PUBHh	0.979406
Freshwater Pond	PUBHh	0.506075
Freshwater Forested/Shrub Wetland	PSS1A	1.760235
Freshwater Forested/Shrub Wetland	PEO1A	2.841688
Lake	LIUBHh	19.551817
Freshwater Pond	PUBHx	0.653322
Freshwater Emergent Wetland	PEM1Ch	0.15063
Freshwater Emergent Wetland	PEM1A	0.186971
Freshwater Forested/Shrub Wetland	PEO1A	0.296813
Freshwater Pond	PUBHh	0.88185
Freshwater Forested/Shrub Wetland	PEO4/1A	0.563908