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

ENVIRONMENTAL ASSESSMENT

Harry Byrd Highway/George Washington Boulevard Overpass
Loudoun County, Virginia
State Project: 0007-053-086, B668, C501, P101, R201; UPC: 105584
Federal Project: STP-5A01(615)
From: Bridgefield Way
To: Russell Branch Parkway

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For: Division Administrator
Federal Highway Administration

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Acronym List

Area of Potential Effect	APE
Council on Environmental Quality	CEQ
National Capital Region's Financially Constrained Long-Range Plan	CLRP
Loudoun County's 2010 Countywide Transportation Plan	CTP
Virginia Department of Conservation and Recreation	DCR
Virginia Department of Environmental Quality	DEQ
Virginia Department of Game and Inland Fisheries	DGIF
Environmental Assessment	EA
Executive Order	EO
Endangered Species Act	ESA
Federal Highway Administration	FHWA
Geographic Information Systems	GIS
U.S. Department of Health and Human Services	HHS
Metropolitan Planning Organization	MPO
National Environmental Policy Act	NEPA
Palustrine Emergent	PEM
Palustrine Forested	PFO
Palustrine Scrub-Shrub	PSS
Sully Road	Route 28
Harry Byrd Highway	Route 7
Right-of-Way	ROW
U.S. Department of Transportation	USDOT
Virginia Department of Transportation	VDOT
Virginia Marine Resources Commission	VMRC
Waters of the United States	WOTUS

Chapter 1.0 PURPOSE AND NEED

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA), is studying a potential bridge overpass on Harry Byrd Highway (Route 7) near George Washington Boulevard and Richfield Way in Loudoun County, Virginia. The Route 7/George Washington Boulevard Overpass would provide a new north – south transportation link. Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, and in accordance with FHWA regulations[1], this Environmental Assessment (EA) has been prepared to analyze the potential social, economic, and environmental effects associated with the proposed project.

1.1 STUDY AREA

The study area for the proposed Route 7/George Washington Boulevard Overpass project is located in eastern Loudoun County, in the southern vicinity of Ashburn's University Center planned community, and approximately 0.6 miles west of the Route 7/Sully Road (Route 28) interchange. As illustrated in **Figure 1**, the study area extends approximately 0.25 miles in length across Route 7 and is generally bounded by the Bridgefield Way/Research Place/George Washington Boulevard intersection to the north and the Russell Branch Parkway/Richfield Way intersection to the south.

1.2 PROJECT HISTORY

1.2.1 Loudoun County

Within Loudoun County's 2010 Countywide Transportation Plan (CTP), amended through November 12, 2015, the County carries forward the commitment to coordinate road network policies with the land use, environmental policies, and heritage preservation policies that are identified in the *Revised General Plan*, Loudoun County's comprehensive plan. In keeping with the land use policies of the *Revised General Plan*, the CTP presents specific policies for roads according to their designation within one of four geographic Policy Areas: Suburban, Transition, Rural, and Joint Land Management Areas. This effort is intended to support the County's proposed land use by ensuring that adequate transportation facilities exist to serve the mobility needs of the residents, visitors, and businesses within each of the four Policy Areas (Board of Supervisors, 2015a).

[1] NEPA and FHWA's regulations for Environmental Impact and Related Procedures can be found at 42 USC § 4332(c), as amended, and 23 CFR § 771, respectively.

Figure 1: Project Location

The proposed project is located within the Ashburn Community of the Suburban Policy Area, where most of the County's residential and commercial growth has occurred over the last twenty years. The Suburban Policy Area has also been designated as the primary location for suburban-scale residential and nonresidential future development. The planned roadway network essential to support the development intended by the *Revised General Plan* in the Suburban Policy Area, and called for by the analysis results from the County's transportation model, is specified in the 2010 CTP. These projects range from operational improvements on existing roadways in developed portions of the Suburban Policy Area to construction of entirely new roadways in areas that are currently undergoing initial development. Though much of the planned road network within the Ashburn Community has been constructed, several key links in the planned roadway network are not yet complete. The proposed project, among other planned improvements, are intended to improve traffic flow on existing roadways such as Route 7, as well as complete missing roadway links in support of the County's proposed land use vision (Board of Supervisors, 2015b).

1.2.2 Richfield Way and George Washington Parkway

Richfield Way construction was completed in the late 1980s to provide planned industrial/office park development south of Route 7 with at-grade access to Route 7 and points north. Construction on George Washington Boulevard was completed in the early 1990s, providing users of the University Center and other residential developments north of Route 7 with at-grade access to Route 7 and points south.

Planning for Route 7 to function as a limited access highway through eastern Loudoun County has been on-going for the last decade. In fall 2010, following the construction of an interchange along Route 7 at Loudoun County Parkway (Route 607), several signaled intersections that once provided a connection between collector roads and Route 7 were closed as a part of that effort. Among these were the at-grade intersection at George Washington Boulevard (Route 1050) and Route 7; the intersection at Richfield Way and Route 7; and the intersection to the west, located at Presidential Drive (Route 607) and Loudoun County Parkway (Route 607). Access to the University Center community was re-routed through the new interchange approximately 0.7 miles west of George Washington Boulevard (Board of Supervisors, 2014).

On November 5, 2014, the Loudoun County Board of Supervisors voted to amend the CTP proposing that the Loudoun County Planning Commission relocate the planned George Washington Boulevard overpass to its currently planned location. It had previously been envisioned as an extension of Riverside Parkway, located about 0.1 miles to the west. An Open House meeting was held on April 16, 2015 to provide information to the community about the proposed changes to the CTP. The meeting was attended by over 25 persons representing both the business and residential communities in the area. Additionally, the Department of Transportation and Capital Infrastructure reviewed the proposed plan amendment and determined that the relocation of the overpass to George Washington Boulevard would result in no change to the capacity of the planned overpass or to the overall number of planned access points to the University Center as compared to the currently adopted CTP (Board of Supervisors, 2015a).

With the support of VDOT, Loudoun County's Planning Commission presented the plan amendment at the Board of Supervisors' Public Hearing on June 10, 2015. The Board voted unanimously to adopt the

amendment to the CTP; the project is also funded for construction in the Metropolitan Planning Organization's (MPO) Long Range Transportation Plan (Board of Supervisors, 2015b).

1.3 NEED FOR THE PROJECT

Current access for areas north and south of Route 7 are limited to Loudoun County Parkway or Ashburn Village Boulevard, and the only point of ingress and egress to the University Center is the intersection at Loudoun County Parkway (Route 607) and George Washington Boulevard. Likewise, ingress and egress to the Strayer University - Loudoun Campus is provided by the intersection of Route 607 and Russell Branch Parkway. The need for the project is based upon the lack of alternative physical connections between the planned communities north and south of the Route 7 corridor that do not require the use of Route 7.

Chapter 2.0 ALTERNATIVES

This chapter discusses the range of alternatives evaluated for the proposed project and the factors considered in their evaluation. Two (2) alternatives, the No-Build Alternative and the Build Alternative have been identified for evaluation within this EA[2]. Descriptions of each, as well as the ability of each to meet the project purpose and need, are summarized below.

2.1 No-Build Alternative

In accordance with the regulations implementing NEPA (40 CFR § 1502.14(d)), the No-Build Alternative has been retained for detailed study and serves as a benchmark for comparison with the Build Alternative (**Section 2.2**). The No-Build Alternative would retain the existing configuration of George Washington Boulevard and Richfield Way, and would not include any modifications to the roadway network other than those projects that have been approved and adopted for implementation, as identified in the most recent *National Capital Region's Financially Constrained Long-Range Plan* (CLRP). Prepared by the National Capital Region Transportation Planning Board, which is the designated MPO for the Washington, DC region under the Metropolitan Washington Council of Governments, the CLRP includes projected transit and traffic, demographic, and air quality conditions through the 2040 horizon year. The roadway projects listed in the CLRP in the vicinity of the project study area include the following:

- Route 28 Corridor Improvements,
- Route 7 Widening,
- Belmont Ridge Road Widening,
- Lease Commuter Parking Spaces at Lowes Island,
- Russell Branch Parkway,
- Sycolin Road Widening,
- Interchange at Route 7 and Route 659 (Belmont Ridge Road),
- Waxpool Road Widening,
- Gloucester Parkway Extension, and
- Riverside Parkway Widening.

2.1.1 Ability to Meet Project Purpose and Need

The No-Build Alternative would not satisfy the identified needs of providing a physical connection between the planned communities north and south of Route 7 that does not require the use of Route 7, and the existing substandard conditions would remain. Furthermore, the No-Build Alternative would not be consistent with the CTP, nor the Loudoun County Comprehensive Plan.

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[2] FHWA Technical Advisory T 6640.8A indicates the following with regard to the development of alternatives in an EA: "Discuss alternatives to the proposed action, including the no-action alternative, which are being considered. The EA may either discuss (1) the preferred alternative and identify any other alternatives considered or (2) if the applicant has not identified a preferred alternative, the alternatives under consideration. The EA does not need to evaluate in detail all reasonable alternatives for the project, and may be prepared for one or more build alternatives."

2.2 BUILD ALTERNATIVE

The Build Alternative was developed based on project scoping and screening efforts, which included public and agency outreach, consideration of environmental concerns, preliminary engineering issues, and its ability to meet the project purpose and need.

The Build Alternative involves construction of a grade separated overpass carrying four lanes of traffic, two in the southbound direction and two in the northbound direction, over Route 7 to connect George Washington Boulevard to a realignment of Richfield Way. The typical section includes a 6-foot sidewalk and a 10-foot shared use path to provide pedestrian access on the overpass. The overpass is anticipated to measure approximately 310 feet long and 73.5 feet wide. The total estimated preliminary engineering and construction cost of the Build Alternative is $24.5 million, and the estimated right-of-way (ROW) and utility relocation cost is $3.5 million for a total estimated cost of approximately $28 million.

2.2.1 Ability to Meet Project Purpose and Need

With respect to the project's purpose and need, as set forth in **Chapter 1.0 Purpose and Need** of this EA, construction of the Build Alternative would provide a physical connection for vehicles, bicyclists, and pedestrians along George Washington Boulevard, which currently terminates at Research Place on the north side of Route 7; and Russel Branch Parkway on the south side of Route 7. The Build Alternative would be consistent with local and regional land use plans, including Loudoun County's Comprehensive Plan. The Build Alternative would also be consistent with the National Capital Region Transportation Plan, the CLRP for the Metropolitan Area. As such, it is being advanced in this EA as the build alternative under consideration.

Chapter 3.0 ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION AND OVERVIEW OF ENVIRONMENTAL CONSEQUENCES

Transportation projects have the potential to affect social, economic, physical, and 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 inventory and analyze the potential environmental consequences associated with the No Build Alternative and Build Alternative considered in the Harry Byrd Highway / George Washington Boulevard Overpass study. **Table 1** identifies the environmental conditions within the study area. Where measurable impacts are not anticipated, no further discussion is warranted for the purposes of this chapter. Where impacts are anticipated, **Table 1** refers the reader to the appropriate section of this chapter.

Table 1: Summary of Environmental Conditions

Environmental Resource	Resource Summary
Demographics	The proposed project is located in a designated growth region of Loudoun County that has witnessed dramatic population and housing increases in recent years, and is expected to continue this development into the future. Implementation of the proposed project would help to accommodate the sustained growth of these diverse neighborhoods and support the goals and direction of Loudoun County's *Revised Comprehensive Plan* (see **Section 3.2**).
ROW and Relocations	Planning-level estimates indicate that approximately 1.3 acres of total ROW would be acquired for this project. An additional 2.62 acres land would be required for a permanent drainage easement. No displacements or relocations are anticipated as a result of the proposed project.
Community Facilities	Community facilities, including a daycare and university, have been identified within the study area (see **Section 3.2**).
Environmental Justice	The project has been evaluated in accordance with Title VI of the Civil Rights Act of 1964, as amended; Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*; and the U.S. Department of Transportation (USDOT) Order 6610.2(a). Minority populations have been identified within the project study area, but are not expected to experience disproportionately high and adverse effects as a result of the proposed project (see **Section 3.2**).
Land Use	Land use in the study area is guided by the principals set forth in the Loudoun County Comprehensive Plan, which primarily concentrates development in the Suburban Policy Planning

Environmental Resource	Resource Summary
	Area and Dulles Community (Board of Supervisors, 2013). The study area is comprised of commercial and industrial uses, zoned throughout as either Planned Development-Industrial Park or Planned Development- Research and Development Park. The proposed project would be consistent with and unlikely to affect zoning classifications within and beyond the study area.
Farmland and Soils	The location of the proposed project is committed to urban use, and as such is excluded from the Farmland Protection Policy Act of 1981 (7 USC § 4201, et seq.). Additionally, Agricultural and Forestal Districts, protected under state law, have not been identified within the study area (see ***Appendix A: Correspondence*** for coordination with the Natural Resources Conservation Service).
Section 6(f)	No Section 6(f) properties are located within the study area.
Section 4(f)	No Section 4(f) properties are located within the study area.
Historic Properties	A Phase I archaeological survey was completed to determine the presence of historic archaeological resources in the area of potential effects (APE). No archaeological were found eligible for listing on the National Register of Historic Places. In addition, no architectural resources meeting the 50-year age criterion for evaluation were present within the project APE. Therefore, no historic resources will be affected as a result of the proposed project. See ***Appendix A: Correspondence*** for consultation with the Virginia Department of Historic Resources and ***Appendix B*** for the associated ***Phase I Archeological Survey Report*** (VDOT, 2016d).
Air Quality	The proposed improvements were assessed for potential air quality impacts and conformity consistent with all applicable air quality regulations and requirements, with specific analyses or reviews for carbon monoxide, particulate matter, mobile source air toxics, and indirect effects and cumulative impacts. The assessment indicates that the project would meet all applicable air quality requirements of NEPA as well as federal and state transportation conformity regulations. As such, the project is not expected to cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of the applicable National Ambient Air Quality Standards. For additional information, refer to ***Appendix C: Air Quality Analysis***

Environmental Resource	Resource Summary
	(VDOT, 2016a).
Noise	A Preliminary Noise Analysis was completed for the proposed project in accordance with the State Noise Abatement Policy, FHWA's Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR §772), and FHWA's Highway Traffic Noise Analysis and Abatement Policy and Guidance (December 2011). The analysis determined that the proposed project is not predicted to create future noise impacts. In addition, there is no highway traffic noise-related public controversy or substantial construction noise impacts associated with this project. For additional information, refer to ***Appendix D: Noise Analysis Memorandum*** (VDOT, 2016c).
Wetlands and Streams	A review of available mapping indicates there is an unnamed intermittent tributary to Broad Run flowing north to south at the western edge of the proposed project area. This stream flows under Route 7 and Russell Branch Pkwy at locations that are both inside and outside of the project area. Headwaters associated with this system are found on the north side of Route 7 and may contain palustrine emergent (PEM), and palustrine scrub-shrub (PSS) wetlands. Palustrine forested wetlands (PFO) may be found buffering the stream on the south side of Route 7. Less than 0.25 acres of wetland impacts and less than 300 linear feet of stream impacts are anticipated. The concept of avoidance and minimization will continue to be emphasized as the project design advances.
Floodplains	Consistent with floodplain mapping produced by the Federal Emergency Management Agency, the study area is located outside of both the 100-year and 500-year floodplains.
Wildlife and Habitat	The study area is located in an urban/suburban environment along an existing major primary state highway and developed corridor in northern Virginia. A colony of nesting great blue heron is documented within 0.5 mi of the proposed project. Great blue heron are protected under the Migratory Bird Treaty Act. However, the location of this colony is far enough away not to be a concern during project construction. Natural heritage resources also exist within two miles of the project area; however, due to the scope of the project and the distance to the resources, no adverse impacts to these natural heritage resources are anticipated. Additionally, there are no State Natural Area Preserves under the Virginia Department

Environmental Resource	Resource Summary
	of Conservation and Recreation (DCR)'s jurisdiction in the project vicinity.
Threatened and Endangered Species	The northern long-eared bat, a federally threated species, and the wood turtle, a state threatened species, are found within two miles of the proposed project area. The proposed project is not anticipated to have an impact on these species or their habitat. Please see **Section 3.4** for additional information.
Hazardous Materials	A search of federal and state agency databases did not identify any recognized environmental conditions within the study area; see ***Appendix E: Hazardous Materials Phase I Environmental Site Assessment*** for additional information (VDOT, 2016b).

Note: The study area is a buffer around the road corridor that includes all natural, cultural, and physical resources that must be analyzed in the NEPA document. It does not imply ROW acquisition or construction impacts.

3.2 SOCIOECONOMIC RESOURCES

3.2.1 Existing Conditions

Community Facilities

Community facilities are structures and/or spaces that provide a variety of services for public benefit, including educational facilities, places of worship, emergency services facilities (police and fire stations), healthcare facilities, governmental facilities, post offices, libraries, museums, performing arts centers, and sports centers. Community facilities were identified through a review of geographic information systems (GIS) data, parcel ownership information, site reconnaissance, and local comprehensive plans based on the study area limits.

A single community facility was identified within the study area; The Goddard School, an educational facility, located at 45091 Research Place, Ashburn, VA.

Environmental Justice

This project has been evaluated in accordance with Title VI of the Civil Rights Act of 1964, as amended, and Executive Order (EO) 12898. EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs Federal agencies to identify and address disproportionately high and adverse human health or environmental effects that their programs, policies, and activities may have on minority and low-income populations to the greatest extent practicable. The goal of this order is to avoid the disproportionate placement of adverse environmental economic, social, or health impacts from federal actions and policies on minority and low-income populations that might be affected by the implementation of a proposed action.

<u>Minority Populations</u>

According to FHWA Order 6640.23A, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (FHWA, 2012), and for the purposes of this EA, minority

populations are comprised of members of the following population groups: Black, Hispanic or Latino, Asian American, American Indian, Alaskan Native, Native Hawaiian, or other Pacific Islander. Minority and/or low-income populations are defined as "any readily identifiable groups of minority and/or low-income persons who live in geographic proximity".

Table 2 identifies the racial and ethnic composition for the two census tracts within or adjoining the project alignment. To serve as a measure for comparison, census data on race and ethnicity was also extracted for Loudoun County and Virginia as a whole.

Table 2: Minority Populations by Census Tract, 2010

Location	Demographic Total	Total Minority	Percent Minority
Virginia	8,001,024	2,514,172	31.4%
Loudoun County	312,311	97,840	31.3%
Census Tract 6110.02	3,869	1,625	42.0%
Census Tract 6110.15	2,170	1,197	55.2%

The census tract containing the lowest minority population is census tract 6110.02 at 42.0% minority. This value, plus an additional 10 percent of this value (4.2) establishes a "meaningfully greater" threshold of 46.2%. Tract 6110.15 contains a minority population greater than the 46.2% threshold; as such, this census tract is considered a minority population for the purposes of this study.

Low-Income Populations

In accordance with the terms of FHWA Order 6640.23A and USDOT Order 5610.2 (a), low-income persons include any persons whose median household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines (FHWA, 2012). While the 2016 HHS poverty threshold data is available, the 2014 dataset is the appropriate data set for a comparison with the census's Median Household Income data in 2014 Inflation-Adjusted Dollars. Published by the Federal Register on January 22, 2014, the 2014 HHS poverty guidelines for Virginia indicate that the poverty level for a family of four was $23,850 for the 48 contiguous states and District of Columbia.

Table 3: Median Household Income by Census Tract in 2014 Inflation-Adjusted Dollars

Location	Median Household Income
Virginia	$64,792
Loudoun County	$123,966
Census Tract 6110.02	$80,114
Census Tract 6110.15	$97,100

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

As indicated on **Table 3**, none of the census block groups within or adjoining the study area have a median household income below the HHS poverty threshold of $ 23,850 for a family of four in 2014. Thus, no low-income populations have been identified within the study area.

3.2.2 Environmental Impacts

Community Facilities

The proposed project would require approximately 0.5 acres of ROW from The Goddard School property; however no community facilities are anticipated to be displaced as a result of anticipated ROW requirements for the proposed project.

Environmental Justice

Per to FHWA Order 6640.23A, a disproportionately high and adverse effect on minority and low-income populations includes those which are "predominantly borne by a minority and/or a low-income population; or will be suffered by the minority and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non-low-income population" (FHWA, 2012). No low-income populations exist within the study area, and the proposed project is not expected to cause disproportionate high and adverse effects on minority populations. The community effects of the project, including improved mobility and access, would be borne by all residents within the community, including minority persons.

VDOT will continue to ensure meaningful opportunities for public participation by conducting all required public outreach to give minority and low-income persons the opportunity to comment throughout project development.

3.3 AQUATIC RESOURCES AND WATER QUALITY

3.3.1 Existing Conditions

Aquatic resources are controlled under the federal Clean Water Act (33 USC § 1251 et seq.), which is administered by Environmental Protection Agency and regulated by U.S. Army Corps of Engineers, in coordination with the Virginia Department of Environmental Quality (DEQ) and the Virginia Marine Resources Commission (VMRC). Section 404 of the Clean Water Act regulates discharges of fill into Waters of the United States (WOTUS). WOTUS can be generally defined as all navigable waters and waters that have been or can be used for interstate or foreign commerce, their tributaries, and any waters that, if impacted, could affect the former. WOTUS include surface waters (streams, lakes, ponds, bays, etc.) and their associated wetlands (inundated or saturated areas that support vegetation adapted for life in wet soils). USACE, DEQ, and VMRC all issue permits for various activities in, under, and over WOUS in Virginia.

WOTUS and water quality within the project area were preliminarily identified and assessed to determine potential impacts associated with the project. The locations of WOTUS within the project area were identified based on a review of available GIS mapping and aerial photography. Should the project advance to more detailed engineering and design phases, WOTUS would be field delineated and confirmed to verify whether the Clean Water Act and relevant regulatory agency jurisdiction applies to the waters or wetlands in question. The project area is located in the Potomac River-Broad Run watershed (HUC 0207000809), a hydrologic subunit of the Middle Potomac-Catoctin River Sub-Basin (HUC 02070008). WOTUS within and adjacent to the project area include an intermittent stream that flows from north to south along the western edge of the project; this stream is a tributary to Broad Run, a stream that flows to the Potomac River. The headwaters of this unnamed stream are located on the north side of Route 7, where they have been primarily incorporated into the stormwater management practices

of the commercial land development that has taken place. A review of available GIS mapping and aerial photography suggest that PEM and PSS wetlands may exist inside and/or outside the stormwater management facilities. Water from the stormwater management facilities and headwater wetlands is conveyed beneath Route 7 and into a defined channel on the south side of Route 7. Here, there may be PFO wetlands associated with the stream channel. The stream channel continues south where it is eventually conveyed under Russell Branch Parkway, to approximately the southern terminus of the project area.

3.3.2 Environmental Impacts

An examination of the preliminary project design indicates that these aquatic resources are not anticipated to be impacted by the project. If and when the project advances to construction, any unforeseen impacts to wetland resources would be avoided and minimized to the greatest extent practicable.

Water quality of the unnamed intermittent stream is heavily influenced by the turf management and maintenance practices associated with the commercial development on the north side of Route 7 within the proposed project area. The turf in this area receives a high degree of maintenance (mowing, fertilizer, herbicides/pesticides). If not properly managed, these activities usually lead to degradation of water quality in the receiving waters downstream. The unnamed intermittent stream eventually flows into Broad Run outside of the proposed project area. Broad Run is listed by DEQ as impaired based on macroinvertebrate community structure, E. coli bacteria, high levels of mercury, and polychlorinated biphenyl found in fish tissue. Proper management of erosion and sediment controls during project construction activities will be necessary to avoid further degradation of the intermittent stream and Broad Run.

3.4 WILDLIFE AND HABITAT

3.4.1 Existing Conditions

The project area is located in an urban/suburban environment along an existing major primary state highway and developed corridor in northern Virginia. Within the preliminary project design footprint are primarily commercial and residential properties that have all been developed within the past twenty years. This development has contributed to the disturbance and modification of habitat and associated wildlife. Forests and farm fields have been converted to parking lots, buildings, stormwater management basins, and managed turf areas. The existing vegetation and trees were planted for landscaping purposes and not for wildlife and habitat enhancement. As a result, wildlife within the project area are typically limited to those associated with northern Virginia's suburban landscape, including rabbits, eastern grey squirrels, red fox, white-tailed deer, raccoon, and a number of common bird species.

Online queries of the U.S. Fish and Wildlife Service and Virginia Department of Game and Inland Fisheries (DGIF) databases suggest a number of species protected under the Endangered Species Act (ESA) may be found within three miles of the proposed project. Federally protected species include the endangered dwarf wedgemussel and the threatened northern long-eared bat. In addition, great blue heron colonies, protected under the Migratory Bird Treaty Act, were identified south of the proposed project and along Broad Run. State protected species include the endangered: little brown bat, tri-colored bat, and brook floater. State species that have a threatened status include the: wood turtle, peregrine falcon, loggerhead shrike, Henslow's sparrow, Appalachian grizzled skipper, green floater, and migrant

loggerhead shrike. State species of concern within the three-mile search radius of the proposed project include the spotted turtle and timber rattlesnake.

3.4.2 Environmental Impacts

Of the species identified, only the northern long-eared bat and the wood turtle require agency coordination as the others are not a concern based on their distance from the proposed project and their habitat requirements. At this time, there are no known northern long-eared bat hibernacula identified within 5 miles of the proposed project area and no known maternity roost trees identified within ¼ mile. As such, the proposed project will likely rely upon the findings of the Programmatic Biological Opinion for Final 4(d) Rule on the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions, dated January 5, 2016. Due to its habitat requirements, VDOT does not expect wood turtle to be found within the proposed project limits. Two wood turtle collections are reported in the DGIF database within two miles of the proposed project, but they were located on the east side of Broad Run. Information will be submitted to USFWS to initiate Section 7 consultation in compliance with ESA, and determinations will be incorporated into the revised EA. VDGIF and VDCR will also be consulted during project design to identify avoidance and minimization measures to incorporate into project design for the state-listed wood turtle.

A search of the DCR's Biotics Data System for occurrences of natural heritage resources (e.g., rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations) indicated that natural heritage resources are located within two miles of the project location. However, due to the scope of the project and the distance of the proposed project from these resources, no impacts to natural heritage resources are anticipated. In addition, there are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

3.5 INDIRECT AND CUMULATIVE EFFECTS

Because indirect effects and cumulative impacts may be influenced by actions including those taken by others outside of the immediate study area, assumptions must be made to estimate the result of these actions. The Council on Environmental Quality (CEQ) regulations states that the analysis must include all the indirect effects that are known, and make a good faith effort to explain the impacts that are not known but which are "reasonably foreseeable." NEPA does not define what constitutes "reasonably foreseeable actions." Court decisions on this topic indicate that indirect effects analyses should consider impacts that are sufficiently "likely" to occur (FHWA, 2014). CEQ has provided guidance on how to define reasonably foreseeable actions based upon court opinions. CEQ makes it clear that actions that are probable should be considered while actions that are merely possible, conceptual, or speculative in nature are not reasonably foreseeable need not be considered in the context of cumulative impacts (CEQ, 1981, FHWA, 2015). This direction on identifying reasonably foreseeable actions is taken into account in both of the analyses described in the following sections.

3.6 Indirect Impacts

CEQ defines indirect effects as "…effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40 CFR § 1508(a)). One particularly applicable category of indirect effects are those which result from induced growth and subsequent changes in the pattern of land use. Other indirect effects may include physical, biological, or socioeconomic alteration

of the behavior and functioning of the affected environment that are a result of and/or lead to changes in "population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR 1508(a)). These actions are those that may or may not occur without the implementation of the proposed project.

As evidenced in FHWA's position paper, *Secondary and Cumulative Impact Assessment in the Highway Project Development Process*, indirect impacts most commonly associated with transportation infrastructure projects are related to induced development, i.e., development that would not occur if the project were not constructed (April 1992). However, indirect effects also may include changes in water quality, economic vitality, negative impacts on endangered species, and effects on the ability of existing environmental protection measures to absorb an increased load (e.g. water treatment plants must work harder because of more pollutants due to projects). In many instances, indirect impacts are referred to as "secondary impacts", as they are often considered to be a derivative of the primary direct effects of the project.

No Build Alternative

Under the No-Build Alternative, indirect effects related to lack of access would have a negative impact on businesses and residents located north and south of Route 7.

Build Alternative

Indirect effects from the Build Alternative are expected to be minimal since the proposed improvements are to a pre-existing facility primarily within existing ROW in an environment that is highly developed and influenced by highway-related pressures. The Build Alternative is expected to provide direct linkage to two areas not currently easily accessible, which in turn will improve travel times and reduce congestion, while also allowing Route 7 to operate as a limited access facility in support of the County Plan.

Potential indirect impacts to wetlands, streams, water quality, and threatened and endangered species could result from increased stormwater runoff due to an increase in impervious surfaces. However, indirect effects associated with sediment transport should be minor during construction through the proper use of stormwater control measures. VDOT would adhere to standard erosion and sediment control, stormwater measures, and the associated required monitoring protocols during construction.

No significant induced growth is expected as a result of the Build Alternative. The study area is already highly developed and growth is anticipated to continue regardless of whether the Build Alternative is constructed.

3.7 Cumulative Effects

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

Cumulative impacts are the total effect on a resource when the proposed project's direct and indirect impacts are added to the aggregate effects of past, present and reasonably foreseeable future actions. These actions include those of the sponsoring agency, but also unrelated governmental and private undertakings. Because of the "incremental impact" portion of the definition, actions that have no direct or indirect impact on a resource by definition will not contribute to any cumulative effect on that resource. Therefore, only those environmental resources that would be directly or indirectly affected by implementation of any of the alternatives would incur cumulative effects from this project in combination with other actions.

Coordination with Loudoun County, other local entities, state and federal agencies, and the public will be ongoing throughout the design and construction process to ensure that direct, indirect, and cumulative effects of the proposed project are avoided and minimized to the greatest extent practicable. This EA will be made available to Loudoun County as well as all agencies and the public in order for them to better plan for and anticipate potential indirect and cumulative effects associated with the proposed project.

Past and Present Actions

As indicated in **Chapter 1.0 Purpose and Need**, the proposed project is located within the Ashburn Community of the Suburban Policy Area, where most of the County's residential and commercial growth has occurred over the last twenty years. The Suburban Policy Area has also been designated as the primary location for suburban-scale residential and nonresidential future development. Route 7 is a major primary state highway, included in the National Highway System, in northern Virginia. Its western terminus begins in the City of Winchester and ends at its eastern terminus in the City of Alexandria. Over time, due largely to growth of the federal government, migration to the suburbs, and growth in commercial, industrial, educational, and medical facilities necessary to serve the growing population, land use adjacent to Route 7 changed from rural in nature to suburban and developed. In addition to the projects listed above in **Section 2.1**, the following projects were recently completed, are currently under construction, or are planned for construction in the vicinity of the proposed project.

- Construction of ***One Loudoun*** began in 2011 and comprises 358 acres of residential, retail, dining, and entertainment facilities. Upon its completion, One Loudoun is planned to include 1040 single family homes, townhomes, and condominiums, with more than 100 acres of parks and trails, extensive outdoor amenities, and a baseball field.
- Construction for the Route ***7 Widening Project from Rolling Holly Drive to Reston Avenue*** was completed in February 2016. Located approximately 5.4 southeast of the proposed project, the project widened Route 7 from four to six lanes; added shared use paths; lengthened turn lanes; and improved intersection operations, particularly at Georgetown Pike, Route 7, and Seneca Ridge Road.
- A grade-separate interchange carrying ***Ashburn Village Boulevard over Route 7*** along a new alignment directly to the east of the existing signalized intersection is under construction approximately 1.8 miles northwest of the proposed project. The project will eliminate the existing traffic signal to help ease congestion along Route 7. Construction on the interchange began in the spring of 2016 and is scheduled for completion in August of 2018.

Reasonably Foreseeable Future Actions

- Approved by the county in 2010, planned development of ***Kincora*** includes over than 2 million square feet of office space as well as retail space, two hotels, a state-of-the-art performing arts center, and 1,400 multifamily-residential units on 424 acres at the southwest corner of Route 7 and Route 28. Construction is scheduled to begin in the spring of 2017 with occupancy in the spring or summer of 2018; full build out of Kincora is planned over the next 15 to 20 years.
- The Federal Aviation Administration (FAA) and the Metropolitan Washington Airports Authority (MWAA) plan to advance the commercial development of a 416-acre parcel of property that it owns at Washington Dulles International Airport (Dulles Airport) by entitling the land through a series of pre-development decisions and approvals. As a result, the Authority has commissioned the development of a General Plan and EA for this property, which is located along the western edge of Dulles Airport. The property, known as the ***Western Land Area (Western Lands)*** represents one of the largest remaining undeveloped parcels of land in the rapidly developing Route 606 (Old Ox Road) corridor. NEPA scoping began in September 2016 and the Draft EA is anticipated to be available for public review and comment in 2017.

As highlighted above by the past, present, and reasonably foreseeable future actions, the study area has been and is anticipated to remain in, a steady progression of development. Conversion of natural areas to developed land has had the greatest impact on the area. This development has helped lead to the degradation and/or loss of natural resources over time.

No-Build Alternative

Under the No-Build Alternative, impacts to natural and socioeconomic resources would continue to occur due to the projected development in the study area.

Build Alternative

The Build Alternative would provide a physical connection between the communities north and south of the Route 7 corridor that do not require the use of Route 7, contributing minor beneficial cumulative effects to socioeconomics, land use, and community facilities. Once complete, the project is not anticipated to create significant induced growth or development beyond what is anticipated without the project.

The Build Alternative's impacts to wetlands and water quality would contribute to the cumulative effects that have occurred in the past to natural resources within the study area. However, mitigation measures would compensate for impacts to wetlands and water quality.

Chapter 4.0 COORDINATION AND COMMENTS

4.1 AGENCY COORDINATION

Early and continued coordination with the appropriate agencies and general public is an essential part of the environmental review process to determine the scope of environmental documentation, level of analysis, potential impacts, mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through formal and informal methods which include project development team meetings and interagency correspondence. The federal, state, and local agencies, and additional entities listed below, were contacted to obtain pertinent information and to identify key issues regarding the potential environmental impacts for this project.

- Federal Emergency Management Agency, Region III
- Loudoun County Department of Planning and Zoning
- Loudoun County Department of Transportation and Capital Infrastructure
- National Marine Fisheries Service
- National Trust for Historic Preservation
- United States Army Corps of Engineers
- United States Department of Agriculture
    - Forest Service
    - Natural Resources Conservation Service
- United States Department of the Interior
    - Fish and Wildlife Service
    - National Park Service
    - Office of Environmental Policy and Compliance
- United States Environmental Protection Agency
- Virginia Department of Agricultural and Consumer Services
- Virginia Department of Conservation and Recreation
- Virginia Department of Environmental Quality
    - Division of Land Protection and Revitalization
    - Northern Regional Office
    - Office of Air Data Analysis
    - Office of Environmental Impact Review
    - Water Division
- Virginia Department of Forestry
- Virginia Department of Game and Inland Fisheries
- Virginia Department of Health
- Virginia Department of Historic Resources
- Virginia Department of Housing and Community Development
- Virginia Department of Mines, Minerals, and Energy
- Virginia Department of Rail and Public Transportation
- Virginia Economic Development Partnership
- Virginia Marine Resources Commission
- Virginia Outdoors Foundation
- Virginia State Police Department

In response to the scoping letters, VDOT received responses from ten agencies identifying transportation needs, environmental resources, and other relevant factors to be analyzed in this EA. Agency scoping responses can be found in ***Appendix A: Correspondence***.

4.2 PUBLIC INVOLVEMENT

VDOT plans to hold a Design Public Hearing for this project in Loudoun County in fall or winter of 2016. Pursuant to federal and state regulatory requirements and in accordance with VDOT's Policy Manual for Public Participation in Transportation Projects (VDOT, 2014), the meeting will be advertised in national and local newspapers; on the project website; on VDOT's social media pages; and via a press release. Additionally, Design Public Hearing notification letters will be sent out to all property owners within or adjacent to the study area 30 days prior to the scheduled hearing date per the Code of Virginia §33.1-223.2:30. The purpose of this hearing will be to present the preliminary project design and findings of this EA, provide a discussion forum between the public and project team, and solicit input and comments from the community. In addition, there will be a 30-day public comment period following notice of availability of the EA. Any comments received during the public hearing and public comment period will become part of the public hearing record, and substantive comments will be addressed.

Chapter 5.0 REFERENCES

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Appendix A: Correspondence

M E M O R A N D U M

DATE: April 29, 2015

TO: Halie Stannard, VDOT

FROM: S. René Hypes, DCR-DNH

SUBJECT: Due April 30, 2015
0007-053-086, B668, C501, P101, R201

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.

Biotics historically documents the presence of natural heritage resources within two miles of the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

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

Many invasive plant species are adapted to take advantage of soil disturbances and poor soil conditions. These adaptations are part of what enable certain species to be invasive. Non-native invasive plants are found through Virginia. Therefore, the potential exists for some VDOT projects to further the establishment of invasive species. To minimize the potential for invasive species infestation, projects should be conducted to minimize the area of disturbance, and disturbed sites should be revegetated with desirable species at the earliest opportunity following disturbance. Equally as important, species used for revegetation should not include the highly invasive species that have traditionally been used for revegetating disturbed sites. We recommend VDOT avoid using crown vetch, tall fescue, weeping lovegrass, and autumn olive if at all possible.

For more information on invasive alien plants and native plants, see the DCR-Division of Natural Heritage website http://www.dcr.virginia.gov/natural_heritage/invspinfo.shtml. For sources of native plant material, see the Virginia Native Plant Society's website (http://vnps.org) or the U.S. Fish and Wildlife Service nursery list for Virginia (http://www.fws.gov/ChesapeakeBay/BayScapes/bsresources/bs-nurseries.html).

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

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

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

The 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.

Stannard, Halie (VDOT)

From: Burstein, Daniel (DEQ)
Sent: Tuesday, April 28, 2015 3:36 PM
To: Stannard, Halie (VDOT)
Cc: Fulcher, Valerie (DEQ)
Subject: Re: VDOT: Route 7/George Washington Boulevard Overpass UPC: 105584, located in Loudoun County - Scoping Review

Ms. Stannard,

NRO comments regarding the Scoping Request for the VDOT: Route 7/George Washington Boulevard Overpass UPC: 105584, located in Loudoun County, are as follows:

Land Protection Division - The project manager is reminded that if any solid or hazardous waste is generated/encountered during construction, that VDOT/contractor would follow applicable federal, state, and county regulations for their disposal.

Air Compliance/Permitting - The project manager is reminded that during the construction phases that occur with this project; the project is subject to the Fugitive Dust/Fugitive Emissions Rule 9 VAC 5-50-60 through 9 VAC 5-50-120. In addition, should the project install fuel burning equipment (Boilers, Generators, Compressors, etc…), or any other air pollution emitting equipment, the project may be subject to 9 VAC 5-80, Article 6, Permits for New and Modified sources and as such the project manager should contact the Air Permit Manager DEQ-NRO prior to installation or construction, and operation, of fuel burning or other air pollution emitting equipment for a permitting determination. Lastly, should any open burning or use of special incineration devices be employed in the disposal of land clearing debris during demolition and construction, the operation would be subject to the Open Burning Regulation 9 VAC 5-130-10 through 9 VAC 5-130-60 and 9 VAC 5-130-100.

Virginia Water Protection Permit (VWPP) Program - The project manager is reminded that a VWP permit from DEQ may be required should impacts to surface waters be necessary. DEQ VWP staff recommends that the avoidance and minimization of surface water impacts to the maximum extent practicable as well as coordination with the US Army Corps of Engineers. Upon receipt of a Joint Permit Application for the proposed surface water impacts, DEQ VWP Permit staff will review the proposed project in accordance with the VWP permit program regulations and current VWP permit program guidance.

Water Permitting/VPDES Program/Stormwater: The project manager is reminded to follow all applicable regulations.

Respectfully,

Dan

Daniel Burstein
Regional Enforcement Specialist, Senior II
Virginia Department of Environmental Quality
Northern Virginia Regional Office
13901 Crown Court
Woodbridge, VA 22193

RECEIVED
APR 09 2015
BY

COMMONWEALTH of VIRGINIA

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

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

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

April 2, 2015

Ms. Halie Stannard, NEPA Specialist
Virginia Department of Transportation
Northern District Office
4975 Alliance Drive
Fairfax, Virginia 22030

RE: Route 7/George Washington Boulevard Overpass, Loudoun County
(VDOT Project No. 007-053-086, B668, C501, P101, R201, UPC: 105584)

Dear Ms. Stannard:

Thank you for your March 27, 2015 letter (received March 31), in which you asked for information and comments on the scope of an Environmental Assessment that the Virginia Department of Transportation (VDOT) is preparing for the above project proposal.

PROJECT DESCRIPTION

You state that VDOT hopes to improve traffic on state Route 7 by constructing a grade-separated overpass connecting George Washington Boulevard (Route 1050) with the realignment of Richfield Way (Route 1060) in Loudoun County. The overpass would extend from approximately 0.1 mile north of Route 7, where the Boulevard intersects Bridgefield Way and Research Place, to approximately 0.1 mile south of Route 7 at the intersection of Richfield Way and Russell Branch Parkway.

ENVIRONMENTAL REVIEW UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT

The role of the Virginia Department of Environmental Quality (DEQ) in relation to the project under consideration is as follows. DEQ's Office of Environmental Impact Review coordinates state agencies' review of environmental documents prepared pursuant to the National Environmental Policy Act (NEPA) and comments to the appropriate federal agency (and interested or cooperating state or local agencies) on behalf of the Commonwealth. Other DEQ offices have permitting or regulatory requirements that may apply to the project.

As you know, the National Environmental Policy Act of 1969 (PL 91-190) (NEPA) and its implementing regulations (Title 40, *Code of Federal Regulations*, Parts 1500-1508) require draft and final Environmental Impact Statements (EISs) for federal activities (to include activities funded or licensed by federal agencies) 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 the project under consideration should not be overlooked in your planning. Accordingly, we refer to "NEPA document" for the remainder of this letter.

PROJECT SCOPING AND REVIEW PARTICIPATION

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 for the proposed project. Therefore, we are sharing your letter with selected state and local Virginia agencies; these are likely to include the following:

Department of Environmental Quality:
- Office of Environmental Impact Review
- Northern Regional Office
- Office of Wetland and Stream Protection
- Division of Air Program Coordination
- Division of Land Protection and Revitalization (formerly Waste Division)
- Office of Stormwater Management

Department of Agriculture and Consumer Services
Department of Conservation and Recreation
Department of Game and Inland Fisheries
Department of Forestry
Marine Resources Commission
Department of Historic Resources
Department of Health
Department of Transportation
Northern Virginia Regional Commission
Loudoun County.

In order to ensure an effective coordinated review of the environmental document and/or FCC, we request electronic copies, with 2 hard copies (CD or paper) for our files and for small localities. Electronic copies may be sent to eir@deq.virginia.gov or made available for download at a website, file transfer protocol (ftp) site or the VITAShare file transfer system (*https://vitashare.vita.virginia.gov*) and should be a searchable PDF or optical character recognition (OCR) scanned document. The document should include a U.S. Geological Survey topographic map as part of its information. We recommend, as well, that project details be adequately described for the benefit of reviewers of the NEPA document.

DATA BASE ASSISTANCE

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

- DEQ Online Database: Virginia Environmental Geographic Information Systems

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

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

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

- 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:
  - http://vafwis.org/fwis/

- Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database: Superfund Information Systems; Information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation,

including sites that are on the National Priorities List (NPL) or being considered for the NPL:

- www.epa.gov/superfund/sites/cursites/index.htm

- EPA RCRAInfo Search

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

- EPA Envirofacts Database

  EPA Environmental Information, including EPA-Regulated Facilities and Toxics Release Inventory Reports:
  - www.epa.gov/enviro/index.html

- EPA NEPAssist Database

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

I hope this information is helpful to you. If you have questions about the environmental review process, please feel free to contact John Fisher of this Office (telephone (804) 698-4339 or e-mail john.fisher@deq.virginia.gov).

Sincerely,

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

ec: Daniel Burstein, DEQ-NRO
Dave Davis, DEQ - OWSP
Kotur S. Narasimhan, DEQ-DAPC
G. Stephen Coe, DEQ-DLPR
Larry Gavan, DEQ-OSM
Holly Sepety, DEQ-OSM
Amy M. Ewing, DGIF
Roberta D. Rhur, DCR
Gregory Evans, DOF
Roger W. Kirchen, DHR
Keith R. Tignor, VDACS
Roy Soto, VDH-ODW
Tony Watkinson, VMRC
G. Mark Gibb, NVRC
Tim Hemstreet, Loudoun County

COMMONWEALTH of VIRGINIA
DEPARTMENT OF TRANSPORTATION
87 Deacon Road
Fredericksburg, Virginia 22405

Charles A. Kilpatrick, P.E.
Commissioner

May 10, 2016

Ms. Julie V. Langan, Director
ATTN: Mr. Marc Holma, Architectural Historian
Division of Review and Compliance
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221

VDOT Project No.: 0007-053-086, B668, C501, P101, R201; UPC: 105584
VDHR File No. 2016-0492
County: Loudoun
Funding: Federal
Action Required: Determination of Effect

Dear Mr. Holma;

The Virginia Department of Transportation (VDOT), along with the Federal Highway Administration (FHWA), is studying a proposed project to construct a grade separated intersection over Route 7 at Route 1050/George Washington Boulevard in eastern Loudoun County. The project was initially coordinated with the Virginia Department of Historic Resources (DHR) via the Department's STP-2 process (No Effect; 2015-3923); however subsequent design changes were thought to impact areas necessitating an archaeological survey and individual project coordination. On behalf of FHWA, the VDOT is taking this opportunity to coordinate the results of the Phase I archaeological survey with your office and other consulting parties pursuant to the requirements of Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800. This letter constitutes a formal request for concurrence with efforts to identify historic properties and determination of effect for this project.

Project Area of Potential Effects

The Area of Potential Effects (APE) is defined as the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)). Specifically, the APE for

archaeological resources includes the area that would be directly and physically impacted by land-disturbing activities. The project includes the installation of a stormwater retention pond, shared use pathway, a realigned section of Route 1060/Richfield Way (from Russell Branch Parkway) to Route 7, and overpass crossing Route 7.

The project will require right-of-way (ROW) and easements approximately 10 to 25-ft beyond the existing ROW limits on either side of Route 1061/Russell Branch Parkway for the shared use pathway. The realignment of Richfield Way (Rte 1060) from Russell Branch Parkway to Route 7 will require from 30 to 70-ft of additional ROW along the east side of Rte 1060. On the north side of Route 7 only narrow strips of ROW/easement will be required adjacent to the existing roadway. A 150 x 250-ft area for a proposed stormwater management pond is proposed in the southwest quadrant of the existing intersection of Waverly Court and Richfield Way (see Figure 8 of the enclosed archaeological report).

The APE for architectural resources (indirect effects) includes all areas within the immediate viewshed of the project that are not obscured by vegetation and/or modern intrusions on the landscape. No standing architectural structures are located within the APE for architectural resources.

Identification of Historic Properties

The VDOT examined the project APE for properties eligible or potentially eligible for inclusion in the National Register of Historic Places (NRHP). In April 2016, Phase I shovel testing was conducted in areas of archaeological potential in the project footprint. Please find 2 copies of the Management Summary, *Archaeological Survey Proposed Route 7/George Washington Blvd Overpass, Loudoun County, Virginia* (May 16, 2016). The report meets the Secretary of the Interior's Standards and Guidelines (1983), as well as the VDHR Guidelines for cultural resources reports (2011).

Archaeology Resources

The archaeological survey showed that the portions of the APE had been previously impacted by the installation of utilities, roadway construction, farming/land clearing, and modern development. The APE contained roadside ditches, utility easements, a wooded area, paved parking lots, landscaped areas, and roadside berms. The Phase I archaeological survey did not identify any archaeological sites within the APE. No further work is warranted.

Architectural Resources

No architectural resources are located within the project APE for indirect effects.

Battlefields

The Civil War Sites Advisory Commission (CWSAC) maps of the area show no potential National Register eligible Civil War battlefields overlapping or adjacent to the project APE.

Effects on Historic Properties

The regulations implementing Section 106 of the National Historic Preservation Act define an effect as an "alteration to the characteristics of a historic property qualifying it for inclusion in or eligible for the National Register" [36CFR800.16(i)]. The effect is adverse when the alteration of a qualifying characteristic occurs in a "manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" [36CFR800.5(a)]. No historic resources are located in the project APE; therefore, the project will have **no effect** on historic properties.

The VDOT invites you to review the enclosed information (Management Summary report) and concur with our findings by signing the signature block below and returning the original signature to my attention within 30 days. If you or any of the consulting parties copied on this letter have any questions or need additional information about this project, please do not hesitate to contact me at (540) 654-1737 or Raymond.Ezell@vdot.virginia.gov.

Sincerely,

Raymond Ezell, RPA
District Archaeologist

Enclosures

cc: /file 105584

cc: /Heidi Siebentritt, Loudoun County Dept. of Planning
/Lori Kimball, Loudoun Preservation Society

CONCURRENCE

VDOT Project No.: 0007-053-086, B668, C501, P101, R201; UPC: 105584
VDHR File No. 2016-0492

The Virginia Department of Historic Resources (DHR) concurs with the Virginia Department of Transportation's (VDOT): 1) definition of the project's Area of Potential Effects (APE); 2) efforts to identify historic properties; 3) finding that no historic properties are located within the project APE; and 4) determination that the Rte 7/George Washington Blvd Overpass project will have **no effect** upon historic properties.

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

7 June 16
Date

2016-0492

Stannard, Halie (VDOT)

From: Okorn, Barbara <Okorn.Barbara@epa.gov>
Sent: Thursday, April 23, 2015 2:21 PM
To: Stannard, Halie (VDOT)
Subject: Route 7/ George Washington Boulevard Overpass Scoping

I reviewed your letter dated March 27, 2015 and have the following comments.

- Information regarding the purpose and need, alternatives analyzed, avoidance and minimization of resources, and cumulative effects for the proposed project should be included in the environmental document.
- The EA should include a clear and robust justification of the underlying purpose and need for the proposed action. The purpose and need statement is important because it helps explain why the proposed action is being undertaken and what objectives the project intends to achieve. The purpose of the proposed action is typically the specific objective of the activity. The need should explain the underlying problem for why the project is necessary.
- Alternatives analysis should include the suite of other activities or solutions that were considered and the rationale for not carrying these alternatives forward for detailed study.
- The document should describe potential impacts to the natural and human environment. Existing resources should be identified and EPA encourages that adverse impacts to natural resources, especially wetlands and other aquatic resources, be avoided and minimized.
- Stormwater ponds, best management practices (BMPs) and construction staging areas should not be located in wetlands and streams.
- EPA suggests coordinating with other appropriate federal, state and local resource agencies on possible impacts to wetlands, streams, historic and/or rare, threatened and endangered species.
- An evaluation of air quality and community impacts, including noise, light and possible traffic impacts, should be included in the document.
- Potential air impacts and general conformity should be included in the EA.
- The EA should also include an analysis of any hazardous sites or materials, and the status of any ongoing or past remediation efforts in the project area.
- The EA should include a discussion of greenhouse gas emissions and climate change.
- Environmental justice (EJ) should also be evaluated, including the identification of potential communities of concern, and meaningful and timely community involvement, public outreach, and access to information.
- Consideration should also be given to all potential impacts to at-risk populations, as well as consideration to sensitive subpopulations, possibly including elderly, children and others. Community impacts should also be avoided, minimized and mitigated.
- The document should address potential indirect and cumulative effects in the project areas, and analysis may aid in the identification of resources that are likely to be adversely affected by multiple projects, and sensitive resources that could require additional measures. It is suggested that a secondary and cumulative effects analysis begin with defining the geographic and temporal limits of the study; this is generally broader than the study area of the project.

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

Barb

USDA
United States Department of Agriculture

Halie Stannard, NEPA Specialist
VDOT Environmental Division
4975 Alliance Drive
Fairfax, VA 22030

RECEIVED
APR 07 2015
By

April 1, 2015

Subject: Route 7/George Washington Boulevard Overpass
Loudoun County, Virginia
VDOT Project Number: 0007-053-086, B668, C501, P101, R201
UPC: 105584

Ms. Stannard,

I conducted a review of the soils found in the area of the subject project. Brief descriptions of the soils can be found on pages 8 through 15 in the attached Custom Soil Resource Report. Also, a Farmland Classification Map is on page 17 depicting areas that are prime, statewide important and non-prime farmland. Page 22 shows the soil map units which would be considered hydric. An area must have hydric soils, hydrophytic vegetation and a hydrologic condition to support hydrophytic plants to classify as a wetland. This area in general seems to lack the hydric soils. The only area where the chance is relatively high in finding a wetland would be in map unit 79A. There is only a small portion of this map unit remaining that has not been paved over by Route 7 and Richfield Way.

If you have any questions concerning this report, do not hesitate in contacting me.

Sincerely,

Don Flegel
Area 1 Soil Resource Specialist

NATURAL RESOURCES CONSERVATION SERVICE
1934 Deyerle Ave. Harrisonburg, VA 22801
Phone: (540) 434-1404 ♦ Fax: (540) 434-1519

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Loudoun County, Virginia

Route 7/George Washington Boulevard Overpass

April 1, 2015

Preface

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

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

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

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

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

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

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

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Soil Map

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

Map Scale: 1:2,210 if printed on A portrait (8.5" x 11") sheet.

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Loudoun County, Virginia
Survey Area Data: Version 12, Sep 23, 2014

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

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

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

Map Unit Legend

Loudoun County, Virginia (VA107)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
62B	Sycoline-Kelly complex, 2 to 7 percent slopes	2.9	43.8%
73B	Penn silt loam, 2 to 7 percent slopes	2.5	36.9%
74B	Ashburn silt loam, 0 to 7 percent slopes	0.3	4.6%
77C3	Nestoria channery silt loam, 7 to 15 percent slopes, severely eroded	0.3	5.1%
79A	Albano silt loam, 0 to 2 percent slopes, frequently flooded	0.6	9.6%
Totals for Area of Interest		**6.6**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially

where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Loudoun County, Virginia

62B—Sycoline-Kelly complex, 2 to 7 percent slopes

Map Unit Setting

National map unit symbol: pk4f
Mean annual precipitation: 36 to 47 inches
Mean annual air temperature: 43 to 66 degrees F
Frost-free period: 150 to 194 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Sycoline and similar soils: 55 percent
Kelly and similar soils: 30 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sycoline

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granulite and/or residuum weathered from hornfels

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 28 inches: silty clay loam
H3 - 28 to 35 inches: loam
H4 - 35 to 45 inches: bedrock

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: About 10 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D

Description of Kelly

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from hornfels

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 37 inches: clay
H3 - 37 to 45 inches: silty clay loam
H4 - 45 to 55 inches: bedrock

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 10 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D

Minor Components

Albano

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

73B—Penn silt loam, 2 to 7 percent slopes

Map Unit Setting

National map unit symbol: pk56
Mean annual precipitation: 36 to 47 inches
Mean annual air temperature: 43 to 66 degrees F
Frost-free period: 150 to 194 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Penn and similar soils: 75 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Penn

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 26 inches: silty clay loam
H3 - 26 to 33 inches: very gravelly silt loam
H4 - 33 to 43 inches: bedrock
H5 - 43 to 53 inches: bedrock

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

74B—Ashburn silt loam, 0 to 7 percent slopes

Map Unit Setting

National map unit symbol: pk59
Mean annual precipitation: 36 to 47 inches
Mean annual air temperature: 43 to 66 degrees F
Frost-free period: 150 to 194 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Ashburn and similar soils: 75 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ashburn

Setting

Landform: Interfluves

Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Reworked alluvium over residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 26 inches: silty clay loam
H3 - 26 to 39 inches: channery silty clay loam
H4 - 39 to 49 inches: bedrock

Properties and qualities

Slope: 0 to 7 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 24 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C

Minor Components

Albano

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

77C3—Nestoria channery silt loam, 7 to 15 percent slopes, severely eroded

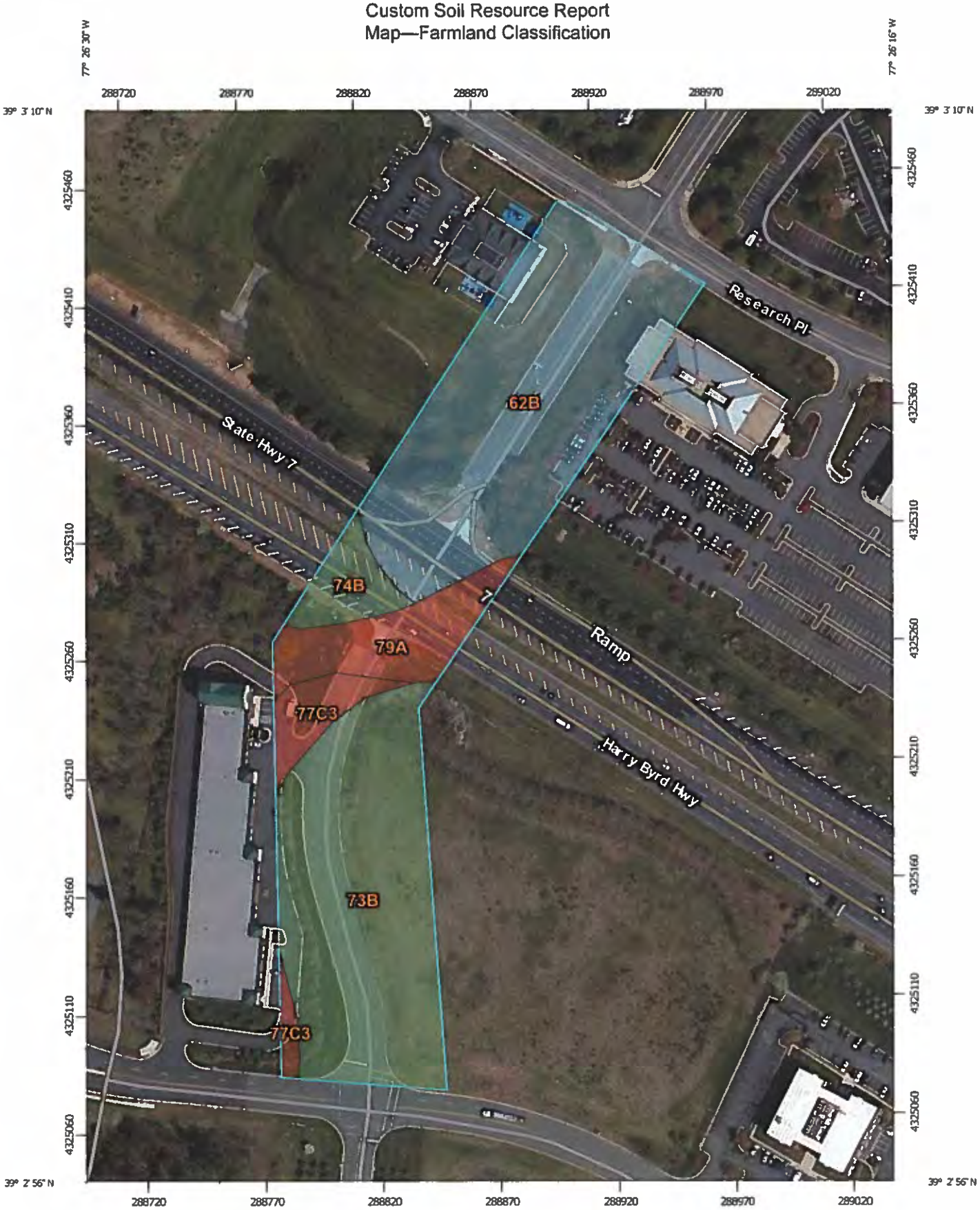
Map Unit Setting

National map unit symbol: pk5h
Mean annual precipitation: 36 to 47 inches
Mean annual air temperature: 43 to 66 degrees F
Frost-free period: 150 to 194 days
Farmland classification: Not prime farmland

Map Unit Composition

Nestoria and similar soils: 80 percent

Custom Soil Resource Report
Map—Farmland Classification



Map Scale: 1:2,210 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nestoria

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 4 inches: channery silt loam
H2 - 4 to 14 inches: very channery silt loam
H3 - 14 to 18 inches: very channery silt loam
H4 - 18 to 22 inches: bedrock
H5 - 22 to 32 inches: bedrock

Properties and qualities

Slope: 7 to 15 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D

Minor Components

Albano

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

79A—Albano silt loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: pk5p

Mean annual precipitation: 36 to 47 inches
Mean annual air temperature: 43 to 66 degrees F
Frost-free period: 150 to 194 days
Farmland classification: Not prime farmland

Map Unit Composition

Albano and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Albano

Setting

Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and shale over residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 30 inches: clay
H3 - 30 to 43 inches: silty clay loam
H4 - 43 to 53 inches: bedrock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Natural drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Frequent
Frequency of ponding: Occasional
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Water Features

MAP INFORMATION

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Loudoun County, Virginia
Survey Area Data: Version 12, Sep 23, 2014

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

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

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

Table—Farmland Classification

Farmland Classification— Summary by Map Unit — Loudoun County, Virginia (VA107)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
62B	Sycoline-Kelly complex, 2 to 7 percent slopes	Farmland of statewide importance	2.9	43.8%
73B	Penn silt loam, 2 to 7 percent slopes	All areas are prime farmland	2.5	36.9%
74B	Ashburn silt loam, 0 to 7 percent slopes	All areas are prime farmland	0.3	4.6%
77C3	Nestoria channery silt loam, 7 to 15 percent slopes, severely eroded	Not prime farmland	0.3	5.1%
79A	Albano silt loam, 0 to 2 percent slopes, frequently flooded	Not prime farmland	0.6	9.6%
Totals for Area of Interest			**6.6**	**100.0%**

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part

(Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

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

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

References:

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

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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

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

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

Soil Survey Area: Loudoun County, Virginia
Survey Area Data: Version 12, Sep 23, 2014

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

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

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

Table—Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Loudoun County, Virginia (VA107)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
62B	Sycoline-Kelly complex, 2 to 7 percent slopes	5	2.9	43.8%
73B	Penn silt loam, 2 to 7 percent slopes	0	2.5	36.9%
74B	Ashburn silt loam, 0 to 7 percent slopes	5	0.3	4.6%
77C3	Nestoria channery silt loam, 7 to 15 percent slopes, severely eroded	5	0.3	5.1%
79A	Albano silt loam, 0 to 2 percent slopes, frequently flooded	85	0.6	9.6%
Totals for Area of Interest			**6.6**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Stannard, Halie (VDOT)

From: Flegel, Donald - NRCS, Harrisonburg, VA <Donald.Flegel@va.usda.gov>
Sent: Tuesday, July 05, 2016 1:49 PM
To: Stannard, Halie (VDOT)
Subject: RE: Route 7/George Washington Boulevard Overpass Project - NRCS CPA 106 Form Review Request
Attachments: NRCS-CPA-106 Loudoun.pdf

Halie,
Attached is the NRCS-CPA-106 for the subject project in Loudoun County. The area in question is "committed to urban" and thus excluded from the FPPA. Let me know if you have any questions concerning this. FYI Larry Wilkinson retired and Roger Flint out of our Warrenton office handles Loudoun County, however, I complete all the CPA-106 and AD-1006 for NRCS Area 1 in Virginia. Take care,
Don

From: Stannard, Halie (VDOT) [mailto:Halie.Stannard@vdot.virginia.gov]
Sent: Friday, July 01, 2016 1:19 PM
To: 'larry.wilkinson@va.usda.gov' <larry.wilkinson@va.usda.gov>
Cc: Bricker, Jack - NRCS, Richmond, VA <Jack.Bricker@va.usda.gov>; Flegel, Donald - NRCS, Harrisonburg, VA <Donald.Flegel@va.usda.gov>
Subject: Route 7/George Washington Boulevard Overpass Project - NRCS CPA 106 Form Review Request

Good afternoon,

Please find the attached NRCS CPA 106 Form and Limits of Disturbance design file for your review and consideration. We are respectfully requesting that you provide a Farmland Conversion Impact Rating at your very earliest convenience, which will inform the development of the Environmental Assessment (EA) for the Route 7/George Washington Boulevard Overpass Project that is currently underway. I have also attached the scoping letter, submitted to your office in March 2015, to re-familiarize you with the project scope.

Should you have any questions or need any additional information, please do not hesitate to contact me. Thank you very much for your time and attention to this matter. We look forward to your expedited review.

Thank you and enjoy the holiday weekend,

Halie Stannard
Environmental Specialist
Northern Virginia District
4975 Alliance Drive
Fairfax, Virginia 22030
Office Telephone: (703) 259-1929
e-mail: halie.stannard@vdot.virginia.gov

VDOT Virginia Department of Transportation

This electronic message contains information generated by the USDA solely for the intended recipients. Any

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 7/1/16	4. Sheet 1 of 1
1. Name of Project **Route 7/George Washington Boulevard Overp**	5. Federal Agency Involved **Federal Highway Administration (FHWA)**	
2. Type of Project **Transportation (Highway)**	6. County and State **Loudoun County, VA**	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 7/1/16	2. Person Completing Form Don Flegel
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☑		4. Acres Irrigated | Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*		Alternative Corridor For Segment _____			
		Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly		<10			
B. Total Acres To Be Converted Indirectly, Or To Receive Services		0			
C. Total Acres In Corridor		<10			
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*					
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area in Nonurban Use	15	0			
2. Perimeter in Nonurban Use	10	0			
3. Percent Of Corridor Being Farmed	20	0			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	0			
6. Creation Of Nonfarmable Farmland	25	0			
7. Availablility Of Farm Support Services	5	1			
8. On-Farm Investments	20	0			
9. Effects Of Conversion On Farm Support Services	25	0			
10. Compatibility With Existing Agricultural Use	10	0			
TOTAL CORRIDOR ASSESSMENT POINTS	160	1	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	0	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	1	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	1	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
Built Alternative identified in the project's	**Less than 10**	**7/1/16**	YES ☐ NO ☑

5. Reason For Selection:

The Build Alternative would provide needed capacity improvements and utilize existing right-of-way to the maximum extent practicable.

Signature of Person Completing this Part: **Halie Stannard**

DATE **7/1/16**

NOTE: Complete a form for each segment with more than one Alternate Corridor

Clear Form

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1096

Reply to
Attention of: **May 11, 2015**

Northern Virginia Regulatory Section
NAO 2015-00524

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

Ms. Halie Stannard
VDOT Environmental Division
4975 Alliance Drive
Fairfax, VA 22030

Dear Ms. Rico and Ms. Stannard:

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

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

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

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

Route 7/George Washington Boulevard Overpass, VDOT 0007-053-086, B668, C501, P101, R201 Loudon County, Virginia

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

"WHEREAS, pursuant to Section 404 of the Clean Water Act, a Department of the Army permit will likely be required from the Corps of Engineers for this project, and the Corps has designated FHWA as the lead federal agency to fulfill federal responsibilities under Section 106; and

In addition, the Corps hereby authorizes FHWA to conduct coordination on its behalf for the Route 7/George Washington Boulevard Overpass project in accordance with Section 7 of the Endangered Species Act.

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

Sincerely,

Tucker Smith
Chief, Northern Virginia
Regulatory Section

Copies Furnished:

Virginia Department of Historic Resources, Richmond

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
6669 Short Lane
Gloucester, Virginia 23061

FEB 04 2013

Greetings:

Due to increases in workload and refinement of our priorities in Virginia, this office will no longer provide individual responses to requests for environmental reviews. However, we want to ensure that U.S. Fish and Wildlife Service trust resources continue to be conserved. When that is not possible, we want to ensure that impacts to these important natural resources are minimized and appropriate permits are applied for and received. We have developed a website, *http://www.fws.gov/northeast/virginiafield/endspecies/Project_Reviews_Introduction.html*, that provides the steps and information necessary to allow landowners, applicants, consultants, agency personnel, and any other individual or entity requiring review/approval of their project to complete a review and come to the appropriate conclusion.

The website will be frequently updated to provide new species/trust resource information and methods to review projects, so refer to the website for each project review to ensure that current information is utilized.

If you have any questions about project reviews or need assistance, please contact Troy Andersen of this office at (804) 693-6694, extension 166, or troy_andersen@fws.gov. For problems with the website, please contact Mike Drummond of this office at mike_drummond@fws.gov.

Sincerely,

Cynthia R Schulz

Cindy Schulz
Supervisor
Virginia Field Office

COMMONWEALTH of VIRGINIA

Sandra J. Adams
Commissioner

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

RECEIVED
20 10 15
By

Ms. Halie Stannard
NEPA Specialist
VDOT Environmental Division
4975 Alliance Drive
Fairfax, VA 22030

Subject: Route 7/George Washington Boulevard Overpass

Dear Ms. Stannard:

This is in response to your letter to this agency dated March 27, 2015, inviting comments concerning potential issues or concerns related to the proposed improvements to Route 7 (Harry Byrd Highway) that would consist of the construction of a grade separated overpass to connect Route 1050 (George Washington Boulevard) with the realignment of Route 1060 (Richfield Way) in Loudoun County, Virginia.

The Virginia Department of Agriculture and Consumer Services (VDACS) is responsible for the preservation of farmland and the protection of endangered and threatened plant and insect species. Concerning farmland preservation, § 3.2-204 of the Code of Virginia requires that in preparing reports on major state projects, each state agency shall demonstrate that it considered the impact of the projects on farm and forest lands as required in § 3.2-205 and that it adequately considered alternatives and mitigating measures. Therefore, VDACS encourages the Virginia Department of Transportation (VDOT) and others involved with this project to minimize the loss of farm and forest land to the highest degree possible. In addition, VDACS suggests that VDOT determine whether Loudoun County has any established agricultural and forestal districts that may be impacted by this project. Should such districts exist, additional project review is required per § 15.2-4313 of the Code of Virginia.

VDACS works closely with the Department of Conservation and Recreation (DCR) in determining the 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, your inquiries relating to state protected plant and insect species should be directed to DCR for response. 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 VDACS 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.

Sincerely,

Sandra J. Adams
Commissioner

cc: Andres Alvarez, Director, Division of Consumer Protection
Kevin Schmidt, Director, Office of Policy, Planning and Research

COMMONWEALTH of VIRGINIA

Molly J. Ward
Secretary of Natural Resources

Department of Game and Inland Fisheries

Robert W. Duncan
Executive Director

April 10, 2015

Halie Stannard
VDOT

via email: halie.stannard@vdot.virginia.gov

Re: Route 7 George Washington Boulevard Overpass – Loudoun County
Project# 0007-053-086,B668,C501,P101,R201 - - UPC# 105584

Dear Ms. Stannard:

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,

Amy Ewing

Amy Ewing
Environmental Services Biologist / FWIS Manager
amy.ewing@dgif.virginia.gov
(804) 367-2211

Stannard, Halie (VDOT)

From: Hallock-Solomon, Michael (VOF)
Sent: Monday, April 06, 2015 11:48 AM
To: Stannard, Halie (VDOT)
Cc: Little, Martha (VOF)
Subject: Route 7/George Washington Boulevard Overpass
Attachments: 20150327_VDOT_Route7.pdf

Ms. Stannard,

The Virginia Outdoors Foundation has reviewed the project referenced above and described in the attached document. As of 6 April 2015, there are not any existing nor proposed VOF open-space easements within the immediate vicinity of the project.

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

Thanks,
Mike

Mike Hallock-Solomon, AICP
GIS/IT Specialist
Virginia Outdoors Foundation
600 E. Main St., Suite 402
Richmond, VA 23219
(804) 371-0114 office
(804) 337-9780 cell
(804) 225-3236 fax

Appendix B: Phase I Archeological Survey Report

MANAGEMENT SUMMARY:
ARCHAEOLOGICAL SURVEY
PROPOSED ROUTE 7/GEORGE WASHINGTON BLVD OVERPASS
LOUDOUN COUNTY, VIRGINIA

VDOT PROJECT 0007-053-086, B668, C501, P101, R201 (UPC 105584)
VDHR PROJECT: 2016-0492

Raymond Ezell, RPA, Archaeologist, VDOT Fredericksburg District
May 10, 2016

The cultural resources staff of the Virginia Department of Transportation (VDOT) completed an archaeological survey to assess the potential effects on archaeological properties of the proposed project to construct a grade separated intersection over Route 7 at Route 1050/George Washington Boulevard in eastern Loudoun County (VDOT Project No. 0007-053-086, B668, C501, P101, R201 (UPC 105584). This Management Summary reports the results of Phase I archaeological survey within the area of potential effect (APE) for the project.

The project includes the installation of a stormwater retention pond, shared use pathway, curb/gutter, a realigned section of Route 1060/Richfield Way (from Russell Branch Parkway) to Route 7, and overpass crossing Route 7 (Figure 1). The project was initially coordinated with the VDHR via the Department's STP-2 process (No Effect; 2015-3923); however design changes were thought to impact areas of moderate archaeological potential necessitating an archaeological survey and individual project coordination with the Virginia Department of Historic Resources (DHR).

The project will require right-of-way (ROW) and easements which extend for several hundred feet, approximately 10 to 25-ft beyond the existing ROW limits on either side of Route 1061/Russell Branch Parkway to accommodate shared use pathway construction. The realignment of Richfield Way (Rte 1060) to Route 7 will require from 30 to 70-ft of additional ROW along the east side of Rte 1060. On the north side of Route 7 only narrow strips of ROW and/or easement will be required adjacent to the existing roadway. A 150 x 250-ft area for a proposed stormwater management pond is proposed in the southwest quadrant of the existing intersection of Waverly Court and Richfield Way. The archaeological area of potential effect (direct APE) for this project is the construction footprint for the proposed project. No standing architectural structures are located within the APE for architectural resources (indirect APE).

The fieldwork was conducted in April 2016 by Raymond Ezell, VDOT District Archaeologist. The VDOT excavated a total of 21 shovel tests within the project's direct (archaeological) APE. Approximately 7.0-acres (2.8-hectares) were examined during the survey using a combination of background research, surface inspection, and shovel testing.

The project is localized and situated on broad ridgetop terrain overlooking the Beaverdam Run and Broad Run drainage in eastern Loudoun County. Although the terrain on the crest of the ridges is nearly level, the topography in the project vicinity is typically rolling. Relief ranges from approximately 220 to 270-ft above mean sea level (amsl) (USGS 1994). Mapped soils in the project APE are within the Sycoline-Kelly complex, 2 to 7 percent slopes; Penn silt loam, 2 to 7 percent slopes; Penn silt loam, 7 to 15 percent slopes; Ashburn silt loam, 0 to 7 percent slopes; Nestoria channery silt loam, 7 to 15 percent slopes, severely eroded; and Albano silt loam, 0 to 2 percent slopes, frequently flooded. These soils are all moderately well drained (USDA web soil survey 2016). Generally the soils in the project APE were found to be severely deflated

and/or disturbed from installation/maintenance of utility easements, roadways, and private commercial development.

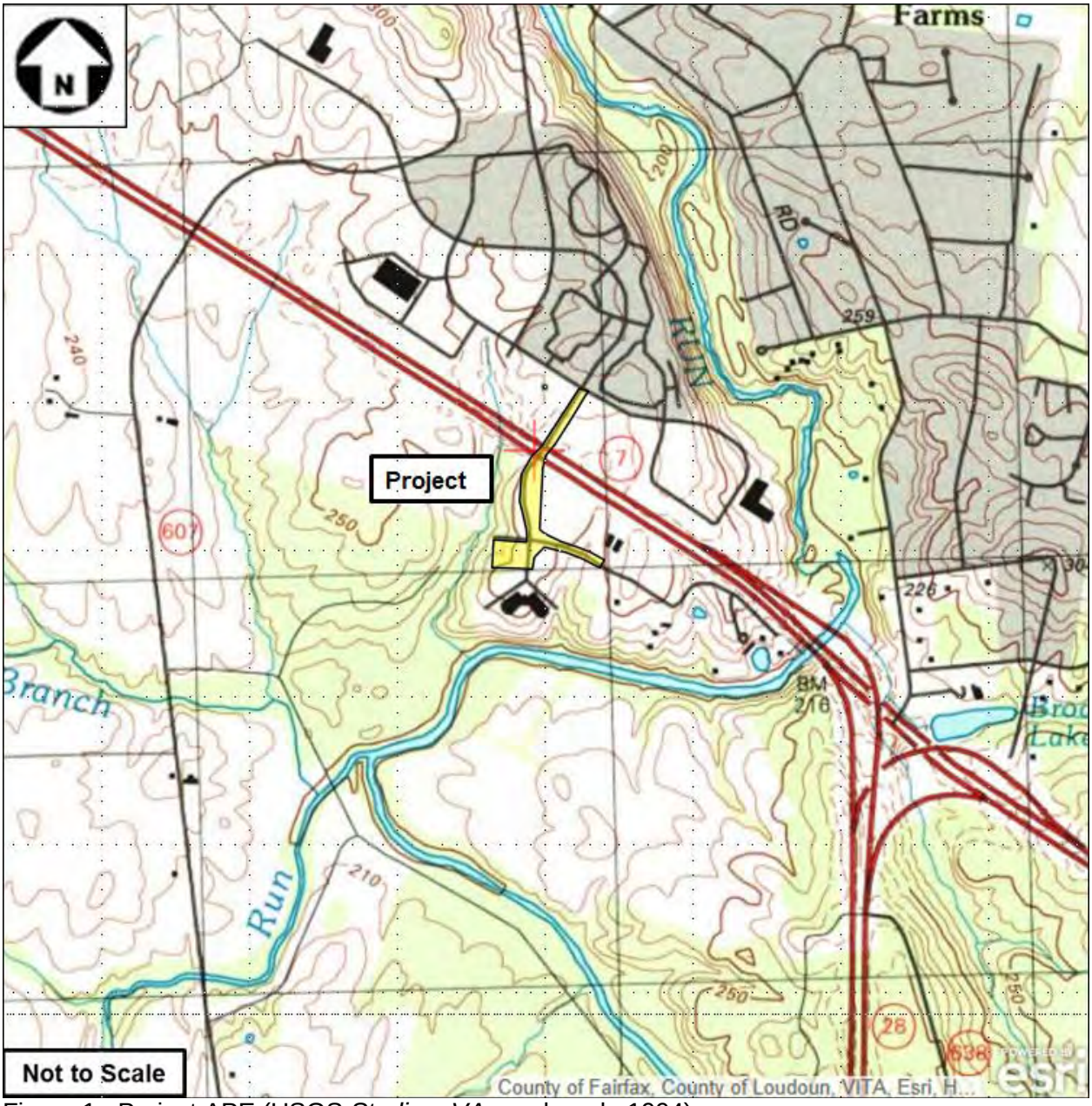

Figure 1. Project APE (USGS *Sterling, VA* quadrangle 1994).

A review of the Virginia DHR-VCRS system confirmed that there were no previously identified architectural or archaeological resources within the APE for the project. The search identified seven archaeological sites and 4 architectural resources within ½-mile of the project, but none are located within the project APE (Table 1; Figure 2). The resources listed in this table are provided to assist in understanding the local/regional context for potential cultural resources in the vicinity, and it is not intended to present properties exclusively within the architectural (indirect) APE for this project. Also during the background review, Civil War Sites Advisory Commission (CWSAC) maps were inspected but no mapped battlefields were noted for the project area.

Table 1. Previously Recorded Cultural Resources within One Half Mile of the Project.

DHR No.	Description	NRHP Evaluation Status
053-0110	Broad Run Bridge and Toll House	NRHP Listing, VLR Listing
053-6373	House, 45241 Russell Branch Parkway	unevaluated
053-6374	House, 45191 Russell Branch Highway	unevaluated
053-6375	Barn, Russell Branch Parkway	unevaluated
44LD0103	Other, Prehistoric/Unknown, Early Archaic, Middle Archaic	DHR Staff: Not Eligible
44LD0104	Other, Woodland	DHR Staff: Not Eligible
44LD0213	Camp, temporary, Prehistoric/Unknown	DHR Staff: Not Eligible
44LD1339	Other, Prehistoric/Unknown	DHR Staff: Not Eligible
44LD1474	Farmstead, World War I to World War II, The New Dominion, Post Cold War	unevaluated
44LD1475	Lithic scatter, Prehistoric/Unknown	unevaluated
44LD1684	Trash pit, The New Dominion, Post Cold War	DHR Staff: Not Eligible

Although no indication of prehistoric archaeological remains was found during the fieldwork, the general (adjacent) area was probably utilized to some extent by prehistoric Native Americans. The APE displays a moderate potential for prehistoric resources based on its distance to permanent water sources, topographic setting, and proximity to other recorded archaeological sites.

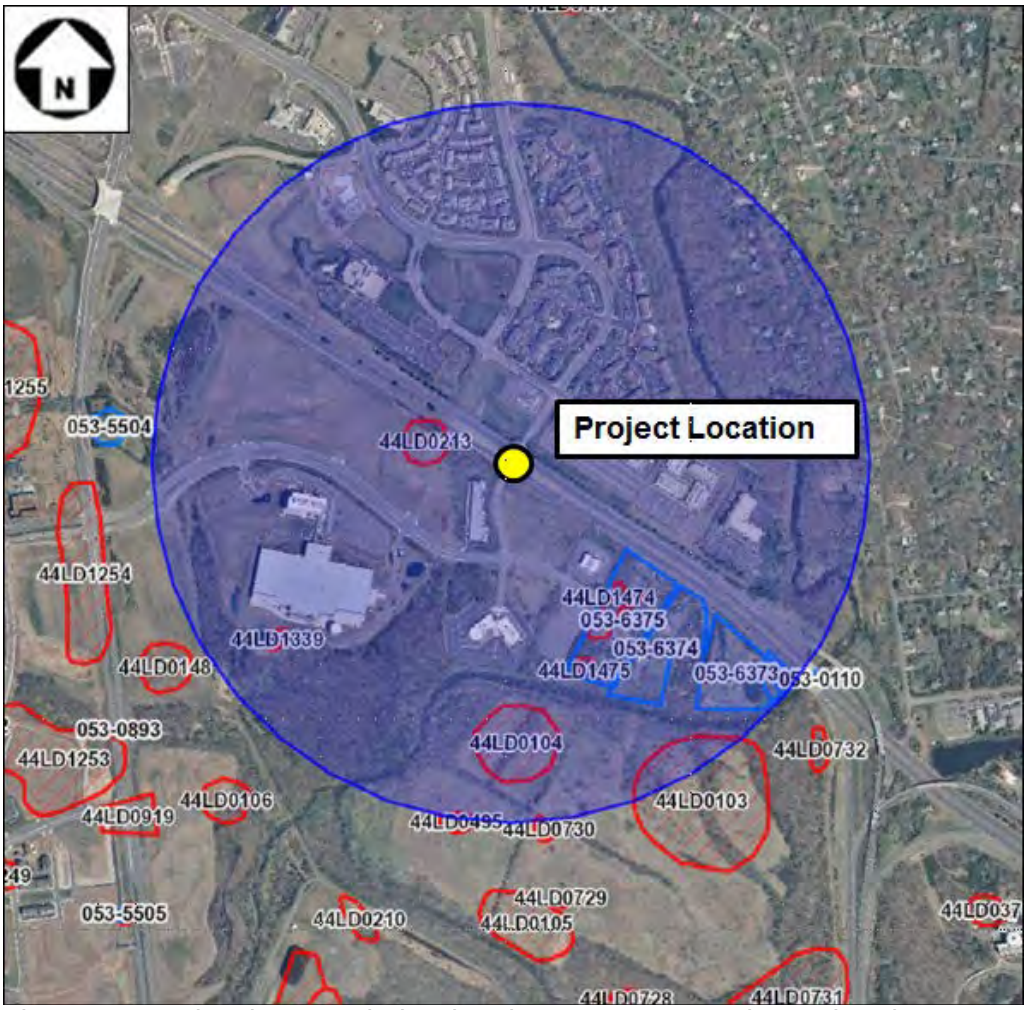

Figure 2. Previously Recorded Cultural Resources near the Project (VCRS 2016).

Before the 20th century, the population density in the project vicinity was low, and land use consisted primarily of agrarian activities. Based on the history of the county and cartographic evidence, development of small towns increased during the second half of the nineteenth century as transportation routes improved. This indicates higher probabilities of locating small farmsteads and domestic sites dating to that time period within or adjacent to the project (Figures 4–6). Based on experience in the region as well as the analysis of the recorded sites within the project vicinity, refuse scatters dating to the late nineteenth and early twentieth centuries are commonly encountered within undeveloped tracts in eastern Loudoun County (Birkett and Monroe 2005; Monroe 2004, 2005).

The 1853 Taylor map of the project vicinity indicates that by 1853 this portion of eastern Loudoun County was beginning to be intensively settled with more settlement focused on the Leesburg Turnpike Road (modern Rte 7). Other developed infrastructure north of the Leesburg Turnpike in this portion of Loudoun County was sparse; however, the road network south of the Turnpike appears to have been more complex at this time (Figure 3).

Figure 3. Detail of a Pre-Civil War Map of Loudoun County showing the Project Vicinity (Taylor, et al. 1853).

During the Civil War, Loudoun County was effectively a boundary area between Union controlled Maryland and Washington, D.C. and Confederate-controlled Virginia. This location made the county's agricultural resources a target of both armies. Colonel John Mosby's Rangers used the county as a primary staging area for their raids on Union forces throughout the War (Poland 1976:183-184).

Loudoun County was the scene of one battle and more than 40 skirmishes. The Battle of Ball's Bluff took place on October 21, 1861 northeast of Leesburg at Harrison's Landing (Poland 1976:191). Skirmishes and raids occurred in various locations around the county throughout the War. One such incident occurred on April 1, 1863 while Confederate Colonel Mosby's troops were camped at John Miskel's farm along Broad Run just north of the Leesburg Turnpike

(Scheel 2002:22-23). Mosby was able to overcome the Federals and chased them down the turnpike to the east, toward Dranesville before falling back to his previous position.

The detail of the 1861 Macomb map shows the small crossroads community of Frankville along the Leesburg and Alexandria Turnpike Road at its intersection with a road crossing the Alexandria, Loudoun & Hampshire Railway to the south. The community at Frankville appears to be small as shown on Figures 3-4.

Figure 4. Detail of a Civil War Era Map of Eastern Loudoun County showing the Project Vicinity (Macomb 1861).

The detail of the 1862 McDowell map shows no structures in the immediate vicinity of the APE (Figure 5). However, it does show that a store, a few homes, and a mill were located near Broad Run east of the project. Scheel's map of Loudoun County shows the trace of Braddock Road just south of the project. Archival information indicates that George Kilgour (1740-1818) was living in Loudoun County by 1778 and owned 450 acres which may have included the lands near the project on the east side of Broad Run (Gardner et al. 2001:31-32).

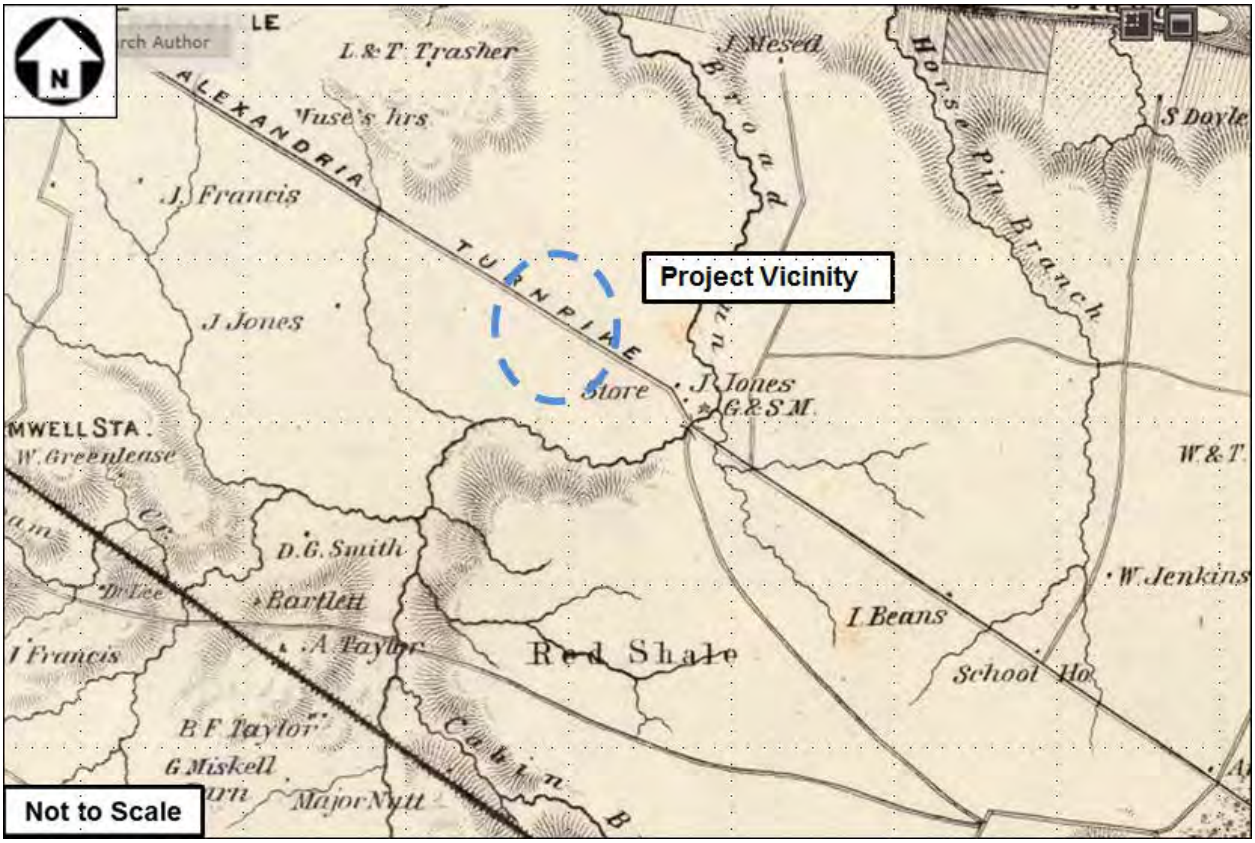

Figure 5. Detail of a Civil War Era Map of Loudoun County showing the Project Vicinity (McDowell 1862).

In addition to farming, the local economy in the area has focused on timbering and small scale commercial pursuits. The 1925 postal service map of the vicinity shows that the Frankville community had dried up and that occupation along Rte 7 near the project was dispersed. It is clear from the map that this area remained rural and sparsely populated during this portion of the twentieth century (Figure 6).

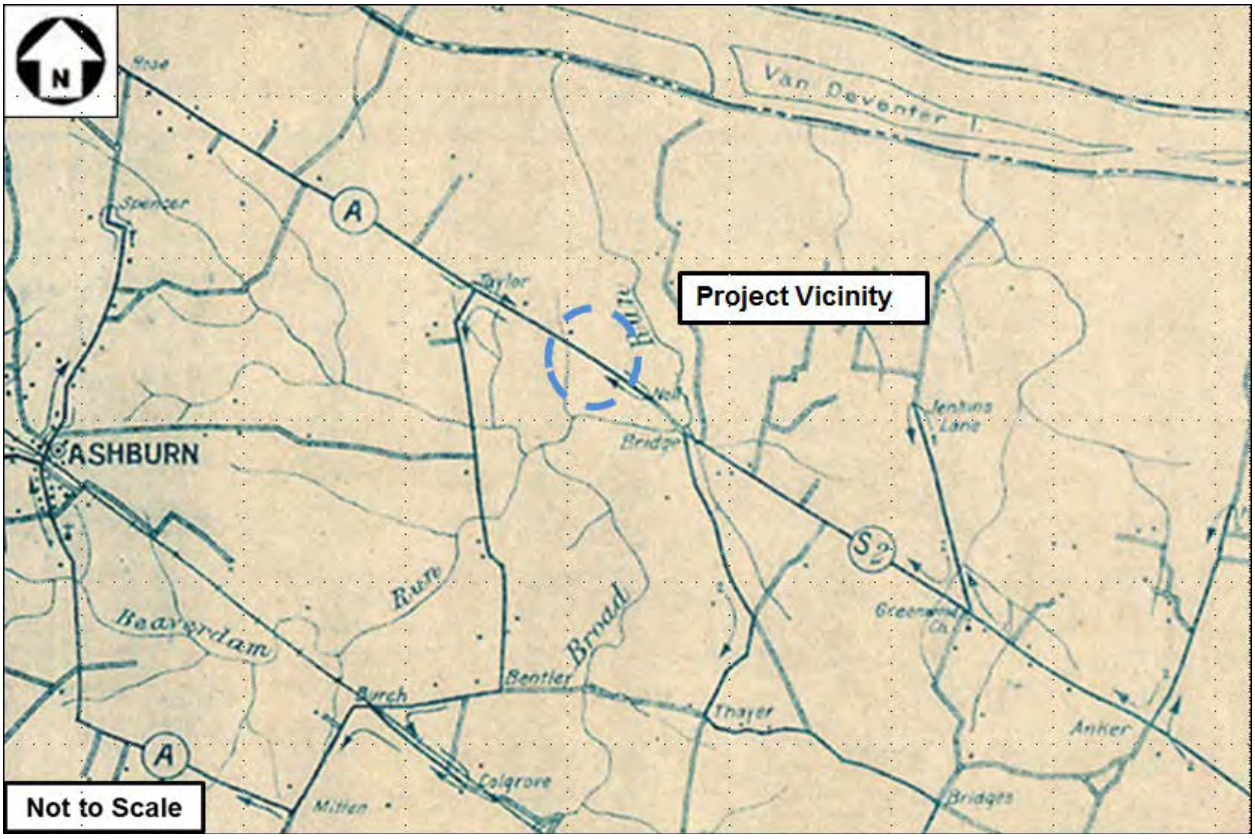

Figure 6. Detail of the Loudoun County United States Postal Service Map showing the Project Vicinity (USPS 1925).

During the early to middle twentieth century this area retained its rural character and was mostly undeveloped until the final decades of the twentieth century. The 1944 USGS quadrangle (Figure 7) shows only two residences along and south of Rte 7 at this time. Most other development along Rte 7 was still relatively limited; while older more established farmstead were situated at some distance from Rte 7 along interior, county roads. This quadrangle shows that a significant portion of land was wooded and the remainder was in pastures and (probably) row crops.

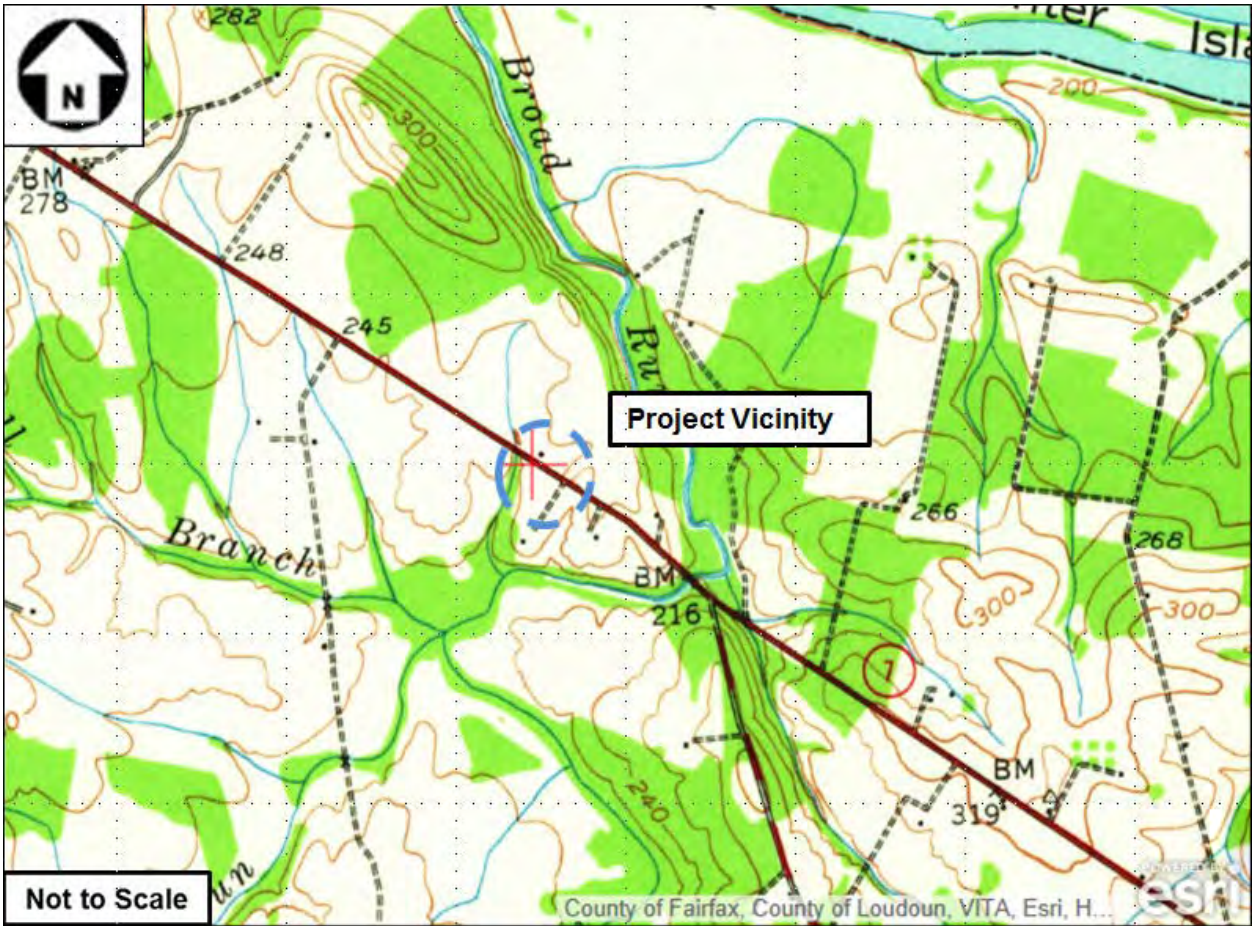

Figure 7. Detail of the *Seneca* Quadrangle in the Project Vicinity (USGS 1944).

Lands in the project vicinity today are typically broad ridgetops dissected by steep drainage ravines and swales. Disturbances adjacent to and within the APE include intensive land clearing and heavy commercial development, as well as activities associated with the maintenance and expansion of the existing road network and the installation of utilities.

The VDOT excavated a total of 21 shovel tests in the APE (Figure 8). Ten of these shovel tests were located on the south side of Russel Branch Pkwy at the location of proposed stormwater retention facility (Figure 9: TR1-2). This area is wooded and on a sloped terrace down to a tributary to Beaverdam Run to the west. Shovel tests in this area generally consisted of 10YR 3/6 silt clay loam (0-0.8-ft bgs) over 7.5YR 4/6 silt clay (0.8-1.5-ft bgs). A few of these shovel tests exhibited small gravels in the lower portion of the profiles. These soils appeared to be mostly intact; however no cultural remains were recovered here. This area is dissected by several ephemeral drainages to the creek to the west.

Three shovel tests were excavated on the top of the ridge just east of the intersection of Russell Branch Pkwy and Richfield Way. These shovel tests appeared to be somewhat disturbed and truncated from utility installation and land clearing (see Figure 9: TR2-2). Eight shovel tests were also excavated along the east side of Richfield Way toward Rte 7. Shovel tests in this area generally consisted of 7.5YR 4/4 silt clay loam (0 to 0.8-ft bgs) over culturally sterile 7.5YR 4/6 silt clay (0.8 to 1.5-ft bgs) (see Figure 9: TR3-2). The upper portion of the soil profiles in a number of shovel tests appeared truncated (probably from historic plowing). Representative shovel test profiles are provided in Figure 9 for reader examination.

The portions of the APE north of Rte 7 were heavily disturbed and were not shovel tested. Although not shovel tested, this area was visually inspected for archaeological remains and indications of archaeological features. No archaeological remains were noted in this area.

Figure 8. Schematic Planview of the Project APE.

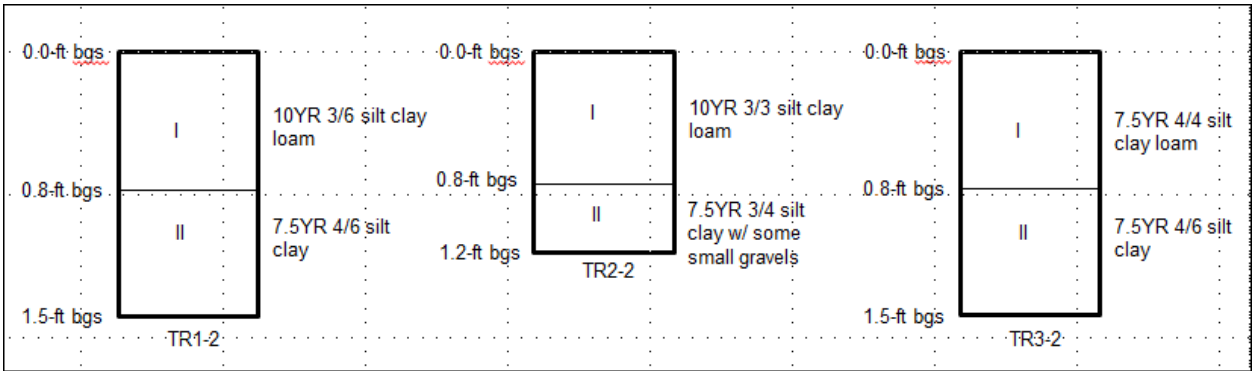

Figure 9. Representative Shovel Test Profiles.

Photographs showing conditions in the project are provided in Figures 10-11. Figure 10 shows the wooded area proposed for the stormwater basin to the southwest of the intersection of Russell Branch Pkwy and Richfield Way. Figure 11 shows the area proposed for the realignment of Richfield Way south of Rte 7.

Figure 10. Wooded Stormwater Management Area, View Southwest.

Figure 11. Area South of Rte 7 Adjacent to Richfield Way, View North.

Overall, soils in the archaeological APE for the project were unexceptional, and no intact cultural zones, archaeological remains, or archaeological features were noted in any of the shovel tests. Portions of the project APE were excluded from shovel testing by factors including obvious disturbances and low swales/drainage heads. No archaeological resources are present in the project APE or will be affected by the proposed project. No additional archaeological work is required.

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Appendix C: Air Quality Analysis

AIR QUALITY ANALYSIS

ROUTE 7/GEORGE WASHINGTON BLVD OVERPASS
0007-053-086, B668, C501, P101, R201

UPC 105584

Northern Virginia District

Prepared by:

Christopher Voigt
Environmental Division

August 16, 2016

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Executive Summary

The Virginia Department of Transportation (VDOT) is proposing to "*construct a flyover spanning Route 7 and provide connectivity between George Washington Blvd, which currently terminates at Research Place, on the north side of Route 7; and Russell Branch Pkwy on the south side of Route 7. No access from Route 7 to flyover is planned. Bridge will include bike & ped facilities*"[1]. The project does not involve additional capacity on Route 7 itself.

The proposed improvements were assessed for potential air quality impacts and conformity consistent with all applicable air quality regulations and requirements. All models, methods and assumptions were also consistent with those provided or specified in the VDOT Resource Document[2]. The assessment indicates that the project would meet all applicable air quality requirements of the National Environmental Policy Act (NEPA) and federal and state transportation conformity regulations. As such, the project will not cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of national ambient air quality standards (NAAQS) as established by the US Environmental Protection Agency (US EPA). Additional detail is provided below.

Fine Particulate Matter ($PM_{2.5}$) Analysis: As the project is located in a region that is currently in maintenance for the (annual) NAAQS for $PM_{2.5}$, EPA project-level ("hot-spot") transportation conformity requirements apply. The project was therefore assessed against criteria for specified in the EPA conformity regulation as well as those established in the VDOT Resource Document, which were made the subject of inter-agency consultation for conformity (IACC) purposes in December 2015 with EPA, the Federal Highway Administration (FHWA), Virginia Department of Environmental Quality (VDEQ), and other agencies.

- Most importantly, the project does not exceed EPA regulatory or VDOT Resource Document criteria that would cause for it to be considered one of potential air quality concern for $PM_{2.5}$.
- Additional considerations or factors that provide additional weight of evidence that the project is not one of potential air quality concern for $PM_{2.5}$ include:

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[1] VDOT Scoping Report (PM-100), January 2016

[2] In 2016, in order to facilitate and streamline the preparation of project-level air quality analyses, and maintain high quality standards for modeling and documentation, the Department created a new resource for modeling. Titled the "Resource Document", it includes an associated online data repository (DR) for all modeling inputs needed for project-level air quality analyses in Virginia. The Resource Document and DR address in a comprehensive fashion the models, methods and assumptions (including data and data sources) needed for the preparation of air quality analyses for transportation projects by or on behalf of the Department. The Resource Document and DR are available on or via the Department website (http://www.virginiadot.org/projects/environmental_air_section.asp). All of the data and information specified in the Resource Document and provided in the repository were subjected to review for compliance with all applicable requirements and guidance. This included inter-agency consultation for conformity (IACC) purposes where transportation conformity requirements apply, i.e., for nonattainment and maintenance areas in northern Virginia. More details on the IACC for the Resource Document and associated DR are presented in Section 6 of the Air Quality Study (Consultation).

- The project involves implementation of a grade separation for a local road with relatively low traffic volumes over Route 7. No mainline (Route 7) capacity increases are proposed as part of the project.
- The region in which the project is located is now not only in attainment (maintenance) of the 1997 annual primary $PM_{2.5}$ NAAQS for which it had been in nonattainment, it also meets the more stringent 2012 $PM_{2.5}$ annual primary NAAQS. It also has always been in attainment of the 24-hour $PM_{2.5}$ NAAQS.
- EPA, with the implementation of the 2012 $PM_{2.5}$ NAAQS, proposed to revoke the 1997 annual primary $PM_{2.5}$ NAAQS[3]. In July 2016, EPA issued a pre-publication version of the final rule including the revocation as proposed.[4] As that is the NAAQS for which this region is currently in maintenance, its imminent revocation will result in the elimination of the associated EPA conformity requirements for this region. This analysis for $PM_{2.5}$, which is being conducted for conformity purposes only (and not NEPA), will then not even be required.

Carbon Monoxide (CO): As the project is located in a region that is attainment of the EPA NAAQS for CO, EPA project-level ("hot-spot") transportation conformity requirements do not apply for this project. For purposes of NEPA, worst-case emission and dispersion modeling was conducted for the project. All modeling inputs were made consistent with the VDOT Resource Document. Assumptions included:

- Worst-case traffic volumes that exceed both the opening and design year ADT forecasts for this project by substantial margins. Most importantly, Route 7 was modeled with ten lanes with each lane carrying worst-case volumes for restricted access facilities, while the actual build scenario has six lanes and one auxiliary lane at the location of the proposed grade separation. Similarly, the George Washington Boulevard (GWB) grade separation (and other local roads) were modeled as eight lane facilities, each carrying worst-case volumes for streets with signalized intersection, whereas the actual grade separation is planned to have four lanes open to traffic and other local roads four lanes or less.
- Worst-case receptor locations on the edge of the roadway right-of-way, i.e., at the closest possible point to roadway.
- Worst-case geometric assumptions that serve to concentrate traffic, emissions and concentrations to the greatest extent possible:
    - Zero vertical separation for the grade separation and Route 7 mainline, which

---

[3] On March 23, 2015, EPA issued a proposed rule (80 FR 15340) on "*Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements*" that stated, in part: "… *EPA is proposing to revoke the 1997 primary annual standard because the EPA revised the primary annual standard in 2012*". See: https://www.gpo.gov/fdsys/pkg/FR-2015-03-23/pdf/2015-06138.pdf.

[4] EPA, website notice "*PM25 NAAQS Implementation Final Rule and Fact Sheet July 2016*", July 2016. See: https://www.epa.gov/pm-pollution/pm25-naaqs-implementation-final-rule-and-fact-sheet-july-2016. From the summary provided in the pre-publication version of the final rule , EPA states that: "*Additionally, in this notice the EPA is revoking the 1997 primary annual standard for areas designated as attainment for that standard because the EPA revised the primary annual standard in 2012*." Once the final rule is published and the effective date met (60 days after publication, as noted in the pre-publication version), the associated project-level ("hot-spot") air quality analysis requirements as specified in the federal transportation conformity rule would no longer apply nationwide for the $PM_{2.5}$ annual primary NAAQS.

serves to increase modeled concentrations.
    - Zero median widths for Route 7 (in addition to all local roads).
    - Modeling the adjacent arterial intersections as located only 400 feet from Route 7, which is closer than they are currently or are planned. This assumption serves to increase the modeled concentrations at both the local street intersections and the grade separation with Route 7.
- Worst-case emission factor (corresponding to 40 mph at 7% road grade) for all local roads, recognizing that emission factors increase with speed for higher road grades for restricted access facilities (including local roads).

Overall, the results indicate that, even assuming worst-case traffic volumes and other modeling inputs, ambient levels of CO in the vicinity of the project are expected to decline significantly over time and to remain below both the one-hour and the eight-hour NAAQS. In general, emissions and ambient concentrations drop significantly over time through the opening and design years due to continued fleet turnover to vehicles constructed to more stringent emission standards. The project therefore is not expected to cause or contribute to a violation of the CO standards.

Mobile Source Air Toxics (MSATs): As indicated in FHWA guidance (2012), MSATs include: acrolein, benzene, 1,3 butadiene, diesel particulate matter, formaldehyde, naphthalene, and polycyclic organic matter. Following FHWA guidance, this project may be categorized as one with low potential MSAT effects based on the criteria specified in the guidance and the forecast traffic volumes for this project. A qualitative assessment was therefore conducted for the project, following FHWA guidance for projects with low potential impacts.

Overall, best available information indicates that, nationwide, regional levels of MSATs are expected to decrease in the future due to ongoing fleet turnover and the continued implementation of increasingly more stringent emission and fuel quality regulations. Nonetheless, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects effectively limit meaningful or reliable estimates of MSAT emissions and effects of this project at this time. While it is possible that localized increases in MSAT emissions may occur as a result of this project, emissions will likely be lower than present levels in the design year of this project as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. Although local conditions may differ from these national projections in terms of fleet mix and turnover, vehicle-miles-travelled (VMT) growth rates, and local control measures, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Indirect Effects and Cumulative Impacts: Indirect effects are defined by the Council on Environmental Quality (CEQ) as "effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water or other natural systems,

including ecosystems" (40 CFR 1508.8(b)). For transportation projects, induced growth is attributed to changes in accessibility caused by the project that influences the location and/or magnitude of future development.[5]

Cumulative impacts are "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7). According to the Federal Highway Administration's (FHWA) *Interim Guidance: Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process*, cumulative impacts include the total of all impacts to a particular resource that have occurred, are occurring, and will likely occur as a result of any action or influence, including the direct and reasonably foreseeable indirect impacts of a proposed project. Cumulative impacts include indirect effects.

The potential for indirect effects or cumulative impacts to air quality that may be attributable to this project is not expected to be significant for two reasons. First, regarding indirect effects, the quantitative assessments conducted for project-specific CO, qualitative analyses for MSAT impacts and the regional conformity analysis conducted for ozone can all be considered indirect effects analyses because they look at air quality impacts attributable to the project that occur at a later time in the future. These analyses demonstrate that in the future, 1) air quality impacts from CO will not cause or contribute to violations of the CO NAAQS; 2) MSAT emissions will be significantly lower than they are today; and 3) the mobile source emissions budgets established for the region for purposes of meeting the ozone NAAQS will not be exceeded.

Second, regarding the potential for cumulative impacts, the annual conformity analysis conducted by the National Capital Region (NCR) Transportation Planning Board (TPB, which is the Metropolitan Planning Organization or MPO for the Washington, D.C. metropolitan nonattainment/ maintenance area) represents a cumulative impact assessment for purposes of regional air quality. Federal conformity requirements, including specifically 40 CFR 93.114 and 40 CFR 93.115, apply as the area in which the project is located is designated as nonattainment for ozone and maintenance for fine particulate matter. Accordingly, there must be a currently conforming transportation plan and program at the time of project approval, and the project must come from a conforming plan and program (or otherwise meet criteria specified in 40 CFR 93.109(b)).

- The existing air quality designations for the region are based, in part, on the accumulated mobile source emissions from past and present actions, and these pollutants serve as a baseline for the current conformity analysis.
- The conformity analysis quantifies the amount of mobile source emissions for which the area is designated nonattainment/maintenance that will result from the implementation of all reasonably foreseeable regionally significant transportation projects in the region (i.e. those proposed for construction funding over the life of the region's transportation plan).

[5] See: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_466.pdf

- The most recent conformity analysis was completed in October 2015, with FHWA and FTA issuing a conformity finding on February 4, 2016 for the TIP and CLRP covered by that analysis. This analysis demonstrated that the incremental impact of the proposed project on mobile source emissions, when added to the emissions from other past, present, and reasonably foreseeable future actions, is in conformance with the SIP and will not cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of the NAAQS established by EPA.

Therefore, the indirect and cumulative effects of the project are not expected to be significant.

Mitigation: Emissions may be produced in the construction of this project from heavy equipment and vehicle travel to and from the site, as well as from fugitive sources. Construction emissions are short term or temporary in nature. To mitigate these emissions, all construction activities are to be performed in accordance with VDOT *Road and Bridge Specifications*[6].

The Virginia Department of Environmental Quality (VDEQ) provides general comments for projects by county. Their comments in part address mitigation. For Loudoun County, VDEQ comments[7] were: "*This project is located within a Marginal 8-hour Ozone Nonattainment area, a Fine Particulate Matter (PM2.5) Maintenance area, and a volatile organic compounds (VOC) and nitrogen oxides (NOx) Emissions Control Area. As such, all reasonable precautions should be taken to limit the emissions of VOC, NOx, and particulate matter. In addition, the following VDEQ air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions*[8]*; 9 VAC 5-45, Article 7, Cutback Asphalt restrictions*[9]*; and 9 VAC 5-50, Article 1, Fugitive Dust precautions*[10]."

Project Status in the Regional Transportation Plan and Program: Federal conformity requirements, including specifically 40 CFR 93.114 and 40 CFR 93.115, apply as the area in which the project is located is designated as nonattainment for ozone and maintenance for fine particulate matter. Accordingly, there must be a currently conforming transportation plan and program at the time of project approval, and the project must come from a conforming plan and program (or otherwise meet criteria specified in 40 CFR 93.109(b)).

As of the date of preparation of this analysis, the project is included in the currently conforming 2015 Constrained Long Range Transportation Plan (CLRP) as well as in the upcoming 2016 CLRP[11]. The CLRP and TIP are developed by the TPB, whose members include VDOT[12].

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6 See http://www.virginiadot.org/business/const/spec-default.asp
7 Spreadsheet entitled: "DEQ SERP Comments rev7 draft", April 2016
8 See http://leg1.state.va.us/000/reg/TOC09005.HTM#C0130
9 See http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-45-760
10 See http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-50-60
11 J. Posey, TPB, email 7/26/2016.
12 See: http://www.mwcog.org/transportation/tpb/.

1.0 Project Background

1.1 Project Description

The Virginia Department of Transportation (VDOT) is proposing to: "*construct a flyover spanning Route 7 and provide connectivity between George Washington Blvd, which currently terminates at Research Place, on the north side of Route 7; and Russell Branch Pkwy on the south side of Route 7. No access from Route 7 to flyover is planned. Bridge will include bike & ped facilities*"[13].

The project does not involve additional capacity on Route 7 itself. Exhibits 1.1.1 and Exhibit 1.1.2 provide an overview and an aerial of the project area, respectively. Exhibit 1.1.3 presents details on current road grades for Route 7, George Washington Boulevard (GWB) and other local roads. Exhibit 1.1.4 presents the project plan and profile title sheet[14]. Exhibits 1.1.5 and 1.1.6 present Alternatives 1 and 2 for the proposed grade separation (GWB Overpass).

1.2 Summary of Traffic Data and Forecasts

For Route 7, which is not being improved as part of this project but is the major crossroad, average daily traffic (ADT) is forecast to be 106 and 102 thousand for the build and no build scenarios respectively by the design year of 2041[15]. For the project opening year 2022, ADT is forecast to reach 103 and 101 thousand respectively for the build and no build scenarios. Truck percentages are low, comprising only 3% of daily traffic volume (with 1% each from Class 4-5, 6-7, and 8-13 trucks)[16].

Exhibits 1.2.1 and 1.2.2 present design year ADT forecasts[17] and truck percentages[18] respectively for GWB, which is the focus of improvements for this project. Note the truck percentages presented in Exhibit 1.2.2 are based on the combined traffic counts for local roads, which was taken by NOVA District Transportation Planning Division to represent the anticipated conditions for the proposed GWB Overpass as well as the other local roads.

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13 VDOT Scoping Report (PM-100), January 2016

14 The final plans are not expected to include the roundabout shown in the preliminary (PFI) plans, but would have a signalized intersection instead. (Personal Communication, L. Tachmetova, 7/21/2016)

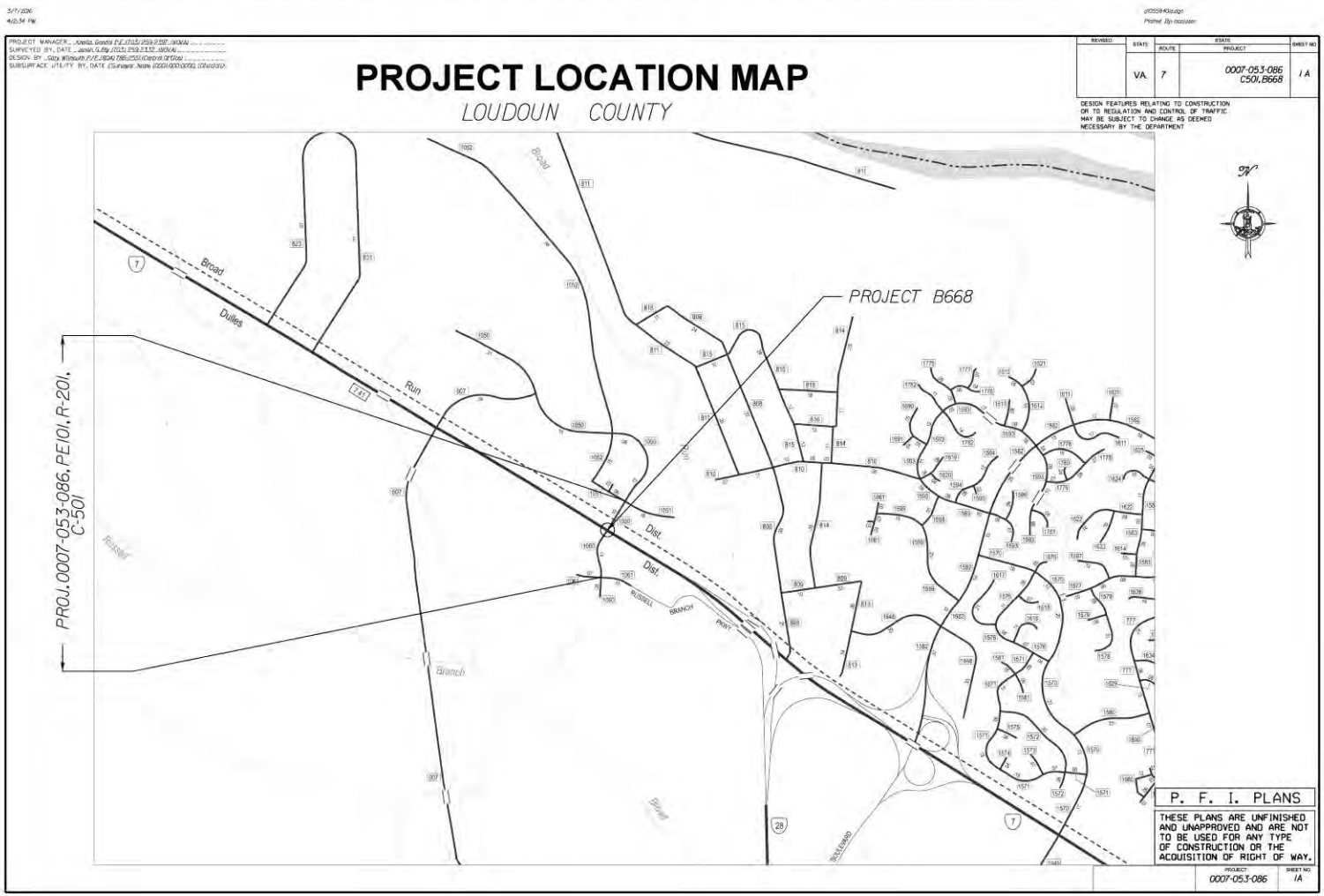
15 VDOT Northern Virginia District, "ROUTE 7/GEORGE WASHINGTON BLVD OVERPASS, Project# 0007-053-086, P101, R201, C501, B668, UPC# 105584 Activity Code 616, ENTRADA2016-01 Analysis Outputs for Air Quality Study, Analysis Segment between Claiborne Parkway (VA-901) and Route 28", February 1, 2016

16 VDOT Northern Virginia District email, 6/21/2016

17 VDOT Northern Virginia District Memorandum, "*Route 7/Route 1050, George Washington Blvd. Overpass, Project# 0007-053-086, P1014, R201, C501, B668; UPC# 105584/Act. 616*", March 13, 2015

18 VDOT Northern Virginia District Transportation Planning Division email and personal communication re the truck percentages to apply for local roads (updating prior estimates), 7/28/2016

Exhibit 1.1.1: Project Location

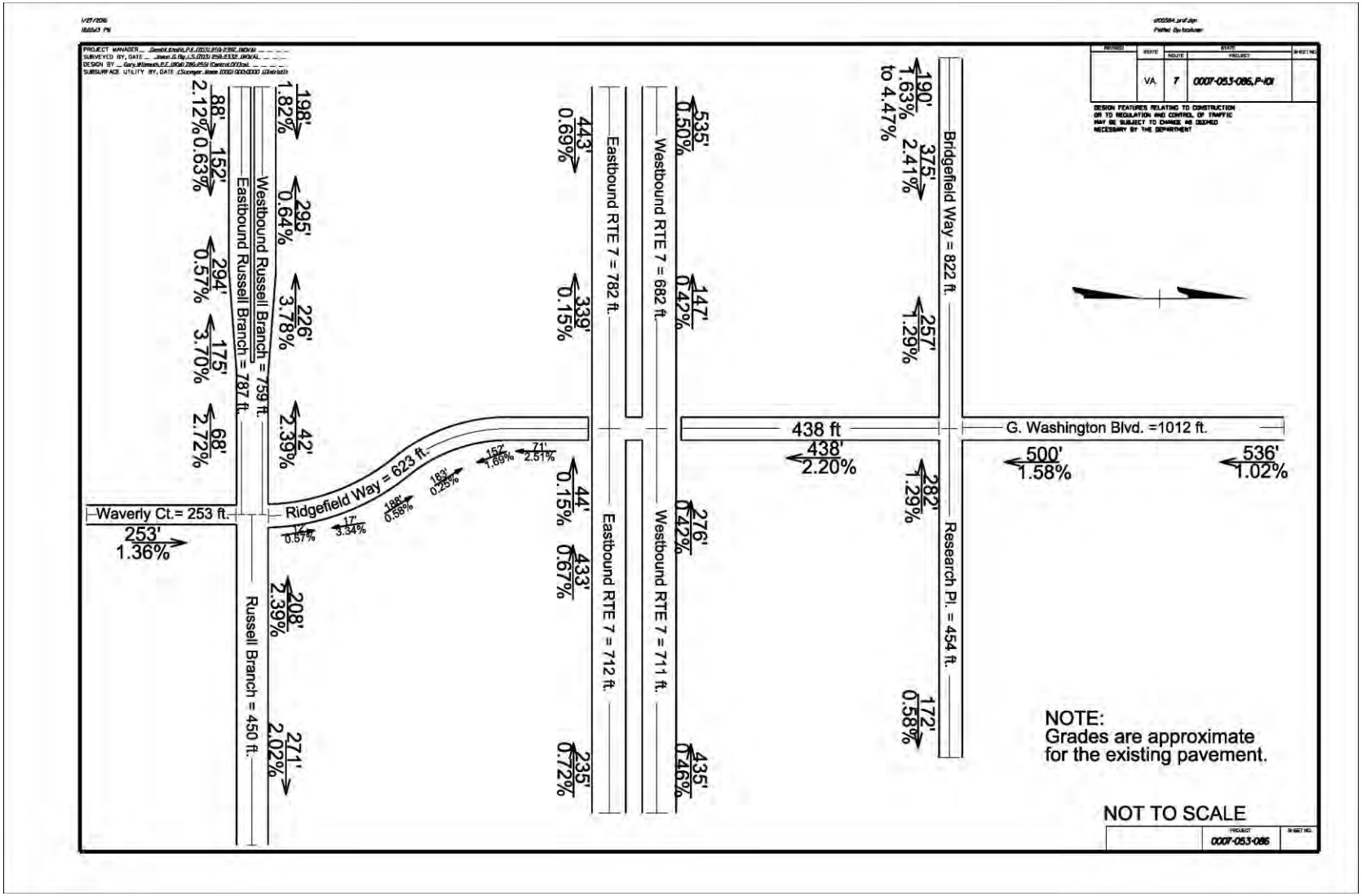


Source: VDOT IPM (intranet), accessed 6/14/2016

Exhibit 1.1.2: Aerial

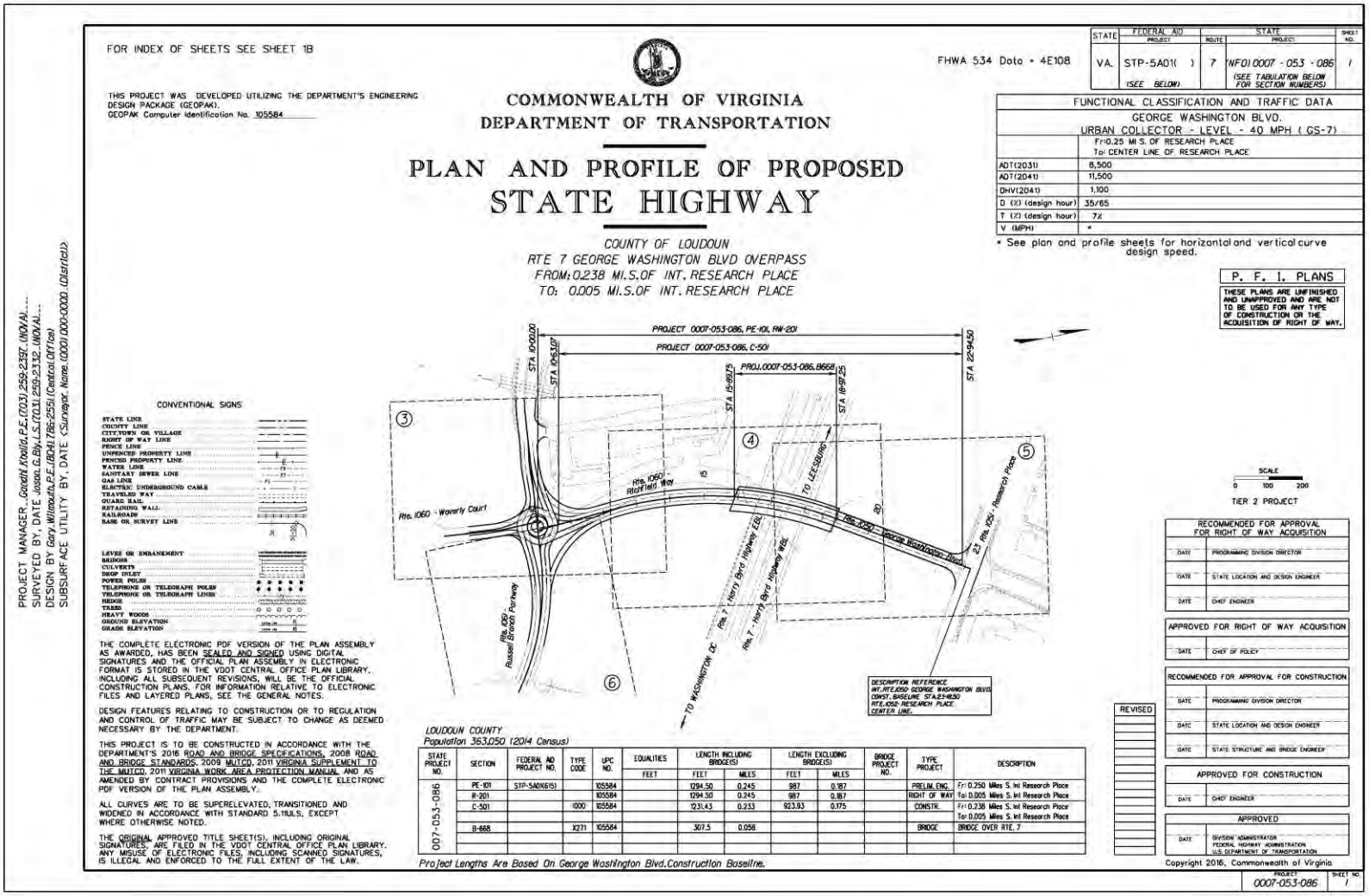
Source: Bing.com (Microsoft) 2016

Exhibit 1.1.3: Average Road Grades



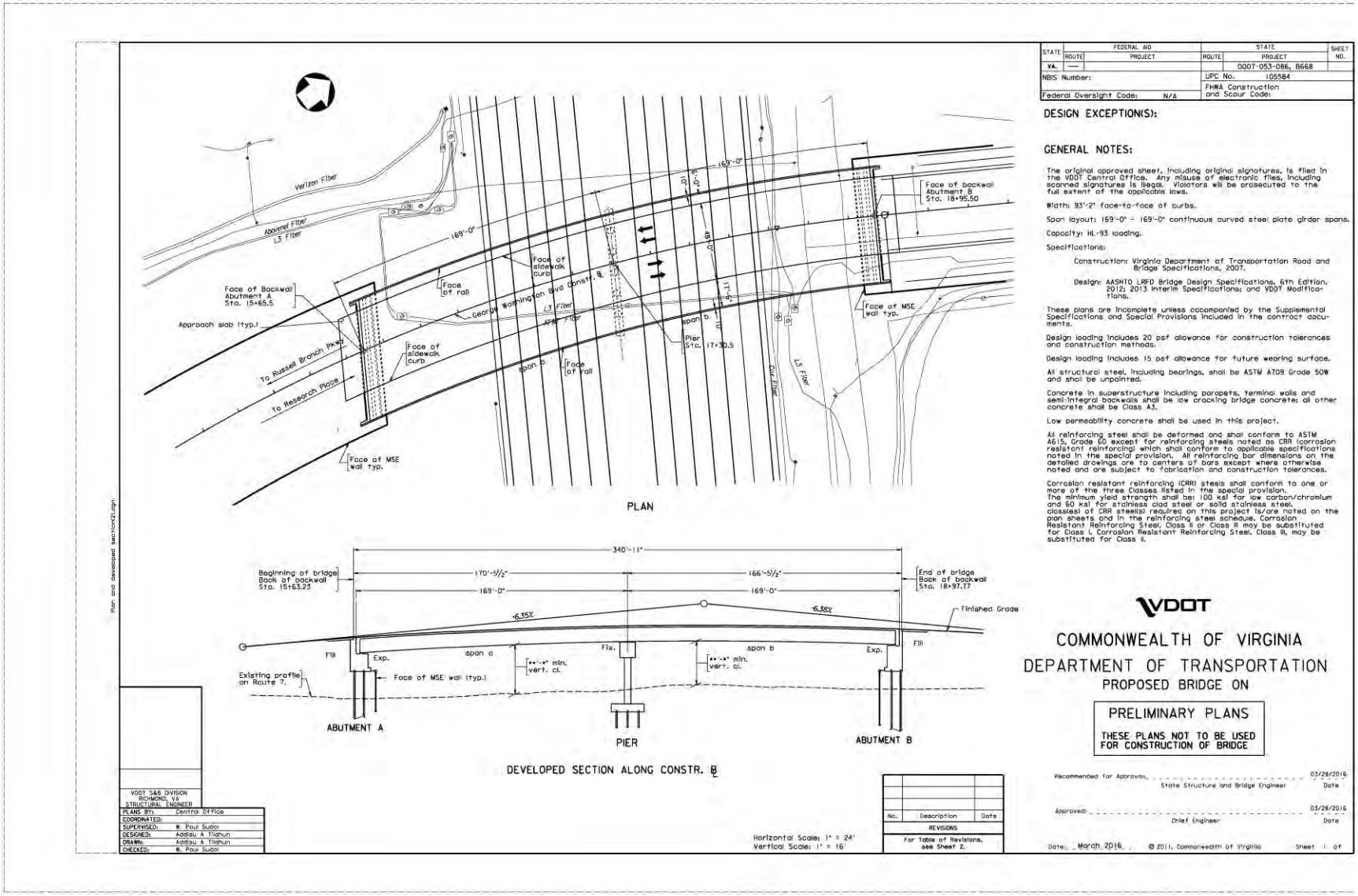
Source: Email attachment 1/28/2016 from L. Tachmetova, VDOT Location & Design

Exhibit 1.1.4: Plan and Profile



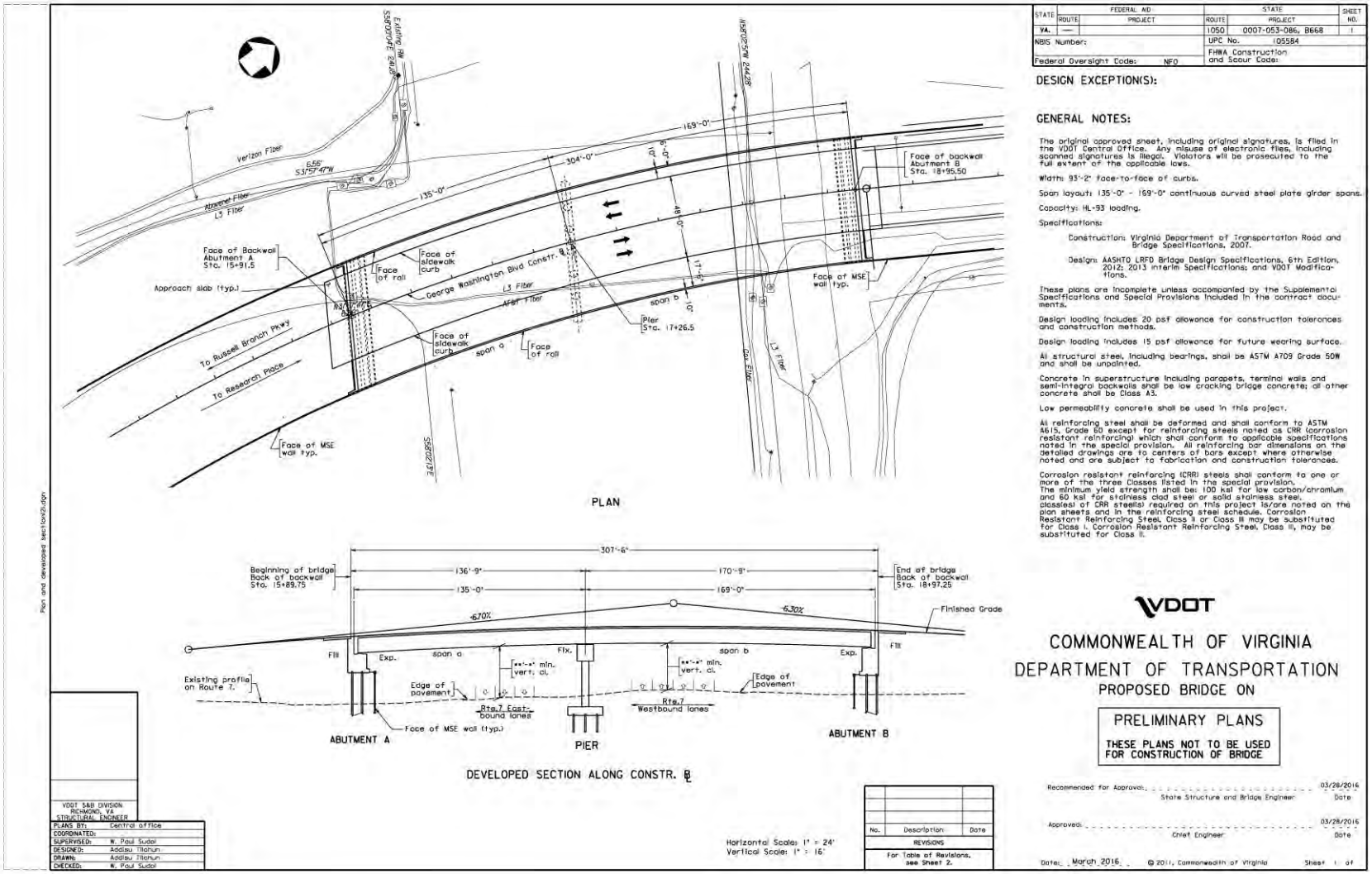
Source: VDOT IPM (intranet), accessed 6/14/2016

Exhibit 1.1.5: Alternative 1 for the Grade Separation



Source: VDOT IPM (intranet), accessed 7/20/2016

Exhibit 1.1.6: Alternative 2 for the Grade Separation



Source: VDOT IPM (intranet), accessed 7/20/2016

Exhibit 1.2.1: ADT Forecasts for George Washington Boulevard and Other Local Roads

Source: VDOT Northern Virginia District Memorandum, "Route 7/Route 1050, George Washington Blvd. Overpass, Project# 0007-053-086, P1014, R201, C501, B668; UPC# 105584/Act. 616", March 13, 2015

Exhibit 1.2.2: Truck Percentages for George Washington Boulevard (Combined with Local Roads)

	Truck Percentages	
	2X-6T	3X+
Daily	4%	0.2%
AMPH	3%	0.2%
PMPH	3%	0.0%

Source: VDOT Northern Virginia District Email, 7/28/2016

Exhibits 1.2.3-1.2.6 present intersection Level of Service (LOS) estimates for the no build and build scenarios. While the no build shows LOS E and F conditions for specific movements for Richfield Way at Russell Branch Parkway, the build scenario (either roundabout or signalization with improvements) shows improved LOS. The LOS for the intersection at GWB at Bridgefield Way degrades from A to C for certain movements.

Copies of the detailed traffic forecasts are provided as Attachment A to this report.

Exhibit 1.2.3: Intersection Level of Service for the No Build Scenario

2041 No Build with No Bridge GW Boulevard at Bridgefield Way							
		AM			PM		
		Delay (secs)	LOS	95th Q (ft)	Delay (secs)	LOS	95th Q (ft)
EB	Left	7.4	A	2.5	7.7	A	2.5
	Thru	0.1	A	0	0	A	0
	Right	0.1	A	0	0	A	0
WB	Left	0	A	0	0	A	0
	Thru	0	A	0	0	A	0
	Right	0	A	0	0	A	0
SB	Left	9.8	A	2.5	9.8	A	0
	Right	8.5	A	0	8.9	A	0
Overall		---	---	---			---

2041 No Build with No Bridge Richfield Way at Russell Branch Pkwy							
		AM			PM		
		Delay (secs)	LOS	95th Q (ft)	Delay (secs)	LOS	95th Q (ft)
EB	Left	8.1	A	2.5	8.9	A	2.5
	Thru	0.1	A	0	0.1	A	0
	Right	0.1	A	0	0.1	A	0
WB	Left	10	A	15	8.6	A	10
	Thru	0.6	A	0	0.5	A	0
	Right	0.6	A	0	0.5	A	0
NB	Left/Thru/Right	42.3	E	82.5	61.1	F	185
SB	Left/Thru	36	E	17.5	42.8	E	20
	Right	9.5	A	2.5	10.5	B	2.5
		ERR					
Overall		---	---	---			---

Source: VDOT Email 8/8/2016 (with update to "105584 MOE.xlsx" spreadsheet tables)

Exhibit 1.2.4: Intersection Level of Service for the Build Scenario (Signals) for GW Boulevard at Bridgefield Way

SIGNALS								
AM- peak hour warrant not met (840 major, 325 minor), PM peak not met (865 major, 235 minor)								
GW Boulevard at Bridgefield Way								
		AM				PM		
		Delay (secs)	LOS	95th Q (ft)		Delay (secs)	LOS	95th Q (ft)
EB	Left/Thru	11.9	B	36		13	B	32
	Thru/Right	14.4	B	36		14.1	B	32
WB	Left/Thru	18.1	B	34		17.6	B	43
	Thru/Right	11.8	B	34		13.3	B	43
NB	Left/Thru	11.6	B	66		10.2	B	87
	Thru/Right	8.6	A	66		8.6	A	87
SB	Left/Thru	7.5	A	46		6.1	A	28
	Thru/Right	7.7	A	46		6.1	A	28
Overall		10.9	B	---		10.6	B	---

Source: VDOT, "105584 MOE.xlsx" (spreadsheet tables, undated)

Exhibit 1.2.5: Intersection Level of Service for the Build Scenario (Signals with Improvements) for Richfield Way at Russel Branch Pkwy

		AM				PM		
		Delay (secs	LOS	95th Q (ft)		Delay (secs	LOS	95th Q (ft)
EB	Left	19.3	B	102		27.3	C	184
	Thru/Righ	30.5	C	173		16.8	B	90
WB	Left	16.7	B	63		13.1	B	55
	Thru/Righ	31.1	C	101		35.3	D	258
NB	Left/Thru/	17.8	B	56		27.5	C	151
SB	Left	18.9	B	241		23.6	C	171
	Thru/Righ	14.3	B	47		16.3	B	45
Overall		24.5	C			26.4	C	---

Source: VDOT, "105584 MOE.xlsx" (spreadsheet tables, undated)

Exhibit 1.2.6: Intersection Level of Service for the Build Scenario (Roundabout) for Richfield Way at Russel Branch Pkwy

Richfield Way at Russell Branch Pkwy							
		AM			PM		
		Delay (secs	LOS	95th Q (ft)	Delay (secs)	LOS	95th Q (ft)
EB	Left/Thru	22.1	C	174	15.7	B	72
	Thru/Right	17.3	B	177	11.4	B	72
WB	Left/Thru	13.9	B	76	17.5	B	160
	Thru/Right	9.6	A	76	13.2	B	160
NB	Left/Thru/Ri	19.1	B	40	17.8	B	61
SB	Left	18.4	B	131	19.3	B	99
	Thru/Right	14.2	B	8	13.9	B	49
Overall		14.8	B	---	13.9	B	---

Source: VDOT, "105584 MOE.xlsx" (spreadsheet tables, undated)

2.0 Regulatory Requirements and Guidance

2.1 National Ambient Air Quality Standards

Exhibit 2.1.1 presents the national ambient air quality standards (NAAQS) established by the EPA for criteria air pollutants, namely: carbon monoxide (CO), sulfur dioxide (SO_2), ozone (O_3), particulate matter (PM), nitrogen dioxide (NO_2), and lead (Pb). There are two types of NAAQS—primary and secondary. EPA notes on the same webpage that: "*Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings*."[19]

Areas which have never been designated nonattainment are classified as attainment areas. Areas that do not meet the NAAQS are designated as nonattainment areas for that pollutant. Control strategy State Implementation Plans (SIPs) are designed to bring nonattainment areas into compliance with the NAAQS. Once nonattainment areas meet the NAAQS, they may be re-designated by EPA as maintenance areas.

[19] See: https://www.epa.gov/criteria-air-pollutants/naaqs-table

Exhibit 2.1.1: National Ambient Air Quality Standards (US EPA Tabulation)

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 μg/m³ (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 μg/m³	annual mean, averaged over 3 years
		secondary	1 year	15.0 μg/m³	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 μg/m³	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 μg/m³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 μg/m3 as a calendar quarter average) also remain in effect.

(2) The level of the annual NO2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which implementation plans providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous SO2 standards or is not meeting the requirements of a SIP call under the previous SO2 standards (40 CFR 50.4(3)), A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the require NAAQS.

Source: Excerpted from the US EPA web page at https://www.epa.gov/criteria-air-pollutants/naaqs-table , accessed July 26, 2016.

Note, EPA, with the implementation of the 2012 $PM_{2.5}$ NAAQS, proposed to revoke the 1997 annual primary $PM_{2.5}$ NAAQS[20]. In July 2016, EPA issued a pre-publication version of the final rule including the revocation as proposed.[21] At the time of preparation of this report, the final rule has not been issued in the Federal Register.

Of the criteria pollutants, project-level air quality analyses focus on CO and PM, EPA provides the following background information on CO[22]:

> *Carbon monoxide (CO) is a colorless, odorless gas emitted from combustion processes. Nationally and, particularly in urban areas, the majority of CO emissions to ambient air come from mobile sources. CO can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues. At extremely high levels, CO can cause death.*

Particulate matter smaller than or equal to 10 and 2.5 microns in diameter is referred to as PM_{10} and $PM_{2.5}$ respectively. EPA provides the following background information on PM[23]:

> *"PM stands for particulate matter (also called particle pollution): the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope.*
>
> *Particle pollution includes:*
> *•PM10 : inhalable particles, with diameters that are generally 10 micrometers and smaller; and*
> *•PM2.5 : fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.*
> *◦How small is 2.5 micrometers? Think about a single hair from your head. The average human hair is about 70 micrometers in diameter – making it 30 times larger than the largest fine particle."*

2.2 National Environmental Policy Act of 1969 (NEPA)

Federal requirements for air quality (hot-spot) analyses for transportation projects derive from the National Environmental Policy Act (NEPA) and the federal transportation conformity rule (40 CFR Parts 51 and 93). In general, while NEPA requirements apply for all transportation projects regardless of location, federal transportation conformity requirements apply only for

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[20] On March 23, 2015, EPA issued a proposed rule (80 FR 15340) on "*Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements*" that stated, in part: "… *EPA is proposing to revoke the 1997 primary annual standard because the EPA revised the primary annual standard in 2012*". See: https://www.gpo.gov/fdsys/pkg/FR-2015-03-23/pdf/2015-06138.pdf.

[21] EPA, website notice "*PM25 NAAQS Implementation Final Rule and Fact Sheet July 2016*", July 2016. See: https://www.epa.gov/pm-pollution/pm25-naaqs-implementation-final-rule-and-fact-sheet-july-2016. From the summary provided in the pre-publication version of the final rule , EPA states that: "*Additionally, in this notice the EPA is revoking the 1997 primary annual standard for areas designated as attainment for that standard because the EPA revised the primary annual standard in 2012*."

[22] See: http://www.epa.gov/airquality/carbonmonoxide/

[23] See: https://www.epa.gov/pm-pollution

projects in areas designated by the US Environmental Protection Agency (US EPA) as ones in nonattainment or maintenance of specific NAAQS.

Air quality is an environmental concern within the broad purview of NEPA. The key action forcing component of NEPA was the introduction of a requirement for federal agencies to prepare a "detailed statement" addressing the environmental impacts of their proposed projects and programs. The requirements of NEPA have been further defined in the Council of Environmental Quality (CEQ) NEPA regulations that apply to all federal agencies (40 CFR 1500) and the FHWA/FTA joint NEPA procedures (23 CFR 771).

NEPA guidance for air quality analyses for transportation projects may be found on or via the Federal Highway Administration (FHWA) website for planning and the environment[24]. Additional information is provided on CEQ website[25], and current research is presented on or via the Transportation Research Board air quality website[26]. Brief background information is provided below.

2.2.1 FHWA Guidance and Software

2.2.1.1 FHWA 1987 Technical Advisory 6640.8A

FHWA's 1987 Technical Advisory 6640.8A, *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*[27] provides general guidance for CO project-level analyses for purposes of NEPA.

2.2.1.2 FHWA Interface Software

FHWA has developed user-friendly interface software to facilitate the application of US EPA dispersion models to meet all applicable federal requirements and guidance, which the Department applies for project-level CO modeling. By assisting modelers in specifying appropriate inputs for worst-case scenario modeling and screening analyses, the FHWA interface model helps to guide and streamline the modeling process, improve quality control and assurance, and minimize time and costs for modeling[28].

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[24] See: http://www.fhwa.dot.gov/environment/index.cfm

[25] See the https://www.whitehouse.gov/administration/eop/ceq as well as the CEQ Section of the Code of Federal Regulations.

[26] See: http://trbairquality.org/. Note: Project-level analyses are addressed at: http://www.trbairquality.org/projectpage/

[27] See: https://www.environment.fhwa.dot.gov/projdev/impTA6640.asp

[28] FHWA develops and maintains graphical user interface software to facilitate and streamline dispersion modeling for state DOTs and other users. *Cal3Interface* was originally designed as a user-friendly interface model for the US EPA CALINES3 and CAL3QHC models. It was released in December 2006 and updated periodically since. The latest version ("*Cal3i*") is based upon their initial version and includes significant new features and enhancements. For more background on the *Cal3Interface* model and the FHWA worst-case scenario modeling guidance, see:

- M. Claggett (FHWA), "CAL3Interface – A Graphical User Interface for the CALINE3 and CAL3QHC Highway Air Quality Models", ca 2006.
- M. Claggett (FHWA), "Update of FHWA's Cal3Interface – A Graphical User Interface for the CALINE3

2.2.2 Mobile Source Air Toxics (MSATs) and FHWA Interim Guidance

On February 3, 2006, FHWA and EPA issued joint guidance[29] for the assessment of MSATs in the NEPA process for highways. The guidance includes specific criteria for determining which projects are to be considered exempt from MSAT analysis requirements, which may require a qualitative analysis, and which should undergo a quantitative assessment. The priority MSATs identified in the guidance were benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene. The priority list was noted in the guidance as subject to change.

On September 30, 2009, FHWA issued updated guidance[30]. The 2009 update superseded the previous guidance, addressing "*…recent regulatory changes; … stakeholder requests to broaden the horizon years of emission trends performed with MOBILE6.2; and … the status of scientific research on air toxics*."[31] The 2009 guidance updated the list for priority MSATs to the following seven: "*acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.*"[32]

On December 6, 2012, FHWA issued another update[33] to the guidance. As stated in the purpose for the update: "*...This update reflects recent changes in methodology for conducting emissions analysis and updates of research in the MSAT arena. The U.S. Environmental Protection Agency (EPA) released the latest emission model, the Motor Vehicle Emissions Simulator (MOVES) in 2010, and started a 2-year grace period to phase in the requirement of using MOVES for transportation conformity analysis. On February 8, 2011, EPA issued guidance on Using the MOVES and Emission FACtors (EMFAC) Models in NEPA Evaluation that recommended the same grace period be applied to project-level emissions analysis for NEPA purposes. At the end of this grace period, i.e. beginning December 20, 2012, project sponsors should use MOVES to conduct emissions analysis for NEPA purposes. To prepare for this transition, FHWA is updating the September 2009 Interim Guidance to incorporate the analysis conducted using MOVES. Based on FHWA's analysis using MOVES2010b, the latest version of MOVES, diesel particulate matter (diesel PM) has become the dominant MSAT of concern. We have also provided an update on the status of scientific research on air toxics. ...*"

FHWA guidance has consistently specified a three-tiered approach to determine the level of analysis needed for MSATs in a project-level study. Descriptions for each of the tiers are provided below, using text (*italicized*) from the current guidance.

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and CAL3QHC Highway Air Quality Models", ca 2008

29 EPA and FHWA, "*Interim Guidance on Air Toxic Analysis in NEPA Documents*", dated 2/3/06.

30 FHWA, "*INFORMATION: Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents*", September 30, 2009. See: http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/100109guidmem.cfm

31 *Ibid*, p.1

32 *Ibid*, p.1

33 FHWA, "INFORMATION: Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents", December 6, 2012. See: http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.pdf

(1) Projects with No Meaningful Potential MSAT Effects or Exempt Projects.

The types of projects included in this category are:

- *Projects qualifying as a categorical exclusion under 23 CFR 771.117(c);*
- *Projects exempt under the Clean Air Act conformity rule under 40 CFR 93.126; or*
- *Other projects with no meaningful impacts on traffic volumes or vehicle mix.*

For projects that are categorically excluded under 23 CFR 771.117(c), or are exempt from conformity requirements under the Clean Air Act pursuant to 40 CFR 93.126, no analysis or discussion of MSAT is necessary. Documentation sufficient to demonstrate that the project qualifies as a categorical exclusion and/or exempt project will suffice. For other projects with no or negligible traffic impacts, regardless of the class of NEPA environmental document, no MSAT analysis is required.1 However, the project record should document the basis for the determination of "no meaningful potential impacts" with a brief description of the factors considered. …

(2) Projects with Low Potential MSAT Effects

The types of projects included in this category are those that serve to improve operations of highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions. This category covers a broad range of projects.
We anticipate that most highway projects that need an MSAT assessment will fall into this category.

Any projects not meeting the criteria in subsection (1) or subsection (3) as follows should be included in this category. Examples of these types of projects are minor widening projects; new interchanges, such as those that replace a signalized intersection on a surface street; or projects where design year traffic is projected to be less than 140,000 to 150,000 annual average daily traffic (AADT).

For these projects, a qualitative assessment of emissions projections should be conducted. This qualitative assessment would compare, in narrative form, the expected effect of the project on traffic volumes, vehicle mix, or routing of traffic and the associated changes in MSAT for the project alternatives, based on VMT, vehicle mix, and speed. It would also discuss national trend data projecting substantial overall reductions in emissions due to stricter engine and fuel regulations issued by EPA. Because the emission effects of these projects are low, we expect there would be no appreciable difference in overall MSAT emissions among the various alternatives. In addition, quantitative analysis of these types of projects will not yield credible results that are useful to project-level decision-making due to the limited capabilities of the transportation and emissions forecasting tools. …

(3) Projects with Higher Potential MSAT Effects

This category includes projects that have the potential for meaningful differences in MSAT emissions among project alternatives. We expect a limited number of projects to meet this two-pronged test. To fall into this category, a project must:

- *Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location; or*
- *Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 or greater by the design year;*

and also

- *Proposed to be located in proximity to populated areas.*

Projects falling within this category should be more rigorously assessed for impacts….

2.2.3 Programmatic Agreements

Programmatic agreements[34] are legal documents between the US DOT and a state DOT that are designed to help streamline the environmental clearance process for transportation projects by, for example, eliminating the need for project-specific modeling for projects that are expected to have minor or no impacts. Programmatic agreements can help focus limited resources on assessing larger projects with greater potential for air quality impacts. In this sense, programmatic agreements serve a similar function to "categorical findings" that may be established under the federal transportation conformity rule. VDOT has implemented several programmatic agreements with FHWA, which are briefly reviewed below. Copies of each of these FHWA-VDOT Agreements are available on the VDOT website[35].

2.2.3.1 Project-Level Air Quality Analyses for Carbon Monoxide

In 2016, FHWA and VDOT executed the "*Programmatic Agreement for Project-Level Air Quality Analyses for Carbon Monoxide*" (2016 FHWA-VDOT Air Quality Agreement"), which specifies technical criteria for determining whether project-specific modeling for carbon monoxide will be needed. The 2016 FHWA-VDOT Air Quality Agreement was customize and refined for application in Virginia using templates originally created in the 2015 NCHRP study "*Programmatic Agreements for Project-Level Air Quality Analyses*"[36]. It incorporates by reference the thresholds that were established for skewed intersections in the prior (2009) FHWA-VDOT Agreement, as the NCHRP template did not include skewed intersections. The NCHRP study report noted specifically that the 2009 FHWA-VDOT programmatic agreement ("PA", which includes the main agreement as well as the Technical Support Document) served as a model for its national-level templates[37].

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[34] Federal Highway Administration. "Programmatic Agreements FAQs". Located online at: http://www.fhwa.dot.gov/everydaycounts/pdfs/spd/pa_faq.pdf

[35] See: http://www.virginiadot.org/projects/environmental_air_section.asp

[36] ICF International, Zamurs and Associates LLC, and Volpe Transportation Systems Center, "Programmatic Agreements for Project-Level Air Quality Analyses", NCHRP 25-25 (78), 2015. http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=3311

[37] *Ibid*, page x: "*Regarding existing state DOT PAs, three states (Colorado, South Carolina and Virginia) currently have PAs that are specific to air quality. Many other state PAs exist, but are typically designed to*

The 2009 FHWA-VDOT "*Project-Level Carbon Monoxide Air Quality Studies Agreement*"[38] was based on the results of extensive modeling of worst-case analyses, which are presented in a separate Technical Support Document[39]. The 2009 Air Agreement incorporated new technical criteria and thresholds (based on the worst-case modeling results) and represented a major update to prior agreements executed in 2004[40] and 2000[41]. Procedures for Updating Air Studies When New Planning Assumptions Become Available

2.2.3.2 Agreement for Updating Air Studies When New Planning Assumptions Become Available

On October 28, 2004, FHWA and VDOT executed a letter agreement defining "*Procedures for Updating Air Studies When New Planning Assumptions Become Available*" (2004 Update Procedures)[42]. The 2004 Update Air Studies Agreement provides guidance on when new or updated air quality studies are needed. Although the focus at the time the letter agreement was executed was on carbon monoxide, the procedures were written generally and therefore may be applied more broadly.

Under the 2004 Update Procedures, updates for air quality analyses may be required for projects for which a re-evaluation of the overall environmental document is being initiated to meet NEPA requirements and/or for projects for which changes may be needed for key modeling inputs for the air studies (such as design year and associated traffic forecasts). As noted in the agreement, decisions on the former (NEPA re-evaluations) would be made by FHWA in consultation with VDOT and on the latter (when re-evaluations are not being prepared) by VDOT air quality staff.

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standardize and provide certainty for the National Environmental Policy Act (NEPA) and/or state environmental review processes. These agreements mention air quality, among other environmental concerns, but do not provide specifics about the air quality analysis and modeling process. Virginia's PA was ultimately selected as a model for the draft template PA because it is specific and technical to air quality, applicable to a wide range of project types and conditions, and can be tailored to NEPA or state environmental requirements."

38 FHWA-VDOT, "*Project-Level Carbon Monoxide Air Quality Studies Agreement*", letter agreement executed February 27, 2009.

39 C. Voigt, "*FHWA-VDOT Agreement On Project-Level Carbon Monoxide Air Quality Studies - Technical Support Document*", VDOT Environmental Division, February 2009

40 FHWA-VDOT, "*Project Level Air Quality Studies Agreement*", letter dated August 4, 2004 from FHWA to VDOT.

41 FHWA-VDOT, "*VDOT request to raise the ADT threshold at which quantitative project-level carbon monoxide analyses are conducted*", letter dated August 7, 2000

42 FHWA, "*Procedures for Updating Air Studies When New Planning Assumptions Become Available*", letter dated October 28, 2004 from FHWA to VDOT.

2.2.3.3 No-Build Analysis Agreement for Air and Noise Studies

On May 22, 2009, FHWA and VDOT executed a "*No-Build Analysis Agreement for Air and Noise Studies*" (2009 No-Build Agreement)[43]. With regard to air quality, the 2009 No-Build Agreement only addresses CO. It requires:

> *…for transportation projects within the Commonwealth of Virginia that require a carbon monoxide (CO) air study under the current Project-Level CO Air Quality Studies Agreement in effect between VDOT and FHWA, the following will govern the need for analysis of the interim and design year no-build alternatives in CO air studies:*
>
> *A. Any project that qualifies for a Categorical Exclusion (CE) will be exempt from analysis of the no-build alternatives, although VDOT may choose to analyze the no-build alternatives if they determine it appropriate;*
>
> *B. Any project that qualifies for an Environmental Assessment (EA) will generally be exempt from analysis of the no-build alternatives, although VDOT may choose to analyze the no-build alternatives if they determine it appropriate;*
>
> *C. Any project that qualifies for an Environmental Impact Statement (EIS) will require analysis of the no-build alternative;*
>
> *D. Notwithstanding (A), (B), and (C) above, transportation conformity requirements may apply to transportation projects that lie within a CO nonattainment/maintenance area, no-build scenarios for CO be assessed for projects located in CO nonattainment or maintenance area (where the federal transportation conformity rule would require such analyses) and also for all projects for which an EIS is being prepared. Otherwise, no-build analyses for CO are not required but may be conducted at the discretion of VDOT.*

2.2.3.4 Programmatic Categorical Exclusion Agreement

On September 17, 2010, FHWA and VDOT executed an update to the existing "*Programmatic Categorical Exclusion Agreement*" (PCE Agreement)[44]. FHWA and VDOT have had a PCE Agreement in-place since 1983 and have updated it on several occasions[45]. From the preface to the 2010 PCE Agreement:

> *"[FHWA and VDOT] … have developed this Programmatic Agreement to outline the policy and procedures for approving Categorical Exclusion (CE) classifications for Federal-aid actions in accordance with the National Environmental Policy Act. These procedures comply with FHWA's implementing regulations for NEPA found at 23 CFR 771.*
>
> *FHWA concurs in advance, on a "programmatic" basis with VDOT's recommendation that those categories of projects listed on Attachment "A," and which satisfy the conditions and*

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[43] FHWA-VDOT, "*No-Build Analysis Agreement for Air and Noise Studies*", letter agreement dated May 22, 2009.

[44] FHWA-VDOT, "*Programmatic Categorical Exclusion Agreement*", executed September 17, 2010.

[45] As noted in the letter accompanying the updated agreement: *"The Programmatic Categorical Exclusion Agreement between the Federal Highway Administration (FHWA) and the Virginia Department of Transportation (VDOT) was first executed October 18, 1983. Since that time, the Agreement has been revised and updated as streamlining opportunities presented themselves (April 6, 1988; August 28, 1991; May 20,1998; June 23,2000; November 1, 2003; and December 29,2004).*"

criteria in Attachment "B," will not result in significant impacts on the human and natural environment, and are therefore categorically excluded from the requirement to prepare a documented Categorical Exclusion, an Environmental Assessment (EA), or Environmental Impact Statement (EIS). FHWA further concurs with VDOT's recommendation that based on past experience with similar actions, FHWA will not require project specific documentation for the actions listed on Attachment "C." The actions on Attachment "c" meet the criteria for CE's in CEQ regulation and Section 771.117 (a) of FHWA's implementing regulations and normally don't require any further NEPA approvals."

The 2010 PCE Agreement includes the following definitions:

Blanket Categorical Exclusion (BCE): An action listed on Attachment "C" that FHWA has determined requires no further NEPA approval and will not require any documentation for the action.

Programmatic Categorical Exclusions (PCE): An action listed on Attachment "A" that meets the conditions and criteria in Attachment "B" and based on past experience, does not involve significant environmental impacts and is documented by VDOT under this Agreement utilizing the PCE form.

Categorical Exclusion (CE): An action that does not individually or cumulatively have significant environmental impacts. Categorical Exclusions are reviewed by VDOT and approved by FHWA.

The project types listed in Attachments A ("*PCE Project Categories*") and C ("*BCE's Project Categories That Require No Documentation*") are consistent with and expand upon those listed in 23 CFR 771.117(c) and/or would be considered exempt under the federal transportation conformity rule. However, if the proposed project involves significant air quality impacts, then, with regard to PCEs, the condition stated in Attachment B ("*PCE Documentation Qualifying Conditions and Criteria*") to that agreement would apply:

"VDOT proposed actions in Appendix "A" may be classified as PCE's [sic] if all of the conditions listed below are true; otherwise, proposed actions must have individual approval of their CE determination by FHWA. …

6. The proposed action does not involve significant air, noise, or water quality impacts."

Projects that qualify for a PCE do not require a hot-spot analysis for CO. Under the 2010 PCE Agreement, a PCE is only selected if the project meets the criteria in that agreement and otherwise is not expected to have significant air quality impacts. The latter condition regarding potential air quality impacts is generally assessed for each project by air quality staff following standard criteria and procedures for each pollutant or pollutant class to meet NEPA and conformity requirements.

2.3 Transportation Conformity

While both federal and state regulations for transportation conformity apply, the latter generally focuses on consultation requirements (rather than technical) and is therefore only

briefly addressed at the end of this section. This section focuses on the technical requirements of the federal transportation conformity rule.

The federal transportation conformity rule (40 CFR Parts 51 and 93) was issued by the EPA pursuant to requirements in the Clean Air Act (CAA) as amended[46]. As indicated in Section 176(c) of the CAA, conformity means:

> *(A) conformity to an [air quality] implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and*
> *(B) that such activities will not — (i) cause or contribute to any new violation of any standard in any area; (ii) increase the frequency or severity of any existing violation of any standard in any area; or (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area. …*

Section 176(c)(4)(B) of the CAA requires regulatory action in the form of criteria and procedures for conformity to be promulgated by EPA in concurrence with the US DOT:

> *176(c)(4)(B) Transportation plans, programs, and projects. — The Administrator, with the concurrence of the Secretary of Transportation, shall promulgate, and periodically update, criteria and procedures for demonstrating and assuring conformity in the case of transportation plans, programs, and projects.*

Detailed regulations and guidance for transportation conformity are provided on the US Environmental Protection Agency (US EPA) website[47]. In general, the federal transportation conformity rule requires conformity determinations for transportation plans, programs and projects in "*non-attainment or maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan*" (40 CFR 93.102(b)).

Areas that fail to meet the NAAQS may be designated by EPA as nonattainment areas. Areas that have failed to meet the standards in the past but have since re-attained them may be designated as attainment (maintenance) areas, which are commonly referred to as maintenance areas. Maintenance areas must meet federal CAA requirements for a significant time period after attainment is reached, after which the maintenance designation may be removed. Federal conformity requirements would then no longer apply for that area for the pollutant(s) involved.

Transportation-related criteria pollutants are those specified in the transportation conformity rule (40 CFR 93.102(b)), namely ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), and particulate matter less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively)[48]. Precursors to these pollutants are also specified.

Generally, regional conformity analysis requirements apply for regional transportation plans and programs. Project-level "hot-spot" analysis requirements apply for transportation projects.

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[46] See: http://www.epa.gov/air/caa/.
[47] See: http://www.epa.gov/otaq/stateresources/transconf/index.htm
[48] See: https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-102.xml

2.3.1 Regional Conformity Requirements Relating to Projects

The federal transportation conformity rule requires a currently conforming transportation plan and program at the time of project approval (40 CFR 93.114)[49] and for the project to be from a conforming plan and program (40 CFR 93.115)[50]. If the project is of a type or one that is not required to be specifically identified in the plan, the project must be consistent with the policies and purpose of the transportation plan and not interfere with other projects specifically included in the transportation plan (40 CFR 93.115(b)).

Additionally, the design concept and scope of the project as specified in the program at the time of the regional conformity determination should be adequate to determine its contribution to regional emissions, and any mitigation measures associated with the project should have written commitments from the project sponsor and/or operator (40 CFR 93.115(c)).

Regional conformity analyses and the associated state (air quality) implementation plan for nonattainment and maintenance areas together provide a general indication of potential indirect effects and cumulative impacts for regional transportation systems that are not otherwise addressed in analyses of direct emissions for individual projects.

2.3.2 Project-Level Conformity Requirements

EPA provides detailed guidance for project-level analyses conducted for purposes of conformity[51]. This guidance is more detailed than that currently provided by FHWA so is often applied, in whole or in part, for purposes of NEPA (though not required in those cases.)

2.3.2.1 Applicability

In general, conformity determinations and supporting project-level (hot-spot) air quality conformity analyses are required for CO, PM_{10} and $PM_{2.5}$ for FHWA and Federal Transit Administration (FTA) projects located in air quality non-attainment and/or maintenance areas. The federal conformity rule addresses these requirements in several locations. First, under "Applicability" (40 CFR 93.102)[52]:

> *"(a) Action applicability*
> *(1)…conformity determinations are required for... (iii) The approval, funding, or implementation of FHWA/FTA projects.*
> *(2) Conformity determinations are not required under this subpart for individual projects which are not FHWA/FTA projects...*
>
> *(b) Geographic applicability.*

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[49] See: https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-114.xml
[50] See: https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-115.xml
[51] See: https://www3.epa.gov/otaq/stateresources/transconf/projectlevel-hotspot.htm
[52] See: https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-102.xml

The provisions of this subpart shall apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan..."

FHWA/ FTA projects are generally ones for which federal funding or approvals are required (40 CFR 93.101)[53]. Applicability for pollutants is addressed with specific requirements for "hot-spots" later in the conformity rule, at 40 CFR 93.116[54]:

"...Criteria and procedures: Localized CO, PM10, and PM2.5 violations (hot-spots).
(a) ...The FHWA/FTA project must not cause or contribute to any new localized CO, PM10, and/or PM2.5 violations, increase the frequency or severity of any existing CO, PM10, and/or PM2.5 violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in CO, PM10, and PM2.5 nonattainment and maintenance areas…"

2.3.2.2 Interagency and Public Consultation

The federal transportation conformity rule at 40 CFR 93.105 addresses consultation requirements. With regard to interagency consultation for conformity purposes (IACC), 40 CFR 93.105(c)(1)(i) requires project sponsors *"evaluate and choose models and associated methods and assumptions."* EPA guidance expands upon options for doing this collectively or on a case-by-case basis[55]: *"For many aspects of PM hot-spot analyses, the general requirement of interagency consultation can be satisfied without consulting separately on each and every specific decision that arises. In general, as long as the consultation requirements are met, agencies have discretion as to how they consult on hot-spot analyses. For example, the interagency consultation process could be used to define the models and procedures that would be used for any hot-spot analyses within a metropolitan area. Further consultation would only be needed if alternatives to the agreed-upon process were needed for a specific project. …"*

IACC may also be conducted for specific circumstances such as the use of the option to conduct $PM_{2.5}$ emissions and air quality modeling for only one quarter of the year when future NAAQS violations and peak emissions are expected to occur only in that quarter.

The conformity rule also requires agencies completing project-level conformity determinations to establish a proactive public involvement process that provides opportunity for public review and comment (40 CFR 93.105). The NEPA public involvement process is typically used to satisfy this public participation requirement. If a project-level conformity determination that includes a CO or PM hot-spot analysis is performed after NEPA is completed, a public comment period must still be provided to support that determination. In these cases, agencies have flexibility to decide what specific public participation procedures are appropriate, as long as the procedures provide a meaningful opportunity for public review and comment.[56]

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53 See https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-101.xml
54 See https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-116.xml
55 US EPA. 2010. "Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas" located at: http://www.epa.gov/otaq/stateresources/transconf/policy/420b10040.pdf , page 8.
56 US EPA. 2010. Transportation Conformity Guidance for Quantitative Hot-spot Analyses in

2.3.2.3 Models

Requirements for the preparation of hot-spot analyses for both CO and particulate are specified in 40 CFR 93.123[57]. Specific requirements apply for models, as follows[58,59]:

> *"...(a) CO hot-spot analysis.*
> *(1) The demonstrations ... must be based on quantitative analysis using the applicable air quality models, data bases, and other requirements specified in 40 CFR part 51, Appendix W (Guideline on Air Quality Models) ...*
>
> *(b) PM10 and PM2.5 hot-spot analyses...*
> *(2) Where quantitative analysis methods are not available, the demonstration ... must be based on a qualitative consideration of local factors...*
> *(4) The requirements for quantitative analysis ... will not take effect until EPA releases modeling guidance on this subject and announces in the Federal Register that these requirements are in effect..."*

On December 20, 2010, EPA official released via federal register notice updated models and guidance for project-level analyses for both CO and PM[60]. For emissions, following a two-year grace period, the new EPA MOVES model was required to be applied for emission modeling for project-level analyses for both CO and PM. The MOVES model has been updated periodically since its inception; as of the date of preparation of this report, the most current version of the model is MOVES2014a[61]. More information is available on the EPA MOVES webpage[62]. For dispersion, the existing CAL3QHC model may continue to be applied for CO[63]. The EPA dispersion models AERMOD and CAL3QHCR are specified for modeling PM.

2.3.2.4 Background Concentrations

Requirements of the federal conformity rule relating to background concentrations are specified in 40 CFR 93.113(c) [64]:

PM2.5 and PM10 Nonattainment and Maintenance Areas" located online at: http://www.epa.gov/otaq/stateresources/transconf/policy/420b10040.pdf

57 See: https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-123.xml

58 The referenced "Appendix W (Guideline on Air Quality Models" is available at: http://www.epa.gov/ttn/scram/guidance/guide/appw_05.pdf

59 EPA has issued a proposed revision to Appendix W, which, as of the date of preparation of this report, has not been finalized.

60 US EPA, "*Official Release of the MOVES2010a and EMFAC2007 Motor Vehicle Emissions Models for Transportation Conformity Hot-Spot Analyses and Availability of Modeling Guidance*", 75 FR 79370-79374, December 20, 2010.
Federal Register notice: http://edocket.access.gpo.gov/2010/2010-31909.htm

61 The two-year grace period for the use of MOVES2014a ends 10/7/2016.

62 See: https://www3.epa.gov/otaq/models/moves/index.htm

63 In 2015, EPA proposed (but as of the date of preparation of this report has not finalized) to eliminate the entire CAL3 series of dispersion models in favor of AERMOD. See: http://www.gpo.gov/fdsys/pkg/FR-2015-07-29/pdf/2015-18075.pdf

64 See: https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-123.xml

"...(c) General requirements. (1) Estimated pollutant concentrations must be based on the total emissions burden which may result from the implementation of the project, summed together with future background concentrations. The total concentration must be estimated and analyzed at appropriate receptor locations in the area substantially affected by the project.

(2) Hot-spot analyses must include the entire project, and may be performed only after the major design features which will significantly impact concentrations have been identified. The future background concentration should be estimated by multiplying current background by the ratio of future to current traffic and the ratio of future to current emission factors..."

2.3.2.5 Projects of Potential Air Quality Concern for Particulate

For particulate, the federal conformity requirements for hot-spot analyses are limited to the following types of projects (40 CFR 93.123(b)(1))[65]:

"...(1) The hot-spot demonstration required by §93.116 must be based on quantitative analysis methods for the following types of projects:

(i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;

(ii) Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

(iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location:

(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

(v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM10 or PM2.5 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation..."

In March 2006, FHWA and EPA issued a final rule[66] and associated guidance[67] for the conduct of qualitative hot-spot analyses for particulate. The preamble to the final rule included examples of projects that would be and would not be of potential air quality concern, which were summarized in Appendix A of the guidance. EPA has updated the guidance since, with the current version published in November 2015[68]. Its Appendix B retains the examples of projects of potential air quality concern.

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[65] *Ibid.*

[66] US EPA, 71 FR 12468 (40 CFR Part 93, EPA–HQ–OAR–2003–0049, FRL–8039–5), "*PM2.5 and PM10 Hot-Spot Analyses in Project-Level Transportation Conformity Determinations for the New PM2.5 and Existing PM10 National Ambient Air Quality Standards; Final Rule*", March 10, 2006. See: http://www.epa.gov/otaq/stateresources/transconf/conf-regs-PMhotspot.htm

[67] US EPA Office of Transportation and Air Quality and FHWA Office of Natural and Human Environment, "*Transportation Conformity Guidance for Qualitative Hot-spot Analysis in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*", March 2006, EPA420-B-06-902. See: http://www.epa.gov/otaq/stateresources/transconf/conf-regs-PMhotspot.htm

[68] US EPA, "*Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas*", November 2015, EPA-420-B-15-084. See:

Appendix L of the VDOT Resource Document (see Section 1.3) also specifies criteria for projects of potential air quality concern for $PM_{2.5}$. The VDOT criteria are based on the EPA examples referenced above. The VDOT Resource Document and the Appendix L criteria were made the subject of inter-agency consultation for conformity purposes (Section 2.3.2.2) with EPA, FHWA, and other state and local agencies in December 2015 before being finalized. The Resource Document is addressed in more detail in Section 2.5, and IACC on the Resource Document is summarized in Section 6 (Consultation). Additional detail is provided in the VDOT Resource Document.[69]

2.3.2.6 Mitigation and Control Measures

Requirements for project-level mitigation and control measures are addressed in several locations in the federal conformity rule.

- Requirements for transportation control measures are specified in 40 CFR 93.113 as follows[70]:

  "... (a) The transportation plan, TIP, or any FHWA/FTA project which is not from a conforming plan and TIP must provide for the timely implementation of TCMs from the applicable implementation plan....

  (d) For FHWA/FTA projects which are not from a conforming transportation plan and TIP, this criterion is satisfied if the project does not interfere with the implementation of any TCM in the applicable implementation plan...."

- Requirements for control measures for particulate for projects in nonattainment and/or maintenance areas for particulate are specified in 40 CFR 93.117, as follows[71]:

  "...The FHWA/FTA project must comply with any PM10 and PM2.5 control measures in the applicable implementation plan. This criterion is satisfied if the project-level conformity determination contains a written commitment from the project sponsor to include in the final plans, specifications, and estimates for the project those control measures (for the purpose of limiting PM10 and PM2.5 emissions from the construction activities and/or normal use and operation associated with the project) that are contained in the applicable implementation plan."

- Requirements mitigation and control measures for CO and particulate are specified in 40 CFR 93.123 as follows[72]:

  "...(4) CO, PM10, or PM2.5 mitigation or control measures shall be assumed in the hot-spot analysis only where there are written commitments from the project sponsor and/or operator to implement such measures, as required by §93.125(a).
  (5) CO, PM10, and PM2.5 hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established "Guideline"

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https://www3.epa.gov/otaq/stateresources/transconf/projectlevel-hotspot.htm

69 See: http://www.virginiadot.org/projects/environmental_air_section.asp

70 See https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-113.xml

71 See https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-117.xml

72 See https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-123.xml

methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site..."

- Requirements for written commitments for project-level mitigation and control measures for CO and/or particulate that may stem from NEPA or conformity are specified in 40 CFR 93.125[73]:

  "... written commitments to implement in the construction of the project and operation of the resulting facility or service any project-level mitigation or control measures which are identified as conditions for NEPA process completion with respect to local CO, PM10, or PM2.5 impacts. Before a conformity determination is made, written commitments must also be obtained for project-level mitigation or control measures which are conditions for making conformity determinations for a transportation plan or TIP and are included in the project design concept and scope which is used in the regional emissions analysis ... or used in the project-level hot-spot analysis..."

2.3.2.7 Conformity SIP

The federal transportation conformity rule at Part 51 Subpart T §51.390 requires the establishment of a state conformity regulation to reflect the federal rule with state requirements. The state regulation is commonly referred to as the conformity SIP and is intended to primarily address consultation for conformity purposes. The requisite state conformity regulation for Virginia is specified at 9 VAC 5-151 (*Regulation for Transportation Conformity*)[74].

The state regulation does not directly provide new or updated technical guidance, or otherwise modify technical requirements for the conduct of project-level analyses. However, additional technical requirements may in time be generated locally in the course of interagency consultation conducted pursuant to the state regulation.

2.3.3 FHWA Categorical Finding for Carbon Monoxide

The federal transportation conformity rule at 40 CFR 93.123(a)(3) provides an option for the US Department of Transportation (US DOT), in consultation with EPA, to make a categorical hot-spot finding for CO based on appropriate modeling. In February 2014, the FHWA implemented

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[73] See https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol20/xml/CFR-2014-title40-vol20-sec93-125.xml

[74] The state regulation was made effective January 19, 2010 through a direct final rule issued in the Federal Register by EPA on November 20, 2009 (74 FR 60194). Updates may be tracked through the Virginia Regulatory Town Hall website. See:
US EPA, "*Approval and Promulgation of Air Quality Implementation Plans; Virginia; Transportation Conformity Regulations*", November 19, 2009 (74 FR 60194):
http://edocket.access.gpo.gov/2009/E9-27814.htm

Regulation for Transportation Conformity (9 VAC 5-151):
http://law.lis.virginia.gov/admincode/title9/agency5/chapter151/

Virginia Regulatory Town Hall (for updates in process):
http://www.townhall.virginia.gov/L/Viewchapter.cfm?chapterid=2459

a new categorical finding for CO[75], which they developed in consultation and cooperation with EPA. In concept, the FHWA categorical finding serves effectively the same purpose for conformity purposes as a programmatic agreement (such as the project-level air quality analyses for CO addressed in the previous section) does for NEPA. Since Virginia no longer has a maintenance area for CO, the need to apply the federal categorical finding for CO is eliminated.

2.4 Integration of NEPA and Transportation Conformity Requirements

The CEQ NEPA regulations at 40 CFR 1506.4 encourage agencies to integrate NEPA requirements with other environmental review and consultation requirements. In addition, 40 CFR 1502.25 directs agencies to prepare environmental impact statements "*concurrently with and integrated with environmental impact analyses and related surveys and studies required….*" by other environmental laws and executive orders.

The FHWA/FTA joint NEPA regulations expand on the CEQ regulations and require NEPA documents to demonstrate compliance with other environmental requirements. "*The final EIS or FONSI should document compliance with requirements of all applicable environmental laws, Executive orders, and other related requirements. If full compliance is not possible by the time the final EIS or FONSI is prepared, the final EIS or FONSI should reflect consultation with the appropriate agencies and provide reasonable assurance that the requirements will be met.*" (23 CFR 771.133). If possible, the transportation conformity determination should be included in the final EIS. In instances when the final EIS does not document full compliance with the transportation conformity provisions, the conformity determination must be made prior to issuance of a Record of Decision (ROD). This is consistent with the transportation conformity rule which refers to NEPA process completion as the point at which FHWA or FTA issues a ROD (40 CFR 93.101).

In keeping with these requirements, FHWA NEPA documents typically contain the air quality analyses needed to comply with transportation conformity requirements as well as the project-level transportation conformity determination. For those pollutants and alternatives evaluated for transportation conformity, the conformity analyses generally meet the objectives of NEPA in terms of considering air quality impacts of proposed actions.

2.5 VDOT Project-Level Air Quality Analysis Resource Document

In 2016, in order to facilitate and streamline the preparation of project-level air quality analyses, and maintain high quality standards for modeling and documentation, the Department created a new resource for modeling. Titled the "Resource Document", it includes an associated online data repository (DR) for all modeling inputs needed for project-level air quality analyses in Virginia. The Resource Document and DR address in a comprehensive fashion the models, methods and assumptions (including data and data sources) needed for the preparation of air

[75] See: http://www.fhwa.dot.gov/environment/air_quality/conformity/policy_and_guidance/cmcf/.

quality analyses for transportation projects by or on behalf of the Department. The Resource Document and DR are available on or via the Department website[76].

All of the data and information specified in the Resource Document and provided in the repository were subjected to review for compliance with all applicable requirements and guidance. This included inter-agency consultation for conformity (IACC) purposes where transportation conformity requirements apply, i.e., for nonattainment and maintenance areas in northern Virginia. More details on the IACC for the Resource Document and associated DR are presented in Section 6 (Consultation).

3.0 Existing Conditions

3.1 Air Quality Attainment Status of Project Area

The Virginia Department of Environmental Quality (VDEQ) provides general comments for projects by county. For Loudoun County, VDEQ comments[77] were: "*This project is located within a Marginal 8-hour Ozone Nonattainment area, a Fine Particulate Matter (PM2.5) Maintenance area, and a volatile organic compounds (VOC) and nitrogen oxides (NOx) Emissions Control Area. As such, all reasonable precautions should be taken to limit the emissions of VOC, NOx, and particulate matter. In addition, the following VDEQ air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions[78]; 9 VAC 5-45, Article 7, Cutback Asphalt restrictions[79]; and 9 VAC 5-50, Article 1, Fugitive Dust precautions[80]*."

3.2 Ambient Air Quality Data and Trends

3.2.1 Carbon Monoxide (CO)

As shown in Exhibit 3.2.1, and due primarily to the implementation of more stringent vehicle emission and fuel quality standards, the national trend in ambient concentrations of CO is and has been downward for decades. The national trend is reflected in the relatively very low ambient CO concentrations observed in Virginia, as summarized in Exhibits 3.2.2 and 3.2.3. Currently, all values in Virginia are well under the one- and eight-hour NAAQS for CO.

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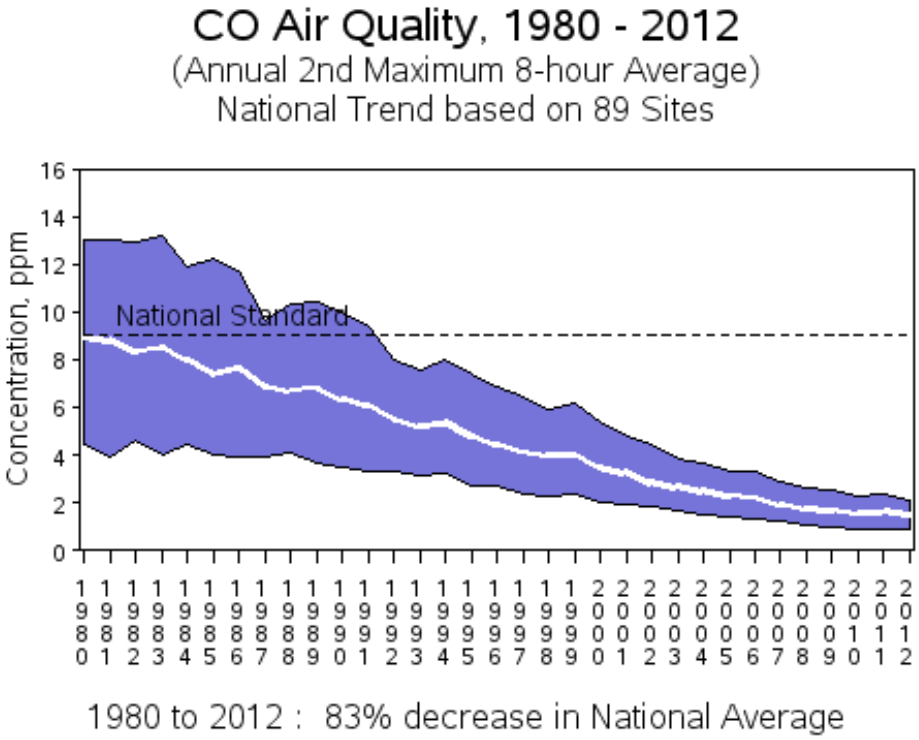
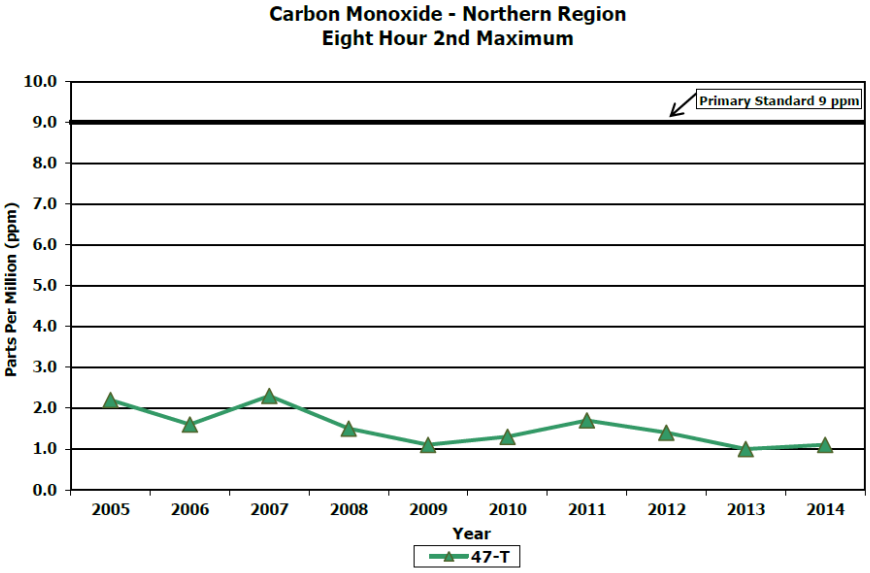
76 See: http://www.virginiadot.org/projects/environmental_air_section.asp
77 Spreadsheet entitled: "DEQ SERP Comments rev7 draft", April 2016
78 See http://leg1.state.va.us/000/reg/TOC09005.HTM#C0130
79 See http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-45-760
80 See http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-50-60

Exhibit 3.2.1: Nationwide Long-Term Trend in Ambient CO Concentrations



Source: http://www.epa.gov/airtrends/carbon.html, accessed September 25, 2014.

Exhibit 3.2.2: Virginia Long-Term Trend in Ambient CO Concentrations



Source: Virginia Department of Environmental Quality, "Virginia Ambient Air Monitoring 2014 Data Report", October 2015. See: http://www.deq.virginia.gov/Programs/Air/AirMonitoring/Publications.aspx

Exhibit 3.2.3: Ambient Concentrations of Carbon Monoxide in Virginia in 2014

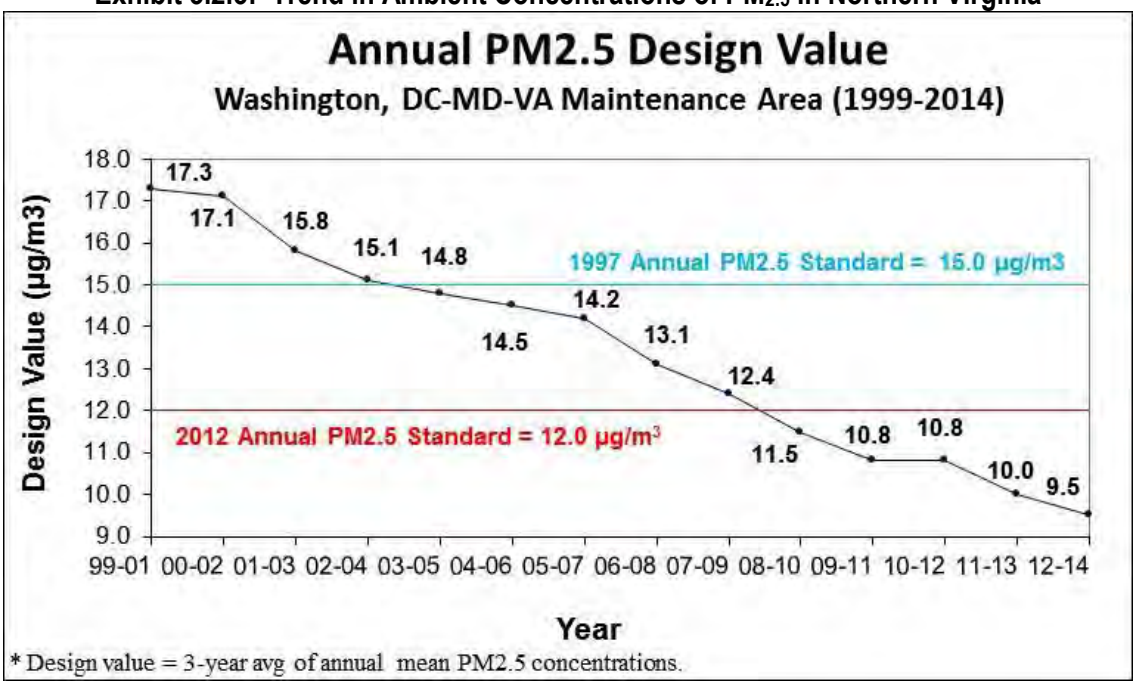
Site	2014			
	1-Hour Avg. (ppm)		8-Hour Avg. (ppm)	
	1st Max.	2nd Max.	1st Max.	2nd Max.
(19-A6) **Vinton**	1.4	1.2	1.1	1.1
(72-M) **Henrico**	1.5	1.3	1.2	1.0
(158-X) **Richmond**	1.8	1.3	1.1	1.0
(179-K) **Hampton**	1.2	1.1	.9	.9
(181-A1) **Norfolk**	1.2	1.1	1.0	.9
(47-T) **Arlington Co.**	1.8	1.6	1.3	1.1

Source: Virginia Department of Environmental Quality, "Virginia Ambient Air Monitoring 2014 Data Report", October 2015. See: http://www.deq.virginia.gov/Programs/Air/AirMonitoring/Publications.aspx

3.2.2 Fine Particulate Matter ($PM_{2.5}$)

As noted previously, the northern Virginia area is in maintenance for the 1997 (annual primary) NAAQS. The long term trends in $PM_{2.5}$ levels in the region is consistently downward, due to the implementation of more stringent emission standards and controls across all source sectors including mobile sources. Exhibit 3.2.3 presents the trend in observed values for DC-MD-VA maintenance area for $PM_{2.5}$.

Exhibit 3.2.3: Trend in Ambient Concentrations of $PM_{2.5}$ in Northern Virginia



Source: Metropolitan Washington Council of Governments, "Ozone Season Summary 2016", Technical Advisory Committee Presentation, July 27, 2016. See: https://www.mwcog.org/committees/mwaqc-technical-advisory-committee/

Exhibit 3.2.4 presents a tabulation of the PM2.5 annual average concentrations for 2014. The monitored values are well below not only the original 1997 NAAQS for which the region is in maintenance, but also significantly below the current (2012) NAAQS as well.

Exhibit 3.2.4: Ambient Concentrations of $PM_{2.5}$ in Virginia in 2014

2012-2014 $PM_{2.5}$ Weighted Annual Arithmetic Means ($\mu g/m^3$, LC)				
Site	**2012**	**2013**	**2014**	**3-Year Average**
(101-E) **Bristol**	8.8	8.5	8.6	8.6
(26-F) **Rockingham Co.**	8.8	8.4	8.7	8.6
(28-J) **Frederick Co.**	9.8	8.8	9.0	9.2
(29-D) **Page Co.**	8.3	7.2	8.0	7.8
(33-A) **Albemarle Co.**	7.8	7.6	7.4	7.6
(110-C) **Salem**	8.9*	8.6*	8.5	8.6
(155-Q) **Lynchburg**	7.6	7.4	7.6	7.6
(71-D) **Chesterfield Co.**	8.9	8.2*	8.4	8.5
(72-M) **Henrico Co.**	8.6	8.1	8.1	8.3
(72-N) **Henrico Co.**	8.3	7.8	8.2	8.1
(75-B) **Charles City Co.**	8.1	7.6	7.9	7.9
(179-K) **Hampton**	7.7	7.1	7.6	7.5
(181-A1) **Norfolk**	8.1	7.5	8.0	7.9
(184-J) **Va. Beach**	8.2	7.7	8.1	8.0
(38-I) **Loudoun Co.**	9.0	8.5	8.5	8.7
(47-T) **Arlington Co.**	9.4	8.9	8.7	9.0
(46-B9) **Franconia, Fairfax Co.**	8.7	8.3	8.2	8.4

* Annual value did not meet completeness criteria.

Source: Virginia Department of Environmental Quality, "Virginia Ambient Air Monitoring 2014 Data Report", October 2015. See: http://www.deq.virginia.gov/Programs/Air/AirMonitoring/Publications.aspx

4.0 Project Assessment

4.1 VDOT Project-Level Air Quality Analysis Resource Document

Data and information from the VDOT Resource Document were applied for all modeling and analyses conducted for this project without change or without substantive change as defined in that document.

4.2 Particulate Matter

As noted previously, the region is in maintenance for fine particulate (PM2.5), and therefore EPA transportation conformity requirements apply. Accordingly, the project was screened to determine if it might be one of potential air quality concern for $PM_{2.5}$. The results of the screening, which is based on EPA regulatory requirements and criteria as well as examples provided in guidance, indicate that the project is not one of potential air quality concern for $PM_{2.5}$. A summary of the screening process is provided below.

Screening to Determine if the project might be one of potential Air Quality Concern for $PM_{2.5}$

As noted previously, the federal conformity rule identifies specific project types for which hotspot analyses would be conducted (40 CFR 93.123(b)(1)). An assessment of this project in relation to each project type is provided below.

40 CFR 93.123(b)(1) project types:

(i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles

VDOT Resource (Appendix L) Document Primary Criterion for Highway Expansion: *"Is the increase in diesel AADTT (if any) for the opening year build scenario less than or equal to 20% of the criteria listed above [opening year diesel annual average daily truck traffic (AADTT) less than or equal to 10,000] for New Highway Construction?"*

This project involves the implementation of a grade separation of a local road (GWB) over Route 7, for which no capacity is being added as part of this project. With regard to Route 7 specifically, total traffic volumes as noted in Section 1 are forecast to reach only 106 thousand and 102 thousand ADT in the design year (serving as a worst-case for the opening year) for the build and no build scenarios respectively, with only 3% trucks. The corresponding net increase in trucks would be 3% of the difference (4000), or only 120 trucks, which is well under the criterion of 2000 (20% of 10 thousand) for highway capacity expansions specified in Appendix L of the VDOT Resource Document. Note the criteria in Appendix L of the VDOT Resource Document, which were established following inter-agency consultation with EPA, FHWA, VDEQ and local agencies, are based on the examples provided in EPA guidance for projects that would not be considered ones of potential air quality concern for particulate matter.

With regard to the proposed improvement, namely the GWB grade separation, traffic volumes are expected to reach only 11.5 thousand in the design year (Exhibit 1.2.1), with 4.2% trucks (Exhibit 1.2.2). This corresponds to 4843 average daily trucks, which is well under the criterion of 2000 for the opening year for highway expansions (and much less than the criterion of 10 thousand AADTT in the opening year for new highways) as specified in Appendix L of the VDOT Resource Document.

Therefore, a $PM_{2.5}$ hot-spot analysis is not warranted for the proposed improvements based on the established criteria from EPA and the VDOT Resource Document.

(ii) Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.

VDOT Resource Document (Appendix L) criteria for intersections: *"Is the project expected to either improve the Level-of-Service (LOS) for intersections operating at D, E or F with significant diesel AADTT or, if there is a significant increase in diesel AADTT related to the project, not degrade intersection LOS to D, E or F?*

With regard to intersection LOS:

- The proposed improvements would meet the EPA and VDOT Resource Document criteria. Exhibits 1.2.3 to 1.2.6 show intersection LOS for the no build and build scenarios. The exhibits show improved LOS for the intersection (Russel Branch) that was deficient. For the intersection at Bridgefield Way, which was not deficient, the change in intersection LOS was not to LOS D, E or F although it is impacted. The EPA regulatory and VDOT Resource Document Appendix L criteria for intersection LOS are therefore met.

With regard to the number of diesel vehicles:

- The project does not involve a significant number of diesel vehicles. The forecast traffic design year volumes (as a worst-case assumption for opening year) on local roads as presented in Exhibit 1.2.1 are very low, with a low truck percentage (Exhibit 1.2.2). Even if only total trucks for the build scenario are considered, the volumes are not considered significant. For the proposed GWB grade separation the average daily truck volumes would be 483 as noted above. For the highest volume leg of the local roads, Russell Branch, the truck volumes would not be much higher, reaching only 714 (4.2% of 17 thousand). The lowest volume link, Research Pl., would carry only 168 trucks per day (4.2% of 4000). These are all much lower than the opening year criteria in the VDOT Resource Document for a highway expansion of 2000 trucks per day (and that much more under the criteria of 10000 trucks per day for a new highway, i.e., the proposed new overpass). Given the relatively low truck volumes, the project would not be categorized with reference to the EPA regulation or the VDOT Resource Document criteria as either one that affects intersections with a significant number of diesel vehicles or one that would result in a significant increase in the number of diesel vehicles.

Therefore, a $PM_{2.5}$ hot-spot analysis is not warranted for the proposed improvements.

(iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location:

This project does not affect bus or rail terminals.

(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

This project does not affect bus or rail terminals.

(v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM10 or PM2.5 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

This project is not located in such an area.

In summary:

- The project does not exceed EPA regulatory or VDOT Resource Document criteria that would cause for it to be considered one of potential air quality concern for $PM_{2.5}$.
- Additional considerations or factors that provide additional weight of evidence that the project is not one of potential air quality concern for $PM_{2.5}$ include:
    - The project involves implementation of a grade separation for a local road with relatively low traffic volumes over Route 7. No mainline (Route 7) capacity increases are proposed as part of the project.
    - The region in which the project is located is now not only in attainment (maintenance) of the 1997 annual primary $PM_{2.5}$ NAAQS for which it had been in nonattainment, it also meets the more stringent 2012 $PM_{2.5}$ annual primary NAAQS. It also has always been in attainment of the 24-hour $PM_{2.5}$ NAAQS.
    - EPA, with the implementation of the 2012 $PM_{2.5}$ NAAQS, proposed to revoke the 1997 annual primary $PM_{2.5}$ NAAQS[81]. In July 2016, EPA issued a pre-publication version of the final rule including the revocation as proposed.[82] As that is the NAAQS for which this region is currently in maintenance, its imminent revocation will result in the elimination of the associated EPA conformity

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[81] On March 23, 2015, EPA issued a proposed rule (80 FR 15340) on "*Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements*" that stated, in part: "… *EPA is proposing to revoke the 1997 primary annual standard because the EPA revised the primary annual standard in 2012*". See: https://www.gpo.gov/fdsys/pkg/FR-2015-03-23/pdf/2015-06138.pdf.

[82] EPA, "*PM25 NAAQS Implementation Final Rule and Fact Sheet July 2016*", July 2016. See: https://www.epa.gov/pm-pollution/pm25-naaqs-implementation-final-rule-and-fact-sheet-july-2016. From the summary provided in the pre-publication version of the final rule, EPA states that: "*Additionally, in this notice the EPA is revoking the 1997 primary annual standard for areas designated as attainment for that standard because the EPA revised the primary annual standard in 2012*." A key implication is, once the final rule is published and the effective date met (60 days after publication, as noted in the pre-publication version), the associated project-level ("hot-spot") air quality analysis requirements as specified in the federal transportation conformity rule would no longer apply nationwide for the $PM_{2.5}$ annual primary NAAQS.

requirements for this region. This analysis for $PM_{2.5}$, which is being conducted for conformity purposes only (and not NEPA), will then not even be required.

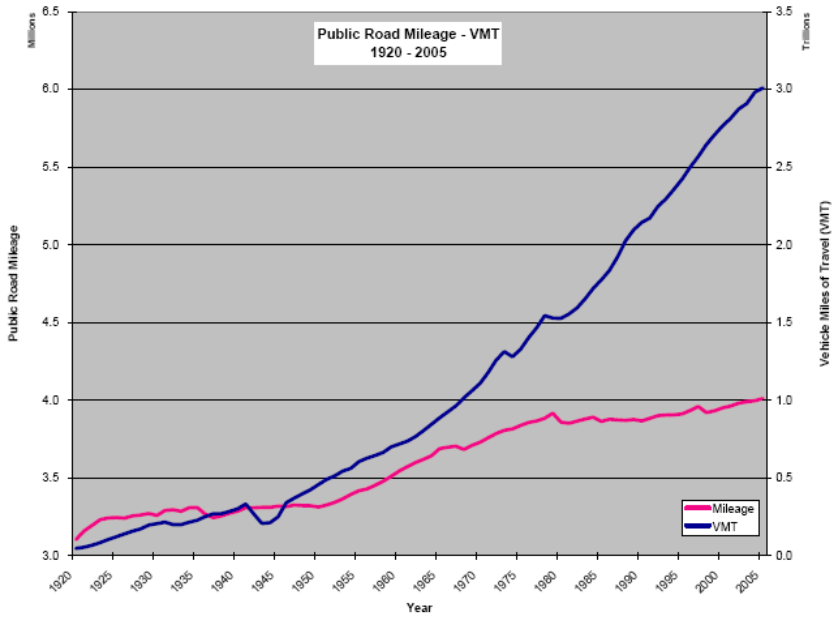
4.3 Carbon Monoxide

4.3.1 Background

Exhibits 4.3.1 and 4.3.2 present, respectively, trends in vehicle-miles-traveled (VMT) at both the national (public road) and local levels. VMT has increased almost continuously over the past several decades, with local trends generally reflecting the national. As emissions are calculated as the product of VMT and per-mile emission factors, they would increase with VMT absent concurrent reductions in emission factors due to improved emission control technology implemented to meet increasingly more stringent emission standards.

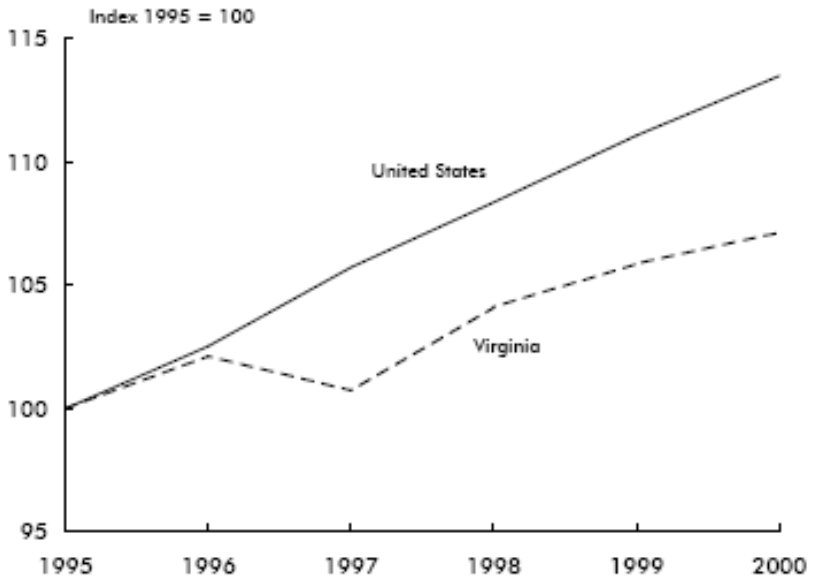
Exhibit 4.3.3 presents the increasingly more stringent new vehicle emission standards for CO as introduced by the US EPA over the past few decades. With continued fleet turnover to new vehicles constructed to the more stringent emission standards, fleet average vehicle emission rates have declined to the extent that emissions and therefore ambient concentrations of CO have not only not increased with the increasing VMT, they have substantially decreased.

Exhibit 4.3.1: Long-Term Trend in Public Road Mileage and Vehicle Miles Traveled (VMT)



Source: FHWA Office of Highway Policy Information (OHPI) Web site, updated 5/20/08 (accessed 8/1/2016). See: http://www.fhwa.dot.gov/policyinformation/charts/05.cfm

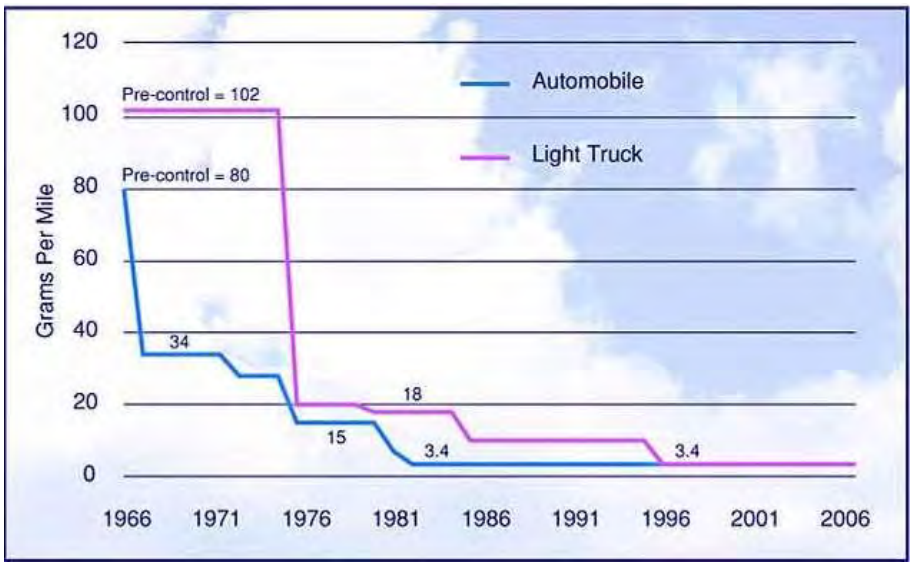
Exhibit 4.3.2: Highway VMT - US and Virginia



SOURCE FOR DATA ON THIS PAGE: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, annual editions, available at http://www.fhwa.dot.gov/ohim/ohimstat.htm as of Dec. 6, 2001.

Source: Highway Vehicle-Miles Traveled, United States and Virginia, from US Department of Transportation, Bureau of Transportation Statistics, "Virginia Transportation Profile", 2007.

Exhibit 4.3.3: Federal Emission Standards for CO for New Automobiles and Light Trucks



Source: U.S. Department of Energy, Office of Energy Efficiency and Renewal Energy. Transportation Energy Data Book: Edition 24, ORNL-6973. December 2004. Web site: http://cta.ornl.gov/data/chapter12.shtml 28 June 2005 as presented on the FHWA web site (accessed April 16, 2012). See: http://www.fhwa.dot.gov/environment/air_quality/publications/fact_book/page14.cfm.

Exhibit 3.2.1 presents the resulting downward to flat trend in ambient concentrations of CO nationwide. Nationwide, from 1980 to 2012, an 83% decrease in average ambient CO concentrations was observed. Local trends reflected the national; Exhibit 3.2.2 presents the recent trend in ambient CO concentrations in northern Virginia. Exhibit 3.2.3 presents data for the most recent year available (2014) for Virginia.

4.3.2 Level of Analysis Determination

4.3.2.1 Project-Specific Modeling

A project-specific hot-spot analysis for CO is required as forecast traffic volumes (Section 1) and roadway grades exceed the criteria specified in the 2016 FHWA-VDOT Programmatic Agreement for Project-Level Analyses for Carbon Monoxide (Section 2.2.3.1). A worst-case hot-spot analysis for CO was therefore conducted for the project following FHWA and EPA guidance and is presented below.

4.3.2.2 No Build Analysis

As the project meets the criteria specified in the 2009 FHWA-VDOT No-Build Agreement (Section 2.2.3.3), it may be applied for this project. The criteria are met given: a) the project location (not within a maintenance area for CO), and b) the level of environmental documentation planned for this project (i.e., not an environmental impact statement). Project-specific modeling of the no build alternative is therefore not required for this project.

4.3.3 Worst-Case Modeling Approach

A worst-case modeling approach was applied for this analysis. This is a very conservative approach that by design uses worst-case assumptions for modeling inputs so that the results (modeling estimates for emissions and ambient concentrations) will be significantly worse than (i.e., in excess of) what may reasonably be expected for the project. If the applicable NAAQS for CO are still met despite the worst-case modeling assumptions, then there is a very high level of confidence that the potential for air quality impacts from the project would be minimal.

It bears noting that the underlying reason that a worst-case modeling approach may be applied for CO is the continuing turnover nationwide of the on-road motor vehicle fleet to vehicles designed and constructed to meet increasingly more stringent EPA exhaust emissions standards has resulted in a steady long-term downward trend in emissions. As a result, the long-term trend in ambient concentrations for CO has been steadily downward, as shown in Exhibits 3.3.1 and 3.3.2, despite steadily increasing VMT nationwide and locally (Exhibits 4.4.1 and 4.4.2). Background concentrations for CO nationwide and in Virginia are now very low and well under the NAAQS, as shown in Exhibits 3.3.1 to 3.3.3. In essence, the introduction of more stringent exhaust standards for CO has in the course of time resulted in much cleaner vehicles on the road today and significantly improved air quality.

All modeling for this project was conducted consistent with applicable federal guidance (as referenced in Section 2) as well as the VDOT Resource Document. Note the more detailed EPA guidance is strictly only required for conformity applications, although it may also be applied in whole or in part for NEPA assessments at the discretion of the project sponsor.

4.3.4 Worst-Case Alternative

Two alternatives for the George Washington Boulevard grade separation were presented in Section 1 (Exhibits 1.1.3 and 1.1.4). For worst-case emission modeling purposes, the primary difference between the two is the average road grade. As modeled emission factors increase with average road grade, the worst-case assumption for average roads grades would need to be as high as or higher than the highest road grades for the alternatives.

As shown in Exhibit 1.1.4, Alternative 2 has a highest road grade (6.7%) of the two alternatives. The worst-case alternative or, more precisely, the worst-case average road grade selected for modeling of the grade separation was 7%, which is higher than the average road grades for either of the two alternatives[83]. The worst-case average road grade was assumed to extend to the adjacent intersections.

4.3.5 Emission Modeling

Specific worst-case modeling assumptions are summarized in the following sections. A summary of all of the key worst-case assumptions as applied in this analysis is provided at the end of this section.

4.3.5.1 Model Selection

The current official EPA emission model, MOVES2014a, was applied for this analysis. It is the most recent and up-to-date version of the software from EPA.

4.3.5.2 Modeling Years

Modeling was conducted for the project opening and design years, 2022 and 2041 respectively. As noted in Section 4.3.2.2, a no-build analysis is not required for this project.

4.3.5.3 Modeling Inputs

Exhibits 4.3.4 and 4.3.5 present respectively summaries of MOVES and "Project Data Manager" inputs as applied for the worst-case emission factor modeling for this project. As noted above, all modeling inputs were taken from or made consistent with those specified in the VDOT Resource Document[84]. A sample copy of the MOVES2014a run specification file is provided in Attachment B to this report.

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[83] The worst-case assumption of an average road grade of 7% for the grade separation is also higher than the plans for the final preferred alternative (Personal Communication, L. Tachmetova, VDOT Location & Design, 7/21/2016).

[84] The tables are based on one presented in Appendix E1 of the VDOT Resource Document (2016),

Exhibit 4.3.4: MOVES2014a Model Inputs & Scripts

Parameter	MOVES Input
Project Scale	Project/Inventory
Emission Factor Script	CO_CAL3QHC_EF.sql (EPA)
Time Spans	2022 & 2041, January, Weekday, 07:00 to 07:59 a.m.
Geographic Bounds	Loudoun County
Vehicles/Equipment	Consistent with the guidance provided in the VDOT Resource Document, the vehicle/source types were made consistent with those specified in MWCOG Conformity Analyses.
Road Type	Urban Restricted Access (Route 7) Urban Unrestricted Access (Local Roads)
Pollutants and Processes	CO Exhaust and Crankcase Exhaust (running emissions only)
Output	Units: grams, joules, and miles Activity: distance travelled (and others)

4.3.5.4 Modeling Results (Emission Factors)

Exhibits 4.3.6 through 4.3.7 respectively present the modeled emission factors as a function of average speed and average road grade for urban interstates (urban restricted access facilities) and local streets (urban unrestricted access facilities), for each of the project opening and design years respectively. Modeled emissions are strongly sensitive to both speed and average road grade.

Exhibit 4.3.8 presents the final set of emission factors that were applied for dispersion modeling for the worst-case analysis for this project. For purposes of worst-case modeling, the emission factors were selected as follows:

- For local roads including the planned grade separation where average road grades reach nearly 7%, and where posted speeds vary from 15 miles per hour (mph) to 40 mph for this project, the worst-case assumption was to model all local roads as operating at 40 mph with a road grade of 7%. Note, as shown in the exhibits above, modeled emission factors increase with speed in this speed range for higher road grades (including 7%).
- For Route 7, consistent with the Resource Document, the emission factor for the posted speed (55 mph) was selected for worst-case modeling.

Exhibit 4.3.5: Project Data Manager Inputs for MOVES2014a

MOVES PDM	Input
Age Distribution (Vehicle Registration by vehicle type and year)	VDOT Resource Document (2016)
Fuels	MOVES2014a Defaults (consistent with the VDOT Resource Document)
Meteorology	VDOT Resource Document: ▪ Resource Document data taken from Metropolitan Washington Council of Governments (MWCOG) data as applied in their conformity analyses, which are based on the values applied in the State Implementation Plan (SIP) for CO. ▪ Since the region is no longer in maintenance, the use of these data are not required but were still applied as an option consistent with the VDOT Resource Document.
Emission Inspection and Maintenance (I/M) Programs	None (worst-case assumption)
Links (average speed, traffic volume, length, road type, grade)	Sensitivity analysis of CO emission factor by speed and average road grade, for both urban restricted (MOVES road type 4) and urban unrestricted (MOVES road type 5). Project specific emission factors taken from the results of the sensitivity analysis (which are presented in separate exhibits below.)
Link Source Type Hour Fraction (distribution among MOVES vehicle types for each link and hour)	VDOT Resource Document (2016): ▪ General Description of the Option Selected: o " … a mix of project-specific forecasts and regional data, e.g., project-specific auto and truck forecasts, with regional data applied to sub-allocate the forecasts to the MOVES source types." ▪ Specific Method: o VDOT Resource Document "Link Source Type Hour Fractions Calculation Tool" (Spreadsheet), Method 1b, using project specific truck percentages as presented in Section 1. o Sub-allocations conducted using VDOT Traffic Monitoring System (TMS) / Highway Performance Monitoring System (HPMS) Daily VMT distributions (Report 1236) (http://www.virginiadot.org/info/ct-TrafficCounts.asp)
Link Drive Schedule (second by second speed inputs for each link; optional)	Not applied. *Note: Given time and cost considerations, and consistent with Department protocols, project-specific link drive schedules and/or operating mode distributions are not typically applied for highway projects.*
Operating Mode Distribution (operating mode fraction data for each link; optional)	
Off-Network Link (vehicles generating starts, extended idling)	Not applicable. *Note: If start and extended idling emissions are determined not to be a significant source of emissions in the project area and are not directly affected by the project, then they may be excluded from the project-level analysis.*

Exhibit 4.3.6(a): MOVES2014a Fleet Average Emission Factors by Average Road Grade for Urban Restricted Access Facilities (MOVES Road Type 4) - Opening Year 2022

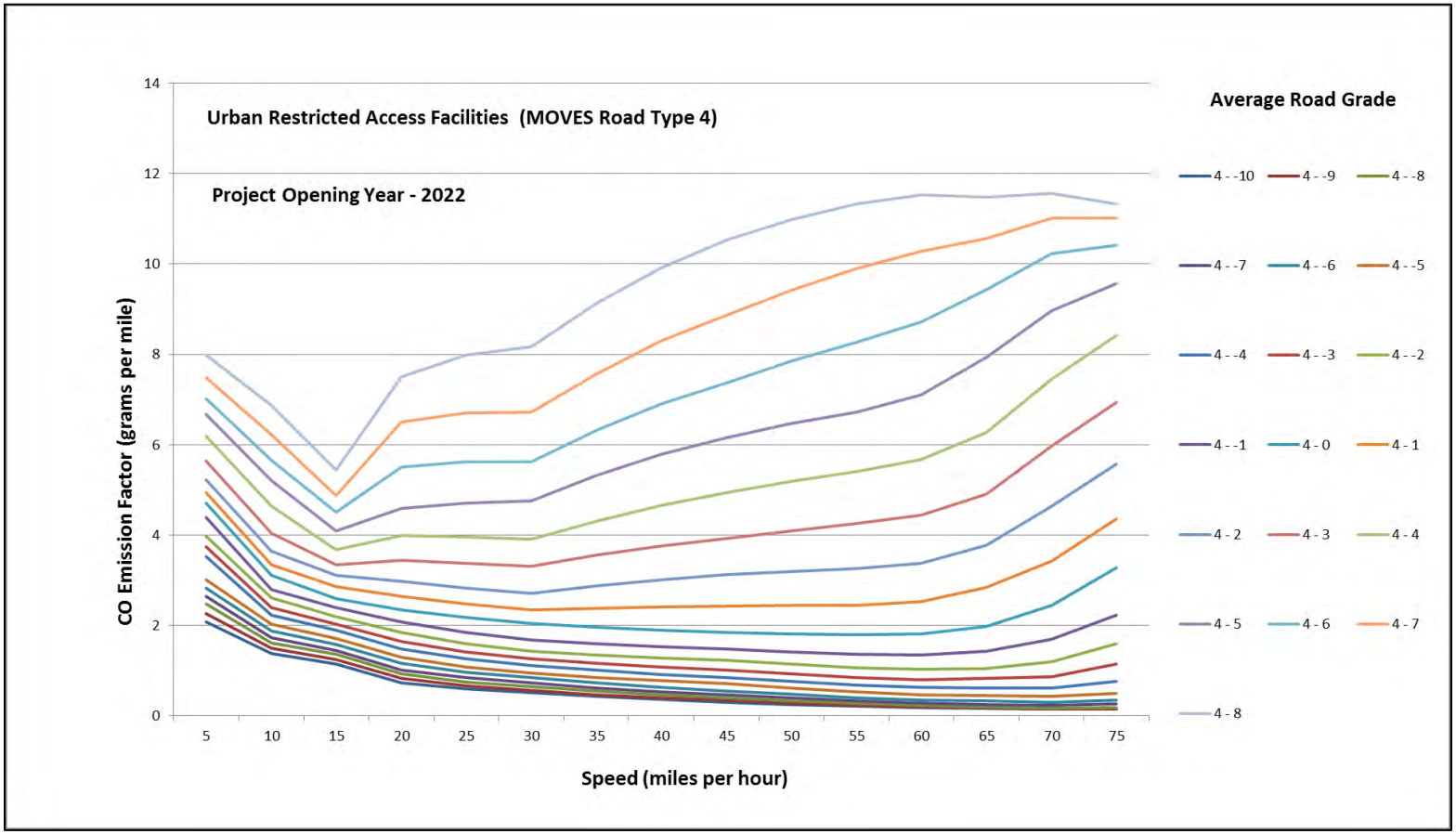

Exhibit 4.3.6(b): MOVES2014a Fleet Average Emission Factors by Average Road Grade for Urban Unrestricted Access Facilities (MOVES Road Type 5) - Opening Year 2022

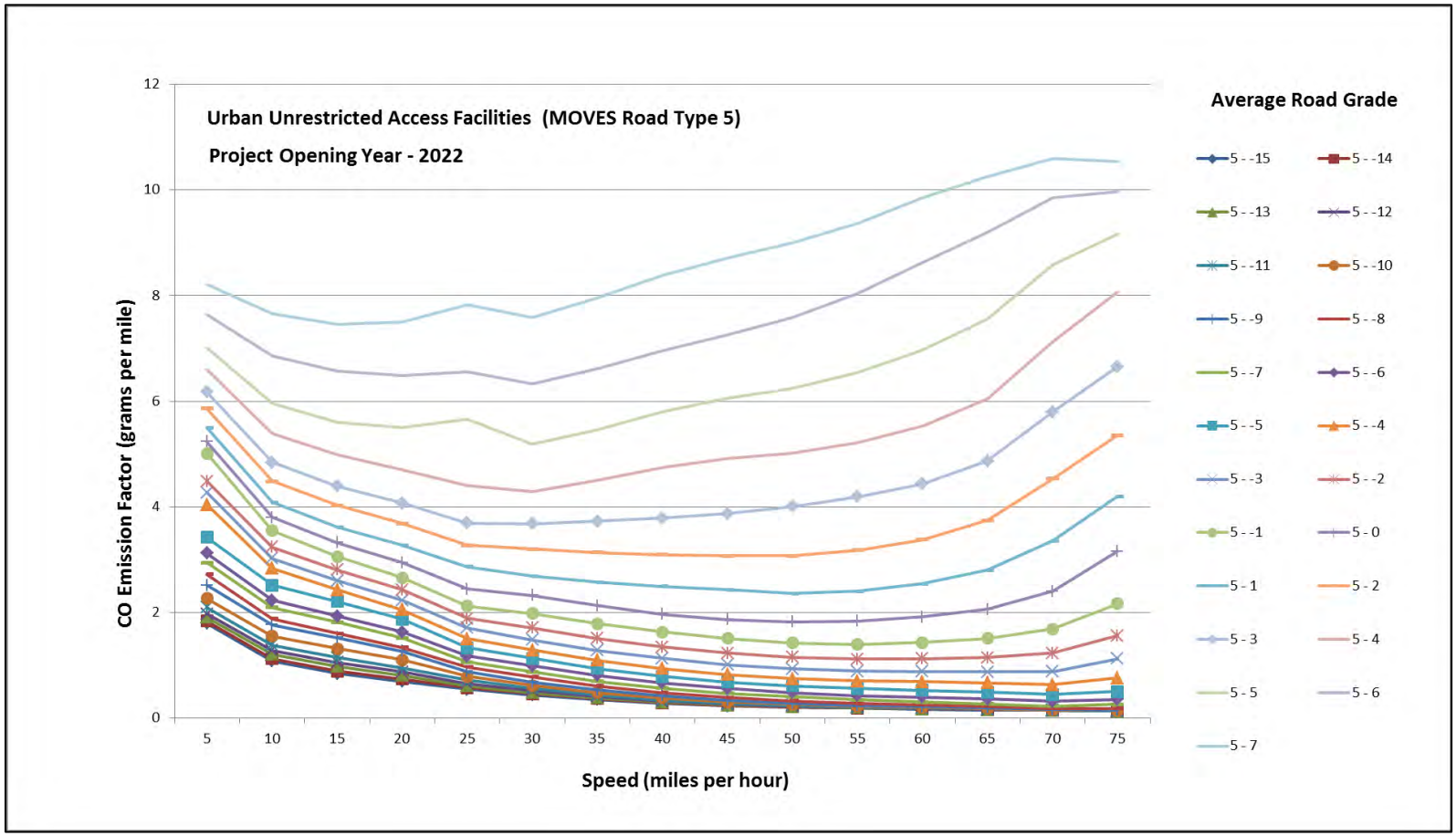

Exhibit 4.3.7(a): MOVES2014a Fleet Average Emission Factors by Average Road Grade for Urban Restricted Access Facilities (MOVES Road Type 4) - Design Year 2041

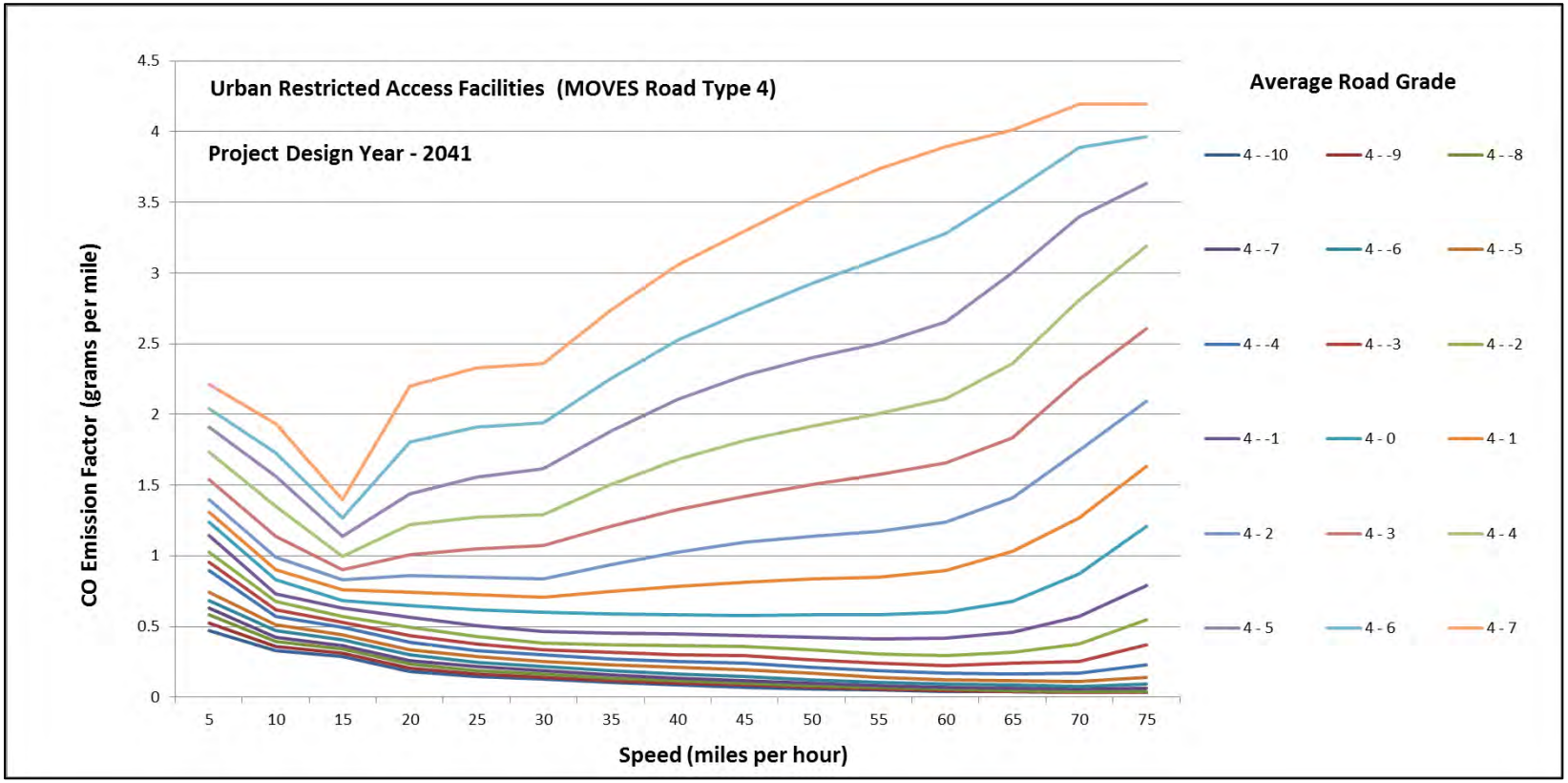

Exhibit 4.3.7(b): MOVES2014a Fleet Average Emission Factors by Average Road Grade for Urban Unrestricted Access Facilities (MOVES Road Type 5) - Design Year 2041

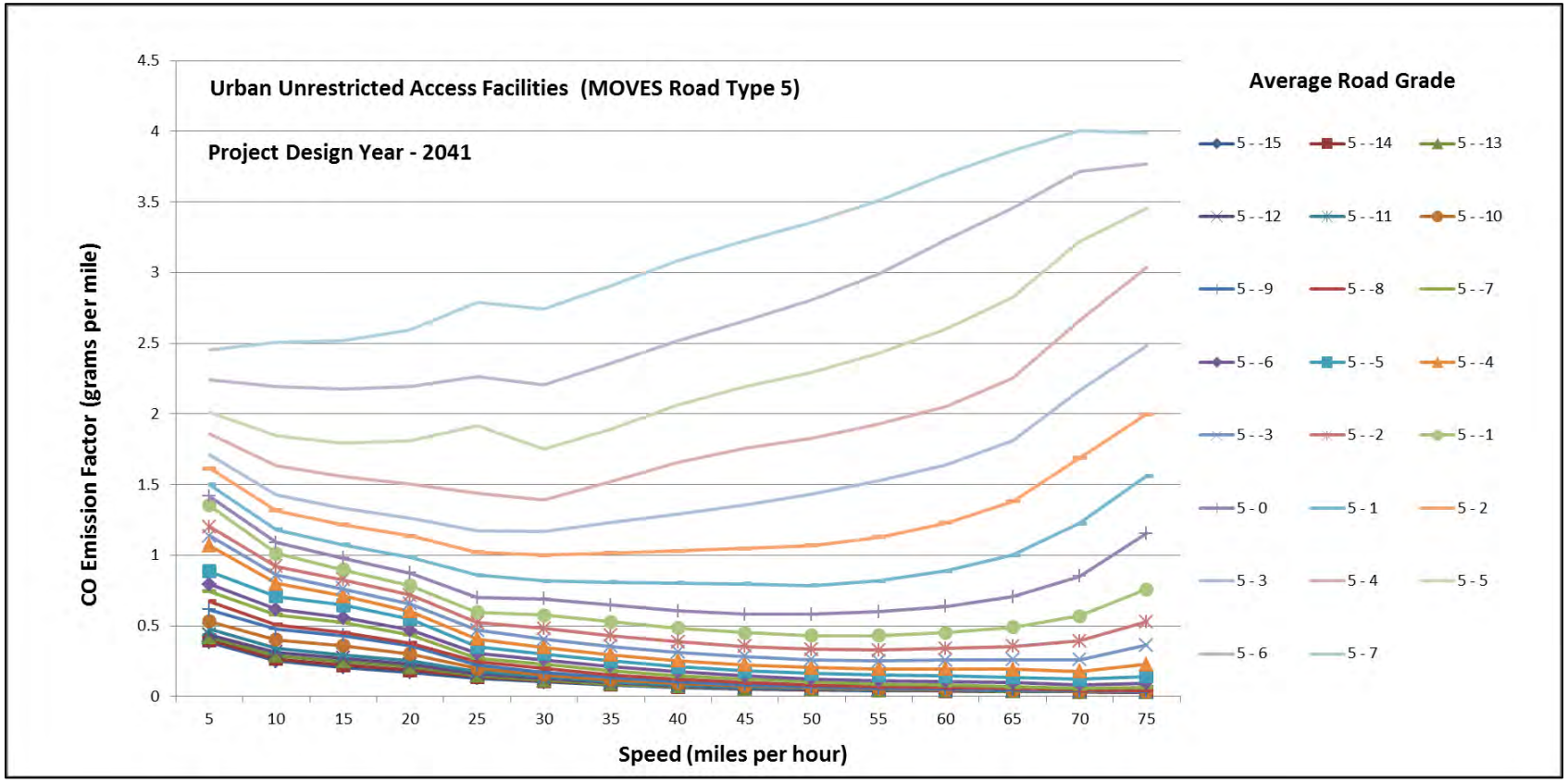

Exhibit 4.3.8: MOVES2014a Fleet Average Emission Factors Summary

MOVES Road Type	Speed (mph)	Emission Factor (g/mi)*		Road Grade (%)
		2022	2041	
All	Idle	5.44	0.96	-
4	55	2.45	0.85	1.0
		1.36	0.41	- 1.0
5	40	8.40	3.08	7.0
		0.57	0.15	- 7.0

** Grams per vehicle hour for idle operation*

4.3.6 Dispersion Modeling

Specific worst-case modeling assumptions are summarized in the following sections. A summary of all of the key worst-case assumptions as applied in this analysis is provided at the end of this section.

4.3.6.1 Model Selection

The current official EPA emission model, CAL3QHC, was applied for this analysis. Consistent with the VDOT Resource Document, a graphical user interface was applied to streamline the file preparation and modeling process. The interface model selected was the FHWA Cal3Interface model, which was initially released in December 2006 and updated periodically since.

4.3.6.2 Modeling Inputs

Exhibits 4.3.9, which is based on the table presented in Appendix G1 of the VDOT Resource Document (2016), summarizes the inputs assumed for the worst-case analysis using the CAL3QHC dispersion model. As noted above, all modeling inputs were taken from or made consistent with those specified in the VDOT Resource Document.

Receptor locations (points for which CO concentrations are estimated with the model) were generally determined following EPA guidance as incorporated into the FHWA Cal3Interface software package, as follows:

- at the corners of the roadway intersections or crossings (i.e., at the intersection of the right-of-way edges);
- along each side of the intersecting roadways at 82 feet (25 meters) and 164 feet (50 meters) from the corners (as the segment length permits); and
- at or near the midpoint of each side of the intersecting roadways.

As noted in the table above, a worst-case approach was taken in which all receptors were located along the default right-of-way edge.

Exhibit 4.3.9: CAL3QHC Worst-Case Analysis Inputs*

CAL3QHC Parameters	Typical Worst-Case Analysis Inputs
Surface Roughness Coefficient (cm)	Urban = 108 (consistent with FHWA CO Categorical Hot-Spot Finding)
Wind Speed (meters per second)	1.0
Wind Direction Increments (degrees, multipliers)	10 (1-36)
Stability Class	Urban Areas: 4 (D-Neutral)
Mixing Height (meters)	1000
Setting Velocity (cm/s)	0
Deposition Velocity (cm/s)	0
Median Width (ft)	Zero (This is a more significant worst-case assumption for Route 7 than for the local roads.)
Source Height (ft)	0
Receptor Height (ft)	5.9
Receptor Locations	VDOT Resource Document based on EPA guidance for spacing, with distance from the traveled roadway as follows for worst-case analyses: ▪ Typical Worst-Case: Along the right of way edge, with defaults of 10 feet for arterial streets and 20 ft for freeways. ▪ Note the EPA default wake distance is three meters (9.8 ft), so receptors should not be located closer than that for free-flow links. *Note: The spacing of receptors is discussed in more detailed following this table.*
Background Concentration (ppm)	Zero (as input to CAL3QHC) *Note: It is standard methodology to first determine the modeled project contribution to the ambient levels, <u>without</u> background, before adding background concentrations to get the estimate for total concentrations. The background concentrations applied for this project were taken as specified in the VDOT Resource Document for project locations in northern Virginia:* *One hour: 1.6 ppm* *Eight hour: 1.4 ppm*
Persistence Factor	0.83 (worst-case assumption, taking the maximum value specified in the VDOT Resource Document for all of Virginia) *Note: The VDOT Resource Document default for northern Virginia is 0.78.*
Averaging Time (min)	60min

CAL3QHC Parameters	Typical Worst-Case Analysis Inputs
Volumes (vehicle per hour) (vph)	VDOT Resource Document defaults, which are based on the HCM (2010): ▪ Freeway = 2400 vehicles per hour per lane (veh/h/ln) times the number of lanes ▪ Street (Metropolitan Areas): 1,230 (veh/h/ln) x number of lanes
Saturation Flow Rate (veh/h/ln)	VDOT Resource Document defaults, which are based on saturation flow rates from the current HCM (2010) (Exhibit 18-28)*: ▪ 1,900 veh/h/ln (Metropolitan area with population>250,000) ** Saturation flow rates from HCM are in passenger car units/h/ln. Values were used to estimate CAL3QHC inputs in veh/h/ln.*
Signal Data	▪ Defaults per HCM 2010 (Exhibit 18-28) and the CAL3QHC User's Guide (1995)(EPA-454/R-92-006 (Revised)): – Signal Type = 1 (pre-timed) – Arrival Rate = 3 (average) ▪ Defaults per CAL3QHC User's Guide (1995)(EPA-454/R-92-006 (Revised): – Clearance Lost Time (s) = 2 ▪ Worst-case defaults where project-specific information are not available: – Average Cycle Length (s): 120 – Average Red Time Length (s): 68
Link Width	Based on the default of 12 feet per lane

** Unless otherwise specified, all inputs were taken from or consistent with those specified in the VDOT Resource Document.*

Exceptions for receptor spacing were made to provide better coverage due to model limitations on the total number of receptors (60). Since the model generates higher estimates for concentrations for receptors located closer to intersections of high volume facilities, namely the grade separation over Route 7, the deletion or relocation of more distant receptors (i.e., the midblock receptors for local roads) would not affect the modeling results in terms of identification of both the peak concentrations and the location of the peak concentrations. This approach was taken for this project, given the limitation to the number of receptors that can be specified with the CAL3QHC model.

A sample copy of a CAL3QHC input file generated using CAL3Interface is provided in Attachment B to this report.

4.3.6.3 Worst-Case Modeling Configuration for the Build Scenario

For reference, in Section 1, Exhibits 1.1.1 and 1.1.2 provide an overview and an aerial of the project area respectively, Exhibit 1.1.3 presents average road grades for the current

configuration. Exhibit 1.1.4 presents the project plan and profile title sheet. Exhibits 1.1.5 and 1.1.6 present Alternatives 1 and 2 for the proposed grade separation (GWB Overpass).

The planned (build scenario) facilities include[85]:

- GWB:
  - Four lanes (two in each direction) with no dedicated left or right turn lanes.
- GWB grade separation:
  - Four lanes (two in each direction) open to traffic, but constructed to accommodate four lanes in each direction in the future.
- Roadways south of Route 7:
  - Russell Branch Pkwy currently has two lanes in each direction, and will be widened to provide one left turn lane to GWB and one left turn lane to Waverly Ct.[86]
- Roadways north of Route 7: unchanged.
  - GWB and Research Pl.: four way stop, without dedicated left turn lanes for the intersecting roadways.

Route 7 would be unimproved, i.e., it would have three lanes in each direction at the location of the GWB grade separation with one additional (auxiliary) lane westbound. Ultimately it may have four lanes in each direction, with one auxiliary lane westbound. The posted speed is currently 55 mph and average road grade ranges from 0.15% to 0.72%.

Among local roads other than the GWB grade separation, average road grades ranged from 0.57% to 4.47%, (Exhibit 1.1.3). The GWB grade separation would have the highest average road grade (6.7%).

For local roads, posted speeds ranged from 15 mph on Research Pl to 40 mph on Russell Branch (west side of GWB). More detail on posted speeds is provided in the LD-104 traffic forecast memorandum in Attachment A.

The worst-case (build scenario) configuration selected for modeling was as follows:

- Route 7:
  - 10 lanes, with a road grade of +1% eastbound and -1% westbound, and posted speed of 55 mph (as planned).
  - This configuration has more lanes (all filled with worst-case traffic volumes) and higher road grades than the planned scenario, which makes it a worst-case configuration.

- GWB Grade Separation & local roads:
  - 8 lanes, with road grades of +/- 7% and posted speed of 40 mph.

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[85] Email 7/29/2016 from L. Tachmetova, VDOT Location & Design

[86] As noted previously, the final plans are expected to be for an intersection and not the roundabout initially considered. For worst-case modeling purposes, a signalized intersection, which has traffic queues, would typically be higher emissions than a roundabout and so may be selected for modeling.

- This configuration has more lanes (all filled with worst-case traffic volumes), higher road grades, and higher speeds for all but one link in the planned build scenario.
    - Note MOVES2014a emission factors increase with road grade, so the selection of the highest road grade (even above those for the planned alternatives) serves as a worst-case assumption.
    - MOVES2014a emissions vary significantly with speed. At road grades of 7%, the MOVES2014a modeled emission factor for CO for unrestricted access facilities is significantly higher at 40 mph than it is at 15 mph and therefore 40mph is a better worst-case assumption for local roads.

Exhibit 4.3.10 presents the worst-case build roadway configuration as specified in the EPA CAL3QHC model for this analysis. Overall, the added lanes over the actual planned configuration combined with the worst-case road grades and (for local roads) speeds significantly increases modeled emissions over what would be expected for the planned build scenario. Note, to simplify the modeling and as a conservative (worst-case) approach, turn lanes were treated as full length through and turn lanes. All of the lanes would carry worst-case traffic volumes.

Receptor locations (points for which CO concentrations are estimated) are shown (numbered) in the exhibit. As noted previously (Section 4.3.6.2), the worst-case roadway configuration and receptor locations were generally specified as provided in the Cal3Interface guidance consistent with EPA and FHWA guidance.

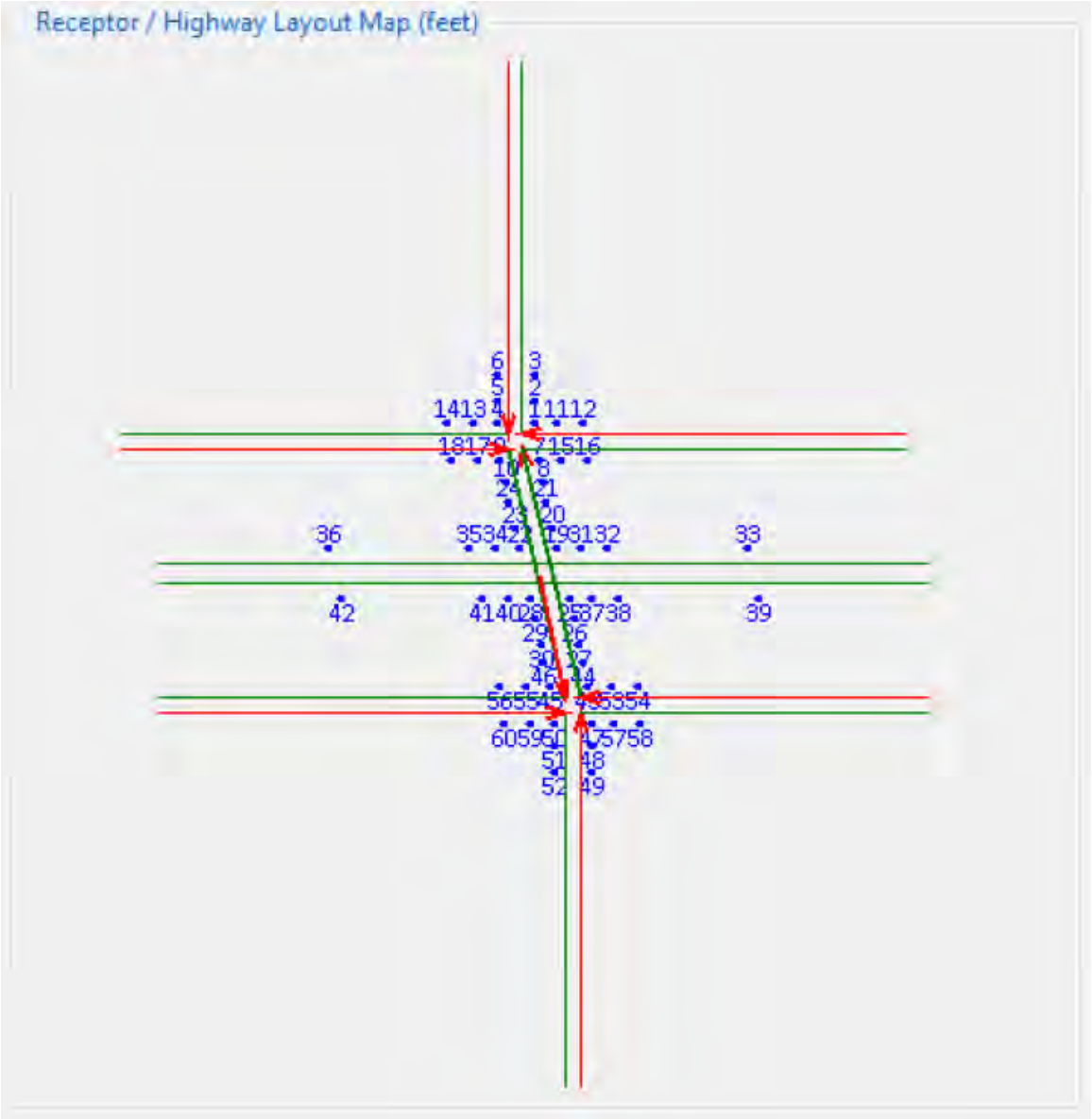
4.3.6.4 Modeling Results for Carbon Monoxide

Exhibit 4.3.11 presents the forecast maximum concentrations for CO for the worst-case scenarios modeled. All forecasts include background concentrations as noted previously.

Modeled emissions and maximum concentrations are highest for the project opening year. The forecast maximum concentrations for CO reach 5.2 and 4.4 ppm in the project opening year, respectively, against the one- and eight-hour standards of 35 and 9 ppm. The location of the forecast maximum concentration is Receptor #22, which is located at the northwest corner of the grade separation with Route 7. The forecast peak concentrations drop to 2.8 and 2.4 ppm respectively for the one- and eight-hour standards for the design year, occurring at receptor #25, which is the southeast corner of the grade separation with Route 7. Both peak concentrations occurred at the grade separation; the forecast worst-case concentrations for the adjacent arterial (local street) intersections were lower for both the opening and design years.

In all scenarios, forecast peak concentrations for CO are well below the respective one- and eight-hour standards of 35 and 9 ppm. In general, emissions and ambient concentrations drop significantly over time through the opening and design years due to continued fleet turnover to vehicles constructed to more stringent emission standards.

Exhibit 4.3.10: Worst-Case Configuration & Receptor Locations – Build Scenario



Source: Excerpted from FHWA Cal3Interface model output.

Overall, the results indicate that, even assuming worst-case traffic volumes, ambient levels of CO in the vicinity of the project are expected to decline significantly over time and to remain below both the one-hour and the eight-hour NAAQS. The project therefore is not expected to cause or contribute to a violation of the CO standards.

Exhibit 4.3.11: Forecast Maximum CO Concentrations (ppm) and Receptor Locations for Worst-Case Scenarios

NAAQS	Opening Year (2022)	Design Year (2041)
Worst-Case Analysis Results:		
One-Hour Standard (35 ppm)	5.2 (22)	2.8 (25)
Eight-Hour Standard (9 ppm)	4.4 (22)	2.4 (25)

* Including background concentrations of 1.6 and 1.4 ppm for the one- and eight-hour standards respectively, based on trend date for Northern Virginia, as specified in the VDOT Resource Document (2016). Receptor locations noted are only for the first location if more than one location has the same value.

** In keeping with the FHWA-VDOT 2009 Agreement for No-Build Analyses, a no-build scenario analysis was determined to not be needed for this project, given: a) the project location (not within a nonattainment or maintenance area for CO), and b) the level of environmental documentation planned for this project (i.e., not an environmental impact statement).

4.3.6.5 Emissions from Construction

Construction of this project is expected to take less than five years and would cause only temporary increases in emissions. A quantitative assessment of construction emissions is not indicated as the project location is not in an area subject to conformity requirements for CO and the primary criterion for conformity (5 years, per 40 CFR 93.123 as noted in Section 2.3.2.6) in any case has not been exceeded.

4.3.7 Summary of Assumptions for the Worst-Case Analysis

Worst-case assumptions applied in this analysis include:

For dispersion modeling:

- Application of a screening model, CAL3QHC, for dispersion modeling, which by design may be conservative and tends to generate relatively high concentrations.
- Worst-case inputs (all of which tend to increase modeled emissions and ambient concentrations of carbon monoxide) for CAL3QHC modeling, including:
    - Worst-case traffic volumes that exceed both the opening and design year ADT forecasts for this project by substantial margins. Most importantly, Route 7 was modeled with ten lanes with each lane carrying worst-case volumes for restricted access facilities, while the actual build scenario has six lanes and one auxiliary lane at the location of the proposed grade separation. Similarly, the George Washington Boulevard (GWB) grade separation (and other local roads) were modeled as eight lane facilities, each carrying worst-case volumes for streets with signalized intersection, whereas the actual grade separation is planned to have four lanes open to traffic and other local roads four lanes or less.
    - Worst-case receptor locations on the edge of the roadway right-of-way, i.e., at the closest possible point to roadway.
    - Worst-case geometric assumptions that serve to concentrate traffic, emissions

and concentrations to the greatest extent possible:
    - Zero vertical separation for the grade separation and Route 7 mainline, which serves to increase modeled concentrations.
    - Zero median widths for Route 7 (in addition to all local roads).
    - Modeling the adjacent arterial intersections as located only 400 feet from Route 7, which is closer than they are currently or are planned. This assumption serves to increase the modeled concentrations at both the local street intersections and the grade separation with Route 7.
  - Other federal default input data for most model inputs (see the exhibit above).

For emission factor modeling:

- Worst-case inputs (tending to increase modeled emission factors), including:
  - Worst-case emission factor (corresponding to 40 mph at 7% road grade) for all local roads, recognizing that emission factors increase with speed for higher road grades and speeds for restricted access facilities (including local roads).
  - Other federal default input data as noted in the exhibit above.

4.4 Mobile Source Air Toxics (MSATs)

4.4.1 Level of Analysis Determination

Mobile Source Air Toxics (MSATs) were assessed for this project in accordance with the most recently issued version of FHWA guidance (2012), general requirements for which were summarized in Section 2 of this report. Following FHWA guidance, the level of analysis for the project is determined based on the traffic forecasts presented in Section 1.

For this project, total traffic is forecast to reach up only 106 thousand ADT for the build scenario, which is well below the 140-150 thousand ADT criteria specified in FHWA guidance for Category 3 projects (i.e., ones for which a quantitative analyses for MSATs would be required). Additionally, this project does not involve the creation or altering of a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location. This project is therefore considered to be in the second category specified in federal guidance, i.e., one with "Low Potential MSAT Effects". Projects in this category are addressed with a qualitative analysis, which as FHWA guidance states provides a basis for identifying and comparing potential differences for MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below follows FHWA guidance. It is derived in part from a study conducted by the FHWA entitled "A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives".

4.4.2 Qualitative MSAT Analysis

BACKGROUND

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards (NAAQS), the U.S. Environmental Protection Agency (EPA) also regulates air toxics. Most air toxics originate from man-made sources, including on-road mobile sources, non-road

mobile sources (e.g., airplanes and locomotives), area sources (e.g., dry cleaners and gas stations), and stationary sources (e.g., factories and refineries). Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. Based on an FHWA analysis using EPA's MOVES2010b model, as shown in the exhibit below, even if vehicle-miles travelled (VMT) increases by 102 percent as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period.

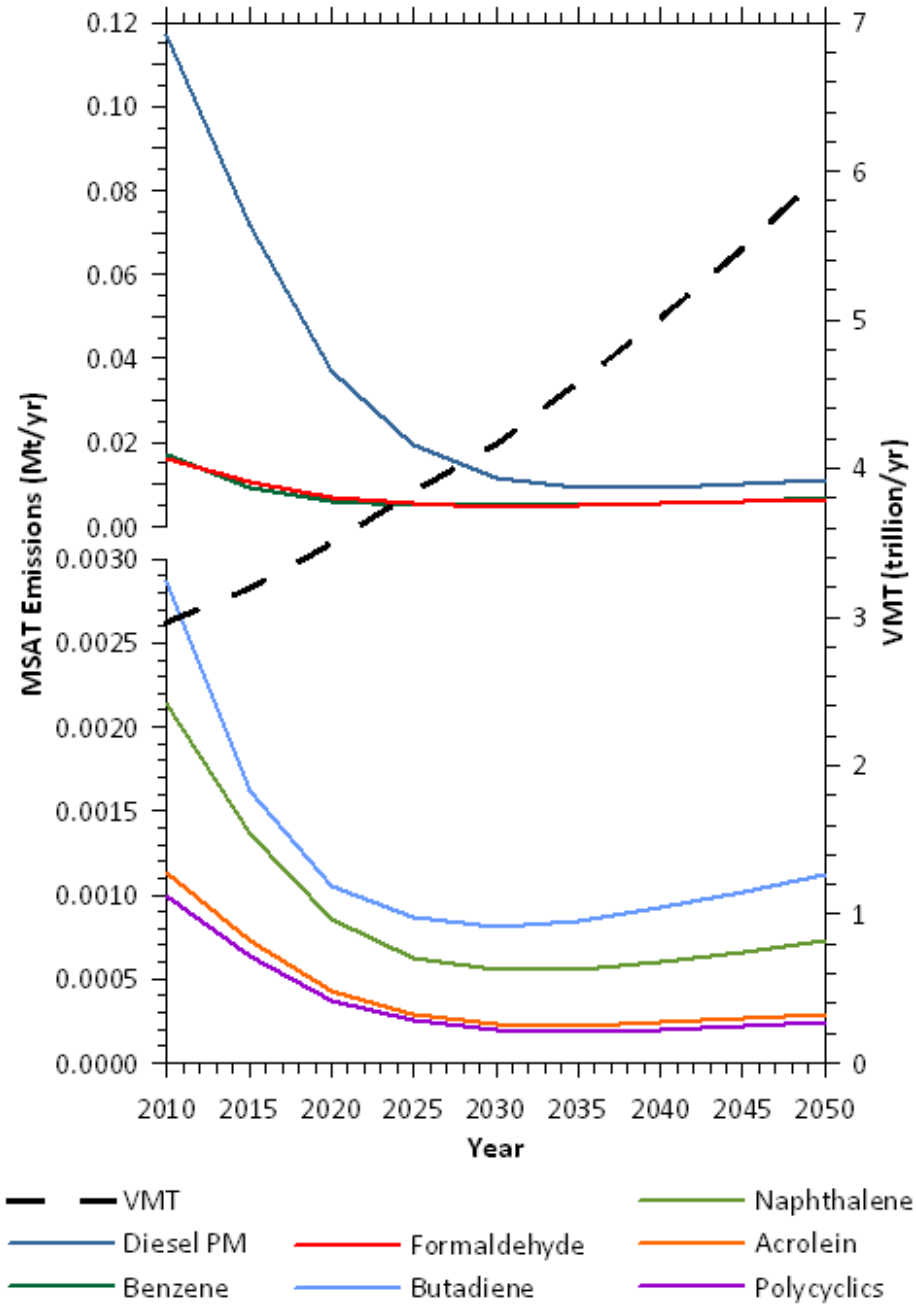
MSAT Research

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field. Additional background information on MSAT-related research is provided by FHWA at:

http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidapd.cfm

Exhibit 4.4.1 National MSAT Emission Trends 1999 – 2050 for Vehicles Operating on Roadways Using EPA's MOVES2010b Model



Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: EPA MOVES2010b model runs conducted during May - June 2012 by FHWA.

PROJECT-LEVEL MSAT DISCUSSION

Following the *FHWA Interim Guidance Update on MSAT Analysis in NEPA* (December 6, 2012), (http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm), this project has been determined to have low potential MSAT effects, thereby requiring a qualitative MSAT analysis. A qualitative MSAT analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives, found at: www.fhwa.dot.gov/environment/airtoxic/msatcompare/ msatemissions.htm.

The amount of MSATs emitted is proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for Build Alternatives therefore may be slightly higher than that for the No-Build Alternative, because any additional capacity may increase the efficiency of the roadway and attract rerouted trips from elsewhere in the transportation network. This potential increase in VMT could lead to higher MSAT emissions for the preferred action alternative along a highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase would be offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES2010b model, emissions of all of the priority MSAT decrease as speed increases.

There may also be localized areas where VMT would increase and other areas where it would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Any additional travel lanes contemplated as part of project alternatives may have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, for each such alternative there may be localized areas where ambient concentrations of MSAT could be higher under certain Build Alternatives than the No-Build Alternative. However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts.

In sum, when capacity is added, such as when a highway is widened, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when

traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

INCOMPLETE OR UNAVAILABLE INFORMATION FOR PROJECT-SPECIFIC MSAT HEALTH IMPACTS ANALYSIS

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, http://www.epa.gov/ iris/). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific

location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id= 82). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (http://www.epa.gov/risk/basicinformation.htm#g)[87] and the HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

CONCLUSION FOR MSATs

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project at this time. While it is possible that localized increases in MSAT emissions may occur as a result of this project, emissions will likely be lower than

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[87] Redirects to: https://www.epa.gov/risk#g

present levels in the design year of this project as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. Although local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

4.5 Indirect Effects and Cumulative Impacts

Indirect effects are defined by the CEQ as "effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water or other natural systems, including ecosystems" (40 CFR 1508.8(b)). For transportation projects, induced growth is attributed to changes in accessibility caused by the project that influences the location and/or magnitude of future development.[88]

Cumulative impacts are "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7). According to the Federal Highway Administration's (FHWA) *Interim Guidance: Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process*, cumulative impacts include the total of all impacts to a particular resource that have occurred, are occurring, and will likely occur as a result of any action or influence, including the direct and reasonably foreseeable indirect impacts of a proposed project. Cumulative impacts include indirect effects.

The potential for indirect effects or cumulative impacts to air quality that may be attributable to this project is not expected to be significant for two reasons. First, regarding indirect effects, the quantitative assessments conducted for project-specific CO, qualitative analyses for MSAT impacts and the regional conformity analysis conducted for ozone can all be considered indirect effects analyses because they look at air quality impacts attributable to the project that occur at a later time in the future. These analyses demonstrate that in the future, 1) air quality impacts from CO will not cause or contribute to violations of the CO NAAQS; 2) MSAT emissions will be significantly lower than they are today; and 3) the mobile source emissions budgets established for the region for purposes of meeting the ozone NAAQS will not be exceeded.

Second, regarding the potential for cumulative impacts, the annual conformity analysis conducted by the National Capital Region (NCR) Transportation Planning Board (TPB, which is the Metropolitan Planning Organization or MPO for the Washington, D.C. metropolitan nonattainment/ maintenance area) represents a cumulative impact assessment for purposes of regional air quality. Federal conformity requirements, including specifically 40 CFR 93.114 and

[88] See: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_466.pdf

40 CFR 93.115, apply as the area in which the project is located is designated as nonattainment for ozone and maintenance for fine particulate matter. Accordingly, there must be a currently conforming transportation plan and program at the time of project approval, and the project must come from a conforming plan and program (or otherwise meet criteria specified in 40 CFR 93.109(b)).

- The existing air quality designations for the region are based, in part, on the accumulated mobile source emissions from past and present actions, and these pollutants serve as a baseline for the current conformity analysis.
- The conformity analysis quantifies the amount of mobile source emissions for which the area is designated nonattainment/maintenance that will result from the implementation of all reasonably foreseeable regionally significant transportation projects in the region (i.e. those proposed for construction funding over the life of the region's transportation plan).
- The most recent conformity analysis was completed in October 2015, with FHWA and FTA issuing a conformity finding on February 4, 2016 for the TIP and CLRP covered by that analysis. This analysis demonstrated that the incremental impact of the proposed project on mobile source emissions, when added to the emissions from other past, present, and reasonably foreseeable future actions, is in conformance with the SIP and will not cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of the NAAQS established by EPA.

Therefore, the indirect and cumulative effects of the project are not expected to be significant.

5.0 Mitigation

Emissions may be produced in the construction of this project from heavy equipment and vehicle travel to and from the site, as well as from fugitive sources. Construction emissions are short term or temporary in nature. To mitigate these emissions, all construction activities are to be performed in accordance with VDOT *Road and Bridge Specifications*[89].

As noted previously, the Virginia Department of Environmental Quality (VDEQ) provides general comments for projects by county. Their comments in part address mitigation. For Loudoun County, VDEQ comments[90] were: "*This project is located within a Marginal 8-hour Ozone Nonattainment area, a Fine Particulate Matter (PM2.5) Maintenance area, and a volatile organic compounds (VOC) and nitrogen oxides (NOx) Emissions Control Area. As such, all reasonable precautions should be taken to limit the emissions of VOC, NOx, and particulate matter. In addition, the following VDEQ air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions*[91]*; 9 VAC 5-45, Article 7, Cutback Asphalt restrictions*[92]*; and 9 VAC 5-50, Article 1, Fugitive Dust precautions*[93]."

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89 See http://www.virginiadot.org/business/const/spec-default.asp
90 Spreadsheet entitled: "DEQ SERP Comments rev7 draft", April 2016
91 See http://leg1.state.va.us/000/reg/TOC09005.HTM#C0130
92 See http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-45-760
93 See http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-50-60

6.0 Consultation

Inter-agency consultation for conformity (IACC) purposes consultation was conducted on the models, methods and assumptions specified in the VDOT Project-Level Air Quality Analysis Resource Document[94], which were applied in this analysis either directly or without substantive change[95]. IACC requirements apply for this project under the federal transportation conformity rule (40 CFR 93.105(c)(1)) and the corresponding section of the Virginia Regulation for Transportation Conformity (9 VAC 5-151 Section 70) as the project is located in an area that is currently in nonattainment or maintenance for one or more NAAQS. EPA provides that IACC requirements may be met on a project-specific basis or by consultation on the models, methods and assumptions to be applied in general in all analyses (see Section 2.3.2.2), and the latter approach was selected for this project via consultation on the Resource Document.

More specifically, IACC was conducted on the VDOT Resource Document on December 14th, 2015. Federal, state and local agencies, including the following, were invited to participate as required by the federal and Virginia conformity regulations:

- FHWA Virginia Division and Resource Center
- Virginia Department of Environmental Quality
- Virginia Department of Transportation
- Virginia Department of Rail and Public Transit
- Metropolitan Washington Council of Governments
- EPA Region 3
- Local agencies

All comments received on the VDOT Resource Document in the consultation process were considered as appropriate before the models, methods and assumptions (including data and data sources and the definition of substantive change) were finalized. No adverse comments were received. A summary of the consultation process, including a list of all individuals and agencies invited to participate, can be found in Appendix A of the VDOT Resource Document.

With regard to public consultation, please refer to the overall NEPA documentation for the project for a summary.

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[94] See: http://www.virginiadot.org/programs/pr-environmental.asp

[95] The following definition of "substantive change" was included in the VDOT Resource Document and made the subject of inter-agency consultation: "*For project-level air quality analyses conducted to meet conformity requirements and/or for purposes of NEPA, a substantive change is defined here as one that would reasonably be expected to affect the modeling results and/or the analysis to the degree that it would change a finding, determination or conclusion that all applicable requirements for the air quality analysis for the project would be met and the project cleared. For analyses involving project-specific dispersion modeling for any pollutant(s) for conformity purposes, this includes whether the project would pass the applicable conformity test(s).*"

7.0 Conclusions

The proposed improvements were assessed for potential air quality impacts and conformity with applicable air quality regulations and requirements. The assessment indicates that the project would meet all applicable air quality requirements of the National Environmental Policy Act (NEPA) and federal and state transportation conformity regulations. As such, the project will not cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of national ambient air quality standards (NAAQS) as established by the US Environmental Protection Agency (US EPA).

Attachment A

Traffic

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
4975 Alliance Drive
Fairfax, VA 22030
(703) 383-VDOT (8368)

Charlie Kilpatrick, P.E.
COMMISSIONER

March 13, 2015

TO: Khalid Gandhi, NOVA-L&D

FR: Ed Azimi, NOVA-TP

RE: Route 7/Route 1050, George Washington Blvd. Overpass
Project# 0007-053-086, P1014, R201, C501, B668; UPC# 105584/Act. 616

We are forwarding you our report in response to your LD-104 request for traffic data, submitted to us on December 25, 2014. Traffic counts were collected in the last week of January and first week of February, 2015.

The **Existing** year 2015 mid-block daily traffic (ADT) volume and intersection turning movement counts are depicted in attached Figure 1. For the Interim year 2031 and the Design year 2041 forecasts, we utilized the MWCOG's Round 8.3 Cooperative Land Use forecasts and; TPB's 2014 CLRP traffic forecasting model version 2.3.57. We also reviewed the "Riverside Parkway/Lexington Drive Extension, Planning Level Traffic Analysis Report", prepared for the Loudoun County and revised on October 16, 2014. The forecasted Interim year 2031 ADT, Design year 2041 ADT and intersection turning volumes are shown in attached Figure 2.

Design Hourly Volume

- Route 1050, between Russell Branch Pkwy and Brdigefield Way/Research Place Design Year 2041 Hourly Volume= 1,100

Peak Hour Directional Distribution

- Route 1050, George Washington Blvd.:
  - AM: **NB**= 35%, **SB**= 65%
  - PM: **NB**= 65%, **SB**= 35%

Truck Classification

The Existing percent truck, as the percentage of traffic, can be utilized for future forecasts.

Period	Class 4-5	Class 6-7	Class 8 - 13
AM PH	7.0%	0.1%	0.1%
PM PH	6.0%	0.0%	0.0%
Daily	8.0%	0.2%	0.0%

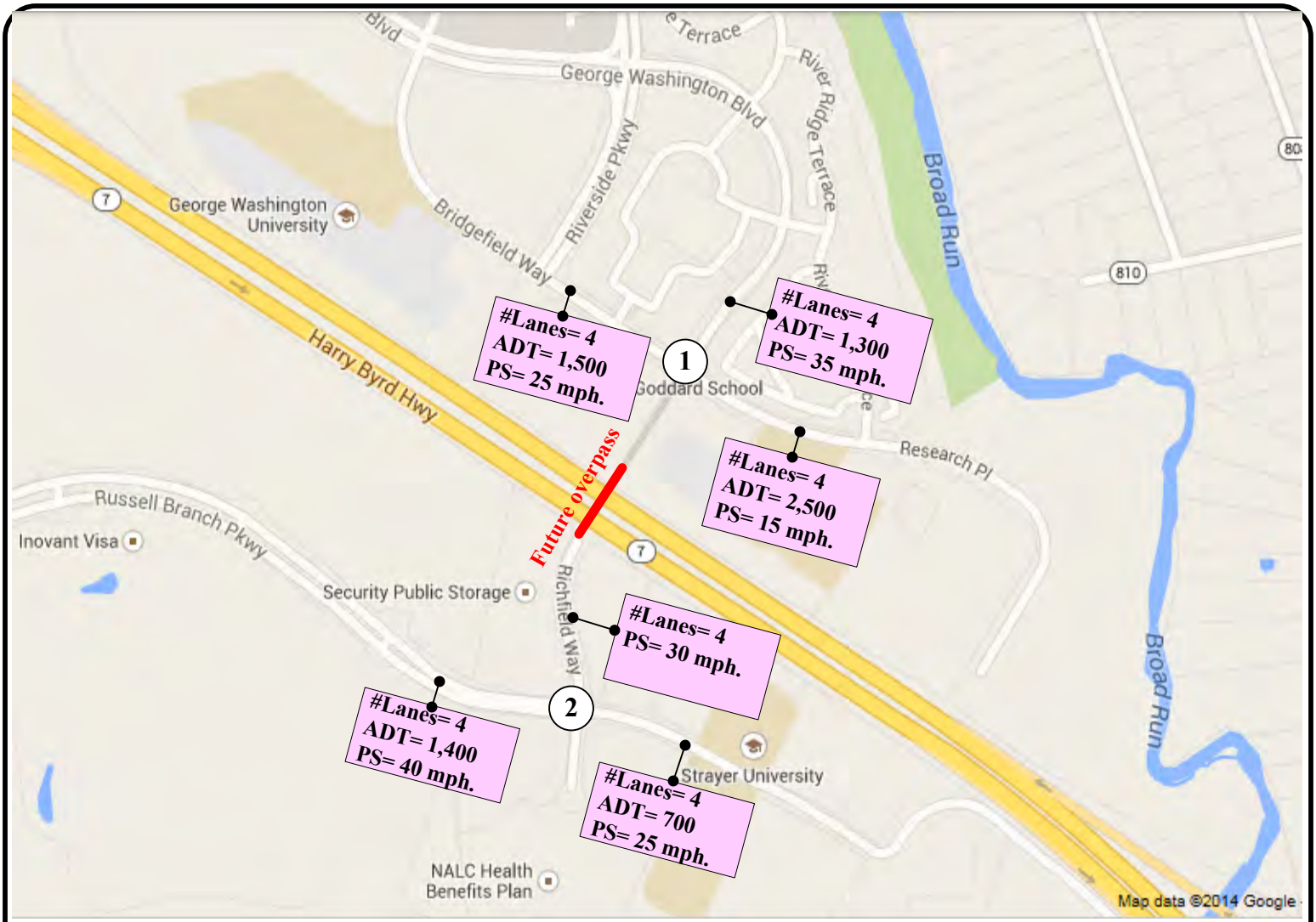
CLRP Inclusion

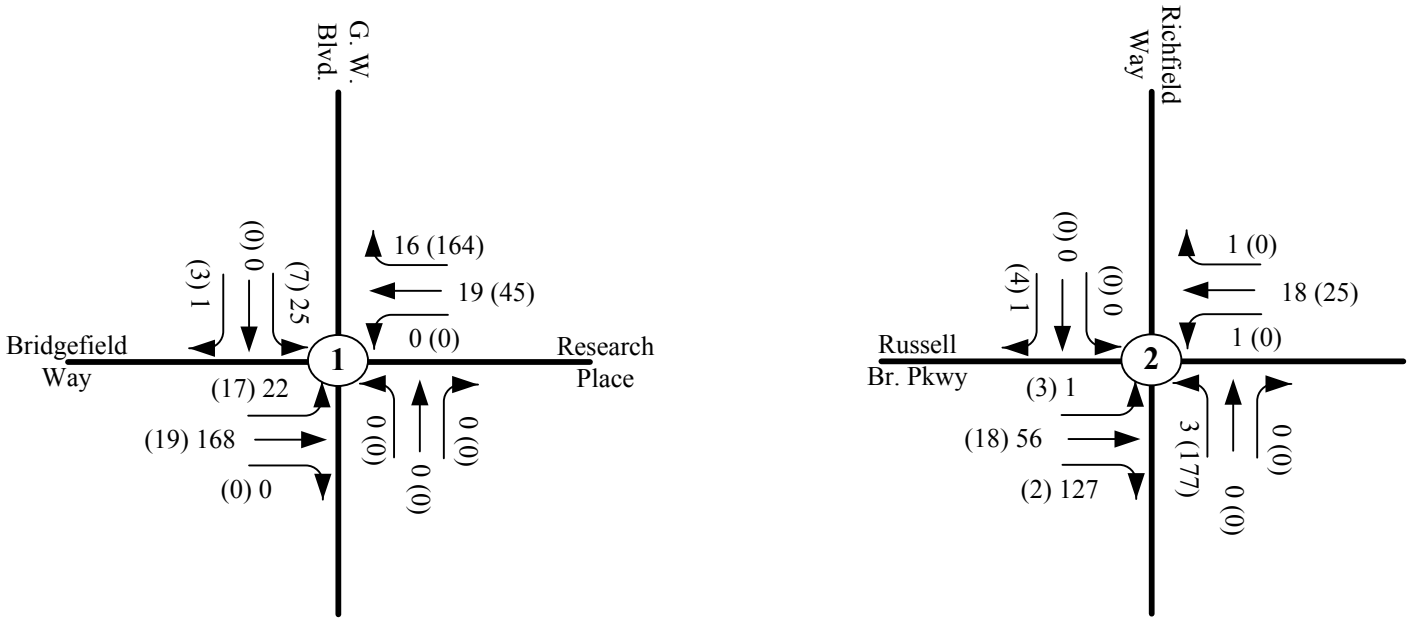
The subject improvement is not listed in the 2015 CLRP and FY2015-2020 TIP.

For additional information, please contact me. Thank you.

Attachments

Cc: Valerie Pardo, NOVA-TP





(PM) AM

Figure 1 - Existing Year 2015 Daily and Intersection Turning Traffic Volume.

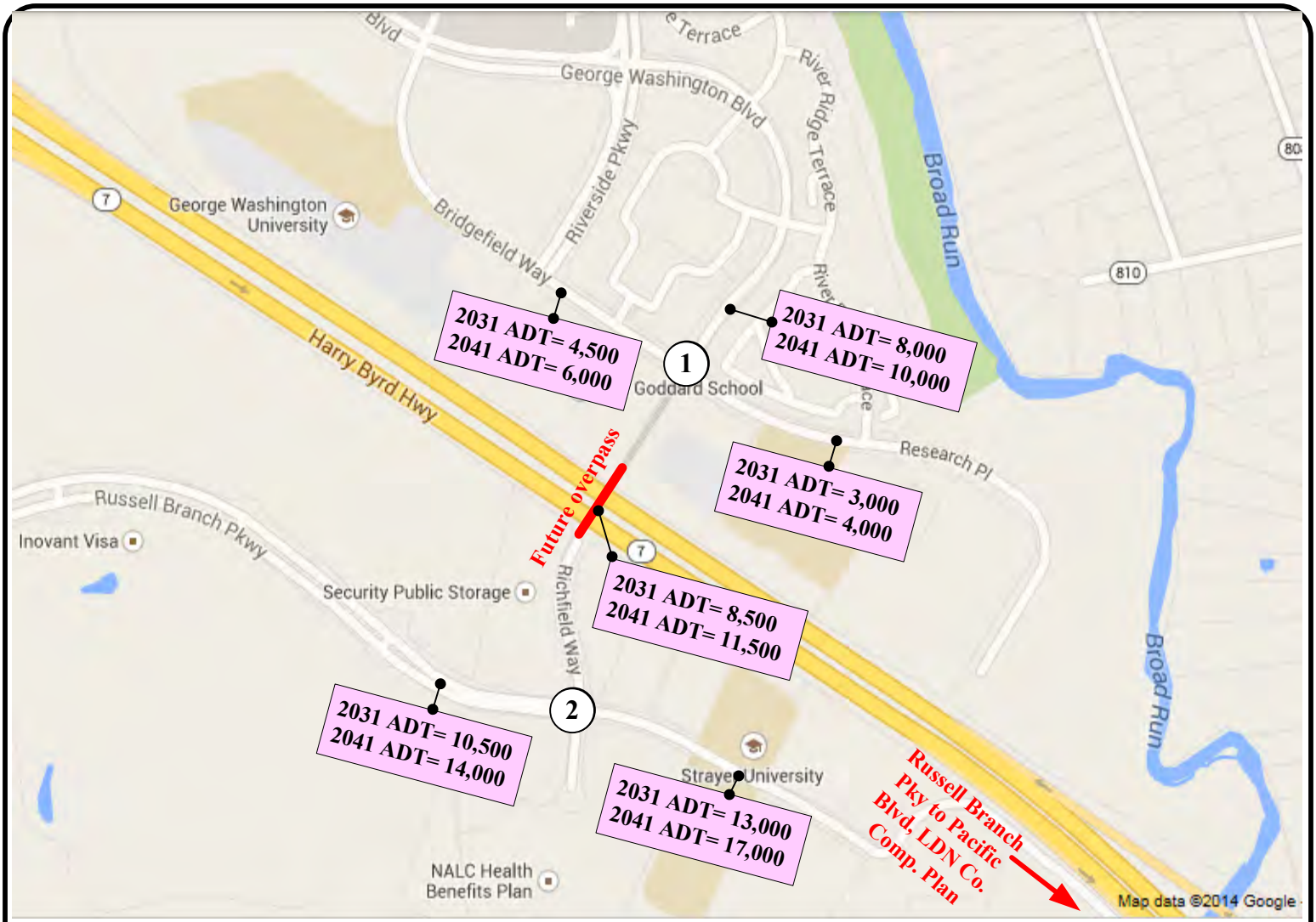
Route 7 (Harry Byrd Hwy) / George Washington Blvd. Overpass LD-104, UPC# 105584 Act. 616

N

March 13, 2015

VDOT

NOVA-TP<EA>



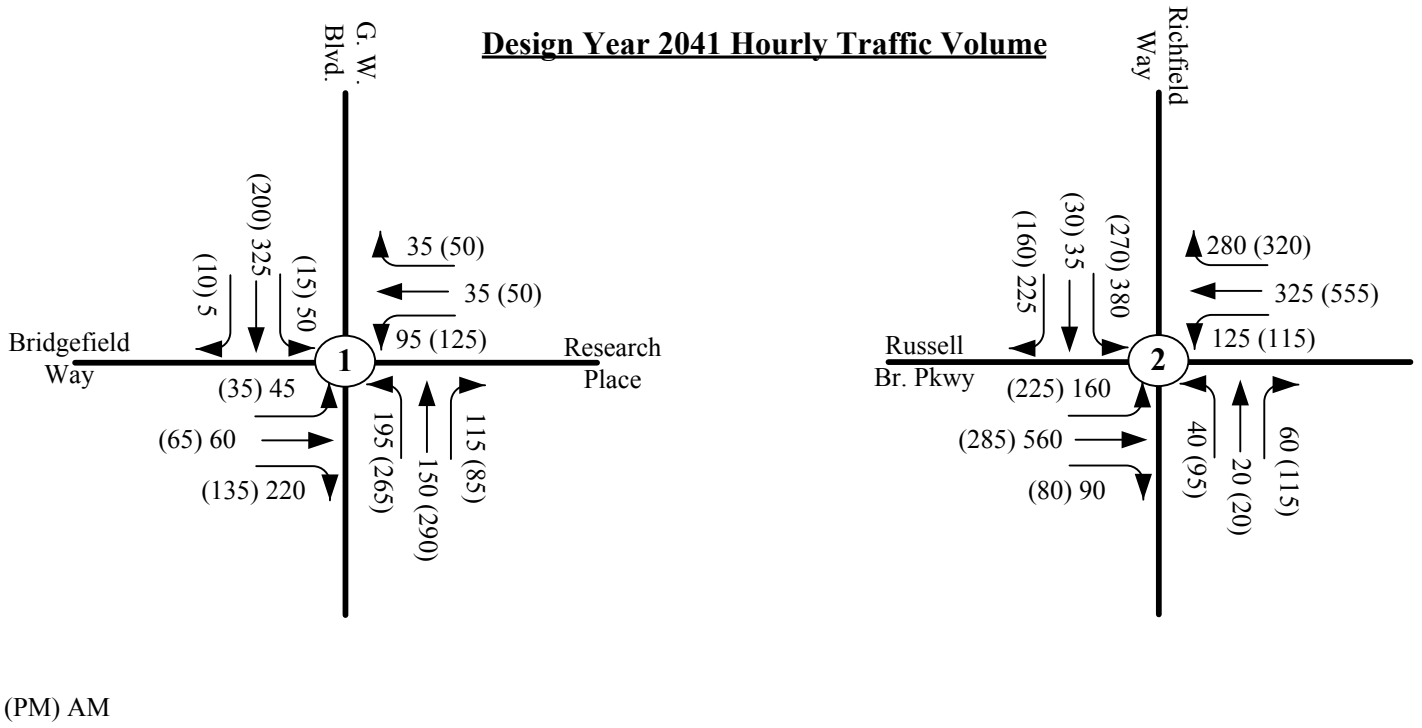


Figure 2 – Forecasted Interim Year 2031 Daily and Design Year 2041 Daily & Intersection Turning Traffic Volume

Route 7 (Harry Byrd Hwy) / George Washington Blvd. Overpass LD-104, UPC# 105584 Act. 616

N

March 13, 2015

VDOT

NOVA-TP<EA>

Location and Design
Request For Traffic Data

Tuesday, December 23, 2014

Tier 2 Project

To District Planning Manager State Transportation Planner

From - Lead Design Engineer Khalid Gandhi

Subject: TRAFFIC DATA FOR : SCOPING REPORT [x] DESIGN PURPOSES [x]

Date Data is needed : 2/25/2015 **(Please allow 60 days from date of submission for receipt of Data)**

UPC: 105584 **District:** Northern Virginia **Residency:** LEESBURG **County:** Loudoun County

Route: 0007 **State Project Number:** 0007-053-086,R201 **Road System:** Primary

FHWA 534#: 4E108 **Federal Number:** STP-5A01(615) **Street Name:** HARRY BIRD HIGHWAY

TERMINI: **From:** 0. 5 MI. W. OF GEORGE WASHINGTON BLVD **To:** 0.5 MI E. OF GEORGE WASHINGTON BLVD

PROJECT LENGTH: 1.0000

DESCRIPTION: ROUTE 7/GEORGE WASHINGTON BLVD OVERPASS

Other : Turning movement counts and forecasts at the intersections of (1) G.W. Blvd., Bridgefield Way, Reserch Pl., & Richfield Way and (2) Russell Branch Pkwy., Richfield Way, & Wavely Ct. and forecasts (volumes and LOS) along all four legs of each intersection.

(i.e. intersection improvements, etc.)

Insure project is open to charges and provide charge code here : UPC #105584, Activity 616

AD Date : 4/15/2019 **Design Year** 2041

Min. Design Speed 40 mph **Operating Speed** 35 mph

(Note : Indicate units, i.e. mph, km/h)

Does this project have Federal Funds as of the time of this form submittal? Yes [x] No [ ]

Please furnish the following traffic data on the above captioned project as checked. If the project has Federal Funds, please also send the data to the Environmental Division (Air & Noise Section).

A location map, sketch, or other information is attached.

NOTE :

Design Year is AD Date + 11 years for Rural Minor Collector and Urban Collector for restoration in kind or minor improvements; and for all Rural Local and all Urban Local functional classifications.

Design Year is AD Date + 22 years for Rural Minor Collector and Urban Collector for new construction of major improvements or expansion of the facility; and all roads in the National Highway System (NHS), all Freeways, all Rural and Urban Arterial, and all Rural Major Collector functional classifications.

[x] * Current (existing) ADT (For information purposes only and maintenance of traffic)

[x] * Design Year ADT

[x] * Design Hourly Volume

[x] * Directional Distribution Factor (Peak Hour)

[x] * %Trucks Daily and % Trucks Peak Hour in 3 categories: (Class 4-5) and (Class 6-7) and (Class 8-13).

Include 'Vehicle Classification Counts Summary Sheet' (if available).

[x] Plan Design Year Level of Service (A sketch of the proposed typical section is required from L&D if checked).

[x] Existing Peak Hour Traffic A.M. & P. M. [x] Peak Hour Factor

[ ] * Please provide Functional Classification (Project Manager should check that iPM is correct).

[x] ADT: [ ] Five [x] Ten [ ] Fifteen [x] Twenty years after completion of the project.

Completion Date : 6/15/2021

[x] * Turning movements at all intersecting routes with a design year count of 3000 V.P.D. or over. (Provide peak hour and twenty-four hour movements for both present and design years)

[ ] Do-nothing Design Year ADT (i.e. design year traffic on existing roadway assuming project is not built.)

[ ] * If recommendations for bicycle and pedestrian accommodations for this area are included in any type of transportation plan, please provide the recommendations.

[x] * If the area has an approved Long-Range Plan, please provide its recommendation.

If additional information is needed, please contact: Khalid Gandhi, NOVA L&D. Phone : 703/259-2397

* Indicates data needed for scoping. L&D is to request only those items needed on subsequent requests.

CC: Environmental Division (Air & Noise Section) Residency Administrator

Project Designer Regional Traffic Engineer

Project Manager Other appropriate individuals

Note: Plans are available in FALCON and FALCON Web for viewing or printing. Users without viewing or printing capabilities may contact their District Location and Design Representative for prints.

ROUTE 7/GEORGE WASHINGTON BLVD OVERPASS

Project# 0007-053-086, P101, R201, C501, B668

UPC# 105584 Activity Code 616

ENTRADA2016-01 Analysis Outputs for Air Quality Study

Analysis Segment between Claiborne Parkway (VA-901) and Route 28

Provided by NOVA Transportation Planning Section

February 1, 2016

ROUTE 7/GEORGE WASHINGTON BLVD OVERPASS

ENTRADA Input Data for Analysis Year:

2015, 2022 & 2031

ENTRADA© - Traffic Input Summary

Route 7, Leesburg Pike

upc# 105584/Act 616

V 2016-01

Facility:	Route 7, Leesburg Pike	Traffic Assignment	Direction: East-West	Existing Year: 2015	Time Span:
From:	Claibornr Pky	Constrained	Facility Length (mi.): 2.70	Interim Year: 2022	24
To:	Route 28		Jurisdiction: 9. Northern Virginia/Loudoun	Design Year: 2031	HOURS

Sys. Unit: E	Existing Terrain: Rolling		Design Terrain: Rolling		Suburban
Scenario Name:	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
Daily Traffic Volume:	96,000	103,000	101,000	113,000	110,000
Daily Truck Volume:	0%	0%	0%	0%	0%
Daily PCE Volume:	104,500	112,200	110,000	123,000	119,800
Facility Type:	Major Arterial with PS>50 mph				
Facility Capacity (pcphpl):	960	960	960	960	960
Median Type:	Divided	Divided	Divided	Divided	Divided
Eastbound # of lanes:	3	3	3	3	3
Westbound # of lanes:	3	3	3	3	3
Outside shldr. width (ft):	6.00	6.00	6.00	6.00	6.00
Inside shldr. width (ft):	6.00	6.00	6.00	6.00	6.00
Lane Width (ft):	12.00	12.00	12.00	12.00	12.00
Access Density:	5	5	5	5	5
Number of Signals:					
Signal Quality:					
Cycle Length C (sec.):					
Effective Green g (sec.):					
Posted Speed, PS (mph):	55	55	55	55	55
Ideal F-F Speed (mph):	62	62	62	62	62
Adjusted F-FS (mph):	60	60	60	60	60

Notes

your note here…

Summary

The Truck input type is Hourly with Area Type selected as Suburban. The Free-Flow Speed method is 85th. %tile for Existing Year 2015, 85th. %tile for Interim Build 2022 & 85th. %tile for Design Build 2031. The FT is Major Arterial with PS>50 mph and it's un-signalized in Existing and un-signalized in Build year with selected Travel-Time model: BPR HCM 4-la Hwy Spd 60 mph

BPR Model: t= t0 * (1 + 0.83 * (v/c)^2.7)

If Posted Speed (PS) <=30 mph, it's recommended to use None in selection of Free-Flow Speed (F-FS) method.

1) 85th. Percentile: Ideal F-FS= 7.675 + 0.98 x PS

2) NCHRP Report 3-55 (Part 2): PS> 50 mph (80 kph)

IF-FS= 0.88 x PS(kph) + 22. | IF-FS= 0.88 x PS(mph) + 14.

3) NCHRP Report 3-55 (Part 2): PS≤ 50 mph (80 kph)

IF-FS= 0.79 x PS(kph) + 19. | IF-FS= 0.79 x PS(mph) + 12.

Adjusted F-FS: By facility characteristics or signal delay.

Present & Future Directional Traffic (All Vehicles) Volume

Starting Time	Eastbound					Westbound				
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
0:00	193	207	203	227	221	369	396	388	434	422
1:00	139	149	146	164	159	184	197	193	216	210
2:00	147	158	155	173	169	127	136	134	150	146
3:00	304	327	320	358	349	107	115	113	126	123
4:00	864	927	909	1,017	990	171	184	180	201	196
5:00	2,781	2,984	2,926	3,273	3,186	566	608	596	667	649
6:00	4,262	4,572	4,484	5,016	4,883	1,394	1,496	1,467	1,641	1,598
7:00	4,350	4,667	4,576	5,120	4,984	2,246	2,410	2,363	2,644	2,574
8:00	4,214	4,522	4,434	4,961	4,829	2,507	2,689	2,637	2,950	2,872
9:00	3,664	3,931	3,855	4,313	4,198	2,099	2,252	2,208	2,471	2,405
10:00	2,672	2,867	2,811	3,145	3,062	2,022	2,170	2,127	2,380	2,317
11:00	2,572	2,759	2,706	3,027	2,947	2,226	2,388	2,342	2,620	2,551
12:00	2,583	2,772	2,718	3,041	2,960	2,523	2,707	2,654	2,970	2,891
13:00	2,420	2,596	2,546	2,848	2,773	2,744	2,944	2,886	3,229	3,144
14:00	2,657	2,850	2,795	3,127	3,044	3,160	3,391	3,325	3,720	3,621
15:00	2,635	2,827	2,772	3,101	3,019	3,569	3,829	3,755	4,201	4,090
16:00	2,765	2,967	2,909	3,255	3,168	3,639	3,904	3,828	4,283	4,169
17:00	2,954	3,169	3,107	3,477	3,384	3,643	3,908	3,832	4,288	4,174
18:00	2,415	2,591	2,540	2,842	2,767	3,689	3,958	3,882	4,343	4,227
19:00	1,722	1,848	1,812	2,027	1,973	3,244	3,481	3,413	3,819	3,718
20:00	1,224	1,313	1,288	1,441	1,402	2,185	2,344	2,299	2,572	2,503
21:00	1,037	1,112	1,091	1,220	1,188	1,920	2,060	2,020	2,260	2,200
22:00	696	747	732	819	797	1,224	1,313	1,288	1,441	1,402
23:00	445	477	468	524	510	728	782	766	857	835
24-hour	49,700	53,300	52,300	58,500	57,000	46,300	49,700	48,700	54,500	53,000

ENTRADA© - Traffic Input Summary

Route 7, Leesburg Pike

upc# 105584/Act 616

V 2016-01

Facility:	**Route 7, Leesburg Pike**	Traffic Assignment	Direction:	**East-West**	Existing Year:	**2015**	Time Span:
From:	**Claibornr Pky**	**Constrained**	Facility Length (mi.):	**2.70**	Interim Year:	**2022**	**24**
To:	**Route 28**		Jurisdiction:	**9. Northern Virginia/Loudoun**	Design Year:	**2031**	HOURS

Existing Hourly Percent Truck Traffic & Collected Field Speed

Starting Time	Eastbound		Westbound		TWO-WAY		Collected Speed	
	2X-6T	3X +	2X-6T	3X +	2X-6T	3X +	Eastbound	Westbound
0:00	1.3%	4.7%	0.5%	3.7%	1.8%	8.3%	0	0
1:00	1.8%	6.1%	2.7%	10.3%	4.5%	16.4%	0	0
2:00	1.4%	6.1%	2.0%	12.9%	3.3%	19.0%	0	0
3:00	0.3%	2.6%	1.9%	18.1%	2.2%	20.8%	0	0
4:00	0.9%	1.3%	3.8%	13.4%	4.7%	14.7%	0	0
5:00	0.8%	0.4%	3.1%	6.7%	3.9%	7.1%	0	0
6:00	0.8%	0.4%	1.8%	3.9%	2.6%	4.3%	0	0
7:00	0.7%	0.3%	2.3%	3.3%	3.0%	3.6%	0	0
8:00	0.8%	0.5%	2.1%	2.9%	2.9%	3.5%	0	0
9:00	1.5%	1.0%	3.1%	4.5%	4.6%	5.5%	0	0
10:00	1.8%	1.3%	2.4%	4.8%	4.2%	6.1%	0	0
11:00	1.4%	1.6%	1.6%	4.3%	3.0%	5.9%	0	0
12:00	1.5%	1.3%	1.4%	3.8%	2.9%	5.1%	0	0
13:00	1.6%	1.5%	1.4%	2.6%	3.0%	4.1%	0	0
14:00	1.6%	1.2%	0.8%	1.9%	2.5%	3.1%	0	0
15:00	1.5%	0.6%	1.3%	0.9%	2.8%	1.5%	0	0
16:00	1.5%	0.3%	0.9%	0.6%	2.4%	0.9%	0	0
17:00	0.8%	0.1%	0.4%	0.2%	1.2%	0.3%	0	0
18:00	0.7%	0.1%	0.4%	0.3%	1.1%	0.4%	0	0
19:00	1.2%	0.3%	0.4%	0.3%	1.6%	0.6%	0	0
20:00	0.4%	0.2%	0.4%	0.4%	0.8%	0.6%	0	0
21:00	0.8%	0.4%	0.4%	0.6%	1.2%	1.0%	0	0
22:00	0.6%	1.3%	0.4%	0.8%	1.0%	2.1%	0	0
23:00	1.5%	0.9%	0.2%	1.8%	1.7%	2.7%	0	0

Directional Distribution (D-factor) - Eastbound

Starting Time	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
0:00	34%	34%	34%	34%	34%
1:00	43%	43%	43%	43%	43%
2:00	54%	54%	54%	54%	54%
3:00	74%	74%	74%	74%	74%
4:00	83%	83%	83%	83%	83%
5:00	83%	83%	83%	83%	83%
6:00	75%	75%	75%	75%	75%
7:00	66%	66%	66%	66%	66%
8:00	63%	63%	63%	63%	63%
9:00	64%	64%	64%	64%	64%
10:00	57%	57%	57%	57%	57%
11:00	54%	54%	54%	54%	54%
12:00	51%	51%	51%	51%	51%
13:00	47%	47%	47%	47%	47%
14:00	46%	46%	46%	46%	46%
15:00	42%	42%	42%	42%	42%
16:00	43%	43%	43%	43%	43%
17:00	45%	45%	45%	45%	45%
18:00	40%	40%	40%	40%	40%
19:00	35%	35%	35%	35%	35%
20:00	36%	36%	36%	36%	36%
21:00	35%	35%	35%	35%	35%
22:00	36%	36%	36%	36%	36%
23:00	38%	38%	38%	38%	38%

ENTRADA program is developed by **Ed Azimi,** VDOT-NOVA

Comment, Question and/or Problem: Ed Azimi

ROUTE 7/GEORGE WASHINGTON BLVD OVERPASS

ENTRADA Output Data for Analysis Year:

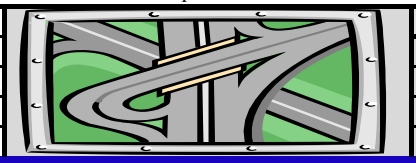
2015, 2022 & 2031

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	Route 7, Leesburg Pike	Area Type:	Suburban
From:	Claibornr Pky	Future Traffic Assignment: Constrained	
To:	Route 28	Existing Year: 2015 ADT:	96,000 / No-build
Jurisdiction:	9. Northern Virginia/Loudoun	Interim Year: 2022 ADT:	103,000 / 101,000
Run Date:	1/29/2016	Design Year: 2031 ADT:	113,000 / 110,000
Time Span:	24 hrs.		



Eastbound

Starting Time	AUTO Only Traffic Volume					Existing		Existing Hourly % Truck		
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	% K-factor	Dir. Dist.	2A-6T	3A+	Total
0:00	181	194	191	213	208	0.58%	34%	1.3%	4.7%	6.0%
1:00	128	138	135	151	147	0.34%	43%	1.8%	6.1%	7.9%
2:00	136	146	143	160	156	0.29%	54%	1.4%	6.1%	7.5%
3:00	295	317	311	348	338	0.43%	74%	0.3%	2.6%	3.0%
4:00	845	906	889	994	968	1.08%	83%	0.9%	1.3%	2.3%
5:00	2,747	2,947 *	2,890 *	3,233 *	3,148 *	3.49%	83%	0.8%	0.4%	1.2%
6:00	4,211 *	4,518 *	4,430 *	4,956 *	4,825 *	5.89%	75%	0.8%	0.4%	1.2%
7:00	4,305 *	4,618 *	4,529 *	5,067 *	4,932 *	6.87%	66%	0.7%	0.3%	1.0%
8:00	4,158 *	4,461 *	4,374 *	4,894 *	4,764 *	7.00%	63%	0.8%	0.5%	1.3%
9:00	3,574 *	3,835 *	3,760 *	4,207 *	4,095 *	6.00%	64%	1.5%	1.0%	2.5%
10:00	2,588	2,777	2,723	3,047 *	2,966 *	4.89%	57%	1.8%	1.3%	3.1%
11:00	2,496	2,678	2,626	2,938 *	2,860 *	5.00%	54%	1.4%	1.6%	2.9%
12:00	2,510	2,693	2,640	2,954 *	2,875 *	5.32%	51%	1.5%	1.3%	2.9%
13:00	2,345	2,516	2,467	2,760	2,687	5.38%	47%	1.6%	1.5%	3.1%
14:00	2,581	2,770	2,716	3,038 *	2,958 *	6.06%	46%	1.6%	1.2%	2.8%
15:00	2,580	2,768	2,714	3,037 *	2,956 *	6.46%	42%	1.5%	0.6%	2.1%
16:00	2,714	2,911 *	2,855 *	3,194 *	3,109 *	6.67%	43%	1.5%	0.3%	1.9%
17:00	2,927 *	3,141 *	3,080 *	3,445 *	3,354 *	6.87%	45%	0.8%	0.1%	0.9%
18:00	2,395	2,569	2,520	2,819	2,744	6.36%	40%	0.7%	0.1%	0.8%
19:00	1,697	1,821	1,785	1,997	1,944	5.17%	35%	1.2%	0.3%	1.5%
20:00	1,216	1,305	1,280	1,432	1,394	3.55%	36%	0.4%	0.2%	0.6%
21:00	1,025	1,099	1,078	1,206	1,174	3.08%	35%	0.8%	0.4%	1.2%
22:00	683	732	718	803	782	2.00%	36%	0.6%	1.3%	1.9%
23:00	435	466	457	512	498	1.22%	38%	1.5%	0.9%	2.4%

Eastbound Truck Volume

Starting Time	Class 4-5 (2X-6T) Truck Traffic Volume					Class 6-13 (3X & more) Truck Traffic Volume				
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
0:00	2	3	3	3	3	9	10	9	11	10
1:00	2	3	3	3	3	8	9	9	10	10
2:00	2	2	2	2	2	9	10	9	11	10
3:00	1	1	1	1	1	8	9	8	9	9
4:00	8	9	8	9	9	11	12	12	14	13
5:00	22	24	24	26	26	11	12	12	14	13
6:00	33	36	35	39	38	17	19	18	21	20
7:00	31	33	33	36	35	14	15	15	16	16
8:00	34	37	36	41	39	22	24	23	26	25
9:00	54	58	57	64	62	35	38	37	42	41
10:00	48	51	50	56	55	36	39	38	42	41
11:00	36	39	38	42	41	40	43	42	47	46
12:00	39	42	41	46	45	34	37	36	41	39
13:00	38	41	40	45	44	36	39	38	43	42
14:00	43	47	46	51	50	32	34	34	38	37
15:00	40	43	42	47	46	15	16	16	18	17
16:00	42	45	45	50	49	9	10	9	11	10
17:00	23	25	25	28	27	3	3	3	4	3
18:00	17	18	18	20	19	3	3	3	4	3
19:00	20	22	22	24	23	5	5	5	6	6
20:00	5	5	5	6	6	2	3	3	3	3
21:00	8	9	8	9	9	4	4	4	5	5
22:00	4	5	5	5	5	9	10	9	11	10
23:00	6	7	7	8	7	4	4	4	5	5

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	**Route 7, Leesburg Pike**	Area Type:	**Suburban**
From:	**Claibornr Pky**		**Future Traffic Assignment: Constrained**
To:	**Route 28**	Existing Year: 2015 ADT:	**96,000** / No-build
Jurisdiction:	**9. Northern Virginia/Loudoun**	Interim Year: 2022 ADT:	**103,000** / **101,000**
Run Date:	**1/29/2016** Time Span: **24 hrs.**	Design Year: 2031 ADT:	**113,000** / **110,000**

Eastbound Hourly Speed — **Traffic Assignment: Constrained** — **Travel-Time Model: BPR HCM 4-la Hwy Spd 6**

Starting Time	Calc. Existing (PS= 55)		Interim Build (PS= 55)		Interim Nbld (PS= 55)		Design Build (PS= 55)		Design Nbld (PS= 55)	
	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.
0:00	62	60	56	55	57	56	48	47	51	50
1:00	62	60	57	56	58	57	49	48	52	51
2:00	62	60	57	55	58	56	49	48	52	51
3:00	61	60	54	53	55	54	45	44	48	47
4:00	58	57	43	43	45	44	34	33	36	35
5:00	29	28	34	33	34	33	34	33	34	33
6:00	15	15	34	33	34	33	34	33	34	33
7:00	14	14	34	33	34	33	34	33	34	33
8:00	15	15	34	33	34	33	34	33	34	33
9:00	19	18	34	33	34	33	34	33	34	33
10:00	31	30	34	33	34	33	34	33	34	33
11:00	33	33	34	33	34	33	34	33	34	33
12:00	33	33	34	33	34	33	34	33	34	33
13:00	37	36	34	33	34	33	34	33	34	33
14:00	34	33	34	33	34	33	34	33	34	33
15:00	35	34	34	33	34	33	34	33	34	33
16:00	33	33	34	33	34	33	34	33	34	33
17:00	32	31	34	33	34	33	34	33	34	33
18:00	40	39	34	33	34	33	34	33	34	33
19:00	50	49	34	33	35	34	34	33	34	33
20:00	57	55	41	40	43	42	34	33	34	33
21:00	58	57	44	43	46	45	34	33	37	36
22:00	60	59	50	49	51	50	39	39	43	42
23:00	61	60	53	52	55	54	44	43	47	46

* Volume Exceeded Maximum Service Flow

Comment, Q & Problem: Ed Azimi

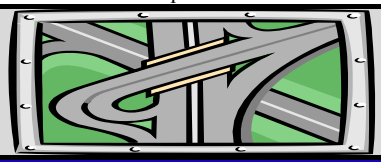
V 2016-01

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	Route 7, Leesburg Pike	Area Type:	Suburban
From:	Claibornr Pky	Future Traffic Assignment: Constrained	
To:	Route 28	Existing Year: 2015 ADT: 96,000	No-build
Jurisdiction:	9. Northern Virginia/Loudoun	Interim Year: 2022 ADT: 103,000	101,000
Run Date: 1/29/2016	Time Span: 24 hrs.	Design Year: 2031 ADT: 113,000	110,000



Westbound

Starting Time	AUTO Only Traffic Volume					Existing		Existing Hourly % Truck		
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	% K-factor	Dir. Dist.	2A-6T	3A+	Total
0:00	353	379	372	416	405	0.58%	66%	0.5%	3.7%	4.2%
1:00	160	171	168	188	183	0.34%	57%	2.7%	10.3%	13.0%
2:00	108	116	114	127	124	0.29%	46%	2.0%	12.9%	14.9%
3:00	86	92	90	101	98	0.43%	26%	1.9%	18.1%	20.0%
4:00	142	152	149	167	162	1.08%	17%	3.8%	13.4%	17.2%
5:00	511	548	537	601	585	3.49%	17%	3.1%	6.7%	9.8%
6:00	1,316	1,412	1,384	1,549	1,507	5.89%	25%	1.8%	3.9%	5.7%
7:00	2,121	2,276	2,232	2,497	2,431	6.87%	34%	2.3%	3.3%	5.6%
8:00	2,379	2,553	2,503	2,801 *	2,726	7.00%	37%	2.1%	2.9%	5.1%
9:00	1,940	2,081	2,041	2,283	2,223	6.00%	36%	3.1%	4.5%	7.6%
10:00	1,876	2,013	1,974	2,209	2,150	4.89%	43%	2.4%	4.8%	7.2%
11:00	2,095	2,248	2,204	2,466	2,400	5.00%	46%	1.6%	4.3%	5.9%
12:00	2,392	2,567	2,517	2,816 *	2,741 *	5.32%	49%	1.4%	3.8%	5.2%
13:00	2,635	2,827 *	2,772 *	3,101 *	3,019 *	5.38%	53%	1.4%	2.6%	4.0%
14:00	3,074 *	3,298 *	3,234 *	3,619 *	3,523 *	6.06%	54%	0.8%	1.9%	2.7%
15:00	3,491 *	3,745 *	3,673 *	4,109 *	4,000 *	6.46%	58%	1.3%	0.9%	2.2%
16:00	3,585 *	3,847 *	3,772 *	4,220 *	4,108 *	6.67%	57%	0.9%	0.6%	1.5%
17:00	3,620 *	3,884 *	3,809 *	4,261 *	4,148 *	6.87%	55%	0.4%	0.2%	0.6%
18:00	3,665 *	3,932 *	3,856 *	4,314 *	4,199 *	6.36%	60%	0.4%	0.3%	0.7%
19:00	3,222 *	3,457 *	3,390 *	3,793 *	3,692 *	5.17%	65%	0.4%	0.3%	0.7%
20:00	2,167	2,325	2,280	2,551	2,483	3.55%	64%	0.4%	0.4%	0.8%
21:00	1,901	2,039	2,000	2,237	2,178	3.08%	65%	0.4%	0.6%	1.0%
22:00	1,210	1,298	1,273	1,424	1,386	2.00%	64%	0.4%	0.8%	1.1%
23:00	714	766	751	840	818	1.22%	62%	0.2%	1.8%	2.0%

Westbound Truck Volume

Starting Time	Class 4-5 (2X-6T) Truck Traffic Volume					Class 6-13 (3X & more) Truck Traffic Volume				
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
0:00	2	2	2	2	2	13	14	14	16	15
1:00	5	5	5	6	6	19	20	20	22	22
2:00	2	3	3	3	3	16	18	17	19	19
3:00	2	2	2	2	2	19	21	20	23	22
4:00	6	7	7	8	7	23	25	24	27	26
5:00	17	19	18	21	20	38	41	40	45	43
6:00	25	27	26	29	29	54	58	57	63	62
7:00	51	55	54	60	59	73	79	77	86	84
8:00	53	57	56	63	61	74	79	78	87	85
9:00	64	69	68	76	74	95	102	100	112	109
10:00	49	53	52	58	57	96	103	101	113	110
11:00	35	37	37	41	40	96	103	101	113	110
12:00	36	39	38	42	41	95	102	100	112	109
13:00	37	40	39	44	43	71	77	75	84	82
14:00	26	28	28	31	30	59	64	62	70	68
15:00	45	48	47	53	51	33	36	35	39	38
16:00	32	35	34	38	37	21	22	22	25	24
17:00	15	16	16	18	17	7	8	8	9	9
18:00	15	16	16	18	17	9	10	10	11	11
19:00	12	13	13	14	14	10	11	10	12	11
20:00	9	10	9	11	10	8	9	9	10	10
21:00	8	9	9	10	10	11	12	12	13	13
22:00	4	5	5	5	5	9	10	10	11	11
23:00	1	2	2	2	2	13	14	14	15	15

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	**Route 7, Leesburg Pike**	Area Type:	**Suburban**
From:	**Claibornr Pky**	**Future Traffic Assignment: Constrained**	
To:	**Route 28**	Existing Year: 2015 ADT:	**96,000** No-build
Jurisdiction:	**9. Northern Virginia/Loudoun**	Interim Year: 2022 ADT:	**103,000** **101,000**
Run Date:	**1/29/2016** Time Span: **24 hrs.**	Design Year: 2031 ADT:	**113,000** **110,000**

Starting Time	Westbound Hourly Speed		Traffic Assignment: Constrained				Travel-Time Model: BPR HCM 4-la Hwy Spd 6			
	Calc. Existing (PS= 55)		Interim Build (PS= 55)		Interim Nbld (PS= 55)		Design Build (PS= 55)		Design Nbld (PS= 55)	
	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.
0:00	61	60	59	58	59	58	54	53	56	55
1:00	62	60	60	59	60	59	56	55	58	57
2:00	62	60	60	59	61	60	57	56	58	57
3:00	62	60	61	59	61	60	57	56	59	57
4:00	62	60	60	59	61	59	56	55	58	57
5:00	61	59	57	56	58	56	50	49	52	51
6:00	53	52	44	43	46	45	34	34	37	37
7:00	40	39	34	33	34	33	34	33	34	33
8:00	36	35	34	33	34	33	34	33	34	33
9:00	41	40	34	33	34	33	34	33	34	33
10:00	42	41	34	33	34	33	34	33	34	33
11:00	39	38	34	33	34	33	34	33	34	33
12:00	34	34	34	33	34	33	34	33	34	33
13:00	31	31	34	33	34	33	34	33	34	33
14:00	27	26	34	33	34	33	34	33	34	33
15:00	22	22	34	33	34	33	34	33	34	33
16:00	22	22	34	33	34	33	34	33	34	33
17:00	23	23	34	33	34	33	34	33	34	33
18:00	23	22	34	33	34	33	34	33	34	33
19:00	27	27	34	33	34	33	34	33	34	33
20:00	43	43	34	33	35	34	34	33	34	33
21:00	47	46	37	36	39	38	34	33	34	33
22:00	56	55	49	48	50	49	39	38	42	41
23:00	60	59	56	54	57	55	48	47	51	50

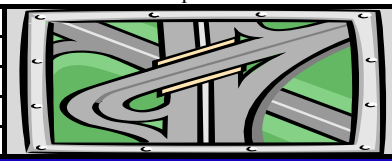
* Volume Exceeded Maximum Service Flow | Comment, Q & Problem: Ed Azimi | V 2016-01

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	Route 7, Leesburg Pike	Area Type:	Suburban
From:	Claibornr Pky	Future Traffic Assignment: Constrained	
To:	Route 28	Existing Year: 2015 ADT: 96,000	No-build
Jurisdiction:	9. Northern Virginia/Loudoun	Interim Year: 2022 ADT: 103,000	101,000
Run Date: 1/29/2016	Time Span: 24 hrs.	Design Year: 2031 ADT: 113,000	110,000



Two-way

Starting Time	ALL Vehicles Total Traffic Volume					Existing		Existing Hourly % Truck		
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	% K-factor	Dir. Dist.	2A-6T	3A+	Total
0:00	561	602	591	661	643	0.58%	100%	1.8%	8.3%	10.2%
1:00	323	346	340	380	370	0.34%	100%	4.5%	16.4%	20.9%
2:00	274	294	289	323	314	0.29%	100%	3.3%	19.0%	22.4%
3:00	412	442	433	484	472	0.43%	100%	2.2%	20.8%	23.0%
4:00	1,035	1,111	1,089	1,219	1,186	1.08%	100%	4.7%	14.7%	19.5%
5:00	3,347	3,591	3,522	3,940	3,835	3.49%	100%	3.9%	7.1%	11.0%
6:00	5,656	6,069 *	5,951 *	6,658 *	6,481 *	5.89%	100%	2.6%	4.3%	6.8%
7:00	6,596 *	7,077 *	6,939 *	7,764 *	7,557 *	6.87%	100%	3.0%	3.6%	6.6%
8:00	6,721 *	7,211 *	7,071 *	7,911 *	7,701 *	7.00%	100%	2.9%	3.5%	6.4%
9:00	5,763 *	6,183 *	6,063 *	6,783 *	6,603 *	6.00%	100%	4.6%	5.5%	10.0%
10:00	4,694	5,037	4,939	5,526	5,379	4.89%	100%	4.2%	6.1%	10.3%
11:00	4,798	5,148	5,048	5,648	5,498	5.00%	100%	3.0%	5.9%	8.8%
12:00	5,106	5,479	5,372	6,011 *	5,851 *	5.32%	100%	2.9%	5.1%	8.0%
13:00	5,163	5,540	5,432	6,078 *	5,916 *	5.38%	100%	3.0%	4.1%	7.1%
14:00	5,817 *	6,241 *	6,120 *	6,847 *	6,665 *	6.06%	100%	2.5%	3.1%	5.6%
15:00	6,204 *	6,656 *	6,527 *	7,303 *	7,109 *	6.46%	100%	2.8%	1.5%	4.3%
16:00	6,404 *	6,870 *	6,737 *	7,537 *	7,337 *	6.67%	100%	2.4%	0.9%	3.3%
17:00	6,596 *	7,077 *	6,940 *	7,764 *	7,558 *	6.87%	100%	1.2%	0.3%	1.5%
18:00	6,104 *	6,549 *	6,422 *	7,185 *	6,994 *	6.36%	100%	1.1%	0.4%	1.5%
19:00	4,967	5,329	5,225	5,846 *	5,691	5.17%	100%	1.6%	0.6%	2.2%
20:00	3,409	3,657	3,586	4,012	3,906	3.55%	100%	0.8%	0.6%	1.4%
21:00	2,957	3,173	3,111	3,481	3,388	3.08%	100%	1.2%	1.0%	2.2%
22:00	1,920	2,060	2,020	2,260	2,200	2.00%	100%	1.0%	2.1%	3.1%
23:00	1,173	1,259	1,235	1,381	1,345	1.22%	100%	1.7%	2.7%	4.3%

Starting Time	Weighted Average Two-way Hourly Speed									
	Calc. Existing (PS= 55)		Interim Build (PS= 55)		Interim Nbld (PS= 55)		Design Build (PS= 55)		Design Nbld (PS= 55)	
	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.
0:00	61	60	58	57	59	58	52	51	54	53
1:00	62	60	59	57	59	58	53	52	55	54
2:00	62	60	58	57	59	58	53	52	55	54
3:00	61	60	56	55	57	56	48	47	51	50
4:00	58	57	46	45	48	47	37	37	40	39
5:00	34	33	38	37	38	37	36	36	37	36
6:00	24	24	36	36	37	36	34	33	35	34
7:00	23	23	34	33	34	33	34	33	34	33
8:00	23	23	34	33	34	33	34	33	34	33
9:00	27	26	34	33	34	33	34	33	34	33
10:00	36	35	34	33	34	33	34	33	34	33
11:00	36	35	34	33	34	33	34	33	34	33
12:00	34	33	34	33	34	33	34	33	34	33
13:00	34	33	34	33	34	33	34	33	34	33
14:00	30	29	34	33	34	33	34	33	34	33
15:00	28	27	34	33	34	33	34	33	34	33
16:00	27	26	34	33	34	33	34	33	34	33
17:00	27	26	34	33	34	33	34	33	34	33
18:00	29	29	34	33	34	33	34	33	34	33
19:00	35	35	34	33	34	33	34	33	34	33
20:00	48	47	36	36	38	37	34	33	34	33
21:00	51	50	40	39	41	41	34	33	35	34
22:00	58	57	49	48	51	49	39	38	42	41
23:00	61	59	55	54	56	55	47	46	49	48

* Volume Exceeded Maximum Service Flow | Comment, Q & Problem: Ed Azimi | V 2016-01

ROUTE 7/GEORGE WASHINGTON BLVD OVERPASS

ENTRADA Input Data for Analysis Year:

2015, 2031 & 2041

ENTRADA© - Traffic Input Summary

Route 7, Leesburg Pike

upc# 105584/Act 616

V 2016-01

Facility:	Route 7, Leesburg Pike	Traffic Assignment	Direction: East-West	Existing Year: 2015	Time Span:
From:	Claibornr Pky	Constrained	Facility Length (mi.): 2.70	Interim Year: 2031	24
To:	Route 28		Jurisdiction: 9. Northern Virginia/Loudoun	Design Year: 2041	HOURS

Sys. Unit: E	Existing Terrain: Rolling		Design Terrain: Rolling		Suburban
Scenario Name:	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
Daily Traffic Volume:	96,000	113,000	110,000	106,000	102,000
Daily Truck Volume:	0%	0%	0%	0%	0%
Daily PCE Volume:	104,500	123,000	119,800	115,400	111,100
Facility Type:	Major Arterial with PS>50 mph				
Facility Capacity (pcphpl):	960	960	960	960	960
Median Type:	Divided	Divided	Divided	Divided	Divided
Eastbound # of lanes:	3	3	3	3	3
Westbound # of lanes:	3	3	3	3	3
Outside shldr. width (ft):	6.00	6.00	6.00	6.00	6.00
Inside shldr. width (ft):	6.00	6.00	6.00	6.00	6.00
Lane Width (ft):	12.00	12.00	12.00	12.00	12.00
Access Density:	5	5	5	5	5
Number of Signals:					
Signal Quality:					
Cycle Length C (sec.):					
Effective Green g (sec.):					
Posted Speed, PS (mph):	55	55	55	55	55
Ideal F-F Speed (mph):	62	62	62	62	62
Adjusted F-FS (mph):	60	60	60	60	60

Notes

your note here…

Summary

The Truck input type is Hourly with Area Type selected as Suburban. The Free-Flow Speed method is 85th. %tile for Existing Year 2015, 85th. %tile for Interim Build 2031 & 85th. %tile for Design Build 2041. The FT is Major Arterial with PS>50 mph and it's un-signalized in Existing and un-signalized in Build year with selected Travel-Time model: BPR HCM 4-la Hwy Spd 60 mph

BPR Model: t= t0 * (1 + 0.83 * (v/c)^2.7)

If Posted Speed (PS) <=30 mph, it's recommended to use None in selection of Free-Flow Speed (F-FS) method.

1) 85th. Percentile: Ideal F-FS= 7.675 + 0.98 x PS

2) NCHRP Report 3-55 (Part 2): PS> 50 mph (80 kph)

IF-FS= 0.88 x PS(kph) + 22. | IF-FS= 0.88 x PS(mph) + 14.

3) NCHRP Report 3-55 (Part 2): PS≤ 50 mph (80 kph)

IF-FS= 0.79 x PS(kph) + 19. | IF-FS= 0.79 x PS(mph) + 12.

Adjusted F-FS: By facility characteristics or signal delay.

Present & Future Directional Traffic (All Vehicles) Volume

Starting Time	Eastbound					Westbound				
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
0:00	193	227	221	213	205	369	434	422	407	392
1:00	139	164	159	154	148	184	216	210	203	195
2:00	147	173	169	163	156	127	150	146	140	135
3:00	304	358	349	336	323	107	126	123	118	114
4:00	864	1,017	990	954	918	171	201	196	189	182
5:00	2,781	3,273	3,186	3,071	2,955	566	667	649	625	602
6:00	4,262	5,016	4,883	4,706	4,528	1,394	1,641	1,598	1,540	1,482
7:00	4,350	5,120	4,984	4,803	4,621	2,246	2,644	2,574	2,480	2,386
8:00	4,214	4,961	4,829	4,653	4,478	2,507	2,950	2,872	2,768	2,663
9:00	3,664	4,313	4,198	4,046	3,893	2,099	2,471	2,405	2,318	2,230
10:00	2,672	3,145	3,062	2,951	2,839	2,022	2,380	2,317	2,233	2,148
11:00	2,572	3,027	2,947	2,840	2,733	2,226	2,620	2,551	2,458	2,365
12:00	2,583	3,041	2,960	2,852	2,745	2,523	2,970	2,891	2,786	2,681
13:00	2,420	2,848	2,773	2,672	2,571	2,744	3,229	3,144	3,029	2,915
14:00	2,657	3,127	3,044	2,933	2,823	3,160	3,720	3,621	3,489	3,358
15:00	2,635	3,101	3,019	2,909	2,799	3,569	4,201	4,090	3,941	3,792
16:00	2,765	3,255	3,168	3,053	2,938	3,639	4,283	4,169	4,018	3,866
17:00	2,954	3,477	3,384	3,261	3,138	3,643	4,288	4,174	4,022	3,870
18:00	2,415	2,842	2,767	2,666	2,566	3,689	4,343	4,227	4,074	3,920
19:00	1,722	2,027	1,973	1,902	1,830	3,244	3,819	3,718	3,582	3,447
20:00	1,224	1,441	1,402	1,351	1,300	2,185	2,572	2,503	2,412	2,321
21:00	1,037	1,220	1,188	1,145	1,102	1,920	2,260	2,200	2,120	2,040
22:00	696	819	797	768	739	1,224	1,441	1,402	1,351	1,300
23:00	445	524	510	491	473	728	857	835	804	774
24-hour	49,700	58,500	57,000	54,900	52,800	46,300	54,500	53,000	51,100	49,200

ENTRADA© - Traffic Input Summary

Route 7, Leesburg Pike

upc# 105584/Act 616

V 2016-01

Facility:	**Route 7, Leesburg Pike**	Traffic Assignment	Direction:	**East-West**	Existing Year:	**2015**	Time Span:
From:	**Claibornr Pky**	**Constrained**	Facility Length (mi.):	**2.70**	Interim Year:	**2031**	**24**
To:	**Route 28**		Jurisdiction:	**9. Northern Virginia/Loudoun**	Design Year:	**2041**	HOURS

Existing Hourly Percent Truck Traffic & Collected Field Speed

Starting Time	Eastbound		Westbound		TWO-WAY		Collected Speed	
	2X-6T	3X +	2X-6T	3X +	2X-6T	3X +	Eastbound	Westbound
0:00	1.3%	4.7%	0.5%	3.7%	1.8%	8.3%	0	0
1:00	1.8%	6.1%	2.7%	10.3%	4.5%	16.4%	0	0
2:00	1.4%	6.1%	2.0%	12.9%	3.3%	19.0%	0	0
3:00	0.3%	2.6%	1.9%	18.1%	2.2%	20.8%	0	0
4:00	0.9%	1.3%	3.8%	13.4%	4.7%	14.7%	0	0
5:00	0.8%	0.4%	3.1%	6.7%	3.9%	7.1%	0	0
6:00	0.8%	0.4%	1.8%	3.9%	2.6%	4.3%	0	0
7:00	0.7%	0.3%	2.3%	3.3%	3.0%	3.6%	0	0
8:00	0.8%	0.5%	2.1%	2.9%	2.9%	3.5%	0	0
9:00	1.5%	1.0%	3.1%	4.5%	4.6%	5.5%	0	0
10:00	1.8%	1.3%	2.4%	4.8%	4.2%	6.1%	0	0
11:00	1.4%	1.6%	1.6%	4.3%	3.0%	5.9%	0	0
12:00	1.5%	1.3%	1.4%	3.8%	2.9%	5.1%	0	0
13:00	1.6%	1.5%	1.4%	2.6%	3.0%	4.1%	0	0
14:00	1.6%	1.2%	0.8%	1.9%	2.5%	3.1%	0	0
15:00	1.5%	0.6%	1.3%	0.9%	2.8%	1.5%	0	0
16:00	1.5%	0.3%	0.9%	0.6%	2.4%	0.9%	0	0
17:00	0.8%	0.1%	0.4%	0.2%	1.2%	0.3%	0	0
18:00	0.7%	0.1%	0.4%	0.3%	1.1%	0.4%	0	0
19:00	1.2%	0.3%	0.4%	0.3%	1.6%	0.6%	0	0
20:00	0.4%	0.2%	0.4%	0.4%	0.8%	0.6%	0	0
21:00	0.8%	0.4%	0.4%	0.6%	1.2%	1.0%	0	0
22:00	0.6%	1.3%	0.4%	0.8%	1.0%	2.1%	0	0
23:00	1.5%	0.9%	0.2%	1.8%	1.7%	2.7%	0	0

Directional Distribution (D-factor) - Eastbound

Starting Time	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
0:00	34%	34%	34%	34%	34%
1:00	43%	43%	43%	43%	43%
2:00	54%	54%	54%	54%	54%
3:00	74%	74%	74%	74%	74%
4:00	83%	83%	83%	83%	83%
5:00	83%	83%	83%	83%	83%
6:00	75%	75%	75%	75%	75%
7:00	66%	66%	66%	66%	66%
8:00	63%	63%	63%	63%	63%
9:00	64%	64%	64%	64%	64%
10:00	57%	57%	57%	57%	57%
11:00	54%	54%	54%	54%	54%
12:00	51%	51%	51%	51%	51%
13:00	47%	47%	47%	47%	47%
14:00	46%	46%	46%	46%	46%
15:00	42%	42%	42%	42%	42%
16:00	43%	43%	43%	43%	43%
17:00	45%	45%	45%	45%	45%
18:00	40%	40%	40%	40%	40%
19:00	35%	35%	35%	35%	35%
20:00	36%	36%	36%	36%	36%
21:00	35%	35%	35%	35%	35%
22:00	36%	36%	36%	36%	36%
23:00	38%	38%	38%	38%	38%

ENTRADA program is developed by **Ed Azimi,** VDOT-NOVA

Comment, Question and/or Problem: Ed Azimi

ROUTE 7/GEORGE WASHINGTON BLVD OVERPASS

ENTRADA Output Data for Analysis Year:

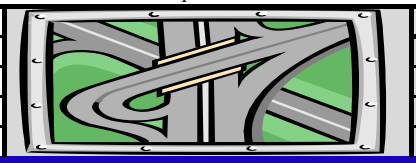
2015, 2031 & 2041

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	Route 7, Leesburg Pike	Area Type:	Suburban
From:	Claibornr Pky	Future Traffic Assignment: Constrained	
To:	Route 28	Existing Year: 2015 ADT:	96,000 / No-build
Jurisdiction:	9. Northern Virginia/Loudoun	Interim Year: 2031 ADT:	113,000 / 110,000
Run Date: 1/29/2016	Time Span: 24 hrs.	Design Year: 2041 ADT:	106,000 / 102,000



Eastbound

Starting Time	AUTO Only Traffic Volume					Existing		Existing Hourly % Truck		
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	% K-factor	Dir. Dist.	2A-6T	3A+	Total
0:00	181	213	208	200	192	0.58%	34%	1.3%	4.7%	6.0%
1:00	128	151	147	142	136	0.34%	43%	1.8%	6.1%	7.9%
2:00	136	160	156	150	145	0.29%	54%	1.4%	6.1%	7.5%
3:00	295	348	338	326	314	0.43%	74%	0.3%	2.6%	3.0%
4:00	845	994	968	933	897	1.08%	83%	0.9%	1.3%	2.3%
5:00	2,747	3,233 *	3,148 *	3,033 *	2,919 *	3.49%	83%	0.8%	0.4%	1.2%
6:00	4,211 *	4,956 *	4,825 *	4,649 *	4,474 *	5.89%	75%	0.8%	0.4%	1.2%
7:00	4,305 *	5,067 *	4,932 *	4,753 *	4,574 *	6.87%	66%	0.7%	0.3%	1.0%
8:00	4,158 *	4,894 *	4,764 *	4,591 *	4,418 *	7.00%	63%	0.8%	0.5%	1.3%
9:00	3,574 *	4,207 *	4,095 *	3,947 *	3,798 *	6.00%	64%	1.5%	1.0%	2.5%
10:00	2,588	3,047 *	2,966 *	2,858 *	2,750	4.89%	57%	1.8%	1.3%	3.1%
11:00	2,496	2,938 *	2,860 *	2,756	2,652	5.00%	54%	1.4%	1.6%	2.9%
12:00	2,510	2,954 *	2,875 *	2,771	2,666	5.32%	51%	1.5%	1.3%	2.9%
13:00	2,345	2,760	2,687	2,589	2,491	5.38%	47%	1.6%	1.5%	3.1%
14:00	2,581	3,038 *	2,958 *	2,850 *	2,743	6.06%	46%	1.6%	1.2%	2.8%
15:00	2,580	3,037 *	2,956 *	2,849 *	2,741	6.46%	42%	1.5%	0.6%	2.1%
16:00	2,714	3,194 *	3,109 *	2,996 *	2,883 *	6.67%	43%	1.5%	0.3%	1.9%
17:00	2,927 *	3,445 *	3,354 *	3,232 *	3,110 *	6.87%	45%	0.8%	0.1%	0.9%
18:00	2,395	2,819	2,744	2,644	2,544	6.36%	40%	0.7%	0.1%	0.8%
19:00	1,697	1,997	1,944	1,874	1,803	5.17%	35%	1.2%	0.3%	1.5%
20:00	1,216	1,432	1,394	1,343	1,292	3.55%	36%	0.4%	0.2%	0.6%
21:00	1,025	1,206	1,174	1,132	1,089	3.08%	35%	0.8%	0.4%	1.2%
22:00	683	803	782	754	725	2.00%	36%	0.6%	1.3%	1.9%
23:00	435	512	498	480	462	1.22%	38%	1.5%	0.9%	2.4%

Eastbound Truck Volume

Starting Time	Class 4-5 (2X-6T) Truck Traffic Volume					Class 6-13 (3X & more) Truck Traffic Volume				
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
0:00	2	3	3	3	3	9	11	10	10	10
1:00	2	3	3	3	3	8	10	10	9	9
2:00	2	2	2	2	2	9	11	10	10	10
3:00	1	1	1	1	1	8	9	9	9	8
4:00	8	9	9	9	8	11	14	13	13	12
5:00	22	26	26	25	24	11	14	13	13	12
6:00	33	39	38	37	36	17	21	20	19	19
7:00	31	36	35	34	33	14	16	16	15	15
8:00	34	41	39	38	37	22	26	25	24	23
9:00	54	64	62	60	58	35	42	41	39	38
10:00	48	56	55	53	51	36	42	41	40	38
11:00	36	42	41	40	38	40	47	46	44	42
12:00	39	46	45	44	42	34	41	39	38	37
13:00	38	45	44	42	41	36	43	42	40	39
14:00	43	51	50	48	46	32	38	37	35	34
15:00	40	47	46	44	42	15	18	17	17	16
16:00	42	50	49	47	45	9	11	10	10	10
17:00	23	28	27	26	25	3	4	3	3	3
18:00	17	20	19	19	18	3	4	3	3	3
19:00	20	24	23	23	22	5	6	6	6	5
20:00	5	6	6	6	5	2	3	3	3	3
21:00	8	9	9	9	8	4	5	5	4	4
22:00	4	5	5	5	5	9	11	10	10	10
23:00	6	8	7	7	7	4	5	5	4	4

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	**Route 7, Leesburg Pike**	Area Type:	**Suburban**
From:	**Claibornr Pky**	**Future Traffic Assignment: Constrained**	
To:	**Route 28**	Existing Year: 2015 ADT:	**96,000** / No-build
Jurisdiction:	**9. Northern Virginia/Loudoun**	Interim Year: 2031 ADT:	**113,000** / **110,000**
Run Date:	**1/29/2016** Time Span: **24 hrs.**	Design Year: 2041 ADT:	**106,000** / **102,000**

Starting Time	Eastbound Hourly Speed		Traffic Assignment: Constrained				Travel-Time Model: BPR HCM 4-la Hwy Spd 6			
	Calc. Existing (PS= 55)		Interim Build (PS= 55)		Interim Nbld (PS= 55)		Design Build (PS= 55)		Design Nbld (PS= 55)	
	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.
0:00	62	60	48	47	51	50	54	53	57	56
1:00	62	60	49	48	52	51	55	54	57	56
2:00	62	60	49	48	52	51	55	54	57	56
3:00	61	60	45	44	48	47	52	51	55	54
4:00	58	57	34	33	36	35	40	39	44	44
5:00	29	28	34	33	34	33	34	33	34	33
6:00	15	15	34	33	34	33	34	33	34	33
7:00	14	14	34	33	34	33	34	33	34	33
8:00	15	15	34	33	34	33	34	33	34	33
9:00	19	18	34	33	34	33	34	33	34	33
10:00	31	30	34	33	34	33	34	33	34	33
11:00	33	33	34	33	34	33	34	33	34	33
12:00	33	33	34	33	34	33	34	33	34	33
13:00	37	36	34	33	34	33	34	33	34	33
14:00	34	33	34	33	34	33	34	33	34	33
15:00	35	34	34	33	34	33	34	33	34	33
16:00	33	33	34	33	34	33	34	33	34	33
17:00	32	31	34	33	34	33	34	33	34	33
18:00	40	39	34	33	34	33	34	33	34	33
19:00	50	49	34	33	34	33	34	33	34	33
20:00	57	55	34	33	34	33	38	37	42	41
21:00	58	57	34	33	37	36	41	40	45	44
22:00	60	59	39	39	43	42	47	46	51	50
23:00	61	60	44	43	47	46	51	50	54	53

* Volume Exceeded Maximum Service Flow

Comment, Q & Problem: Ed Azimi

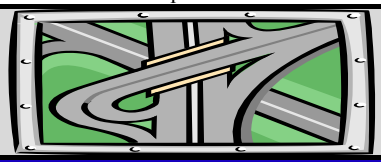
V 2016-01

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	Route 7, Leesburg Pike	Area Type:	Suburban
From:	Claibornr Pky	Future Traffic Assignment: Constrained	
To:	Route 28	Existing Year: 2015 ADT:	96,000 / No-build
Jurisdiction:	9. Northern Virginia/Loudoun	Interim Year: 2031 ADT:	113,000 / 110,000
Run Date: 1/29/2016	Time Span: 24 hrs.	Design Year: 2041 ADT:	106,000 / 102,000



Westbound

Starting Time	AUTO Only Traffic Volume					Existing		Existing Hourly % Truck		
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	% K-factor	Dir. Dist.	2A-6T	3A+	Total
0:00	353	416	405	390	375	0.58%	66%	0.5%	3.7%	4.2%
1:00	160	188	183	176	170	0.34%	57%	2.7%	10.3%	13.0%
2:00	108	127	124	120	115	0.29%	46%	2.0%	12.9%	14.9%
3:00	86	101	98	95	91	0.43%	26%	1.9%	18.1%	20.0%
4:00	142	167	162	156	151	1.08%	17%	3.8%	13.4%	17.2%
5:00	511	601	585	564	543	3.49%	17%	3.1%	6.7%	9.8%
6:00	1,316	1,549	1,507	1,453	1,398	5.89%	25%	1.8%	3.9%	5.7%
7:00	2,121	2,497	2,431	2,342	2,254	6.87%	34%	2.3%	3.3%	5.6%
8:00	2,379	2,801 *	2,726	2,627	2,528	7.00%	37%	2.1%	2.9%	5.1%
9:00	1,940	2,283	2,223	2,142	2,061	6.00%	36%	3.1%	4.5%	7.6%
10:00	1,876	2,209	2,150	2,072	1,994	4.89%	43%	2.4%	4.8%	7.2%
11:00	2,095	2,466	2,400	2,313	2,226	5.00%	46%	1.6%	4.3%	5.9%
12:00	2,392	2,816 *	2,741 *	2,641	2,542	5.32%	49%	1.4%	3.8%	5.2%
13:00	2,635	3,101 *	3,019 *	2,909 *	2,799 *	5.38%	53%	1.4%	2.6%	4.0%
14:00	3,074 *	3,619 *	3,523 *	3,395 *	3,266 *	6.06%	54%	0.8%	1.9%	2.7%
15:00	3,491 *	4,109 *	4,000 *	3,855 *	3,709 *	6.46%	58%	1.3%	0.9%	2.2%
16:00	3,585 *	4,220 *	4,108 *	3,959 *	3,809 *	6.67%	57%	0.9%	0.6%	1.5%
17:00	3,620 *	4,261 *	4,148 *	3,997 *	3,846 *	6.87%	55%	0.4%	0.2%	0.6%
18:00	3,665 *	4,314 *	4,199 *	4,047 *	3,894 *	6.36%	60%	0.4%	0.3%	0.7%
19:00	3,222 *	3,793 *	3,692 *	3,558 *	3,424 *	5.17%	65%	0.4%	0.3%	0.7%
20:00	2,167	2,551	2,483	2,393	2,303	3.55%	64%	0.4%	0.4%	0.8%
21:00	1,901	2,237	2,178	2,099	2,020	3.08%	65%	0.4%	0.6%	1.0%
22:00	1,210	1,424	1,386	1,336	1,285	2.00%	64%	0.4%	0.8%	1.1%
23:00	714	840	818	788	759	1.22%	62%	0.2%	1.8%	2.0%

Westbound Truck Volume

Starting Time	Class 4-5 (2X-6T) Truck Traffic Volume					Class 6-13 (3X & more) Truck Traffic Volume				
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld
0:00	2	2	2	2	2	13	16	15	15	14
1:00	5	6	6	6	5	19	22	22	21	20
2:00	2	3	3	3	3	16	19	19	18	17
3:00	2	2	2	2	2	19	23	22	21	21
4:00	6	8	7	7	7	23	27	26	25	24
5:00	17	21	20	19	19	38	45	43	42	40
6:00	25	29	29	28	27	54	63	62	59	57
7:00	51	60	59	57	55	73	86	84	81	78
8:00	53	63	61	59	57	74	87	85	82	78
9:00	64	76	74	71	68	95	112	109	105	101
10:00	49	58	57	55	52	96	113	110	106	102
11:00	35	41	40	39	37	96	113	110	106	102
12:00	36	42	41	40	38	95	112	109	105	101
13:00	37	44	43	41	40	71	84	82	79	76
14:00	26	31	30	29	28	59	70	68	66	63
15:00	45	53	51	50	48	33	39	38	37	36
16:00	32	38	37	36	34	21	25	24	23	22
17:00	15	18	17	17	16	7	9	9	8	8
18:00	15	18	17	17	16	9	11	11	10	10
19:00	12	14	14	13	13	10	12	11	11	11
20:00	9	11	10	10	10	8	10	10	9	9
21:00	8	10	10	9	9	11	13	13	12	12
22:00	4	5	5	5	5	9	11	11	10	10
23:00	1	2	2	2	2	13	15	15	14	14

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	**Route 7, Leesburg Pike**	Area Type:	**Suburban**
From:	**Claibornr Pky**	**Future Traffic Assignment: Constrained**	
To:	**Route 28**	Existing Year: 2015 ADT:	**96,000** / No-build
Jurisdiction:	**9. Northern Virginia/Loudoun**	Interim Year: 2031 ADT:	**113,000** / **110,000**
Run Date:	**1/29/2016** Time Span: **24 hrs.**	Design Year: 2041 ADT:	**106,000** / **102,000**

Starting Time	**Westbound Hourly Speed**		**Traffic Assignment: Constrained**				**Travel-Time Model: BPR HCM 4-la Hwy Spd 6**			
	Calc. Existing (PS= 55)		**Interim Build (PS= 55)**		**Interim Nbld (PS= 55)**		**Design Build (PS= 55)**		**Design Nbld (PS= 55)**	
	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.
0:00	61	60	54	53	56	55	58	57	59	58
1:00	62	60	56	55	58	57	59	58	60	59
2:00	62	60	57	56	58	57	60	59	61	59
3:00	62	60	57	56	59	57	60	59	61	59
4:00	62	60	56	55	58	57	59	58	60	59
5:00	61	59	50	49	52	51	55	54	57	56
6:00	53	52	34	34	37	37	42	41	45	44
7:00	40	39	34	33	34	33	34	33	34	33
8:00	36	35	34	33	34	33	34	33	34	33
9:00	41	40	34	33	34	33	34	33	34	33
10:00	42	41	34	33	34	33	34	33	34	33
11:00	39	38	34	33	34	33	34	33	34	33
12:00	34	34	34	33	34	33	34	33	34	33
13:00	31	31	34	33	34	33	34	33	34	33
14:00	27	26	34	33	34	33	34	33	34	33
15:00	22	22	34	33	34	33	34	33	34	33
16:00	22	22	34	33	34	33	34	33	34	33
17:00	23	23	34	33	34	33	34	33	34	33
18:00	23	22	34	33	34	33	34	33	34	33
19:00	27	27	34	33	34	33	34	33	34	33
20:00	43	43	34	33	34	33	34	33	34	33
21:00	47	46	34	33	34	33	34	33	38	37
22:00	56	55	39	38	42	41	46	45	49	48
23:00	60	59	48	47	51	50	54	53	56	55

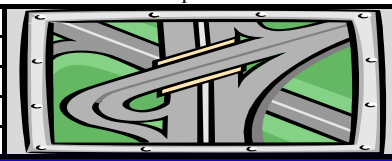
* Volume Exceeded Maximum Service Flow | Comment, Q & Problem: Ed Azimi | V 2016-01

ENTRADA© Traffic & Predicted Speed Data Output Sheet

Route 7, Leesburg Pike

upc# 105584/Act 616

Route:	Route 7, Leesburg Pike	Area Type:	Suburban
From:	Claibornr Pky	Future Traffic Assignment: Constrained	
To:	Route 28	Existing Year: 2015 ADT: 96,000	No-build
Jurisdiction:	9. Northern Virginia/Loudoun	Interim Year: 2031 ADT: 113,000	110,000
Run Date: 1/29/2016	Time Span: 24 hrs.	Design Year: 2041 ADT: 106,000	102,000



Two-way

Starting Time	ALL Vehicles Total Traffic Volume					Existing		Existing Hourly % Truck		
	Existing	Interim Build	Interim Nbld	Design Build	Design Nbld	% K-factor	Dir. Dist.	2A-6T	3A+	Total
0:00	561	661	643	620	596	0.58%	100%	1.8%	8.3%	10.2%
1:00	323	380	370	356	343	0.34%	100%	4.5%	16.4%	20.9%
2:00	274	323	314	303	292	0.29%	100%	3.3%	19.0%	22.4%
3:00	412	484	472	454	437	0.43%	100%	2.2%	20.8%	23.0%
4:00	1,035	1,219	1,186	1,143	1,100	1.08%	100%	4.7%	14.7%	19.5%
5:00	3,347	3,940	3,835	3,696	3,556	3.49%	100%	3.9%	7.1%	11.0%
6:00	5,656	6,658 *	6,481 *	6,245 *	6,010 *	5.89%	100%	2.6%	4.3%	6.8%
7:00	6,596 *	7,764 *	7,557 *	7,283 *	7,008 *	6.87%	100%	3.0%	3.6%	6.6%
8:00	6,721 *	7,911 *	7,701 *	7,421 *	7,141 *	7.00%	100%	2.9%	3.5%	6.4%
9:00	5,763 *	6,783 *	6,603 *	6,363 *	6,123 *	6.00%	100%	4.6%	5.5%	10.0%
10:00	4,694	5,526	5,379	5,183	4,988	4.89%	100%	4.2%	6.1%	10.3%
11:00	4,798	5,648	5,498	5,298	5,098	5.00%	100%	3.0%	5.9%	8.8%
12:00	5,106	6,011 *	5,851 *	5,638	5,426	5.32%	100%	2.9%	5.1%	8.0%
13:00	5,163	6,078 *	5,916 *	5,701	5,486	5.38%	100%	3.0%	4.1%	7.1%
14:00	5,817 *	6,847 *	6,665 *	6,423 *	6,180 *	6.06%	100%	2.5%	3.1%	5.6%
15:00	6,204 *	7,303 *	7,109 *	6,850 *	6,592 *	6.46%	100%	2.8%	1.5%	4.3%
16:00	6,404 *	7,537 *	7,337 *	7,071 *	6,804 *	6.67%	100%	2.4%	0.9%	3.3%
17:00	6,596 *	7,764 *	7,558 *	7,283 *	7,008 *	6.87%	100%	1.2%	0.3%	1.5%
18:00	6,104 *	7,185 *	6,994 *	6,740 *	6,486 *	6.36%	100%	1.1%	0.4%	1.5%
19:00	4,967	5,846 *	5,691	5,484	5,277	5.17%	100%	1.6%	0.6%	2.2%
20:00	3,409	4,012	3,906	3,764	3,622	3.55%	100%	0.8%	0.6%	1.4%
21:00	2,957	3,481	3,388	3,265	3,142	3.08%	100%	1.2%	1.0%	2.2%
22:00	1,920	2,260	2,200	2,120	2,040	2.00%	100%	1.0%	2.1%	3.1%
23:00	1,173	1,381	1,345	1,296	1,247	1.22%	100%	1.7%	2.7%	4.3%

Starting Time	Weighted Average Two-way Hourly Speed									
	Calc. Existing (PS= 55)		Interim Build (PS= 55)		Interim Nbld (PS= 55)		Design Build (PS= 55)		Design Nbld (PS= 55)	
	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.	Un-Interrup.	Interrup.
0:00	61	60	52	51	54	53	57	55	58	57
1:00	62	60	53	52	55	54	57	56	59	58
2:00	62	60	53	52	55	54	57	56	59	58
3:00	61	60	48	47	51	50	54	53	56	55
4:00	58	57	37	37	40	39	43	43	47	46
5:00	34	33	36	36	37	36	37	37	38	37
6:00	24	24	34	33	35	34	36	35	37	36
7:00	23	23	34	33	34	33	34	33	34	33
8:00	23	23	34	33	34	33	34	33	34	33
9:00	27	26	34	33	34	33	34	33	34	33
10:00	36	35	34	33	34	33	34	33	34	33
11:00	36	35	34	33	34	33	34	33	34	33
12:00	34	33	34	33	34	33	34	33	34	33
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14:00	30	29	34	33	34	33	34	33	34	33
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16:00	27	26	34	33	34	33	34	33	34	33
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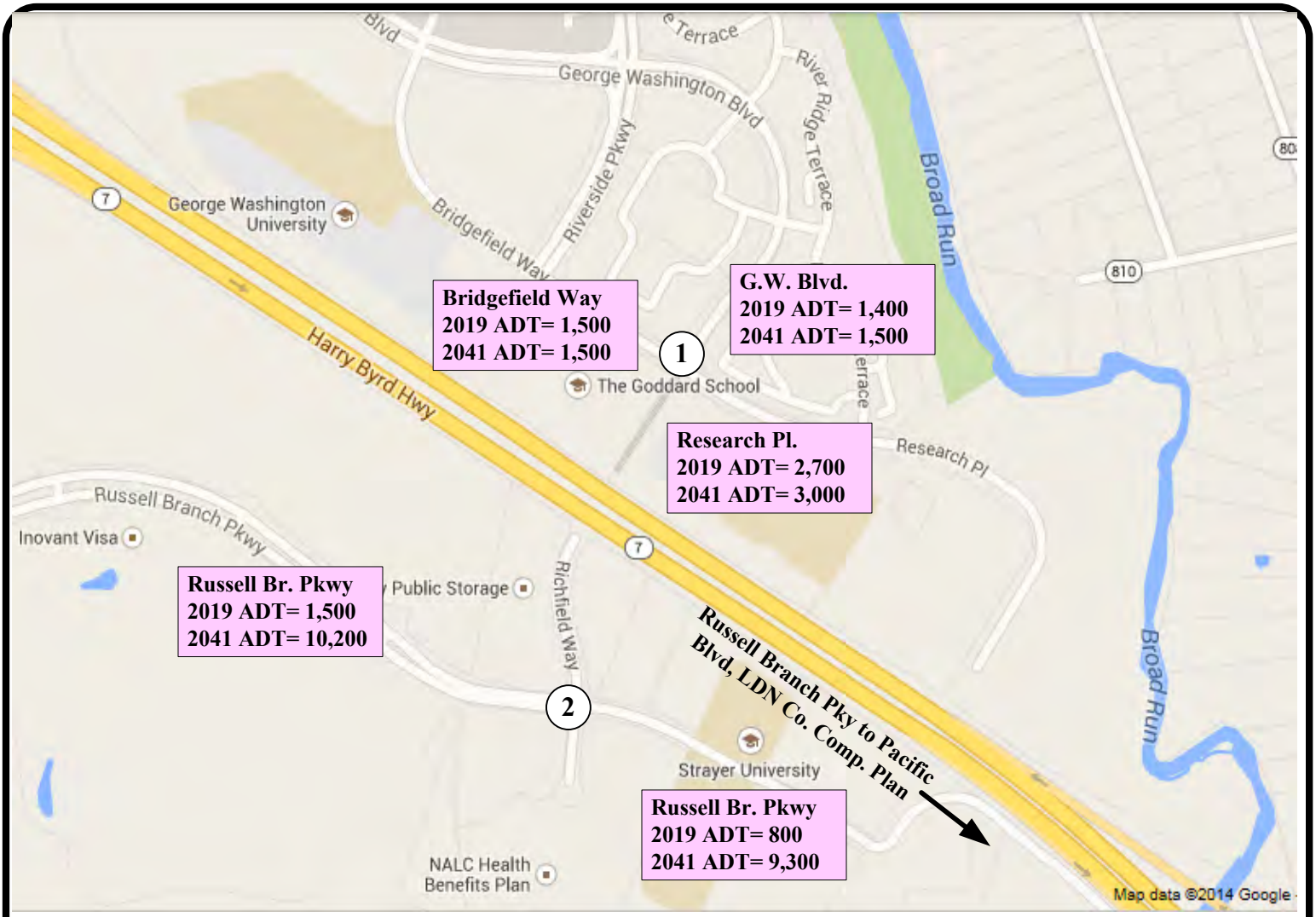
18:00	29	29	34	33	34	33	34	33	34	33
19:00	35	35	34	33	34	33	34	33	34	33
20:00	48	47	34	33	34	33	35	34	37	36
21:00	51	50	34	33	35	34	37	36	40	40
22:00	58	57	39	38	42	41	46	45	50	49
23:00	61	59	47	46	49	48	53	52	55	54

* Volume Exceeded Maximum Service Flow | Comment, Q & Problem: Ed Azimi | V 2016-01



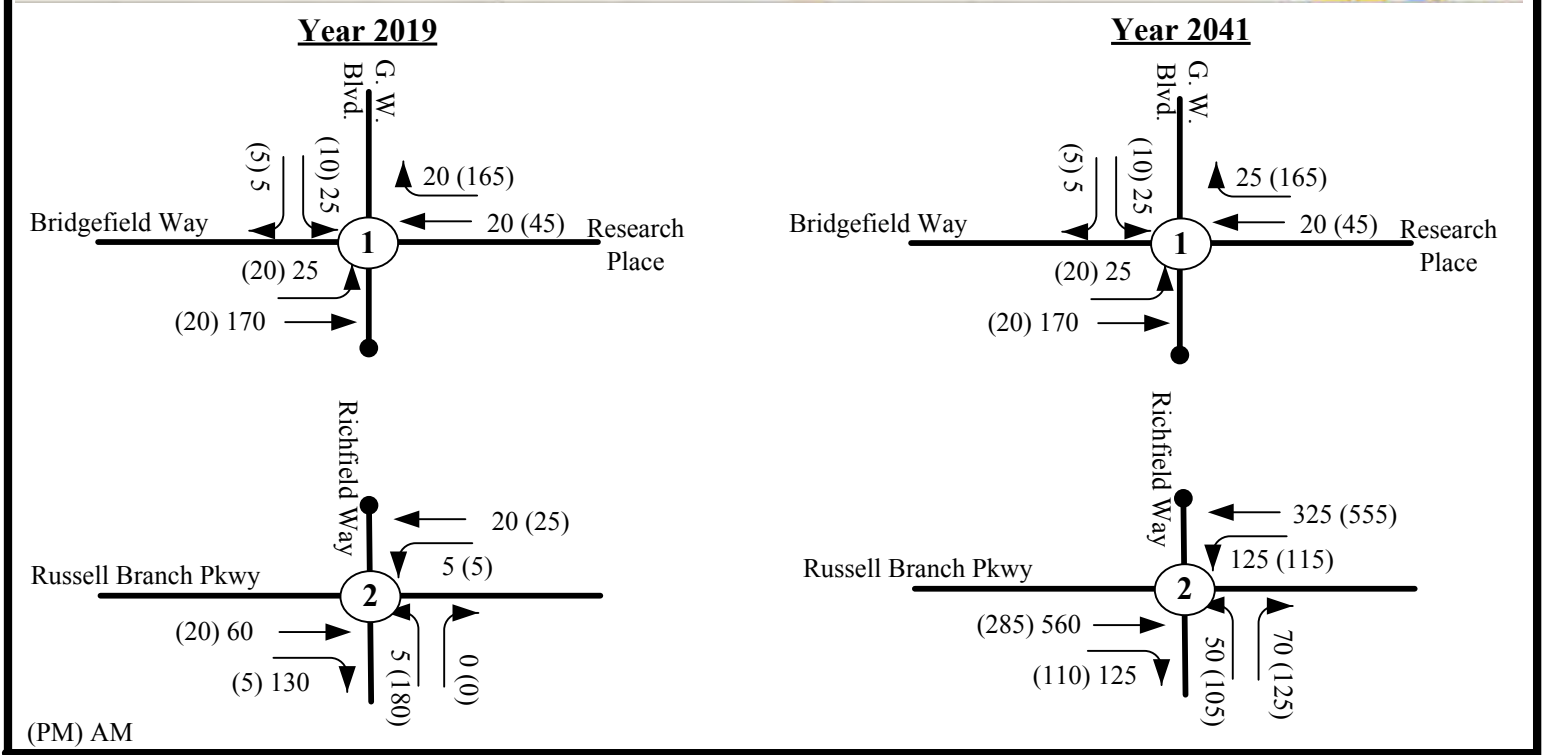


Figure 3 – Forecasted NO-BUILD Year 2019 and Year 2041 Daily Traffic Volume & Intersection Turning Movements.

Route 7 (Harry Byrd Hwy) / George Washington Blvd. Overpass LD-104, UPC# 105584 Act. 616

Aug 8, 2016

NOVA-TP<EA>

Attachment B

Sample MOVES2014 Run-Spec and CAL3QHC Inputs

Sample MOVES2014a Run-Spec

2022 Worst Case Build Scenario
Route 7/GWB Grade Separation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Defaults Fuels
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Links RG Sensitivty with 1000 vol & link length
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LSTHF from VDOT RD Method 1b
* Route 7 - Urban Principal Arterial - Other
* Local Roads - Unrestricted Access]]></description>
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Sample CAL3QHC Inputs

As generated using the FHWA Cal3Interface Model

2022 Worst Case Build Scenario
Route 7/GWB Grade Separation

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Appendix D: Noise Analysis Memorandum

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

July 21, 2016

To: File

From: LJ (Lovejoy) Muchenje, PE, PMP LM

Subject: Route 7/George Washington Blvd overpass
UPC: 105584
Project No: 0007-053-086, B668, C501, P101, R201

The purpose of this memorandum is to summarize the results of the Preliminary Noise Analysis for the above project. This analysis was completed in accordance with The State Noise Abatement Policy that was developed to implement the requirements of 23 Code of Federal Regulations (CFR) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2011), Federal Highway Administration's (FHWA's) Highway Traffic Noise Analysis and Abatement Policy and Guidance (December 2011), and the noise related requirements of The National Environmental Policy Act of 1969. The current VDOT State Noise Abatement Policy became effective on July 13, 2011 and was updated on July 14, 2015.

The purpose of the project is to improve traffic operations on Route 7 by constructing a grade separated overpass at Route 1050/George Washington Blvd. Per the Federal noise regulations and State noise policy, due to the proposed change in vertical alignment, the project qualifies as a Type I project, meaning that a noise study is required. According to Google maps and through coordination with the District the following noise sensitive sites were identified in the project corridor

- Residential apartments with first, second and third story balconies, and an outdoor recreational area. The residential sites were studied under the Noise Abatement Criteria (NAC) B, and are represented by sites R3 to R8, and R10 to R27 as shown in ***Appendix 1***. The outdoor recreation area was evaluated under NAC C, and is represented by site R9.
- Playground at the Goddard School. The playgrounds were modeled under the NAC C, and are represented by sites R1 and R2 as shown in ***Appendix 1***. In addition, the interior noise level at the Goddard School is also represented by site R1.
- There are no apparent outdoor activities at Strayer University; therefore no exterior sites were evaluated for noise at this location. However, site R28 was used to evaluate the interior noise level.

The noise analysis for the project was performed using a simplified Traffic Noise Model (TNM). ***Table 1*** summarizes the results from the analysis. A total of 28 noise sensitive sites were modeled in the project study area representing 24 apartment units, the Goddard School and Strayer University. For all sites studied, the existing (exterior) noise levels are predicted to range from 41 to 62 dBA. The future design year (2040) build noise levels (exterior) are predicted to range from 43 to 65 dBA. No sites are predicted to be noise impacted as a result of noise levels approaching or exceeding the Noise Abatement Criteria (NAC) in the future design year (2040) build condition.

Interior noise levels at the Goddard School and Strayer University were evaluated under Activity Category D in Table 1 (FHWA Noise Abatement Criteria). Since the exterior for both buildings is composed of masonry material and modern air conditioning is installed, the reduction in noise levels in the interior as a result of the building is predicted to be 25 dBA (FHWA "Highway Traffic Noise Analysis and Abatement Policy and Guidance," December 2011). Therefore the indoor noise level for the Goddard School and Strayer University is not predicted to experience noise impact (Under Activity Category D indoor NAC) in the future build condition.

In addition, through coordination with the County, it has been confirmed that there are no permitted undeveloped lands within the project corridor.

Any construction noise impacts that do occur as a result of roadway construction measures are anticipated to be temporary in nature and will cease upon completion of the project construction phase. The contractor will be required to conform to construction noise specifications found in VDOT's 2007 Road and Bridge Specifications, Section 107.16(b.3), "Noise".

In conclusion, the proposed project is not predicted to create future noise impacts. In addition, there is no highway traffic noise-related public controversy or substantial construction noise impacts associated with this project. Therefore a detailed quantitative noise analysis is not required.

Feel free to contact the VDOT noise section with any questions.

Table 1: Predicted Noise Levels

Receptor Number	NAC	Land Use	No. of Dwelling / Recreational Units*	Predicted Noise Levels (dBA)		Noise Abatement Criteria** (dBA)	Abatement Considered
				Existing Condition (2015)	Build Condition (2040)		
R1	C	School Playground	1	62	63	66	No
	D	School		(37)	(38)	(51)	No
R2	C	School Playground	1	59	61	66	No
R3	B	Aptmnt 1st Floor	1	55	56	65	No
R4	B	Aptmnt 2nd Floor	1	57	58	66	No
R5	B	Aptmnt 3rd Floor	1	60	61	66	No
R6	B	Aptmnt 1st Floor	1	55	56	65	No
R7	B	Aptmnt 2nd Floor	1	57	58	66	No
R8	B	Aptmnt 3rd Floor	1	60	61	66	No
R9	C	Recreational	1	41	43	51	No
R10	B	Aptmnt 1st Floor	1	51	56	61	No
R11	B	Aptmnt 2nd Floor	1	52	57	62	No
R12	B	Aptmnt 3rd Floor	1	56	59	66	No
R13	B	Aptmnt 1st Floor	1	56	62	66	No
R14	B	Aptmnt 2nd Floor	1	60	63	66	No
R15	B	Aptmnt 3rd Floor	1	62	65	66	No
R16	B	Aptmnt 1st Floor	1	55	61	65	No
R17	B	Aptmnt 2nd Floor	1	57	62	66	No
R18	B	Aptmnt 3rd Floor	1	59	63	66	No
R19	B	Aptmnt 1st Floor	1	54	55	64	No
R20	B	Aptmnt 2nd Floor	1	58	59	66	No
R21	B	Aptmnt 3rd	1	61	61	66	No

Receptor Number	NAC	Land Use	No. of Dwelling / Recreational Units*	Predicted Noise Levels (dBA)		Noise Abatement Criteria** (dBA)	Abatement Considered
				Existing Condition (2015)	Build Condition (2040)		
		Floor					
R22	B	Aptmnt 1st Floor	1	50	52	60	No
R23	B	Aptmnt 2nd Floor	1	52	54	62	No
R24	B	Aptmnt 3rd Floor	1	56	57	66	No
R25	B	Aptmnt 1st Floor	1	50	50	60	No
R26	B	Aptmnt 2nd Floor	1	53	53	63	No
R27	B	Aptmnt 3rd Floor	1	56	60	66	No
R28	D	University	1	65	65	66	No
				(40)	(40)	(51)	No
*	Dwelling Units may refer to residential and/or recreational units						
**	Criteria based on NAC or substantial increase, whichever is lower						
(#)	Indicates indoor noise levels						

Route 7 - George Washington Blvd Overpass
State Project: 0007-053-086, B668, C501, P101, R201
UPC: 105584

VDOT **Virginia Department of Transportation**

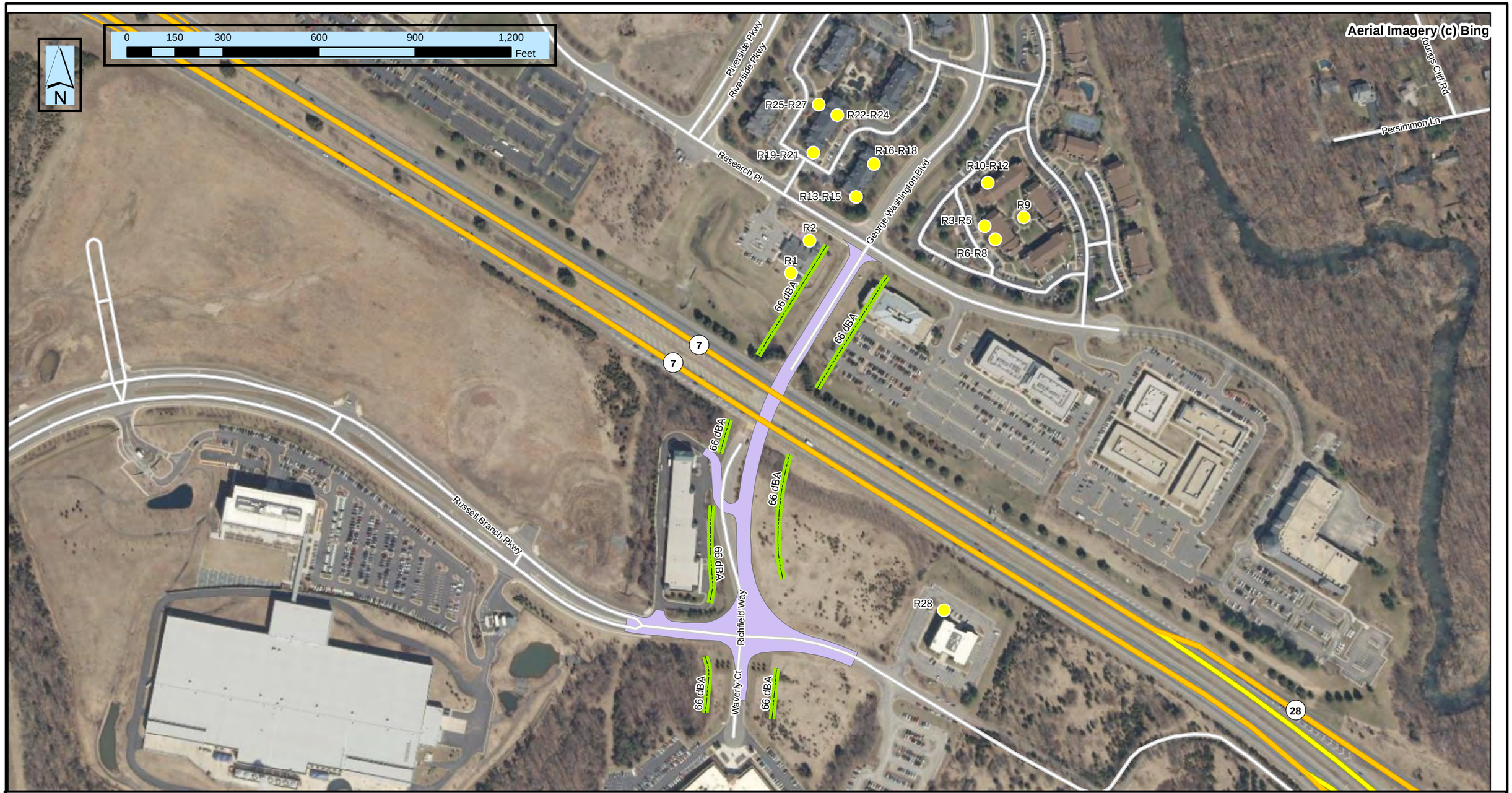
Noise Study Buffer

Project Area

Route 7-George Washingotn Blvd Overpass

Loudoun County

Figure 1
Location Map



Route 7 - George Washington Blvd Overpass
State Project: 0007-053-086, B668, C501, P101, R201
UPC: 105584

Virginia Department of Transportation

Reciever Location-Not Impacted

66 dBA Noise Contour

Project Area

Route 7-George Washingotn Blvd Overpass

Loudoun County

Appendix A1
Summary of Results

Stannard, Halie (VDOT)

From: Muchenje, Lovejoy 'LJ' P.E. (VDOT)
Sent: Friday, October 21, 2016 8:56 AM
To: Stannard, Halie (VDOT)
Cc: Tachmetova, Larissa (VDOT); Gandhi, Khalid L. P.E. (VDOT); Wilmouth, Gary W., P.E. (VDOT)
Subject: RE: UPC105584_new bridge over RTE 7
Attachments: UPC 105584_Update to preliminary design.pdf

Haile-

As indicated earlier, I was notified of design changes on the noted project.

Upon reviewing the updated design, it does not appear the proposed design changes will affect the conclusions of the preliminary noise report. As indicated in the below email, much of the design changes occur at the bridge portion (see attachment). This area does not have noise sensitive sites; much of the noise sensitive sites are located to the north and to south of this location. In addition, the design change (shift in alignment) is not considered substantial. For a horizontal alignment shift to be considered 'substantial' the proposed design has to be halving the distance between the traffic noise source and the closest receptor.

In conclusion, the proposed design changes are not predicted to change the noise levels in any substantive way. As such, the conclusions of the preliminary noise report remain valid. Let me know if you have any questions.

Thanks,

LJ Muchenje, PE, PMP
(804)371-6768

******Please note: The Virginia Department of Transportation has recently updated the State Noise Abatement Policy and created a Guidance Manual (July 14, 2015). The policy and manual can be located at the following address: http://www.virginiadot.org/projects/pr-noise-walls-about.asp******

From: Tachmetova, Larissa (VDOT)
Sent: Tuesday, October 18, 2016 2:07 PM
To: Muchenje, Lovejoy 'LJ' P.E. (VDOT)
Cc: Gandhi, Khalid L. P.E. (VDOT); Wilmouth, Gary W., P.E. (VDOT)
Subject: UPC105584_new bridge over RTE 7

Good afternoon Lovejoy,
Please find in Project design folder **d105584** the updated design file with new layout of G. Washington Blvd over Rte. 7 (**d105584des.dgn**). (The project located in Falcon-Central Office, Environment: Consultant Files.)
We are going now with a design of straight bridge over Rte. 7. You will realize from our design that the part of G. Washington Blvd was shifted to the east. Potentially it may impact the Noise Study provided by you.
Please review the new Project layout and let us know if you will have any question or need any assistance.
Thanks!

Larissa

Larissa Tachmetova
Transportation Engineer
L&D Division CO VDOT

Appendix E: Hazardous Materials Phase I Environmental Site Assessment

Phase I Environmental Site Assessment

Route7/George Washington Blvd Overpass
Ashburn, Virginia 20147

Prepared For:
Virginia Department of Transportation
Northern Virginia District Office
4975 Alliance Drive
Fairfax, VA 22030

VDOT Project: UPC 105584; act 789

Prepared By:
KCI Technologies Inc.
936 Ridgebrook Road
Sparks, Maryland 21152
KCI Job No: 121601218

June 10, 2016

Phase I Environmental Site Assessment

FOR

Route 7/George Washington Boulevard Overpass Ashburn, Virginia 20147

Prepared For:

Virginia Department of Transportation
Northern Virginia District Office
4975 Alliance Drive
Fairfax, Virginia 22030
VDOT Project: UPC 105584; act 789

Prepared By:

KCI Technologies, Inc.
936 Ridgebrook Road
Sparks, Maryland 21152
KCI Project: 12159091A05

June, 2016

June, 2016

Dr. Budoin-Brutus Cooper, Ph.D.
Regional Hazardous Materials Manager
Virginia Department of Transportation
Northern Virginia District Office
4975 Alliance Drive
Fairfax, Virginia 22030

RE: Phase I Environmental Site Assessment
Route 7/George Washington Boulevard Overpass
Ashburn, Virginia 20147
VDOT Project No. UPC 105584; act 789
KCI Project No. 12159091A05

Dear Dr. Copper,

KCI Technologies, Inc. (KCI) appreciates the opportunity to provide our services on this project. Herein is a report of our findings from the Phase I Environmental Site Assessment of the above referenced property. This report was prepared in accordance with ASTM Standard E 1527-13: "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*". If you have any questions with regard to this report or any other aspect of our services, please feel free to contact us at 410-316-7800.

Sincerely,
KCI Technologies, Inc.

_____
Douglas E. Talaber, CHMM
Environmental Scientist
Hazardous Waste and Environmental Compliance

Environmental Professional's Statement

I declare that, to the best of my professional knowledge and belief, I meet the definition of "Environmental Professional" as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject site. I have developed and performed all appropriate inquiries in conformance with the standards and practices set in 40 CFR 12.

Douglas Talaber
Environmental Scientist
Hazardous Waste and Environmental Compliance

Executive Summary

Virginia Department of Transportation (VDOT) retained KCI Technologies, Inc. (KCI) to perform a Phase I Environmental Site Assessment of the Route 7/George Washington Boulevard Overpass in Ashburn, Virginia 20147 (subject site). VDOT intends to widen and/or extend the existing roadways, construct a new overpass bridge, and perform other related construction activities along the roads, including installation a storm water management basins. This Phase I ESA was conducted in accordance with ASTM Standard E 1527-13: "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*."

The subject site consists of eight (8) vacant VDOT proposed partial take parcels and one (1) vacant VDOT proposed full take parcel. The subject site area totals approximately ± 3.7 acres. The subject site is located in the immediate vicinity of the intersection of Route 7 and George Washington Boulevard, Ashburn, Virginia 20147. The findings from this assessment are summarized as follows:

- The subject site consists of vacant property located in a commercial business park community. KCI's review of historic topographic maps and aerial photographs suggests that the subject site remained undeveloped wooded land and field/pasture since at least 1894. KCI did not identify any Recognized Environmental Conditions (RECs) in connection with the current or historic uses of the subject site.

- The review of the environmental databases did not suggest that any listed nearby properties would represent a REC to the subject site.

- The completion of a Vapor Encroachment Screening has not identified any Vapor Encroachment Conditions (VECs) at the subject site.

- KCI did not identify any Data Gaps during the completion of this Phase I ESA that would materially affect our ability to render professional opinions regarding the subject site. ASTM defines a data gap as a "*lack or inability to obtain information via the practice despite good faith efforts by the environmental professional to gather such information*".

Based on the findings and conclusions of this Phase I ESA, no ASTM Phase II environmental site assessment appears warranted at the subject site at this time.

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1.0 Introduction

Virginia Department of Transportation (VDOT) retained KCI Technologies, Inc. (KCI) to perform a Phase I Environmental Site Assessment (ESA) for properties VDOT proposes to acquire to facilitate the proposed Route 7/George Washington Boulevard Overpass construction project that is located in Ashburn, Virginia 20147. VDOT proposes to acquire one (1) complete 2.17 acre parcel (full take), and eight (8) partial parcels (partial take) that total approximately 1.5 acres. The parcels VDOT proposes to acquire are identified below in Table 1-1:

Table 1-1: Parcels for Acquisition

VDOT Parcel ID	VDOT Take	Parcel ID.	Total Parcel Acreage	Primary Street Address
001	Partial	040476675000	4.18	45050 RUSSELL BRANCH PKWY
002	Partial	040375998000	3.23	No Address Provided
003	Full	040479351000	2.17	No Address Provided
004	Partial	040481243000	1.95	No Address Provided
005	Partial	040380390000	2.89	No Address Provided
007	Partial	039182610000	3.94	45145 RESEARCH PL
008	Partial	039178435000	5.77	45091 RESEARCH PL
009	Partial	040464286000	41.29	44901 RUSSELL BRANCH PKWY
010	Partial	040383790000	1.7	45151 RUSSELL BRANCH PKWY

This Phase I ESA was prepared in general accordance with ASTM Standard E 1527-13: "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*." A description of the limitations, restrictions, and qualifications applicable to this assessment are included in Section 1.4 of this report.

1.1 Purpose

This Phase I Environmental Site Assessment was performed for the purpose of identifying Recognized Environmental Conditions in connection with the subject site. ASTM E 1527-13 provides the following definition for Recognized Environmental Condition:

"the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not recognized environmental conditions."

1.2 Scope

The scope of this assessment included the following tasks:

- Site Reconnaissance: KCI performed a walking reconnaissance of the subject site. The purpose of the reconnaissance was to visually observe and assess current conditions at the subject site and on observable portions of adjacent properties.

- Review of Standard Environmental Databases: KCI reviewed an environmental database radius report provided by Environmental Data Resources, Inc. (EDR). The review was conducted to determine the subject site's proximity to known and potential contaminant sources.

- Review of Other Historical Resources: KCI reviewed and/or attempted to review historical aerial photographs and Sanborn fire insurance maps covering the area of the subject site. The review of these resources was conducted to determine former site features and to review the general types of historic land usage at properties located adjacent to (or within approximately 500 feet of) the subject site.

- Public Information Act/Freedom of Information Act Requests: KCI contacted the Virginia Department of Environmental Quality (DEQ) and local health department in an effort to review departmental files related to environmental concerns or conditions at the subject site.

- Interviews: KCI interviewed and/or attempted to interview individuals associated with the subject site. The purpose of the interviews was to obtain information indicating Recognized Environmental Conditions in connection with the subject site.

- Review of Geologic Resources: KCI reviewed publications provided by the USDA to determine the soil and geologic formation at the subject site.

1.3 Significant Assumptions

Data and information regarding current site conditions and operations have been provided to KCI in part by the client and other sources. As is customary, KCI has assumed these data and information to be complete and factually correct.

1.4 Limitations, Restrictions, and Qualifications

This assessment was limited to observations made during KCI's inspection and research of the site. No borings or ground water monitoring wells were installed, inspected, or sampled. No soil, sediment, surface water, ground water or building materials has been collected for laboratory analysis. KCI makes no certifications concerning subsurface conditions, soil, or surface water or ground water quality.

This environmental site assessment was performed to identify potential liabilities associated with the current site conditions. KCI will not be held liable for the discovery or elimination of hazards encountered that may potentially cause damage, accidents or injuries. The recommendations rendered from work performed in no way eliminate hazards or the owner's obligation to Federal, State or Local laws. The property owner is solely responsible for notifying the proper authorities of any conditions, which violate current laws and regulations.

Data and information regarding current site conditions and operations have been provided to KCI in part by the client and other sources. As is customary, KCI has assumed these data and information to be complete and factually correct. The conclusions rendered from these data and information are subject to

professional opinion, and thus could result in differing interpretations. Additionally, the conclusions rendered from this work are based on qualitative and quantitative information gathered on or near the date of this report.

This work has been performed in accordance with ASTM E 1527-13, the EPA All Appropriate Inquiry Rule, and generally accepted engineering practices. This investigation was conducted by and/or under the direction of an environmental professional as defined in Section 312.10 (b)(2) of the All Appropriate Inquiry Rule. No other warranty, expressed or implied, is made. Changes as to the content or form of this report may be made only with KCI's expressed written approval.

KCI has employed certain investigative and research procedures during the course of this assessment, and it should be understood that such procedures indicate actual conditions only at the location investigated and that, as is customary, KCI has made certain inferences based on the results of our assignment.

1.5 Exceptions

Conclusions regarding the potential environmental impact of off-site facilities are based on readily available information from the review of regulatory databases, distances from the subject site, and the estimated groundwater flow direction based on surficial topography. A file review of each off-site facility and a determination of actual groundwater conditions were beyond the scope of work for this project.

The scope of work for this Phase I ESA did not include inspection and/or testing for light ballasts, asbestos-containing materials, radon gas, lead-in-paint, urea formaldehyde, or any other material not specifically addressed within the contract for this assessment. Therefore, as applicable, KCI will not render an opinion or provide professional advice regarding the potential, suspect or actual presence/absence of such materials without appropriate inspection and testing. In addition, the scope of work included an inspection of current on-site conditions and operations, but did not include an evaluation of compliance with environmental regulations.

1.6 Special Terms and Conditions

This report has been prepared and is intended for the sole use of our Client. The scope of services performed in execution of this assessment is not necessarily appropriate to satisfy the needs of other users, and use of this report or the findings, conclusions, or recommendations contained herein is at the risk of said user.

2.0 Site Description

The information in the following sections was acquired from online tax record data and/or from information acquired during KCI's site reconnaissance. The site reconnaissance was conducted by Mr. Douglas Talaber on May 18th, 2016. The site inspection included a walk around the perimeter of the subject site, and a visual inspection of the parcel and parcel portions that VDOT has purposed to acquire. Site photographs are included in Appendix A of this report.

2.1 Property Location and Legal Description

The subject site is located in Ashburn, Virginia 20147, and consists of one (1) full parcel (parcel 003) and eight (8) partial parcels (Parcels 001; 002; 003; 005; 007; 008; 009 and 010) that adjoin approximately 0.6-miles of VDOT secondary road right-of-way (ROW). The secondary road ROWs include existing

portions of Russell Branch Pkwy, Richfield Way and George Washington Boulevard. Virginia Route 7 (Harry Byrd Hwy) bisects the subject site between Richfield Way (south of Route7) and George Washington Boulevard (north of Route 7). The location of the subject site relative to surrounding roads and features is indicated on Figure 1 on the following page.

The following Table 2-1 presents property information and legal description of each parcel within the subject site. KCI obtained the property information summarized in the Tables 2-1 from the Loudoun County Virginia Real Estate Assessment /Parcel Database.

Table 2-1: Subject Site Parcel Information

VDOT Parcel ID	VDOT Take/Acres	Parcel ID/Owner	Total Parcel Acreage	Primary Street Address	Legal Description
001	Partial/0.087	**040476675000**/ LOUDOUN SQUARE STORAGE LLC	4.18	45050 RUSSELL BRANCH PKWY	LOUDOUN SQUARE LOT 1A 200402040010560 200904230024934 200402020009875P 01302210015479P
002	Partial/0.150	**040375998000**/ PAHLAVANI, MEHDI & M TRAHOMI	3.23	No Address Provided	LOUDOUN SQUARE LOT 10-A 200408020079382 1063--272 ESMT 200809230057404P
003	Full/2.17	**040479351000**/ INDUS RE LLC	2.17	No Address Provided	LOUDOUN SQUARE LOT 2 200407290077919 (3)
004	Partial/0.007	**040481243000**/ INDUS RE LLC	1.95	No Address Provided	LOUDOUN SQUARE LOT 3 200407290077919 (3)
005	Partial/0.067	**040380390000**/ NYGAARD PARTNERS LP	2.89	No Address Provided	LOUDOUN SQUARE LOT 5-A 200801100001756 200606020048763 1036-1568 BLA
007	Partial/0.583	**039182610000**/ 45145 RESEARCH PLACE HOLDINGS LP	3.94	45145 RESEARCH PL	UNIVERSITY CTR PH.1 L.L2A 1644--1330
008	Partial/0.477	**039178435000**/ A & N DEVELOPMENT LLC	5.77	45091 RESEARCH PL	UNIVERSITY CTR PH.1 L.L-1 200606020048856 D/G 200501060001853
009	Partial/0.037	**040464286000**/ VISA USA INC	41.29	44901 RUSSELL BRANCH PKWY	DULLES OVERLOOK PARCEL B2 201512170082956/7P BLA 200903020011478P 200708170061038 200708130059746P BLA
010	Partial/0.077	**040383790000**/ LOUDOUN COUNTY BOARD OF SUPERVISORS	1.7	45151 RUSSELL BRANCH PKWY	CROSS CRK OFFICE CND PH.2 200809040053697 (2)

2.2 Site and Vicinity General Characteristics

Virginia Route 7 (Harry Byrd Hwy) bisects the subject site between Richfield Way (south of Route7) and George Washington Boulevard (north of Route 7). The subject site and its immediate vicinity south of Route 7 are comprised of commercial business park development, wooded areas and vacant undeveloped lots. A tributary stream of Broad Run tracks north/south under Russell Branch Road and under the approximate center section of Parcel 006.

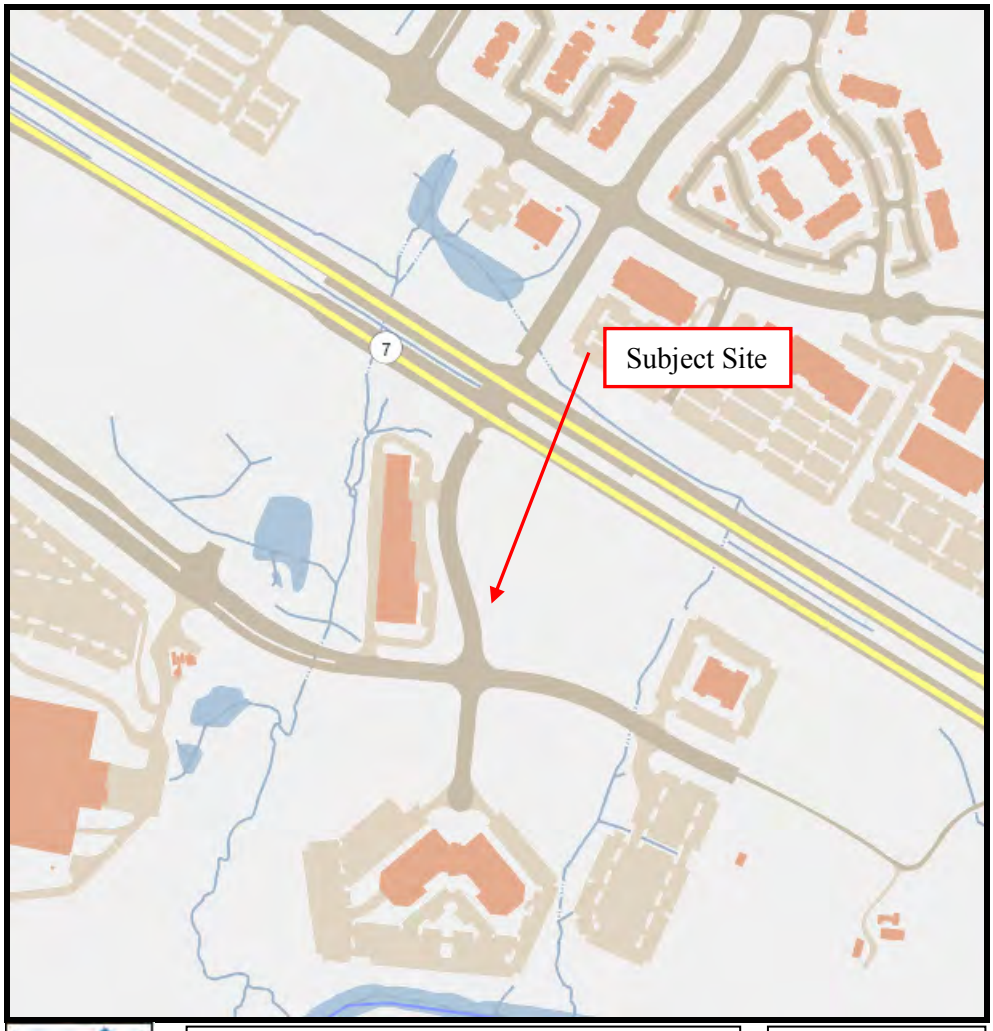


Figure 1
Phase I Environmental Site Assessment
Proposed Route 7/George Washington Boulevard Overpass
Ashburn, VA

North
(Not to scale; Site boundaries approximate)

The subject site and its immediate vicinity north of Route 7 are comprised of commercial business park development. Radiating further out from the portion of the subject site located north of Route 7, are retail venues, George Washington College Science and Technology Research Campus, and residential town homes.

2.3 Current Use of the Property

The following Table 2-2 presents the current general characteristics of the subject site parcels.

Table 2-2: Subject Site Parcel Use

Parcel Partial and Full #	Proposed VDOT Subject Site Parcels Partial and Full
001 Partial	The area consists of maintained landscaped lawn interspersed with mulch bedded trees and shrubs. The area contains underground utilities.
002 Partial	The area consists of maintained landscaped lawn around the intersection of Waverly Ct and Russell Branch Rd. The remaining portion is unmaintained lawn. The area contains underground utilities.
003 Full	A vacant undeveloped Parcel with unmaintained grassland interspersed with trees and shrubs.
004 Partial	The area consists of unmaintained lawn. The area contains underground utilities.
005 Partial	The area consists of unmaintained lawn. The area contains underground utilities.
007 Partial	The area consists of maintained landscaped lawn interspersed with mulch bedded trees and shrubs. The area contains underground utilities.
008 Partial	The area consists of maintained landscaped lawn interspersed with mulch bedded trees and shrubs. The area contains underground utilities.
009 Partial	The area consists of maintained landscaped lawn interspersed with mulch bedded trees and shrubs. A portion of the area has a concrete sidewalk that parallels Russell Branch Rd. The area contains underground utilities.
010 Partial	The area consists of maintained landscaped lawn. The area contains underground utilities.

2.5 Current Uses of Adjoining Properties

The following Table 2-3 presents the current general characteristics of the subject site parcels.

Table 2-3: Adjoining Property Information

Adjoining Full Parcel or Adjoining Non-VDOT Property	Occupant of Adjoining Property	Adjoining Location Relative to Subject Site Partial Take/Full Take Parcel #s
001 Full Parcel	Security Public Storage: Public storage unit rentals – The parcel is developed with a rental storage unit warehouse that includes an office and a second story residential dwelling.	Northwest of 001; west of 003; north of 002; and south of 008.
002 Full Parcel	Vacant undeveloped Parcel with grassland interspersed with shrubs and trees.	North of 002; east of 009; south of 001: and west of 005
003 Full Parcel	A vacant undeveloped Parcel with unmaintained grassland interspersed with trees and shrubs.	North of 001; east of 003; south of 008;
004 Full Parcel	A vacant undeveloped Parcel with unmaintained grassland interspersed with trees and shrubs.	North of 005; east of 003
005 Full Parcel	A vacant undeveloped Parcel with unmaintained grassland interspersed with trees and shrubs.	East of 002; south of 004; and west of 010
007 Full Parcel	Accenture Federal Services LLC: Management Consulting Services - The parcel is developed with one (1) multi-story office building and adjoining parking lot.	North of 003; and east of 008
008 Full Parcel	Goddard School in Ashburn (University Center): Pre-School/day care.- The parcel is developed with one (1) single story building with fenced play yard and adjoining parking lot.	North of 001; and west of 007

Table 2-3: Adjoining Property Information		
Adjoining Full Parcel or Adjoining Non-VDOT Property	**Occupant of Adjoining Property**	**Adjoining Location Relative to Subject Site Partial Take/Full Take Parcel #s**
009 Full Parcel	VISA Operations Center: Business Services - Multiple building campus. (No access granted at time of site reconnaissance)	West of 002
010 Full Parcel	Loudon County Transit – Ashburn North Park and Ride: The parcel is developed with asphalt paved parking areas, paved sidewalks, landscaped lawns, and is interspersed with bus stop style pedestrian wind/rain shelters.	East of 005
Non-VDOT	Tributary to Broad Run followed by unmaintained grassland interspersed with trees and shrubs.	West of 001
Non-VDOT	Bridgefield Way followed by residential town houses	North of 007
Non-VDOT	Bridgefield Way followed by residential apartments	North of 008
Non-VDOT	Strayer University office building	North of 010
Non-VDOT	A vacant undeveloped Parcel with unmaintained grassland interspersed with trees and shrubs.	East of 010
Non-VDOT	A vacant undeveloped Parcel with unmaintained grassland interspersed with trees and shrubs.	North of 009
Non-VDOT	VISA Operations Center: Business Services - Multiple building campus. (No access granted at time of site reconnaissance)	West of 009
Non-VDOT	A vacant undeveloped Parcel with unmaintained grassland interspersed with trees and shrubs.	East of 004

3.0 User Provided Information

In accordance with the ASTM E 1527-13 Standard Practice, the user should provide certain non-technical information to assist the Environmental Professional in identifying Recognized Environmental Conditions at the subject site. KCI supplied a User Information Questionnaire to Mr. Gandhi Khalid L.P. E. of VDOT (Client). Mr. Khalid included only the following paragraph with regards to the subject site: "Not aware of any environmental cleanup liens or contamination. The proposed link will be built on the footprint of the earlier linkup between George Washington Blvd. located to the north of Rte. 7 and Richfield way located to the south of Rte. 7. The northern portion of the link up was constructed on an easement whereas the southern portion was no VDOT RW." A copy of the completed questionnaire is provided in Appendix B.

3.1 Reason for Performing Phase I ESA

KCI understands that the scope of services described herein are required to establish an environmental baseline for properties VDOT proposes to acquire to facilitate the proposed Route 7/George Washington Boulevard Overpass construction project (Project).

3.2 Environmental Liens and Activity and Land Use Limitations

Mr. Richardson (Coca-Cola Refreshment USA, Inc) indicated that he did not have any actual knowledge of any Environmental Lien or Activity or Use Limitations (AULs) encumbering the subject site. As part of this assessment, KCI also requested that EDR complete a search of Loudon County land records for evidence of Environmental Liens or AULs for the full take parcel 003. EDR did not find any indications of Environmental Liens or other Activity and Use Limitations in connection with the subject site. The EDR Lien search is discussed further in Section 4.5.

3.3 Specialized Knowledge or Experience

Mr. Richardson reported that he does not have specialized knowledge or experience related to the subject site (refer to User Questionnaire, Appendix B).

3.4 Reduction in Land Value Due to Environmental Issues

Mr. Richardson reported that it is unknown if there is a reduction in the value of the subject site due to hazardous substances or petroleum products (refer to User Questionnaire, Appendix B).

3.5 Commonly Known Information

Mr. Richardson reported that he is unaware of the past uses of the property. He reports that chemicals customarily used in fleet repair operations were once present on the property and he knows of a truck fuel release and clean-up on the property. Mr. Richardson provided documentation of fuel spills that occurred during fueling of the trucks back in December 2013. The fuel spills occurred on the parking lot pavement as a result of carelessness while fueling. Diesel Direct performed a clean-up with absorbency pads and speedy dry at all spill locations.

Based on the small volume of fuel spilled, and that the spills occurred on pavement and was cleaned up, the fuel spills in December 2013 do not represent a REC. See Appendix D for documentation of spills and photos provided by the Client.

3.6 Obvious Evidence of Environmental Contamination

During the reconnaissance of the subject site, KCI did not observe obvious evidence of environmental contamination at the subject site (i.e., stained or stressed vegetation, surface chemical releases, discarded bulk chemical storage containers, evidence of waste burial, or unusual odors or stained soil).

4.0 Records Review

As part of this assessment, KCI reviewed standard environmental databases (Sections 4.1), requested permission to review regulatory files (Section 4.2), researched the subject site's physical setting (Section 4.3), reviewed historic site drawings, aerial photographs, maps and documents (Section 4.4), reviewed land records and title information (Section 4.5), and reviewed standard environmental databases with respect to Vapor Encroachment Conditions (Section 4.6). Detailed discussions concerning these topics are provided in the following report sections.

4.1 Standard Environmental Databases

The review of the environmental databases described hereafter was completed to determine the subject site's proximity to known and potential contaminant sources. The Federal and State environmental database report was provided by EDR, dated February 20th, 2015. A copy of the Environmental Database Report included in Appendix C. The specific databases reviewed for this assessment are summarized in Table 4-1 as follows.

Table 4-1: Environmental Database Search

Database		Search Distance (Miles)	Total Properties Plotted
FEDERAL RECORDS			
NPL	National Priority List	1.25	**1**
Proposed NPL	List of sites that have been proposed to the NPL	1.25	0
Delisted NPL	National Priority List Deletions.	1.25	0
NPL LIENS	Federal Superfund Liens	1.25	0
CERCLIS	Comprehensive Environmental Response, Compensation and Liability System List	0.75	0
SEMS-ARCHIVE	Superfund Enterprise Management System Archive (formerly CERCLIS-NFRAP)	0.75	**1**
LIENS 2	CERCLA Lien Information	0.25	0
CORRACTS	Corrective Action Report.	1.25	0
RCRA TSDF	Resource Conservation & Recovery Act Information System – RCRA - Transporters, Storage and Disposal List	0.75	0
RCRA Lg. Quan. Gen.	Resource Conservation & Recovery Info. Sys. – Large Quantity Generators List	0.50	0
RCRA Sm. Quan. Gen.	Resource Conservation & Recovery Info. Sys. – Small Quantity Generators List	0.50	0
RCRA-CESQG	Resource Conservation & Recovery Act Information System RCRA - Conditionally Exempt Small Quantity Generators	0.50	0
RCRA-NonGen	Resource Conservation & Recovery Act Information System RCRA - Non Generators	0.50	1
US ENG CONTROLS	Engineering Controls List Sites.	0.75	0
US INST CONTROL	Properties that are included in the Voluntary Cleanup program, which have Deed Restrictions.	0.75	0
ERNS	Emergency Response Notification System	0.25	0
HMIRS	Hazardous Materials Information Reporting System.	0.25	0
DOT OPS	Incident and Accident Data	0.25	0
US CDL	Clandestine Drug Labs	0.25	0
US BROWNFIELDS	A Listing of Brownfields properties Addressed by Either Cooperative Agreements or Targeted Brownfields Assessments.	0.75	0
DOD	Department of Defense Sites.	1.25	0
FUDS	Formerly Used Defense Sites.	1.25	0
LUCIS	Land Use Control Information System	0.75	0
CONSENT	CERCLA Consent Decrees.	1.25	0
ROD	Records of Decision.	1.25	0
UMTRA	Uranium Mill Tailings Sites.	0.75	0

Table 4-1: Environmental Database Search

Database		Search Distance (Miles)	Total Properties Plotted
ODI	Open Dump Inventory: A Listing of Disposal Facilities that do not Comply with 40 CFR Parts 257 or 258.	0.75	0
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations	0.75	0
MINES	Mines Master Index File	0.50	0
TRIS	Toxic Chemical Release Inventory System.	0.25	0
TSCA	Toxic Substances Control Act.	0.25	0
FTTS	Federal Insecticide, Fungicide, and Rodenticide Act/Toxic Substances Control Act Tracking System.	0.25	0
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing	0.25	0
SSTS	Section 7 Tracking Systems. Refers to Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act. All Registered Facilities Must Submit a Report to EPA on a Yearly Basis.	0.25	0
ICIS	Integrated Compliance Information System	0.25	0
PADS	PCB Activity Database System	0.25	0
MLTS	Material Licensing Tracking System	0.25	0
RADINFO	Radiation Information Database	0.25	0
FINDS	Facility Index System	0.25	**2**
RAATS	RCRA Administrative Action Tracking System	0.25	0
STATE AND LOCAL RECORDS			
VA SPILLS	VDEQ Spills sites	0.25	**2**
SWF/LF	Permitted Solid Waste Disposal Facilities.	0.75	**0**
SWRCY	Recycling Directory.	0.50	0
LTANKS	Leaking Petroleum Storage Tanks	0.50	**4**
VA LUST	Leaking Underground Storage Tanks.	0.50	**1**
VA UST	Registered Underground Storage Tank List.	0.50	**3**
Historical UST	Listing of Registered Underground Storage Tanks.	0.50	0
AST	Registered Aboveground Storage Tank List.	0.50	**0**
VA-FAL	Financial assurance information for underground storage tank facilities.	0.25	**2**
INST CONTROLS	Voluntary Remediation Program	0.75	**0**
ENG CONTROLS	Engineering Controls Site Listing	0.75	**0**
VCP	Voluntary Remediation program Applicants/Participants.	0.50	**0**

Table 4-1: Environmental Database Search			
Database		**Search Distance (Miles)**	**Total Properties Plotted**
DRYCLEANERS	Listing of Registered Dry Cleaners.	0.50	**0**
BROWNFIELDS	Eligible Brownfields Properties.	0.75	**0**
PA MANIIFEST	Hazardous Waste Manifest Information	0.25	**1**
ECHO	Compliance and enforcement	0.25	**1**
VA TIER 2	Hazardous Waste Manifest Information	0.25	**1**
NPDES	Wastewater Permit Listing	0.50	**0**
AIRS	A listing of permitted facilities and emissions information.	0.25	**1**
LEAD	Lead Inspection Database.	0.25	0
TRIBAL RECORDS			
INDIAN RESERV	Indian Reservations.	1.25	0
INDIAN ODI	A listing of open dump inventories on Indian Land.	0.75	0
INDIAN LUST	A listing of leaking underground storage tank locations on Indian Land.	0.75	0
INDIAN UST	A listing of underground storage tank locations on Indian Land.	0.50	0
INDIAN VCP	A listing of Voluntary Cleanup Programs on Indian Land.	0.75	0
ADDITIONAL ENVIRONMENTAL RECORDS AND EDR PROPRIETARY RECORDS			
SPILLS	Prep/Spills Database Listing	0.25	0
ENF	Enforcement Actions Data	0.25	0
Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants.	1.25	0
EDR Historical Auto Stations	EDR Proprietary Historical Auto Stations	0.375	**0**
EDR Historical Cleaners	EDR Proprietary Historical Cleaners	0.375	

National Priorities List (NPL) – The National Priorities List (NPL) is the EPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. A site must meet or surpass a predetermined hazard ranking system score, be chosen as a state's top priority site, or meet three specific criteria set jointly by the US Department of Health and Human Services and the US EPA in order to become a NPL site. The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. The subject site was not included on the NPL database; however, Hidden Lane Landfill on Persimmon Lane, located approximately 0.80 miles east/northeast of the subject site, was included on this database.

The Hidden Lane Landfill was a 25-acre privately owned and operated disposal facility north of Virginia Route 7 between the Broad Run Farms and Countryside communities. It is immediately adjacent to the floodplain of the Potomac River. Starting in 1971 the facility accepted a variety of solid wastes including construction and demolition wastes, land clearing wastes and other items such as appliances, tires, paper, and cardboard. The county closed down the facility in 1984, pursuant to a local court decision the year before.

The Hidden Lane Landfill had been named by county and state health officials as the likely source of the degreasing solvent trichloroethylene, first detected in drinking water wells of some homes in the Broad Run Farms subdivision just west of the landfill in 1989. Hidden Lane Landfill was listed on the National Priorities List in March 2008. Based on the distance from the subject site, and presence of the Broad Run River flowing in a southeasterly direction between Hidden Lane landfill and the subject site, the Hidden Lane Landfill does not appear to represent a REC to the subject site at this time.

Proposed NPL List – The proposed NPL List includes hazardous waste sites that have been proposed to the NPL. These sites may be added to the NPL or not depending on the results of the site investigations and other factors. Neither the subject site nor any properties within the search radius were included on the proposed NPL database.

Delisted NPL Sites – A listing of sites that have been deleted from the National Priorities List according to the criteria in the National Oil and Hazardous Substances Pollution Contingency Plan. Neither the subject site nor any properties within the search radius were included on the proposed NPL database

NPL LIENS – Under the authority granted to EPA by CERCLA of 1980, the EPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property's owner received notification of potential liability. Neither the subject site nor any properties within the search radius were included on the NPL Recovery database.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List – The CERCLIS List contains sites which are either proposed to be placed on or are on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL. The information on each site includes a history of all pre-remedial, remedial, removal and community relations activities or events at the site, financial funding information for the events, and unrestricted enforcement activities. Neither the subject site nor any properties within the search radius were included on the CERCLIS database.

CERCLIS-No Further Remedial Action Planned (CERC-NFRAP) List – As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites, where following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so that EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites. Neither the subject site nor any properties within the search radius were included on the CERCLIS-NFRAP database.

LIENS 2 – CERCLA Lien Information - A Federal CERCLA ('Superfund') lien which could exist by operation of law at any site or property at where the EPA has spent Superfund monies. The money is spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties. Neither the subject site nor any properties within the search radius were included on the LIENS 2 database.

Resource Conservation and Recovery Information System – Treatment, Storage, and Disposal Facilities (RCRA -TSDF) List, CORRACTS Facilities List - The EPA maintains this database of RCRA facilities, which are undergoing corrective action. A corrective action order is issued pursuant to RCRA Section 3008(h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility's boundary and can be required regardless of when the release occurred, even if it predates RCRA. Neither the subject site nor any properties within the search radius were included on the RCRA TSDF or CORRACTS databases.

Resource Conservation and Recovery Information System – Small and Large Quantity Generators (RCRA - SQG and LQG) List - The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities, which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA small quantity generators are facilities that generate less than 1000 kg/month of non-acutely hazardous waste, and less than 1 kg/month of acutely hazardous waste. RCRA large quantity generators are facilities that generate at least 1000 kg/month of non-acutely hazardous waste (or 1 kg/month or more of acutely hazardous waste). Neither the subject site nor any properties within the search radius were included on the RCRA – SQG or LQG databases.

RCRA-CESQG – Conditionally Exempt Small Quantity Generators. This database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Neither the subject site nor any properties within the search radius were included on the RCRA – CESQG databases.

RCRA-NonGen –This database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). However, Non-Generators do not presently generate hazardous waste. The subject site properties were not included on the RCRA – NonGen list; however, one (1) off-site property was included on the RCRA – NonGen database.

Verizon Virginia Inc. site, at 45168 Waterpointe Terrace, is located approximately 0.48 miles north of the subject site. No violations were reported in the RCRA-NonGen database. In addition, RCRA – NonGen do not presently generate hazardous waste. Based on the distance and no violation status of this facility, Verizon Virginia Inc. does not appear to represent a REC to the subject site at this time.

United States Engineering Controls (US ENG Controls) Sites List – A listing of sites where engineering controls are in place. Engineering controls include various forms of caps, specialized building foundations, liners, and on-site treatment methods designed to eliminate pathways by which regulated substances may enter environmental media or come into contact with human populations. Neither the subject site nor any properties within the search radius were included on the US ENG Controls database.

United States Institutional Controls (US INST Controls) List – A listing of sites with institutional controls in place. Institutional Controls include a variety of administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Neither the subject site nor any properties within the search radius were included on the US INST Controls database.

Emergency Response Notification System (ERNS) Database – The Emergency Response Notification System (ERNS) database provides information regarding reported releases of oil and hazardous substances. Neither the subject site nor any properties within the search radius were included on the ERNS database.

Hazardous Materials Information Reporting System (HMIRS) Database – The HMIRS database contains a listing of sites at which hazardous materials spills have been reported to the Federal Department of Transportation (DOT). Neither the subject site nor any properties within the search radius were included on the HMIRS database.

Incident and Accident Data (DOT OPS) - The DOT OPS contains records of Department of Transportation, Office of Pipeline Safety Incident and Accident data. Neither the subject site nor any properties within the search radius were included on the DOT OPS database.

United States Clandestine Drug Labs (CDL) – The CDL is a listing of clandestine drug lab locations. The U.S. Department of Justice provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. Neither the subject site nor any properties within the search radius were included on the CDL database.

United States Brownfields Database (US BROWNFIELDS) – This is a listing of brownfields sites that are being addressed under Cooperative Agreements or that have been involved in EPA's Target Brownfields Assessments program. Neither the subject site nor any properties within the search radius were included on the US BROWNFIELDS database.

Department of Defense Sites (DOD) – This data set consists of federally owned lands administered by the Department of Defense that have a land area of at least one square mile. Neither the subject site nor any properties within the search radius were included on the DOD database.

Formerly Used Defense Sites (FUDS) – The FUDS listing identifies formerly used defense sites where the US Army Corps of Engineers is actively working or will take the necessary cleanup actions. Neither the subject site nor any properties within the search radius were included on the FUDS database.

Land Use Control Information System (LUCIS) – The LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure Properties. Neither the subject site nor any properties within the search radius were included on the LUCIS database.

Superfund Consent Decrees (CONSENT) – The major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters. Neither the subject site nor any properties within the search radius were included on the CONSENT database.

Records of Decision (ROD) – ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup. Neither the subject site nor any properties within the search radius were included on the ROD database.

Uranium Mill Tailings Sites (UMTRA) – Uranium ore was mined by private companies for federal government use in national defense programs. When the mills closed, large piles of mill tailings were left in place. Although typically the levels of human exposure to radioactive materials from the piles are low, tailings were in some cases used as construction fill materials before the potential health hazards represented by the tailings were recognized. The federal government's Department of Energy has targeted certain former mill sites for cleanup. Neither the subject site nor any properties within the search radius were included on the UMTRA database.

Open Dump Inventory (ODI) – This is a listing of open dumps, defined as waste disposal areas that do not comply with 40 CFR Parts 257 or 258. Neither the subject site nor any properties within the search radius were included on the ODI database.

Torres Martinez Reservation Illegal Dump Site Locations (DEBRIS REGION 9) - A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California. Neither the subject site nor any properties within the search radius were included on the DEBRIS REGION 9 database.

MINES Database – Mines Master Index File. Neither the subject site nor any properties within the search radius were included on the MINES database.

Toxic Chemical Release Inventory System (TRIS) – TRIS identifies facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III Section 313. Neither the subject site nor any properties within the search radius were included on the TRIS database.

Toxic Substances Control Act (TSCA) – TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site. Neither the subject site nor any properties within the search radius were included on the TSCA database.

FIFRA/TSCA Tracking System Database (FTTS) – This database tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA, or EPCRA. Neither the subject site nor any properties within the search radius were included on the FTTS database.

FIFRA/TSCA Tracking System Administrative Case Listing (HIST FTTS) – A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of the FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substance Control Act). Some EPA regions area not closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated. Neither the subject site nor any properties within the search radius were included on the HIST FTTS database.

Section Seven Tracking Systems Database (SSTS) – This is a listing of all pesticide producing establishments that are required to submit an annual report to the US EPA under Section 7 of the Federal

Insecticide, Fungicide, and Rodenticide Act. Neither the subject site nor any properties within the search radius were included on the SSTS database.

Integrated Compliance Information System (ICIS) – The ICIS supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program. The subject site was not identified on the ICIS database; however, one off-site property located within the search radius was identified on the ICIS database.

Hidden Lane Landfill on Persimmon Lane, located approximately 0.80 miles east/northeast of the subject site, was included on this database. The site is discussed above in the NPL section

PCB Activity Database System (PADS) – PADS identifies generators, transporters, commercial stores and/or brokers and disposers of PCBs, who are required to notify the EPA of such activities. Neither the subject site nor any properties within the search radius were included on the PADS database.

Material Licensing Tracking System (MLTS) – MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites, which possess or use radioactive materials and which are subject to NRC licensing requirements. Neither the subject site nor any properties within the search radius were included on the MLTS database.

Radiation Information Database (RADINFO) – The RADINFO contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity. Neither the subject site nor any properties within the search radius were included on the RADINFO database.

Facility Index System (FINDS)/Facility Identification Initiative Program Summary Report – FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System). The subject site properties were not identified on the FIINDS database; however, one adjacent property and one off site property located within the search radius was identified on the FIINDS database.

Visa Commonwealth Center OCE (VISA Center), at 45005 Russel Branch Pkwy, located to the adjacent south of the partial take parcel 009, and is listed on the FIINDS database. The site is discussed below in the Virginia UST section

Hidden Lane Landfill on Persimmon Lane, located approximately 0.80 miles east/northeast of the subject site, was included on the FINDS database. The site is discussed above in the NPL section

RCRA Administrative Action Tracking System (RAATS) – RAATS contains records based on the enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to

update the information contained in the database. Neither the subject site nor any properties within the search radius were included on the RAATS database.

VA SPILLS - The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment. PREP staff often work to assist local emergency responders, other state agencies, federal agencies, and responsible parties, as may be needed, to manage pollution incidents. Oil spills, fish kills, and hazardous materials spills are examples of incidents that may involve the DEQ's PREP Program. The subject site was not included on the VA SPILLS database; however, one (1) adjacent property was included on the VA SPILLS database.

National Association of Letter Carriers (NALC) Health Benefit Plan, at 20547 Waverly Ct, located adjacent to the south of the subject site partial take parcels 002 and 005, is reported to have had two (2) spill incidents as follows:

- An approximate 50 gallon diesel oil spill reported on 01/23/2007 from a ruptured saddle tank that struck a light pole. The spill was reported to have entered the storm drain but did not enter Broad Run to the south of the NALC property. A site cleanup took place with the placement of absorbents and the storm drain was power washed. A closure letter was sent on 06/11/2007.

- A small quantity mercury spill occurred when a blood pressure gauge was knocked over in the health clinic. Mercury was reported on the carpet. A contractor was contacted for the mercury cleanup. Disposal certificates and manifests were generated and a closure letter was sent on 06/11/2007.

The NALC property slopes steeply to the south southwest towards Broad Run. Based on the Spills downgradient locations, and reported closure, the inclusion of NALC on the VA-SPILL database does not represent a REC to the subject site at this time.

Virginia Solid Waste Disposal Facilities (SWF)/Landfill Sites (LF) List – Listings under Solid Waste Facilities (SWF) typically contain information provided by the Virginia Department of Environmental Quality (DEQ) regarding active or inactive solid waste disposal facilities or landfills. Neither the subject site nor any properties within the search radius were included on the SWF database.

Solid Waste Recycling Directory (SWRCY) – This is a listing of solid waste recycling facilities. The subject site was not included on the SWRCY database; however, Grafco at 7447 Candlewood Road, located adjacent to the northeast of the subject site, was included on this database. The facility accepts virgin and recycled PET Pellets. KCI concludes that due to the lack of any reported releases or violations at the property, and the lower elevation of the property relative to the subject site, the inclusion of Grafco in the SWRCY database does not represent a REC to the subject site at this time.

Virginia Leaking Underground Storage Tank List (VA LUST) – This is a database listing of leaking underground storage tanks. The subject site was not included on the VA LUST database; however, Chamblin/Walker Residence at 20376 White Oak Dr, located approximately 0.6 mil east/northeast of the subject site, was included on this database. Based on the distance from the subject site, and presence of the Broad Run River flowing in a southeasterly direction between Chamblin/Walker Residence and the subject site, the Chamblin/Walker Residence does not appear to represent a REC to the subject site at this time.

VA LTANKS – This is the leaking tanks database and contains current leaking petroleum tanks. The data comes from the Virginia Department of Environmental Quality (VA DEQ). The subject site was not listed on the VA LTANKS database; however, four (4) off-site properties located within the search radius were identified on the VA LTANKS database. Table 3-2 summarizes the off-site properties that were identified on the VA LTANKS database.

Table 4-2: Summary of VA LTANKS Listed Properties

Listed Off-Site Facility	Case Status	Reported Date	Direction/ Distance
BAROODY MARIE RESIDENCE 20396 White Oak DR. Sterling, VA 20165	Closed	08/31/2015	ENE 0.62 miles
CHAMBLIN/WALKER RESIDENCE (SLS) 20376 White Oak Dr. Sterling, VA 20165	Closed	04/26/1993	ENE 0.63 miles
COONEY THOMAS J AND LOURINE W RESIDENCE 20261 Dairy Ln, Sterling, VA 20165	Closed	01/04/2015	NE 0.68 miles
SHAFFER WELL 20170 Youngs Cliff RD, Sterling, VA 20165	Closed	04/04/1990	NNW 0.20 miles

Based on a variety of factors including the distances from the subject site (≥ 0.20 miles), and/or closed regulatory status (s), none of the above listed VA LTANKS sites appear to represent a REC to the subject site at this time.

Historical LUST – This database includes a list of leaking underground storage tanks (LUSTs) maintained by the Virginia Department Environmental Quality (DEQ) through 1999. Neither the subject site nor any properties within the search radius were included on the Historical LUST database.

Virginia Underground Storage Tank (UST) List – The Virginia Underground Storage Tank Report is a comprehensive listing of all registered active and inactive underground storage tanks located within the state. Underground Storage Tanks (USTs) are regulated under Subtitle I of RCRA and must be registered with the Virginia Department of Environmental Quality, which is responsible for administering the state's UST program. The subject site was not included on the UST database; however, Two (2) adjacent properties and one (1) off site property were included on the UST database.

National Association of Letter Carriers (NALC) Health Benefit Plan (LSQ One/NALC Building), at 20547 Waverly Ct, located adjacent to the south of the subject site partial take parcels 002 and 005, is reported to have a 550-gallon diesel tank currently in use for the emergency generator. This UST was observed during the site reconnaissance and was located on the southwest of the NALC building adjacent to the rear loading dock. The NALC property slopes steeply to the south southwest towards Broad Run at the location of the UST. This UST location was observed to be downgradient of the subject site proprieties. Based on the UST's downgradient location the inclusion of NALC on the UST database does not represent a REC to the subject site at this time.

Visa Commonwealth Center OCE (VISA Center), at 45005 Russel Branch Pkwy, located to the adjacent south of the partial take parcel 009, is reported to have two (2) 5000-gallon diesel tanks currently in use. KCI was denied access to the VISA Center property at the time of the site reconnaissance. However, KCI was able to observe the VISA Center from the partial take 009 parcel. The VISA Center structures were observed to be located approximately 500ft southwest of the subject sites parcels. The observed topographic gradient of the VISA Center was south to southeast (away from the subject site parcels) towards two storm water management ponds. The storm water management ponds drain to the south southeast into an unnamed tributary of Broad Run. Based on the VISA Center's topographic gradient away from the subject site parcels, the inclusion of the VISA Center on the UST database does not represent a REC to the subject site at this time.

University Center, at 45299 Research PL., located approximately 0.27 miles northeast and downgradient of the subject site parcels is reported to have one (1) 500 gallon diesel UST. This UST is reported to be permanently out of service. Based on the UST's distance, downgradient location, and permanently out of service status, the inclusion of the University Center on the UST database does not represent a REC to the subject site at this time

Historical Underground Storage Tanks (HIST UST) List – A listing of historical underground storage tanks. These tanks may have been removed, or are otherwise no longer in service. Neither the subject site nor any properties within the search radius were included on the HIST UST database.

VA Financial Assurance List (VA FAL) -A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay. The subject site was not included on the VA FAL database; however, two (2) adjacent properties were included on the VA FAL database.

VISA USA Incorporated at 45005 Russel Branch, is located to the adjacent south of parcel 009 and is listed on the VA FAL database. The site is discussed above in the VA UST section

National Association of Letter Carriers (NALC) Health Benefit Plan, at 20547 Waverly Ct, located adjacent to the south of the subject site partial take parcels 002 and 005, and is listed on the VA FAL database. The site is discussed above in the VA UST section

Registered Aboveground Storage Tanks (AST) List – Registered aboveground storage tanks. Neither the subject site nor any properties within the search radius were included on the AST database.

Voluntary Cleanup Program Applicants/Participants, Institutional Control Database (INST CONTROL) – This is a listing of sites that are included in the VCP database listing, which have deed restrictions. Neither the subject site nor any properties within the search radius were included on the INST CONTROL database.

Engineering Controls (ENG CONTROLS) – Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. The subject site was not included on the ENG CONTROLS database.

Voluntary Cleanup Program (VCP) Applicants – The Voluntary Cleanup Program, administered by the Virginia Department of Environmental Quality, streamlines the environmental cleanup process for

sites, usually commercial or industrial properties, that are contaminated or perceived to be contaminated by hazardous substances. Developers and lenders are provided with certain limitations on liability and participants in the program are provided certainty in the process by knowing exactly what will be required. Neither the subject site nor any properties within the search radius were identified on the VCP database.

Registered Drycleaning Facilities Database (DRYCLEANERS) – This is a listing of registered drycleaning facilities. Neither the subject site nor any properties within the search radius were identified on the DRYCLEANERS database.

Eligible Brownfields Properties (BROWNFIELDS) Database – The Site Assessment Section of the State Superfund Division is responsible for conducting federally-funded assessments of eligible Brownfields properties. These assessments are undertaken to determine whether there are environmental cleanup requirements at these sites. Neither the subject site nor any properties within the search radius were included on the BROWNFIELDS database.

VA AIRS -
A listing of permitted Airs facilities. The subject site was not identified on the VA AIRS database; however, one off-site property located within the search radius was identified on the VA AIRS database.

VISA USA Incorporated at 45005 Russel Branch, is located to the adjacent south of parcel 009 and is listed on the VA AIRS database. The site is discussed above in the VA UST section

Wastewater Permit Listing (NPDES) – A listing of wastewater permit locations. Neither the subject site nor any properties within the search radius were identified on the NPDES database.

US Permit and Facility Information Listing (US AIRS) Database – This is a listing of permitted facilities and their emissions information. The subject site was included on the AIRS database. The subject site was not identified on the AIRS database; however, one off-site property located within the search radius was identified on the AIRS database.

VISA USA Incorporated at 45005 Russel Branch, is located to the adjacent south of parcel 009 and is listed on the US AIRS database. The site is discussed above in the VA UST section

Lead Inspection Database (LEAD) – This is a listing of sites that are included in the Childhood Lead Poisoning Prevention Program which consists of data of lead inspection for the state. Neither the subject site nor any properties within the search radius were included on the LEAD database.

Indian Reservations listing (INDIAN RESERV) – This is a listing of Indian Reservation lands of the United States with an area equal to or greater than one square mile. Neither the subject site nor any properties within the search radius were included on the INDIAN RESERV database.

Indian ODI – This is a listing of open dump inventory locations on Indian Land. Neither the subject site nor any properties within the search radius were included on the INDIAN ODI database.

Indian LUST – This is a listing of leaking underground storage tank locations on Indian Land. Neither the subject site nor any properties within the search radius were included on the INDIAN LUST database.

Indian UST – This is a listing of underground storage tank locations on Indian Land. Neither the subject site nor any properties within the search radius were included on the INDIAN UST database.

Indian VCP – This is a listing of voluntary cleanup program locations on Indian Land. Neither the subject site nor any properties within the search radius were included on the INDIAN VCP database.

ECHO - ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide. The subject site was not identified on the ECHO database; however, two (2) off-site properties located within the search radius was identified on the ECHO database.

Hidden Lane Landfill on Persimmon Lane, located approximately 0.80 miles east/northeast of the subject site, was included on this database. The site is discussed above in the NPL section

VISA USA Incorporated at 45005 Russel Branch, is located to the adjacent south of parcel 009 and is listed on the ECHO database. The site is discussed above in the VA UST section

PA MANIFEST – Hazardous waste manifest information. The subject site was not identified on the PA MANIFEST database; however, one off-site property located within the search radius was identified on the PA MANIFEST database.

National Association of Letter Carriers (NALC) Health Benefit Plan, at 20547 Waverly Ct, located adjacent to the south of the subject site partial take parcels 002 and 005, and is listed on the PA MANIFEST database. No violations were reported in the PA MANIFEST database. The site is discussed above in the VA UST section

VA TIER 2 - A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report. The subject site was not identified on the VA TIER 2 database; however, one off-site property located within the search radius was identified on the VA TIER 2 database.

VISA USA Incorporated at 45005 Russel Branch, is located to the adjacent south of parcel 009 and is listed on the VA AIRS database. The site is discussed above in the VA UST section

Manufactured Gas Plants – Former manufactured gas (coal gas) sites. Neither the subject site nor any properties within the search radius were included on the Manufactured Gas Plant database.

EDR Historical Auto Stations – Former gas station, auto station, and service station sites. Neither the subject site nor any properties within the search radius were included on the EDR Historical Auto Stations database.

EDR Historical Cleaners – Former dry cleaner sites. Neither the subject site nor any properties within the search radius were included on the EDR Historical Cleaners database.

Land Restoration Program (LRP) – This is a listing of Land Restoration Program sites. Site types include Voluntary Cleanup Program, National Priority List, Brownfields, Site Assessment, Formerly Used Defense Site, State Master List, Non Master List, Groundwater Investigation and Federal Facility. Neither the subject site nor any properties within the search radius were included on the LRP database

4.2 Review of Agency Files

KCI submitted written requests to the Virginia Department of Environmental Quality (DEQ) and Loudon County Department of Health pursuant to the Public Information Act, in order to review departmental files pertaining to the subject site. Copies of KCI's information request letters are included in Appendix D of this report.

4.2.1 Loudon County Department of Health

KCI did not receive a response from Loudon County Department of Health regarding the PIA request prior to issuing this report. Any significant information received in the future, as well as any related changes in KCI's conclusions, will be forwarded as an addendum to this report. The request letter is attached in Appendix D.

4.2.2 Virginia Department Environmental Quality

KCI did not receive a response from DEQ prior to issuing this report. Any significant information received in the future, as well as any related changes in KCI's conclusions, will be forwarded as an addendum to this report.

4.3 Physical Setting Sources

The type and geological stratification of soils and bedrock, as well as the location, depth, and direction of groundwater flow, comprise the subject site's physical setting. KCI researched the physical setting of the subject site to help determine the potential routes of migration for subsurface contaminants.

4.3.1 Topography and Surface Drainage

Based on a review of topographic maps provided by EDR and observations made during the site reconnaissance, the subject site is approximately 121 feet above mean sea level (MSL). The topography at the subject site and surrounding properties appears to generally slope to the east/northeast toward Stony Run. Surface runoff from the subject site and adjacent properties in a higher elevation would therefore drain in an east/northeasterly direction. Major drainage systems include Broad Run. This drainage systems and all of the smaller ones in Loudoun County are part of the Potomac River Basin.

4.3.2 Site Geology

According to the Digital Geologic Map of Loudoun County Virginia, U.S. Geological Survey Open-File Report 99-150*Draft Physiographic Map of Virginia*, the subject site is situated within the located in the Piedmont physiographic province. The Piedmont is comprised of a set of Late Proterozoic and Paleozoic igneous and metamorphic rocks

4.3.3 Soils Information

Review of the information available from the United States Department of Agriculture indicates the soils at the subject site are comprised primarily of Penn silt loam sand soils that residuum weathered from shale and siltstone and Sycoline-kelly complex which is comprised of residuum weathered from hornfels.

4.4 Historical Use Information

As part of this assessment, KCI reviewed historic uses of the subject site and surrounding properties. Historic information and record sources searched for this purpose included: historic Sanborn fire insurance maps (Section 4.4.1), historic aerial photographs (Section 4.4.2), historic topographic maps (Section 4.4.3), and an historic city directory abstract (Section 4.4.4). These records were reviewed to identify historical site operations or conditions that may have impacted environmental conditions at the subject site.

4.4.1 Sanborn Fire Insurance Maps

Sanborn fire insurance maps covering the area of the subject site were ordered from EDR. However, EDR reported that coverage for the area does not exist. Therefore, Sanborn fire insurance maps depicting the project site were not available for review. A copy of EDR's "Unmapped Property" document is provided in Appendix F of this report.

4.4.2 Aerial Photographs

KCI reviewed aerial photographs covering the area of the subject site dated 1951, 1957, 1963, 1966, 1979, 1980, 1988, 1994, 1998, 2000, 2002, 2005, 2008, 2009, 2011, and 2012. The aerial photographs were provided by EDR; copies are provided in Appendix G of this report. Information obtained from the review of aerial photography is provided as follows.

<u>1979 and 1980 Aerial Photographs</u>

The 1979 and 1980 aerial photographs revealed that the subject site properties were a mix of undeveloped wooded land and open field/pasture. Route 7 is observed running east and west bisecting the subject site into a northern portion (parcels 007 and 008) and a southern portion (parcels 001, 002, 003, 004, 005, 009, and 010). An access road runs from Route 7 south thru the middle of the subject sites southern portion and terminates at a small farm compound to the adjoining south. In addition, an access road runs from Route 7 north thru the middle of the subject sites northern portion and terminates at a farm compound to the adjoining north.

<u>1988 Aerial Photographs</u>

The northern portions of the subject appear as observed in the 1979 and 1980 aerial photographs. The southern portions of the subject site appear to have had some clearing activity for the initial stages of construction. An intersection appears in the sites southern portion access road at the present day location of the intersection of Russel Branch and Waverly Ct. The farm compound to the adjoining south has been cleared.

<u>1994 Aerial Photograph</u>

The northern and southern portions of the subject site appear much the same as in the 1988 aerial photograph. The adjoining property to the north, east and south of the subject site properties have been developed with commercial structures. The adjoining property to the west of the subject site appeared primarily undeveloped wooded land and open field/pastures.

1998 Aerial Photograph

The subject sites northern portion parcel 007 has been developed with a commercial structure. The remaining portions of the subject site and the adjoining properties appear much the same as the 1994 aerial photograph.

2000, and 2002 Aerial Photograph

With one exception, the subject site and adjoining properties appear much the same as depicted in the 1998 aerial photograph. The exception being the development of the present day park and ride to the adjoining southeast of the subject site.

2005 Aerial Photograph

Parcel 001, which is located in the southern portion of the subject site, has been developed with a commercial structure. The remaining subject site properties and adjoining properties appear much the same as depicted in the 2002 aerial photograph.

2008, 2009, 2011 and 2012 Aerial Photographs

The subject sites northern portion parcel 008 has been developed with a commercial structure. With one exception, the remaining subject site properties and adjoining properties appear much the same as depicted in the 2005 aerial photograph. The exception being the development of commercial structures to the adjoining west southwest of the subject site.

4.4.3 Historic Topographic Maps

In support of this assessment, KCI reviewed a series of historic topographic maps covering the area of the subject site. EDR provided the historic topographic maps, which were dated 1893, 1894, 1908, 1944, 1952, 1968, 1972, 1980, 1984, 1995, and 2013. The review of historic topographic maps provides information concerning historic development of the subject site, including site grading, cutting and filling activities; general size and location of onsite structures; and, whether or not historic mining operations occurred on or near the subject site. Information from KCI's review of the historic topographic maps is provided below. Copies of the historic topographic maps are provided in Appendix H of this report.

1893, 1894, and 1908 Topographic Maps

The subject site and adjoining areas were illustrated as undeveloped land with no structures. A road (in the location of the present day Route 7) is observed running east and west bisecting the subject site into a northern portion (parcels 007 and 008) and a southern portion (parcels 001, 002, 003, 004, 005, 009, and 010). Broad Run is illustrated to the east and south of the site. A tributary stream of Broad Run is illustrated tracking north/south along the western border of the subject site and thru the approximate center section of the subject site's Parcel 006. Across the region, scattered farms/residences were present.

1944, 1952,1968, 1972, 1980, and 1984 Topographic Maps

An access road is illustrated that runs from Route 7 south thru the middle of the subject sites southern portion and terminates at a structure to the adjoining south. With the exception of the access road, the

subject site and adjoining areas were depicted as undeveloped land. Scattered small structures were present in the outlying areas of the subject site.

1995 Topographic Maps

A road, corresponding to the present day George Washington Boulevard, is illustrated in the north central portion of the subject site above Route 7. Below Route 7 the southern portion of the subject site is illustrated with roads corresponding to the present day configuration of Russell Branch Pkwy tracking east/west through the subject site; Richfield Way originating from Russel Branch Pkwy and tracking north to terminate at Route 7; and Waverly Way originating from Russel Branch Pkwy tracking south to terminating in a circle prior to Broad Run. No structures are illustrated within the subject site. Commercial structures are illustrated to the adjoining south of the subject site and off-site to the east of the subject site. Off site to the north of the subject site roads are illustrated inferring development. Off site to the west of the site is illustrated as undeveloped wooded land and field/pasture land.

2013 Topographic Map

The subject site and adjoining areas are illustrated much the same as in the 1995 topographic map, with the exception that no structures are illustrated in the 2013 topographic map.

4.4.4 Historic City Directories

As part of this assessment, KCI reviewed the EDR City Directory Report for the subject site and the surrounding properties. City directories dated 1992-2013 were reviewed at approximately five-year intervals. A copy of the EDR City Directory is included in Appendix H.

The EDR City Directory review indicated that the subject sites parcel 001 (45005 Russell Branch Pkwy) and parcel 009 (45005 Russell Branch Pkwy) were listed in the 2013 directory as follows:

2013

- Parcel 001, 45050 Russell Branch Pkwy – Security Public Storage
- Parcel 009, 45005 Russell Branch Pkwy - Inovant Visa Visa OCX

No subject site addresses were not listed in the 2008, 2003, 1999, 1995, and 1992 city directories.

One adjacent property located to the north of the subject sites parcel 010, 45150 Russell Branch Pkwy, was listed as the follows:

2013

- 45150 Russell Branch Pkwy – Allstate; Friends & Company; Graduate School of Islamic & Socia; Heritage Education Trust; Russell Branch Partners, LLC; and Strayer University.

2008

- 45150 Russell Branch Pkwy – Cordoba University; Graduate School of Islam; Huntley NYCE & Associates; and Strayer University.

2003

- 45150 Russell Branch Pkwy – Huntley NYCE & Associates; Sirius Management Technologies; and Strayer University.

1999

- 45150 Russell Branch Pkwy – Checkfree Corporation Development Office; Huntley NYCE & Associates; International Society Carotid Artery Therapy; Medicorp; Parsay Mo Ins; Vaw; and Strayer University.

1995

- 45150 Russell Branch Pkwy –. Huntley NYCE & Associates; International Business & Tech; Intl Bus&Tech Cnslt; Nationwide Ins Sales; Nationwide Insurance Co; Prudential Insurance Co; and Strayer College Loudon Campus.

1992

- 45150 Russell Branch Pkwy –.Allstate Insurance; and Intl Bus Cnslts Inc.

The properties surrounding the subject site were occupied primarily by commercial and residential properties. No RECs appear to be associated with the listed historical occupants on the subject site and surrounding properties.

4.5 Environmental Lien Search

At KCI's request, EDR completed a review of land records and title information pertaining to the subject site in order to search for evidence of Environmental Liens or Activity and Use Limitations. EDR did not find evidence of any Environmental Liens or Activity and Use Limitations associated with the subject site. A copy of the EDR Lien Search Report is included in Appendix I.

4.6 Vapor Encroachment Screen

KCI completed a Vapor Encroachment Screening (VES) for the subject site using The EDR Vapor Encroachment Condition (VEC) Application. The purpose of the VES was to evaluate the potential for contaminated vapors migrating onto the subject site as a result of contaminated soil and groundwater on or near the subject site. The VES was completed in general accordance with the requirements of ASTM E2600-10, "Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions."

One property, National Association of Letter Carriers (NALC) Health Benefit Plan, at 20547 Waverly Ct, located adjacent to the south of the subject site, was identified within the ASTM-specified approximate minimum search distance (0.33 mile for chemicals of concern and 0.10 mile for petroleum). The following incidents were reported at the NALC site:

- An approximate 50 gallon diesel oil spill reported on 01/23/2007 from a ruptured saddle tank that struck a light pole. The spill was reported to have entered the storm drain but did not enter Broad Run to the south of the NALC property. A site cleanup took place with the placement of absorbents and the storm drain was power washed. A closure letter was sent on 06/11/2007.

- A small quantity mercury spill occurred when a blood pressure gauge was knocked over in the health clinic. Mercury was reported on the carpet. A contractor was contacted for the mercury cleanup. Disposal certificates and manifests were generated and a closure letter was sent on 06/11/2007.

The NALC property slopes steeply to the south southwest towards Broad Run. Based on the Spills downgradient locations, and reported cleanup and closure, the NALC property does not appear to represent a VEC to the subject site at this time.

4.7 Previous Environmental Reports

No previous environmental reports were located for review during the course of this ESA.

5.0 Site Reconnaissance

As part of this assessment, KCI conducted a visual site reconnaissance of the subject site. The site reconnaissance was performed to search for evidence of: hazardous waste/materials; leaks or spills; stressed vegetation or soil discoloration; drinking water/environmental monitoring wells; environmental remediation activities; storage drums; industrial or commercial refuse; herbicide or pesticide containers; farm waste; septic systems; aboveground storage tanks (ASTs); underground storage tanks (USTs); pipelines; industrial/manufacturing or similar environmentally-sensitive operations or conditions; rail spurs; ruins; landfills or illicit dumping; air emissions/waste water discharges; leachate or seeps; surface or ground water contamination; and/or PCB-containing articles.

5.1 Methodology and Limiting Conditions

Mr. Douglas Talaber, completed the site reconnaissance on May 18th, 2015. Mr. Talaber performed the site reconnaissance by completing a walk around the perimeter of the subject site, followed by regularly-spaced traverses of the exterior portions of the property, and observations of the interior of the onsite structures. In addition, KCI conducted a brief reconnaissance of properties located adjacent to the subject site, as well as other nearby properties. Site photographs obtained during the site reconnaissance are included in Appendix A to this report.

5.2 General Site Setting

Virginia Route 7 (Harry Byrd Hwy) bisects the subject site between Richfield Way (south of Route7) and George Washington Boulevard (north of Route 7). The subject site and its immediate vicinity south of Route 7 are comprised of commercial business park development, wooded areas and vacant undeveloped lots. A tributary stream of Broad Run tracks north/south under Russell Branch Road and under the approximate center section of Parcel 006.

The subject site and its immediate vicinity north of Route 7 are comprised of commercial business park development. Radiating further out from the portion of the subject site located north of Route 7, are retail venues, George Washington College science and technology research campus, and residential town homes.

5.3 Interior and Exterior Observations

No structures are located on the proposed eight (8) partial take parcels and one (1) full take parcel that makes up the subject site for this ESA. During the performance of this ESA, KCI observed all subject site parcels to search for evidence of Recognized Environmental Conditions (RECs). Information provided in the following sections details observations made during the site reconnaissance. Additional information revealed during this assessment has also been incorporated into these sections as necessary.

5.3.1 Solid and Hazardous Waste Generation, Storage, and Disposal

KCI identified no solid and hazardous waste generation, storage, and disposal during the site reconnaissance.

5.3.2 Underground and Aboveground Storage Tanks

KCI inspected the project site for evidence of aboveground storage tanks (ASTs) such as concrete pads, piping or secondary containment systems, pedestals, or steel support structures and evidence of underground storage tanks (USTs) such as vent pipes, fill caps, fuel pumps, or concrete islands. Based on KCI's observations during the site reconnaissance and the review of environmental regulatory databases, has not identified any evidence of current or historic USTs and/or ASTs at the subject site.

5.3.3 Drums and Bulk Storage Containers

KCI identified no drums or bulk storage containers at the subject site during the site reconnaissance.

5.3.4 Chemical Storage Areas

During the site reconnaissance, KCI did not observe any chemical storage areas at the subject site.

5.3.5 Potential Sources of Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are synthetic organic chemicals used in some electrical transformers, hydraulic systems, fluorescent light ballasts, electrical panels, or other similar equipment. PCBs can be found in liquid, solid or vapor form, and are usually colorless or light yellow. PCB content in electrical transformers has been categorized into three classifications by the federal government. Those units that contain less than 50 parts per million (ppm) are defined as non-PCB. Units that contain between 50 ppm and less than 500 ppm of PCBs are defined as PCB-contaminated. Units with a PCB content of 500 ppm and greater are classified as PCB transformers. The production of PCBs was stopped in the U.S. in 1977 because of mounting evidence that they build up in the environment and cause harmful effects.

During the site reconnaissance, KCI did not observe any electrical transformers at the subject site.

5.3.6 Unusual Odors

KCI identified no unusual odors during the site reconnaissance.

5.3.7 Pools of Liquid

KCI did not identify any pools of liquid during the site reconnaissance.

5.3.8 Pits, Ponds, and Lagoons

KCI did not identify any pits or lagoons during the site reconnaissance.

5.3.9 Staining or Stressed Vegetation

KCI did not identify staining or stressed vegetation during the reconnaissance.

5.3.10 Drains and Sumps

Drains and sumps can provide a route for hazardous materials, chemicals, or other contaminants to migrate into the subject site's soil and/or groundwater in the event that a release of such materials occurs. During the reconnaissance of the subject site, KCI observed concrete stromwater drains along Richfield way, Waverly Ct, Russell Branch Pkwy, and George Washington Blvd.

5.3.11 Wells and Septic Systems

The subject site area is currently connected to the sanitary sewer system and is supplied with municipal water. KCI did not identify the presence of wells or septic systems at the subject site

6.0 Interviews

KCI interviewed Mr. Criag Johnson, Manager for Security Public Storage at 45050 Russell Branch and located to the adjacent west of the subject site. He has been manager on the subject site since 2015. He is unaware of any fuel tanks, contamination, or environmental issues associated with the subject site.

KCI interviewed Mr. Bruce Calhoun, Facility Manager for National Association of Letter Carriers Health and Benefit Plan (NALC) at 20547 Waverly Ct, and located to the adjacent south of the subject site. He has been associated with the subject site since 1990. He said the NALC facility was constructed in June of 1990. The site has a 500 gallon diesel UST for the emergency generator. The UST is located behind the building by the loading dock. He is unaware of any fuel leaks from the UST. He mentioned that there was a spill incident from a truck that cracked its diesel saddle tank on a light pole concrete pad. He mentioned it was a surface spill and that it did not reach Broad Run which is located to the immediate south of the NALC facility. The topography for the NALC facility slopes steeply to the south so any leak that could possible occur onsite would travel in a southerly direction, away from the subject site. He was not aware of any additional tanks, contamination, or environmental issues associated with the NALC facility or with the subject site.

A "User" Questionnaire was also completed by the Mr. Gandhi Khalid L.P. E. of VDOT (Client) in support of this assessment. Mr. Khalid included only the following paragraph with regards to the subject site: "Not aware of any environmental cleanup liens or contamination. The proposed link will be built on the footprint of the earlier linkup between George Washington Blvd. located to the north of Rte. 7 and Richfield way located to the south of Rte. 7. The northern portion of the link up was constructed on an easement whereas the southern portion was no VDOT RW."

7.0 Data Gaps

ASTM defines a data gap as a lack or inability to obtain information via the practice despite good faith efforts by the environmental professional to gather such information. KCI did not identify any Data Gaps for this assessment.

8.0 Findings and Opinion

KCI has completed a Phase I Environmental Site Assessment for the eight (8) partial take parcels and one (1) full take parcel that comprise the subject site. The subject site is located in the immediate vicinity of the intersection of Route 7 and George Washington Boulevard, Ashburn, Virginia 20147. This assessment

was performed to identify RECs in connection with the subject site. A discussion of the significant findings from this assessment is provided below.

8.1 Operating History

Currently, the subject site consists of vacant property located in a commercial business park community. KCI's review of historic topographic maps and aerial photographs suggests that the subject site remained undeveloped wooded land and field/pasture since at least 1894. The subject site was not included on any reviewed databases of environmental concern and KCI did not observe any evidence of hazardous materials or petroleum products at the subject site. KCI concludes that no RECs appear to be associated the current and historic uses of the subject site.

8.2 Drains and Sumps

KCI observed concrete stromwater drains along Richfield Way, Waverly Ct, Russell Branch Pkwy, and George Washington Blvd. Since the drains are for the collection and drainage of storm water, they would not represent an environmental concern to the subject site.

8.8 Off-Site Concerns

During the review of environmental regulatory databases conducted in support of this assessment, KCI identified records of several off-site properties in the vicinity of the subject site. The offsite concerns are discussed in detail below.

Hidden Lane Landfill on Persimmon Lane, located approximately 0.80 miles east/northeast of the subject site, was included on the NPL, SEMS, PRP ICIS, FINDS, ECHO databases.. Hidden Lane Landfill was listed on the National Priorities List in March 2008. Based on the distance from the subject site, and presence of the Broad Run River flowing in a southeasterly direction between Hidden Lane landfill and the subject site, KCI Concludes the inclusion of this property on the NPL, SEMS, PRP ICIS, FINDS, ECHO databases does not represent a REC to the subject site at this time.

Verizon Virginia Inc. site, at 45168 Waterpointe Terrace, located approximately 0.48 miles north of the subject site, was included on the RCRA-NonGen database. No violations were reported in the RCRA-NonGen database. In addition, RCRA – NonGen do not presently generate hazardous waste. Based on the distance and no violation status of this facility, KCI Concludes the inclusion of this property on the RCRA – NonGen databases does not represent a REC to the subject site at this time.

National Association of Letter Carriers (NALC) Health Benefit Plan (LSQ One/NALC Building), at 20547 Waverly Ct, located adjacent to the south of the subject site, was included on the VA SPILLS, VA UST, PA MANIFEST, and VA Financial Assurance List (VA FAL) databases. An approximate 50 gallon diesel oil spill was reported on 01/23/2007 from a ruptured saddle tank that struck a light pole. The spill was reported to have entered the storm drain but did not enter Broad Run to the south of the NALC property. A site cleanup took place with the placement of absorbents and the storm drain was power washed. A closure letter was sent on 06/11/2007. A small quantity mercury spill occurred when a blood pressure gauge was knocked over in the health clinic. Mercury was reported on the carpet. A contractor was contacted for the mercury cleanup. Disposal certificates and manifests were generated and a closure letter was sent on 06/11/2007. No violations were reported for the NALC property in the PA MANIFEST or VA FAL databases. The NALC property is reported to have a 500-gallon diesel tank currently in use for the emergency generator. This UST was observed during the site reconnaissance and was located on

the southwest of the NALC building adjacent to the rear loading dock. The NALC property slopes steeply to the south southwest towards Broad Run at the location of the UST. This UST location was observed to be downgradient of the subject site proprieties. Based on the reported cleanups and closed regulatory status of the VA SPILLS listings, the topographic position of the properties relative to the subject site, lack of any reported groundwater contamination, and the inclusion on the VA FAL database, NACL property does not appear to represent a REC to the subject site at this time.

VISA USA Incorporated (VISA) at 45005 Russel Branch, is located to the adjacent south of the subject site, was included on the VA UST, VA FAL, US AIRS, VA AIRS, FINDS, ECHO, and VA TIER 2 databases. No violations were reported for the VISA facility in the VA FAL, US AIRS, VA AIRS, FINDS, ECHO, and VA TIER 2 databases. VISA is reported to have two (2) 5000-gallon diesel tank currently in use. KCI was denied access to the VISA Center property at the time of the site reconnaissance. However, KCI was able to observe the VISA Center from the partial take OO9 parcel. The VISA facility structures were observed to be located approximately 500ft southwest of the subject sites parcels. The observed topographic gradient of the VISA facility was south to southeast (away from the subject site parcels) towards two storm water management ponds. The storm water management ponds drain to the south southeast into an unnamed tributary stream of Broad Run. The VISA facility is not included in any leaking tank database or reported to have contaminated groundwater. Based on the VISA facilities topographic position of the properties relative to the subject site, lack of any reported groundwater contamination, and the inclusion on the VA FAL database, the VISA property does not appear to represent a REC to the subject site at this time.

Four (4) off-site properties located within the search radius were identified on the VA LTANKS database. Baroody Marie Residence at 20396 White Oak Dr, Chamblin/Walker Residence at 20367 White Oak Dr, Cooney Thomas J and Lourine W Residence at 20261 Dairy Ln, and Shaffer Well at 20170 Youngs Cliff Rd. All four off-site properties have a reported “Closed” site status. Based on a variety of factors including the distances from the subject site (≥ 0.20 miles), and/or closed regulatory status (s), none of the above listed VA LTANKS sites appear to represent a REC to the subject site at this time.

One (1) off-site property located within the search radius was identified on the VA LUST database. Chamblin/Walker Residence at 20367 White Oak Dr, and located approximately 0.6 mil east/northeast of the subject site, was included on VA LUST database. Based on the distance from the subject site, and presence of the Broad Run River flowing in a southeasterly direction between Chamblin/Walker Residence and the subject site, the Chamblin/Walker Residence does not appear to represent a REC to the subject site at this time.

9.0 Conclusions

KCI has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the subject sites proposed eight (8) partial take parcels and one (1) full take parcel located in the immediate vicinity of the intersection of Route 7 and George Washington Boulevard, Ashburn, Virginia 20147. Any exceptions to, or deletions from, this practice are described in Sections 1.4 and/or 1.5 of this report. This assessment has not revealed evidence of RECs in connection with the subject site.

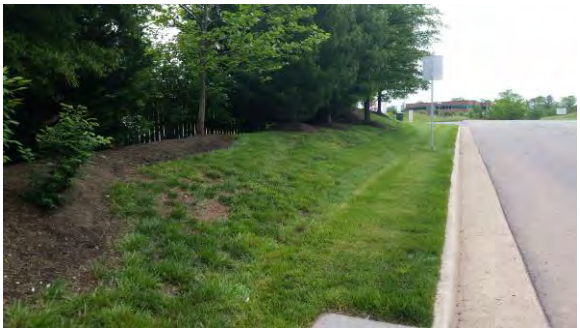
10.0 Opinion Regarding Need for Additional Investigation

KCI concludes that an ASTM Phase II environmental site assessment of the subject site appears unwarranted.

Appendix A

Site Photographs

Site Visit Photo Record
Virginia Department of Transportation
Proposed Route 7/George Washington Boulevard Overpass
May 18, 2016



1. Looking east along partial parcel 001

4. View west of partial parcel 002 parallel to Russel Branch.

2. Looking North along partial parcel 001 at intersection of Richfield Way and Russell Branch.

5. View east of partial parcel 002 parallel to Russel Branch.

3. Looking West (from Parcel 003) at partial parcel 001 (intersection of Richfield Way and Russell Branch).

6. Looking west at full take parcel 003.

7. Looking west within tree line of full take parcel 003.

8. Looking west at parcel parcel 004.

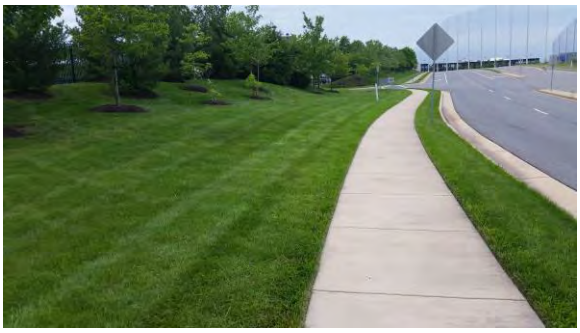
9. View east of partial parcel 005.

10. View east of partial parcel 010.

11. View of adjoining property NALC 500-gallon diesel UST location..

12. View west of partial parcel 008.

13. View northeast of partial parcel 007.



14. View west of partial parcel 009.

15. View north of unnamed tributary of Broad run that borders the west of parcel 001

Appendix B

User Questionnaire

Phase I Environmental Site Assessment "User" Questionnaire

Property Being Assessed: _____

Date of Completion of Questionnaire: _____

"User" of Phase I ESA: _____

Name of "User" Representative: _____

Title: _____

Standard ASTM "User" Questions:

(1.) **Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).**

Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

Not aware of any environmental cleanup liens or contamination. The proposed link will be built on the footprint of the earlier linkup between George Washington Blvd. located to the north of Rte. 7 and Richfield way located to the south of Rte. 7. The northern portion of the link up was constructed on an easement whereas the southern portion was no VDOT RW.

(2.) **Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).**

Are you aware of any Activity and Use Limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

See response to (1) above.

(3.) **Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).**

As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

(4.) **Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29).**

Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

NOVA RW Section has not started any real estate evaluation.

(5.) **Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).**
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

(a.) Do you know the past uses of the property?

(b.) Do you know of specific chemicals that are present or once were present at the property?

(c.) Do you know of spills or other chemical releases that have taken place at the property?

(d.) Do you know of any environmental cleanups that have taken place at the property?

(6.) **The degree of obviousness of the presence of likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).**

As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

Signature of User: _____ Date: _____

Definitions:

Activity and Use Limitations: Legal or physical restrictions or limitations on the use of, or access to, a site or facility: (1) to reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil or ground water on the property, or (2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls, are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil or ground water on the property.

Actual Knowledge: The knowledge actually possessed by an individual who is a real person, rather than an entity. Actual knowledge is to be distinguished from constructive knowledge that is knowledge imputed to an individual or entity.

Recognized Environmental Conditions: The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions.

Reasonably Ascertainable: Information that is (1) publicly available, (2) obtainable from its source within reasonable time and cost constraints, and (3) practically reviewable.

Appendix C

Environmental Database Report

RT 7/George Wash Blvd Overpass - Phase I
45050 Russell Branch Pkwy
Ashburn, VA 20147

Inquiry Number: 4615723.2s
May 11, 2016

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

45050 RUSSELL BRANCH PKWY
ASHBURN, VA 20147

COORDINATES

Latitude (North):	39.0489220 - 39˚ 2' 56.11''
Longitude (West):	77.4390570 - 77˚ 26' 20.60''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	288924.6
UTM Y (Meters):	4324828.5
Elevation:	240 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5948990 STERLING, VA
Version Date:	2013

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120520, 20110629, 20120511
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
45050 RUSSELL BRANCH PKWY
ASHBURN, VA 20147

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
Reg	HIDDEN LANE LANDFILL	OFF OF PERSIMMON LN,	NPL, SEMS, PRP, ICIS, FINDS, ECHO	Same	4211, 0.798, ENE
A1	NALC HEALTH BENEFIT	20547 WAVERLY COURT	PA MANIFEST	Higher	422, 0.080, West
A2	NALC-HBP	20547 WAVERLY COURT	VA SPILLS	Higher	422, 0.080, West
A3	NALC	20547 WAVERLY CT	VA SPILLS	Higher	422, 0.080, West
A4	LSQ ONE/NALC BUILDIN	20547 WAVERLY CT	VA UST, VA Financial Assurance	Higher	422, 0.080, West
B5	VISA USA INCORPORATE	45005 RUSSEL BRANCH	US AIRS, FINDS, ECHO	Lower	719, 0.136, West
B6	COMMONWEALTH OCX	45005 RUSSEL BRANCH	VA UST, VA Financial Assurance	Lower	719, 0.136, West
B7	VISA USA INCORPORATE	45005 RUSSEL BRANCH	VA AIRS	Lower	719, 0.136, West
B8	VISA COMMONWEALTH CE	45005 RUSSELL BRANCH	VA TIER 2	Lower	719, 0.136, West
9	UNIVERSITY CENTER	45299 RESEARCH PL	VA UST	Lower	1474, 0.279, ENE
10		45168 WATERPOINTE TE	RCRA NonGen / NLR	Higher	2538, 0.481, North
C11	BAROODY MARIE RESIDE	20396 WHITE OAK DR	VA LTANKS	Higher	3259, 0.617, ENE
C12	CHAMBLIN WALKER RESI	20376 WHITE OAK DR	VA LTANKS	Higher	3349, 0.634, ENE
C13	CHAMBLIN/WALKER RESI	20376 WHITE OAK DRIV	VA LUST	Higher	3349, 0.634, ENE
14	COONEY THOMAS J AND	20261 DAIRY LN	VA LTANKS	Lower	3589, 0.680, NE
15	SHAFFER WELL	20170 YOUNGS CLIFF R	VA LTANKS	Lower	3751, 0.710, NNE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

Federal ERNS list

ERNS ..... Emergency Response Notification System

EXECUTIVE SUMMARY

State- and tribal - equivalent CERCLIS

VA SHWS..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State and tribal landfill and/or solid waste disposal site lists

VA SWF/LF..... Solid Waste Management Facilities

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
VA AST..... Registered Petroleum Storage Tanks
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

VA ENG CONTROLS..... Engineering Controls Sites Listing
VA INST CONTROL..... Voluntary Remediation Program Database

State and tribal voluntary cleanup sites

VA VCP..... Voluntary Remediation Program
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

VA BROWNFIELDS..... Brownfields Site Specific Assessments

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
ODI..... Open Dump Inventory

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
US CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information

EXECUTIVE SUMMARY

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
VA SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PADS	PCB Activity Database System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US MINES	Mines Master Index File
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
VA NPDES	Comprehensive Environmental Data System
VA COAL ASH	Coal Ash Disposal Sites
VA DRYCLEANERS	Drycleaner List
VA ENF	Enforcement Actions Data
VA UIC	Underground Injection Control Wells
FUELS PROGRAM	EPA Fuels Program Registered Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historic Gas Stations
EDR Hist Cleaner	EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

VA RGA LF	Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

VA RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: Also known as Superfund, the National Priority List database is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. The source of this database is the U.S. EPA.

A review of the NPL list, as provided by EDR, and dated 03/07/2016 has revealed that there is 1 NPL site within approximately 1.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HIDDEN LANE LANDFILL	***OFF OF PERSIMMON LN,***	***ENE 1/2 - 1 (0.798 mi.)***	***0***	***8***

State and tribal leaking storage tank lists

VA LUST: The Leaking Underground Storage Tank Database.

A review of the VA LUST list, as provided by EDR, and dated 05/18/2004 has revealed that there is 1 VA LUST site within approximately 0.75 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CHAMBLIN/WALKER RESI Facility Status: Open Pollution Complaint #: 93-2118 Facility ID: 3026852	20376 WHITE OAK DRIV	ENE 1/2 - 1 (0.634 mi.)	C13	35

VA LTANKS: The Leaking Tanks Database contains current Leaking petroleum tanks. The data comes from the Department of Environmental Quality.

A review of the VA LTANKS list, as provided by EDR, and dated 02/03/2016 has revealed that there are 4 VA LTANKS sites within approximately 0.75 miles of the target property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BAROODY MARIE RESIDE Facility Status: Open CEDS Facility Id: 200000881387 Pollution Complaint #: 20163035	20396 WHITE OAK DR	ENE 1/2 - 1 (0.617 mi.)	C11	34
CHAMBLIN WALKER RESI Facility Status: Closed CEDS Facility Id: 200000079638 Pollution Complaint #: 19932118	20376 WHITE OAK DR	ENE 1/2 - 1 (0.634 mi.)	C12	35

Lower Elevation	Address	Direction / Distance	Map ID	Page
COONEY THOMAS J AND Facility Status: Closed CEDS Facility Id: 200000879703 Pollution Complaint #: 20153127	20261 DAIRY LN	NE 1/2 - 1 (0.680 mi.)	14	35
SHAFFER WELL Facility Status: Closed CEDS Facility Id: 200000087008 Pollution Complaint #: 19901313	20170 YOUNGS CLIFF R	NNE 1/2 - 1 (0.710 mi.)	15	35

State and tribal registered storage tank lists

VA UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Quality's Underground Storage Tank Data Notification Information.

A review of the VA UST list, as provided by EDR, and dated 02/03/2016 has revealed that there are 3 VA UST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LSQ ONE/NALC BUILDIN Tank Status: CURR IN USE Facility Id: 3037539 CEDS Facility ID: 200000197185	***20547 WAVERLY CT***	***W 0 - 1/8 (0.080 mi.)***	***A4***	***18***

Lower Elevation	Address	Direction / Distance	Map ID	Page
COMMONWEALTH OCX Tank Status: CURR IN USE Facility Id: 3040986 CEDS Facility ID: 200000847213	***45005 RUSSEL BRANCH***	***W 1/8 - 1/4 (0.136 mi.)***	***B6***	***25***
UNIVERSITY CENTER Tank Status: PERM OUT OF USE Facility Id: 3016514 CEDS Facility ID: 200000096359	45299 RESEARCH PL	ENE 1/4 - 1/2 (0.279 mi.)	9	32

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Records of Emergency Release Reports

VA SPILLS: The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment. PREP staff often work to assist local emergency responders, other state agencies, federal agencies, and responsible parties, as may be needed, to manage pollution incidents. Oil spills, fish kills, and hazardous materials spills are examples of incidents that may involve the DEQ's PREP Program.

A review of the VA SPILLS list, as provided by EDR, and dated 02/03/2016 has revealed that there are 2 VA SPILLS sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NALC-HBP IR Number: 2007-N-0492 IR Number: 2007-N-0579 Incident Response IR #: 2007-N-0579 Date Closed: 6/11/2007	20547 WAVERLY COURT	W 0 - 1/8 (0.080 mi.)	A2	12
NALC Incident Response IR #: 2007-N-0492 Date Closed: 1/29/2007	20547 WAVERLY CT	W 0 - 1/8 (0.080 mi.)	A3	16

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/09/2015 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	45168 WATERPOINTE TE	N 1/4 - 1/2 (0.481 mi.)	10	33

US AIRS: The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

A review of the US AIRS list, as provided by EDR, and dated 10/20/2015 has revealed that there is 1 US AIRS site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
VISA USA INCORPORATE	***45005 RUSSEL BRANCH***	***W 1/8 - 1/4 (0.136 mi.)***	***B5***	***20***

EXECUTIVE SUMMARY

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 07/20/2015 has revealed that there is 1 FINDS site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
VISA USA INCORPORATE	***45005 RUSSEL BRANCH***	***W 1/8 - 1/4 (0.136 mi.)***	***B5***	***20***

VA AIRS: A listing of permitted Airs facilities.

A review of the VA AIRS list, as provided by EDR, and dated 03/03/2016 has revealed that there is 1 VA AIRS site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
VISA USA INCORPORATE Region Number: 73643 Facility ID: 200000847213 Operating Status: Operating	45005 RUSSEL BRANCH	W 1/8 - 1/4 (0.136 mi.)	B7	28

VA Financial Assurance: A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

A review of the VA Financial Assurance list, as provided by EDR, and dated 02/12/2016 has revealed that there are 2 VA Financial Assurance sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LSQ ONE/NALC BUILDIN Facility ID: 3037539 ROF Own Id: 46143	***20547 WAVERLY CT***	***W 0 - 1/8 (0.080 mi.)***	***A4***	***18***

Lower Elevation	Address	Direction / Distance	Map ID	Page
COMMONWEALTH OCX Facility ID: 3040986 ROF Own Id: 44838	***45005 RUSSEL BRANCH***	***W 1/8 - 1/4 (0.136 mi.)***	***B6***	***25***

EXECUTIVE SUMMARY

PA MANIFEST: Hazardous waste manifest information.

A review of the PA MANIFEST list, as provided by EDR, has revealed that there is 1 PA MANIFEST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NALC HEALTH BENEFIT Generator EPA Id: VAP000016484	20547 WAVERLY COURT	W 0 - 1/8 (0.080 mi.)	A1	11

VA TIER 2: A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

A review of the VA TIER 2 list, as provided by EDR, and dated 12/31/2013 has revealed that there is 1 VA TIER 2 site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
VISA COMMONWEALTH CE	45005 RUSSELL BRANCH	W 1/8 - 1/4 (0.136 mi.)	B8	31

ECHO: ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

A review of the ECHO list, as provided by EDR, and dated 09/20/2015 has revealed that there is 1 ECHO site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
VISA USA INCORPORATE	***45005 RUSSEL BRANCH***	***W 1/8 - 1/4 (0.136 mi.)***	***B5***	***20***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

Site Name	Database(s)
QUARLES/SHELL	VA LUST
STUDIBAKER RESIDENCE	VA LUST

OVERVIEW MAP - 4615723.2S

0 1/2 1 2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: RT 7/George Wash Blvd Overpass - Phase I	CLIENT: KCI Technologies, Inc.
ADDRESS: 45050 Russell Branch Pkwy Ashburn VA 20147	CONTACT: Douglas Talaber INQUIRY #: 4615723.2s
LAT/LONG: 39.048922 / 77.439057	DATE: May 11, 2016 9:53 am

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DETAIL MAP - 4615723.2S

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: RT 7/George Wash Blvd Overpass - Phase I	CLIENT: KCI Technologies, Inc.
ADDRESS: 45050 Russell Branch Pkwy Ashburn VA 20147	CONTACT: Douglas Talaber INQUIRY #: 4615723.2s
LAT/LONG: 39.048922 / 77.439057	DATE: May 11, 2016 9:53 am

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.250		0	0	0	1	0	1
Proposed NPL	1.250		0	0	0	0	0	0
NPL LIENS	0.250		0	0	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.250		0	0	0	0	0	0
Federal CERCLIS list								
FEDERAL FACILITY	0.750		0	0	0	0	NR	0
SEMS	0.750		0	0	0	1	NR	1
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.750		0	0	0	0	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.250		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.750		0	0	0	0	NR	0
Federal RCRA generators list								
RCRA-LQG	0.500		0	0	0	NR	NR	0
RCRA-SQG	0.500		0	0	0	NR	NR	0
RCRA-CESQG	0.500		0	0	0	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.750		0	0	0	0	NR	0
US ENG CONTROLS	0.750		0	0	0	0	NR	0
US INST CONTROL	0.750		0	0	0	0	NR	0
Federal ERNS list								
ERNS	0.250		0	0	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
VA SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
State and tribal landfill and/or solid waste disposal site lists								
VA SWF/LF	0.750		0	0	0	0	NR	0
State and tribal leaking storage tank lists								
VA LUST	0.750		0	0	0	1	NR	1
INDIAN LUST	0.750		0	0	0	0	NR	0
VA LTANKS	0.750		0	0	0	4	NR	4
State and tribal registered storage tank lists								
FEMA UST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
VA UST	0.500		1	1	1	NR	NR	3
VA AST	0.500		0	0	0	NR	NR	0
INDIAN UST	0.500		0	0	0	NR	NR	0
State and tribal institutional control / engineering control registries								
VA ENG CONTROLS	0.750		0	0	0	0	NR	0
VA INST CONTROL	0.750		0	0	0	0	NR	0
State and tribal voluntary cleanup sites								
VA VCP	0.750		0	0	0	0	NR	0
INDIAN VCP	0.750		0	0	0	0	NR	0
State and tribal Brownfields sites								
VA BROWNFIELDS	0.750		0	0	0	0	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.750		0	0	0	0	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
INDIAN ODI	0.750		0	0	0	0	NR	0
DEBRIS REGION 9	0.750		0	0	0	0	NR	0
ODI	0.750		0	0	0	0	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.250		0	0	NR	NR	NR	0
US CDL	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS 2	0.250		0	0	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.250		0	0	NR	NR	NR	0
VA SPILLS	0.250		2	0	NR	NR	NR	2
VA SPILLS 90	0.250		0	0	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.500		0	0	1	NR	NR	1
FUDS	1.250		0	0	0	0	0	0
DOD	1.250		0	0	0	0	0	0
SCRD DRYCLEANERS	0.750		0	0	0	0	NR	0
US FIN ASSUR	0.250		0	0	NR	NR	NR	0
EPA WATCH LIST	0.250		0	0	NR	NR	NR	0
2020 COR ACTION	0.500		0	0	0	NR	NR	0
TSCA	0.250		0	0	NR	NR	NR	0
TRIS	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SSTS	0.250		0	0	NR	NR	NR	0
ROD	1.250		0	0	0	0	0	0
RMP	0.250		0	0	NR	NR	NR	0
RAATS	0.250		0	0	NR	NR	NR	0
PRP	0.250		0	0	NR	NR	NR	0
PADS	0.250		0	0	NR	NR	NR	0
ICIS	0.250		0	0	NR	NR	NR	0
FTTS	0.250		0	0	NR	NR	NR	0
MLTS	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	0.250		0	0	NR	NR	NR	0
COAL ASH EPA	0.750		0	0	0	0	NR	0
PCB TRANSFORMER	0.250		0	0	NR	NR	NR	0
RADINFO	0.250		0	0	NR	NR	NR	0
HIST FTTS	0.250		0	0	NR	NR	NR	0
DOT OPS	0.250		0	0	NR	NR	NR	0
CONSENT	1.250		0	0	0	0	0	0
INDIAN RESERV	1.250		0	0	0	0	0	0
FUSRAP	1.250		0	0	0	0	0	0
UMTRA	0.750		0	0	0	0	NR	0
LEAD SMELTERS	0.250		0	0	NR	NR	NR	0
US AIRS	0.250		0	1	NR	NR	NR	1
US MINES	0.500		0	0	0	NR	NR	0
FINDS	0.250		0	1	NR	NR	NR	1
UXO	1.250		0	0	0	0	0	0
DOCKET HWC	0.250		0	0	NR	NR	NR	0
VA AIRS	0.250		0	1	NR	NR	NR	1
VA NPDES	0.250		0	0	NR	NR	NR	0
VA COAL ASH	0.750		0	0	0	0	NR	0
VA DRYCLEANERS	0.500		0	0	0	NR	NR	0
VA ENF	0.250		0	0	NR	NR	NR	0
VA Financial Assurance	0.250		1	1	NR	NR	NR	2
PA MANIFEST	0.250		1	0	NR	NR	NR	1
VA TIER 2	0.250		0	1	NR	NR	NR	1
VA UIC	0.250		0	0	NR	NR	NR	0
ECHO	0.250		0	1	NR	NR	NR	1
FUELS PROGRAM	0.500		0	0	0	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.250		0	0	0	0	0	0
EDR Hist Auto	0.375		0	0	0	NR	NR	0
EDR Hist Cleaner	0.375		0	0	0	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
VA RGA LF	0.250		0	0	NR	NR	NR	0
VA RGA LUST	0.250		0	0	NR	NR	NR	0
- Totals --		0	5	7	2	7	0	21

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

NPL	**HIDDEN LANE LANDFILL**	**NPL**	**1010082282**
Region	**OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7**	**SEMS**	**VAD980829030**
ENE	**STERLING, VA 21065**	**PRP**	
1/2-1		**ICIS**	
4211 ft.		**FINDS**	
		ECHO	

NPL:

EPA ID:	VAD980829030
Cerclis ID:	302762
EPA Region:	3
Federal:	N
Final Date:	2008-03-19 00:00:00
Site Score:	50
Latitude:	39.053579999999997
Longitude:	-77.4255

Site Details:

Site Name:	HIDDEN LANE LANDFILL
Site Status:	Proposed
Site Zip:	21065
Site City:	STERLING
Site State:	VA
Federal Site:	No
Site County:	LOUDOUN
EPA Region:	03
Date Proposed:	09/19/07
Date Deleted:	Not reported
Date Finalized:	/ /

SEMS:

Site ID:	302762
EPA ID:	VAD980829030
Federal Facility:	N
NPL:	Currently on the Final NPL
Non NPL Status:	Not reported

PRP:

PRP name:	ALBERT E. MORAN
	ESTATE OF ALBERT E. MORAN
	ESTATE OF PHILIP W. SMITH
	ESTATE OF SARAH STOCKTON MORAN
	JOYCE MCPHEE
	PHILIP W. SMITH
	PHILIP W. SMITH RECOVERABLE TRUST

ICIS:

Enforcement Action ID:	03-2012-0073
FRS ID:	110028288528
Program ID:	CERCLIS VAD980829030
Action Name:	HIDDEN LANE LANDFILL
Full Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7 STERLING VA 21065
State:	Virginia
Facility Name:	HIDDEN LANE LANDFILL
Facility Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7 STERLING, VA 21065

HIDDEN LANE LANDFILL (Continued) **1010082282**

Enforcement Action Type: CERCLA 122h Agrmt For Cost Recovery
Facility County: LOUDOUN
EPA Region #: 3

Enforcement Action ID: 03-2012-0073
FRS ID: 110028288528
Program ID: FRS 110028288528
Action Name: HIDDEN LANE LANDFILL
Full Address: OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7 STERLING VA 21065
State: Virginia
Facility Name: HIDDEN LANE LANDFILL
Facility Address: OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
STERLING, VA 21065
Enforcement Action Type: CERCLA 122h Agrmt For Cost Recovery
Facility County: LOUDOUN
EPA Region #: 3

Enforcement Action ID: 03-2012-0073
FRS ID: 110028288528
Program ID: RE-POWERING VAD980829030-71334
Action Name: HIDDEN LANE LANDFILL
Full Address: OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7 STERLING VA 21065
State: Virginia
Facility Name: HIDDEN LANE LANDFILL
Facility Address: OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
STERLING, VA 21065
Enforcement Action Type: CERCLA 122h Agrmt For Cost Recovery
Facility County: LOUDOUN
EPA Region #: 3

Enforcement Action ID: 03-2008-0362
FRS ID: 110028288528
Program ID: CERCLIS VAD980829030
Action Name: HIDDEN LANE LANDFILL
Full Address: OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7 STERLING VA 21065
State: Virginia
Facility Name: HIDDEN LANE LANDFILL
Facility Address: OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
STERLING, VA 21065
Enforcement Action Type: CERCLA 122A/104A Agrmt For RI/FS
Facility County: LOUDOUN
EPA Region #: 3

Enforcement Action ID: 03-2008-0362
FRS ID: 110028288528
Program ID: FRS 110028288528
Action Name: HIDDEN LANE LANDFILL
Full Address: OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7 STERLING VA 21065
State: Virginia
Facility Name: HIDDEN LANE LANDFILL
Facility Address: OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
STERLING, VA 21065
Enforcement Action Type: CERCLA 122A/104A Agrmt For RI/FS
Facility County: LOUDOUN
EPA Region #: 3

Enforcement Action ID: 03-2008-0362

HIDDEN LANE LANDFILL (Continued) **1010082282**

FRS ID:	110028288528
Program ID:	RE-POWERING VAD980829030-71334
Action Name:	HIDDEN LANE LANDFILL
Full Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7 STERLING VA 21065
State:	Virginia
Facility Name:	HIDDEN LANE LANDFILL
Facility Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7 STERLING, VA 21065
Enforcement Action Type:	CERCLA 122A/104A Agrmt For RI/FS
Facility County:	LOUDOUN
EPA Region #:	3

Program ID:	CERCLIS VAD980829030
Facility Name:	HIDDEN LANE LANDFILL
Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Program ID:	FRS 110028288528
Facility Name:	HIDDEN LANE LANDFILL
Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Program ID:	RE-POWERING VAD980829030-71334
Facility Name:	HIDDEN LANE LANDFILL
Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Program ID:	CERCLIS VAD980829030
Facility Name:	HIDDEN LANE LANDFILL
Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Program ID:	FRS 110028288528
Facility Name:	HIDDEN LANE LANDFILL
Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Program ID:	RE-POWERING VAD980829030-71334
Facility Name:	HIDDEN LANE LANDFILL
Address:	OFF OF PERSIMMON LN, ~3/4 MILE N OF RT 7
Tribal Indicator:	N

HIDDEN LANE LANDFILL (Continued) **1010082282**

Fed Facility: No
NAIC Code: Not reported
SIC Code: Not reported

FINDS:

Registry ID: 110028288528

Environmental Interest/Information System

CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

ECHO:
Envid: 1010082282
Registry ID: 110028288528
DFR URL: http://echo.epa.gov/detailed_facility_report?fid=110028288528

A1 **NALC HEALTH BENEFIT PLAN** **PA MANIFEST** **S109246648**
West **20547 WAVERLY COURT** **N/A**
< 1/8 **ASHBURN, VA**
0.080 mi.
422 ft. **Site 1 of 4 in cluster A**

Relative:
Higher

Actual:
252 ft.

Manifest Details:
Year: 2007
Manifest Number: 001180871JJK
Manifest Type: Not reported
Generator EPA Id: VAP000016484
Generator Date: 04/12/2007
Mailing Address: Not reported
Mailing City,St,Zip: Not reported
Contact Name: BRUCE CALHOUN
Contact Phone: 703-729-8135
TSD EPA Id: PAD067098822
TSD Date: Not reported
TSD Facility Name: CYCLE CHEM INC
TSD Facility Address: 550 INDUSTRIAL DRIVE

NALC HEALTH BENEFIT PLAN (Continued) **S109246648**

TSD Facility City:	LEWISBERRY
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D009
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	10
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

A2 **NALC-HBP** **VA SPILLS** **S108426930**
West **20547 WAVERLY COURT** **N/A**
< 1/8 **ASHBURN, VA**
0.080 mi.
422 ft. **Site 2 of 4 in cluster A**

Relative:
Higher

Actual:
252 ft.

SPILLS:

Fips City/County:	Loudoun County
Status:	Not reported
Reference Id:	Not reported
IR Number:	2007-N-0492
Associated IR:	Not reported
Incident Date:	08/16/2006
Call Received Date:	01/23/2007
Closure Comments:	See Site Summary for details
Threat To:	Not reported
Terrorism (Y/N):	NO
Characterize Incident:	Not reported
Incident Type:	Petroleum
Incident Subtype:	Petroleum
Materials:	Oil (Fuel-Diesel)(50 - 50 Gallons)
Effect To Receptor:	Not reported
Water Body:	Broad Run
Low Quantity To Water:	-1
High Quantity To Water:	-1
Quantity Units:	Gallons
Other Receptors:	Not reported
RP Company:	Sysco Food Services of Virginia LLC
RP Name:	Kevin Farren
Property Owner:	Not reported
Property Company:	Not reported
Duration Of Event (Hrs):	Not reported
Impacts:	Not reported
Other Impacts:	Not reported
Steps Taken:	Not reported
Steps Taken Description:	Not reported
System Components:	Not reported
Other System Components:	Not reported
Cause Of Event:	Not reported
Corrective Action Taken:	Not reported
Weather Status:	Not reported
Precipitation (Wet):	Not reported
Discharge Type:	Not reported
Discharge Volume:	Not reported

NALC-HBP (Continued) **S108426930**

Unknown Discharge (Y/N):	NO
Site Name:	NALC
Closure Date:	01/29/2007
Orig. Call Incident Description:	Ruptured saddle tank-struck light pole. Product entered storm drain but did not enter Broad Run.
Original Call Material Description:	diesel (Qty=50)
Original Call Location Description:	NALC-20547 Waverly Ct-Ashburn-VA--Loudoun County
Incident Ongoing at time of Call:	Not reported
Agencies Notified (Y/N):	NO
Other Agencies:	Not reported
Permitted (Y/N):	NO
Call Reported By Company Name:	Bruce Calhoun
Call Property Owner Company Name:	Not reported
Call Property Owner Name:	Not reported
Site Summary:	GEC conducted site clean up. Adsorbent placed. Storm drain power washed. Incident not reported until 1/23/07. Clean up report received.
Fips City/County:	Loudoun County
Status:	Not reported
Reference Id:	Not reported
IR Number:	2007-N-0579
Associated IR:	Not reported
Incident Date:	03/07/2007
Call Received Date:	03/07/2007
Closure Comments:	See Site Summary for details
Threat To:	Not reported
Terrorism (Y/N):	NO
Characterize Incident:	Not reported
Incident Type:	Waste
Incident Subtype:	Hazardous Waste
Materials:	Mercury(-1 - -1 Unknown)
Effect To Receptor:	Not reported
Water Body:	Not reported
Low Quantity To Water:	Not reported
High Quantity To Water:	Not reported
Quantity Units:	Not reported
Other Receptors:	Not reported
RP Company:	Not reported
RP Name:	Not reported
Property Owner:	Not reported
Property Company:	Not reported
Duration Of Event (Hrs):	Not reported
Impacts:	Not reported
Other Impacts:	Not reported
Steps Taken:	Not reported
Steps Taken Description:	Not reported
System Components:	Not reported
Other System Components:	Not reported
Cause Of Event:	Not reported
Corrective Action Taken:	Not reported
Weather Status:	Not reported
Precipitation (Wet):	Not reported
Discharge Type:	Not reported
Discharge Volume:	Not reported
Unknown Discharge (Y/N):	NO
Site Name:	NALC-HBP
Closure Date:	06/11/2007

NALC-HBP (Continued) **S108426930**

Orig. Call Incident Description:	Blood pressue gauge knocked over in health clinic. Mercury on carpet.
Original Call Material Description:	mercury (Qty=small quantity)
Original Call Location Description:	NALC-HBP-20547 Waverly Court-Ashburn-VA--Loudoun County
Incident Ongoing at time of Call:	Not reported
Agencies Notified (Y/N):	NO
Other Agencies:	Not reported
Permitted (Y/N):	NO
Call Reported By Company Name:	Bruce Calhoun
Call Property Owner Company Name:	Not reported
Call Property Owner Name:	Not reported
Site Summary:	Contractor contacted for clean up. Disposal certificates and manifests received. Closure letter sent 6/11/07.

SPILLS NO:

Region:	NO
Id:	Not reported
Incident Summary:	Not reported
Date In:	3/7/2007
Date Closed:	6/11/2007
Pollution Type:	Not reported
Responsible Party:	Not reported
Facility Status:	**Not reported**
Owner:	Not reported
Facility Contact:	Not reported
Facility Permitted:	0
Facility Telephone:	Not reported
Time In:	12:41:00 PM
Reported By Name:	Bruce Calhoun
Reported By Telephone:	Not reported
Reported By Affiliation/Addr:	NALC
Incident Response IR #:	2007-N-0579
Responsible Party Address:	Not reported
Responsible Party City:	Not reported
Responsible Party State:	Not reported
Responsible Party Zip:	Not reported
Responsible Party Contact:	Not reported
Responsible Party Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City:	Not reported
Owner State:	Not reported
Owner Zip:	Not reported
Owner Contact:	Not reported
Owner Telephone:	Not reported
Incident Date:	3/7/2007
Incident Time:	Not reported
Petroleum:	0
Solid Waste:	0
Hazardous Waste:	-1
Water:	0
Air:	0
Sewage:	0
Fish Kill:	0
Threat Wetlands:	0
Wetlands:	0
Material Released:	mercury
Possible Receptors:	Not reported

NALC-HBP (Continued) **S108426930**

Quantity Released:	small quantity
Unit Released:	Not reported
Quantity In Water:	na
Receiving Waters:	Not reported
River Basin:	Not reported
Inspection Date:	Not reported
Call Date:	Not reported
Inspector:	Not reported
Response Due:	Not reported
Response Received Date:	Not reported
Visit Needed:	0
Open:	0
Air Referral Date:	Not reported
Air Reg/ Permit Number:	Not reported
Waste Referral Date:	Not reported
Epa Id Or Permit Number:	Not reported
Water Referral Date:	Not reported
Water Permit Number:	Not reported
Remediation Referral Date:	Not reported
Remediation Pc Number:	Not reported
Enforcement Referral Date:	Not reported
Nov Number:	Not reported
Pc Number:	Not reported
Receive By:	Not reported
Case Officer:	Not reported
Case Type:	Not reported
Street Address:	Not reported
Polllutant:	Not reported
Impact:	Not reported
Spill Time:	Not reported
Spill Date:	Not reported
Spill Volume:	Not reported
Measure:	Not reported
Volume In Water:	Not reported
Stream Name:	Not reported
Investigation Date:	Not reported
Closure Date:	Not reported
Lab Results:	Not reported
Target Date:	Not reported
Prep Number:	Not reported
Report Date:	Not reported
Report Time:	Not reported
Pollutant Scr:	Not reported
Volume:	Not reported
Volume Esc:	Not reported
Future Recommendations:	Not reported
Stream Code:	Not reported
Visit Date:	Not reported
Lab Date:	Not reported
File Close Date:	Not reported
Prep Copy:	Not reported
City:	Not reported
Incident Summary:	Blood pressue gauge knocked over in health clinic. Mercury on carpet.
Reported:	Not reported
Results:	Not reported
Inspection Comments:	Contractor contacted for clean up. Disposal certificates and manifests received. Closure letter sent 6/11/07.

NALC-HBP (Continued) **S108426930**

Remarks: Not reported

A3
West
< 1/8
0.080 mi.
422 ft.

NALC **VA SPILLS** **S108426846**
20547 WAVERLY CT **N/A**
ASHBURN, VA

Site 3 of 4 in cluster A

Relative:
Higher

Actual:
252 ft.

SPILLS NO:

Region:	NO
Id:	Not reported
Incident Summary:	Not reported
Date In:	1/23/2007
Date Closed:	1/29/2007
Pollution Type:	Not reported
Responsible Party:	Sysco Food Services of Virginia LLC
Facility Status:	**Not reported**
Owner:	Not reported
Facility Contact:	Bruce Calhoun
Facility Permitted:	0
Facility Telephone:	7037298135
Time In:	Not reported
Reported By Name:	Bruce Calhoun
Reported By Telephone:	7037298135
Reported By Affiliation/Addr:	NALC Health Plan
Incident Response IR #:	2007-N-0492
Responsible Party Address:	5081 South Valley Pike
Responsible Party City:	Harrisonburg
Responsible Party State:	VA
Responsible Party Zip:	22801
Responsible Party Contact:	Kevin Farren
Responsible Party Telephone:	5404323448
Owner Name:	Not reported
Owner Address:	Not reported
Owner City:	Not reported
Owner State:	Not reported
Owner Zip:	Not reported
Owner Contact:	Not reported
Owner Telephone:	Not reported
Incident Date:	8/16/2006
Incident Time:	Not reported
Petroleum:	-1
Solid Waste:	0
Hazardous Waste:	0
Water:	0
Air:	0
Sewage:	0
Fish Kill:	0
Threat Wetlands:	0
Wetlands:	0
Material Released:	diesel
Possible Receptors:	Not reported
Quantity Released:	50
Unit Released:	gallons
Quantity In Water:	unk
Receiving Waters:	Broad Run
River Basin:	Not reported
Inspection Date:	Not reported

NALC (Continued) **S108426846**

Call Date:	Not reported
Inspector:	Not reported
Response Due:	Not reported
Response Received Date:	1/25/2007
Visit Needed:	0
Open:	0
Air Referral Date:	Not reported
Air Reg/ Permit Number:	Not reported
Waste Referral Date:	Not reported
Epa Id Or Permit Number:	Not reported
Water Referral Date:	Not reported
Water Permit Number:	Not reported
Remediation Referral Date:	Not reported
Remediation Pc Number:	Not reported
Enforcement Referral Date:	Not reported
Nov Number:	Not reported
Pc Number:	Not reported
Receive By:	Not reported
Case Officer:	Not reported
Case Type:	Not reported
Street Address:	Not reported
Polllutant:	Not reported
Impact:	Not reported
Spill Time:	Not reported
Spill Date:	Not reported
Spill Volume:	Not reported
Measure:	Not reported
Volume In Water:	Not reported
Stream Name:	Not reported
Investigation Date:	Not reported
Closure Date:	Not reported
Lab Results:	Not reported
Target Date:	Not reported
Prep Number:	Not reported
Report Date:	Not reported
Report Time:	Not reported
Pollutant Scr:	Not reported
Volume:	Not reported
Volume Esc:	Not reported
Future Recommendations:	Not reported
Stream Code:	Not reported
Visit Date:	Not reported
Lab Date:	Not reported
File Close Date:	Not reported
Prep Copy:	Not reported
City:	Not reported
Incident Summary:	Ruptured saddle tank-struck light pole. Product entered storm drain but did not enter Broad Run.
Reported:	Not reported
Results:	Not reported
Inspection Comments:	GEC conducted site clean up. Adsorbent placed. Storm drain power washed. Incident not reported until 1/23/07. Clean up report received.
Remarks:	Not reported

A4 West < 1/8 0.080 mi. 422 ft. | **LSQ ONE/NALC BUILDING**
20547 WAVERLY CT
ASHBURN, VA 20149

VA UST | **U003745694**
VA Financial Assurance | **N/A**

Site 4 of 4 in cluster A

Relative: Higher

Actual: 252 ft.

Facility:

Facility Id:	3037539
Facility Type:	COMMERCIAL
CEDS Facility ID:	200000197185

Owner:

Owner Id:	42756
Owner Name:	Loudoun Square One Limited Partnership
Owner Address:	c/o The Shooshan Company
Owner Address2:	4001 Fairfax Dr Ste. 125
Owner City, State, Zip:	Arlington, VA 22203
Owner Type:	PRIVATE
Number of Active AST:	0
Number of Active UST:	1
Number of Inactive AST:	0
Number of Inactive UST:	0

Owner Id:	46143
Owner Name:	LSQ One Limited Liability Corporation
Owner Address:	7500 Old Gerogetown Rd Floor 15
Owner Address2:	Not reported
Owner City, State, Zip:	Bethesda, MD 20814
Owner Type:	COMMERCIAL
Number of Active AST:	0
Number of Active UST:	1
Number of Inactive AST:	0
Number of Inactive UST:	0

Owner Id:	39393
Owner Name:	LSQ ONE LIMITED PARTNERSHIP
Owner Address:	4001 N FAIRFAX DR, SUITE 125
Owner Address2:	Not reported
Owner City, State, Zip:	ARLINGTON, VA 22203
Owner Type:	COMMERCIAL
Number of Active AST:	0
Number of Active UST:	1
Number of Inactive AST:	0
Number of Inactive UST:	0

UST:

Facility ID:	3037539
Federally Regulated:	Yes
Tank Number:	1
Tank Capacity:	550
Tank Contents:	EMER GENERATOR
Tank Status:	**CURR IN USE**
Tank Type:	UST

Tank Material:

Install Date:	11/1/1989
Tank Materials: Bare Steel	No
Tank Materials: Cath Protect Steel	No
Tank Materials: Epoxy Steel	No

LSQ ONE/NALC BUILDING (Continued) **U003745694**

Tank Materials: Fiberglass	Yes
Tank Materials: Concrete	No
Tank Materials: Composite	No
Tank Materials: Double Walled	No
Tank Materials: Lined Interior	No
Tank Materials: Excav Liner	No
Tank Materials: Insulated Tank Jacket	No
Tank Materials: Repaired	No
Tank Materials: Unknown	No
Tank Materials: Other	No
Tank Materials: Other Note	No

Release Detection:

Tank Release Detection: Leak Deferred	No
Tank Release Detection: Manual Gauge	Yes
Tank Release Detection: Auto Gauge	No
Tank Release Detection:Tank Tightness	No
Tank Release Detection: Vapor Monitor	No
Tank Release Detection: Inventory	No
Tank Release Detection: Stat Invent Recon	No
Tank Release Detection: Spill Install	No
Tank Release Detection: Overfill Install	Yes
Tank Release Detection: Groundwater	No
Tank Release Detection: Int Sec Containment	No
Tank Release Detection: Int Double Walled	No
Tank Release Detection: Other Method	No
Tank Release Detection: Other Note	Not reported
Pipe Release Detection: Leak Deferred	Not reported
Pipe Release Detection: Autoleak	Not reported
Pipe Release Detection: Line Tightness	No
Pipe Release Detection: Stat Invent Recon	No
Pipe Release Detection: Groundwater	No
Pipe Release Detection: Int Sec Containment	No
Pipe Release Det: Interior Double Walled	No
Pipe Release Detection: Other Method	No
Pipe Release Detection: Other Note	Not reported

Pipe Type:	PRESSURE
Pipe Materials: Bare Steel	No
Pipe Materials: Galvanized Steel	No
Pipe Materials: Copper	No
Pipe Materials: Fiberglass	No
Pipe Materials: Cath Protect	No
Pipe Materials: Double Walled	No
Pipe Materials: Sec Containment	Not reported
Pipe Materials: Repaired	No
Pipe Materials: Unknown	No
Pipe Materials: Other	No
Pipe Materials: Other Note	N

VA Financial Assurance 1:

Facility ID:	3037539
Owner Name:	LSQ One Limited Liability Corporation
ROF Own Id:	46143
Tank Type:	UST

LSQ ONE/NALC BUILDING (Continued) **U003745694**

Mechanism:	Not reported
Gallonage:	Not reported
Per Occurence:	Not reported
Third Party:	Not reported
Annual Aggregate:	Not reported
In Compliance:	Not reported
Total Capacity:	550
CEDS Facility Name:	Nalc Health Benefit Plan
Tank Status:	CURR IN USE
Active Federally Regualted UST:	Y

B5
West
1/8-1/4
0.136 mi.
719 ft.

VISA USA INCORPORATED
45005 RUSSEL BRANCH PKWY
ASHBURN, VA 20147

US AIRS **1010693335**
FINDS **N/A**
ECHO

Site 1 of 4 in cluster B

Relative:
Lower

Actual:
229 ft.

US AIRS (AFS):

Envid:	1010693335
Region Code:	03
County Code:	VA107
Programmatic ID:	AIR VA0000005110700886
Facility Registry ID:	110031217706
D and B Number:	Not reported
Facility Site Name:	VISA USA INCORPORATED
Primary SIC Code:	Not reported
NAICS Code:	518210
Default Air Classification Code:	SMI
Facility Type of Ownership Code:	NON
Air CMS Category Code:	Not reported
HPV Status:	Not reported

US AIRS (AFS):

Region Code:	03
Programmatic ID:	AIR VA0000005110700886
Facility Registry ID:	110031217706
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	New Source Performance Standards
Activity Date:	2015-02-11 00:00:00
Activity Status Date:	2015-03-31 16:08:05
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active

Region Code:	03
Programmatic ID:	AIR VA0000005110700886
Facility Registry ID:	110031217706
Air Operating Status Code:	OPR
Default Air Classification Code:	SMI
Air Program:	New Source Performance Standards
Activity Date:	2008-06-05 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

Region Code:	03

VISA USA INCORPORATED (Continued) **1010693335**

Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: New Source Performance Standards
Activity Date: 2008-07-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: New Source Performance Standards
Activity Date: 2008-10-22 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2015-02-11 00:00:00
Activity Status Date: 2015-03-31 16:08:05
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2008-06-05 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2008-07-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation

VISA USA INCORPORATED (Continued) **1010693335**

Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2008-10-22 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-04-20 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-02-18 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-02-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-01-21 00:00:00

VISA USA INCORPORATED (Continued) **1010693335**

Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-02-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-04-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-05-25 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-08-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR

VISA USA INCORPORATED (Continued) **1010693335**

Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-12-09 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-02-16 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2013-01-22 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 03
Programmatic ID: AIR VA0000005110700886
Facility Registry ID: 110031217706
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2014-02-07 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

FINDS:

Registry ID: 110031217706

Environmental Interest/Information System
AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans

VISA USA INCORPORATED (Continued) **1010693335**

to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

AIR SYNTHETIC MINOR

ECHO:

Envid:	1010693335
Registry ID:	110031217706
DFR URL:	http://echo.epa.gov/detailed_facility_report?fid=110031217706

B6 **COMMONWEALTH OCX** **VA UST** **U004123904**
West **45005 RUSSEL BRANCH PKWY** **VA Financial Assurance** **N/A**
1/8-1/4 **ASHBURN, VA 20147**
0.136 mi.
719 ft. **Site 2 of 4 in cluster B**

Relative:
Lower

Actual:
229 ft.

Facility:

Facility Id:	3040986
Facility Type:	COMMERCIAL
CEDS Facility ID:	200000847213

Owner:

Owner Id:	44838
Owner Name:	VISA U.S.A. Incorporated
Owner Address:	45005 Russel Branch Pkwy
Owner Address2:	Not reported
Owner City, State, Zip:	Ashburn, VA 20147
Owner Type:	COMMERCIAL
Number of Active AST:	0
Number of Active UST:	2
Number of Inactive AST:	0
Number of Inactive UST:	0

UST:

Facility ID:	3040986
Federally Regulated:	Yes
Tank Number:	1
Tank Capacity:	50000
Tank Contents:	DIESEL
Tank Status:	**CURR IN USE**
Tank Type:	UST

Tank Material:

Install Date:	11/1/2007
Tank Materials: Bare Steel	No
Tank Materials: Cath Protect Steel	Yes
Tank Materials: Epoxy Steel	No
Tank Materials: Fiberglass	No
Tank Materials: Concrete	No
Tank Materials: Composite	Yes
Tank Materials: Double Walled	No
Tank Materials: Lined Interior	No
Tank Materials: Excav Liner	No
Tank Materials: Insulated Tank Jacket	No

COMMONWEALTH OCX (Continued) **U004123904**

Tank Materials: Repaired	No
Tank Materials: Unknown	No
Tank Materials: Other	No
Tank Materials: Other Note	No

Release Detection:

Tank Release Detection: Leak Deferred	No
Tank Release Detection: Manual Gauge	No
Tank Release Detection: Auto Gauge	Yes
Tank Release Detection:Tank Tightness	No
Tank Release Detection: Vapor Monitor	No
Tank Release Detection: Inventory	No
Tank Release Detection: Stat Invent Recon	No
Tank Release Detection: Spill Install	Yes
Tank Release Detection: Overfill Install	Yes
Tank Release Detection: Groundwater	No
Tank Release Detection: Int Sec Containment	No
Tank Release Detection: Int Double Walled	Yes
Tank Release Detection: Other Method	No
Tank Release Detection: Other Note	Not reported
Pipe Release Detection: Leak Deferred	No
Pipe Release Detection: Autoleak	Not reported
Pipe Release Detection: Line Tightness	No
Pipe Release Detection: Stat Invent Recon	No
Pipe Release Detection: Groundwater	No
Pipe Release Detection: Int Sec Containment	Yes
Pipe Release Det: Interior Double Walled	No
Pipe Release Detection: Other Method	No
Pipe Release Detection: Other Note	Not reported

Pipe Type:	NO VALVE: SUCTION
Pipe Materials: Bare Steel	No
Pipe Materials: Galvanized Steel	Yes
Pipe Materials: Copper	No
Pipe Materials: Fiberglass	No
Pipe Materials: Cath Protect	No
Pipe Materials: Double Walled	No
Pipe Materials: Sec Containment	Not reported
Pipe Materials: Repaired	No
Pipe Materials: Unknown	Yes
Pipe Materials: Other	No
Pipe Materials: Other Note	N

Facility ID:	3040986
Federally Regulated:	Yes

Tank Number:	2
Tank Capacity:	50000
Tank Contents:	DIESEL
Tank Status:	**CURR IN USE**
Tank Type:	UST

Tank Material:

Install Date:	11/1/2007
Tank Materials: Bare Steel	No
Tank Materials: Cath Protect Steel	Yes

COMMONWEALTH OCX (Continued) **U004123904**

Tank Materials: Epoxy Steel	No
Tank Materials: Fiberglass	No
Tank Materials: Concrete	No
Tank Materials: Composite	Yes
Tank Materials: Double Walled	No
Tank Materials: Lined Interior	No
Tank Materials: Excav Liner	No
Tank Materials: Insulated Tank Jacket	No
Tank Materials: Repaired	No
Tank Materials: Unknown	No
Tank Materials: Other	No
Tank Materials: Other Note	No

Release Detection:

Tank Release Detection: Leak Deferred	No
Tank Release Detection: Manual Gauge	No
Tank Release Detection: Auto Gauge	Yes
Tank Release Detection:Tank Tightness	No
Tank Release Detection: Vapor Monitor	No
Tank Release Detection: Inventory	No
Tank Release Detection: Stat Invent Recon	No
Tank Release Detection: Spill Install	Yes
Tank Release Detection: Overfill Install	Yes
Tank Release Detection: Groundwater	No
Tank Release Detection: Int Sec Containment	No
Tank Release Detection: Int Double Walled	Yes
Tank Release Detection: Other Method	No
Tank Release Detection: Other Note	Not reported
Pipe Release Detection: Leak Deferred	No
Pipe Release Detection: Autoleak	Not reported
Pipe Release Detection: Line Tightness	No
Pipe Release Detection: Stat Invent Recon	No
Pipe Release Detection: Groundwater	No
Pipe Release Detection: Int Sec Containment	Yes
Pipe Release Det: Interior Double Walled	No
Pipe Release Detection: Other Method	No
Pipe Release Detection: Other Note	Not reported

Pipe Type:	NO VALVE: SUCTION
Pipe Materials: Bare Steel	No
Pipe Materials: Galvanized Steel	Yes
Pipe Materials: Copper	No
Pipe Materials: Fiberglass	No
Pipe Materials: Cath Protect	No
Pipe Materials: Double Walled	No
Pipe Materials: Sec Containment	Not reported
Pipe Materials: Repaired	No
Pipe Materials: Unknown	Yes
Pipe Materials: Other	No
Pipe Materials: Other Note	N

VA Financial Assurance 1:

Facility ID:	3040986
Owner Name:	VISA U.S.A. Incorporated
ROF Own Id:	44838

COMMONWEALTH OCX (Continued) **U004123904**

Tank Type:	UST
Mechanism:	Not reported
Gallonage:	Not reported
Per Occurence:	Not reported
Third Party:	Not reported
Annual Aggregate:	Not reported
In Compliance:	Not reported
Total Capacity:	50000
CEDS Facility Name:	Visa USA Incorporated
Tank Status:	CURR IN USE
Active Federally Regualted UST:	Y

Facility ID:	3040986
Owner Name:	VISA U.S.A. Incorporated
ROF Own Id:	44838
Tank Type:	UST
Mechanism:	Not reported
Gallonage:	Not reported
Per Occurence:	Not reported
Third Party:	Not reported
Annual Aggregate:	Not reported
In Compliance:	Not reported
Total Capacity:	50000
CEDS Facility Name:	Visa USA Incorporated
Tank Status:	CURR IN USE
Active Federally Regualted UST:	Y

B7 **VISA USA INCORPORATED** **VA AIRS** **S109260509**
West **45005 RUSSEL BRANCH PKWY** **N/A**
1/8-1/4 **ASHBURN, VA 20147**
0.136 mi.
719 ft. **Site 3 of 4 in cluster B**

Relative:
Lower

Actual:
229 ft.

AIRS:

Region:	NRO
Region Number:	73643
Contact First Name:	Emil
Contact Last Name:	Grecescu
Contact Title:	Sr. Facilities Manager
Contact Phone:	5714397283
Latitude:	39.0219
Longitude:	-77.4608
Lat Deg/Min/Sec Lon Deg/Min/Sec:	39 1 18.84 / -77 27 38.88
Mailing Address:	45005 Russel Branch Pkwy
Mailing City:	Ashburn
Mailing State:	VA
Mailing Zip Code:	20147
Program Type:	Article 6 - mNSR
Permit Type:	MINOR
Issued Date:	12/19/2007
Operating Status:	Operating
Contact Email:	egrecesc@visa.com
Owner ID:	Not reported
Owner Name:	Not reported
Owner Tele:	Not reported
Facility Full Name:	Visa USA Incorporated
ICIS Federal ID:	VA0000005110700886
Currently Active (y/n):	Y

VISA USA INCORPORATED (Continued) **S109260509**

Primary Permit Type Desc:	For legacy mapping purposes only (inactive for picklist purposes)
Permit Status:	Issued
Region:	NRO
Region Number:	73643
Contact First Name:	Emil
Contact Last Name:	Grecescu
Contact Title:	Sr. Facilities Manager
Contact Phone:	5714397283
Latitude:	39.0219
Longitude:	-77.4608
Lat Deg/Min/Sec Lon Deg/Min/Sec:	39 1 18.84 / -77 27 38.88
Mailing Address:	45005 Russel Branch Pkwy
Mailing City:	Ashburn
Mailing State:	VA
Mailing Zip Code:	20147
Program Type:	Article 6 - mNSR
Permit Type:	MINAMEN
Issued Date:	02/25/2009
Operating Status:	Operating
Contact Email:	egrecesc@visa.com
Owner ID:	Not reported
Owner Name:	Not reported
Owner Tele:	Not reported
Facility Full Name:	Visa USA Incorporated
ICIS Federal ID:	VA0000005110700886
Currently Active (y/n):	Y
Primary Permit Type Desc:	Minor Amendment to Minor NSR Permit
Permit Status:	Superseded
Region:	NRO
Region Number:	73643
Contact First Name:	Emil
Contact Last Name:	Grecescu
Contact Title:	Sr. Facilities Manager
Contact Phone:	5714397283
Latitude:	39.0219
Longitude:	-77.4608
Lat Deg/Min/Sec Lon Deg/Min/Sec:	39 1 18.84 / -77 27 38.88
Mailing Address:	45005 Russel Branch Pkwy
Mailing City:	Ashburn
Mailing State:	VA
Mailing Zip Code:	20147
Program Type:	Article 6 - mNSR
Permit Type:	MINAMEN
Issued Date:	08/28/2009
Operating Status:	Operating
Contact Email:	egrecesc@visa.com
Owner ID:	Not reported
Owner Name:	Not reported
Owner Tele:	Not reported
Facility Full Name:	Visa USA Incorporated
ICIS Federal ID:	VA0000005110700886
Currently Active (y/n):	Y
Primary Permit Type Desc:	Minor Amendment to Minor NSR Permit
Permit Status:	Issued

VISA USA INCORPORATED (Continued) **S109260509**

Region:	NRO
Region Number:	73643
Contact First Name:	Emil
Contact Last Name:	Grecescu
Contact Title:	Sr. Facilities Manager
Contact Phone:	5714397283
Latitude:	39.0219
Longitude:	-77.4608
Lat Deg/Min/Sec Lon Deg/Min/Sec:	39 1 18.84 / -77 27 38.88
Mailing Address:	45005 Russel Branch Pkwy
Mailing City:	Ashburn
Mailing State:	VA
Mailing Zip Code:	20147
Program Type:	Article 6 - mNSR
Permit Type:	MINAMEN
Issued Date:	04/29/2010
Operating Status:	Operating
Contact Email:	egrecesc@visa.com
Owner ID:	Not reported
Owner Name:	Not reported
Owner Tele:	Not reported
Facility Full Name:	Visa USA Incorporated
ICIS Federal ID:	VA0000005110700886
Currently Active (y/n):	Y
Primary Permit Type Desc:	Minor Amendment to Minor NSR Permit
Permit Status:	Issued

Region:	NRO
Region Number:	73643
Contact First Name:	Emil
Contact Last Name:	Grecescu
Contact Title:	Sr. Facilities Manager
Contact Phone:	5714397283
Latitude:	39.0219
Longitude:	-77.4608
Lat Deg/Min/Sec Lon Deg/Min/Sec:	39 1 18.84 / -77 27 38.88
Mailing Address:	45005 Russel Branch Pkwy
Mailing City:	Ashburn
Mailing State:	VA
Mailing Zip Code:	20147
Program Type:	Article 6 - mNSR
Permit Type:	ADAMEN
Issued Date:	10/13/2011
Operating Status:	Operating
Contact Email:	egrecesc@visa.com
Owner ID:	Not reported
Owner Name:	Not reported
Owner Tele:	Not reported
Facility Full Name:	Visa USA Incorporated
ICIS Federal ID:	VA0000005110700886
Currently Active (y/n):	Y
Primary Permit Type Desc:	Administrative Amendment to Minor NSR Permit
Permit Status:	Issued

B8 West 1/8-1/4 0.136 mi. 719 ft. | **VISA COMMONWEALTH CENTER OCE**
45005 RUSSELL BRANCH PARKWAY
ASHBURN, VA 20147

Site 4 of 4 in cluster B

VA TIER 2 | **S112431263**
N/A

Relative: Lower

Actual: 229 ft.

TIER 2:

Facility ID:	Not reported
CAS Number:	7439-92-1
SIC Code:	Not reported
NAICS:	518210
Entered Chemical Name:	LEAD
Average Amt Code:	6
Owner Name:	VISA, Inc./ Inovant LLC
Owner Phone:	Not reported
Contact Type:	NAICS

Facility ID:	Not reported
CAS Number:	7664-93-9
SIC Code:	Not reported
NAICS:	518210
Entered Chemical Name:	SULFURIC ACID
Average Amt Code:	5
Owner Name:	VISA, Inc./ Inovant LLC
Owner Phone:	Not reported
Contact Type:	NAICS

Facility ID:	Not reported
CAS Number:	68476-34-6
SIC Code:	Not reported
NAICS:	518210
Entered Chemical Name:	DIESEL FUEL
Average Amt Code:	5
Owner Name:	VISA, Inc./ Inovant LLC
Owner Phone:	Not reported
Contact Type:	NAICS

Facility ID:	Not reported
CAS Number:	Not reported
SIC Code:	Not reported
NAICS:	518210
Entered Chemical Name:	FR3 FLUID (transformer coolant)
Average Amt Code:	5
Owner Name:	VISA, Inc./ Inovant LLC
Owner Phone:	Not reported
Contact Type:	NAICS

Facility ID:	Not reported
CAS Number:	Not reported
SIC Code:	Not reported
NAICS:	518210
Entered Chemical Name:	HYDRAULIC OIL
Average Amt Code:	3
Owner Name:	VISA, Inc./ Inovant LLC
Owner Phone:	Not reported
Contact Type:	NAICS

9 ENE 1/4-1/2 0.279 mi. 1474 ft. | **UNIVERSITY CENTER 45299 RESEARCH PL ASHBURN, VA 20147** | **VA UST** | **U003680966 N/A**

Relative: Lower

Actual: 228 ft.

Facility:

Facility Id:	3016514
Facility Type:	COMMERCIAL
CEDS Facility ID:	200000096359

Owner:

Owner Id:	37246
Owner Name:	UNIVERSITY CENTER I ASSOC LTD
Owner Address:	45299 RESEARCH PLACE
Owner Address2:	Not reported
Owner City, State, Zip:	ASHBURN, VA 20147
Owner Type:	PRIVATE
Number of Active AST:	0
Number of Active UST:	0
Number of Inactive AST:	0
Number of Inactive UST:	1

UST:

Facility ID:	3016514
Federally Regulated:	Yes
Tank Number:	1
Tank Capacity:	500
Tank Contents:	DIESEL
Tank Status:	**PERM OUT OF USE**
Tank Type:	UST

Tank Material:

Install Date:	1/1/1992
Tank Materials: Bare Steel	No
Tank Materials: Cath Protect Steel	No
Tank Materials: Epoxy Steel	No
Tank Materials: Fiberglass	Yes
Tank Materials: Concrete	No
Tank Materials: Composite	Yes
Tank Materials: Double Walled	No
Tank Materials: Lined Interior	No
Tank Materials: Excav Liner	No
Tank Materials: Insulated Tank Jacket	No
Tank Materials: Repaired	No
Tank Materials: Unknown	No
Tank Materials: Other	No
Tank Materials: Other Note	No

Release Detection:

Tank Release Detection: Leak Deferred	No
Tank Release Detection: Manual Gauge	No
Tank Release Detection: Auto Gauge	No
Tank Release Detection:Tank Tightness	No
Tank Release Detection: Vapor Monitor	No
Tank Release Detection: Inventory	No
Tank Release Detection: Stat Invent Recon	No
Tank Release Detection: Spill Install	Yes

UNIVERSITY CENTER (Continued) **U003680966**

Tank Release Detection: Overfill Install	Yes
Tank Release Detection: Groundwater	No
Tank Release Detection: Int Sec Containment	No
Tank Release Detection: Int Double Walled	No
Tank Release Detection: Other Method	No
Tank Release Detection: Other Note	Not reported
Pipe Release Detection: Leak Deferred	Not reported
Pipe Release Detection: Autoleak	Not reported
Pipe Release Detection: Line Tightness	No
Pipe Release Detection: Stat Invent Recon	No
Pipe Release Detection: Groundwater	No
Pipe Release Detection: Int Sec Containment	No
Pipe Release Det: Interior Double Walled	Yes
Pipe Release Detection: Other Method	No
Pipe Release Detection: Other Note	Not reported
Pipe Type:	NO VALVE: SUCTION
Pipe Materials: Bare Steel	No
Pipe Materials: Galvanized Steel	No
Pipe Materials: Copper	Yes
Pipe Materials: Fiberglass	No
Pipe Materials: Cath Protect	No
Pipe Materials: Double Walled	Yes
Pipe Materials: Sec Containment	Not reported
Pipe Materials: Repaired	No
Pipe Materials: Unknown	No
Pipe Materials: Other	No
Pipe Materials: Other Note	N

10
North
1/4-1/2
0.481 mi.
2538 ft.

45168 WATERPOINTE TERRACE
ASHBURN, VA 22011

RCRA NonGen / NLR **1014921953**
VAP407201124

Relative:
Higher

Actual:
273 ft.

RCRA NonGen / NLR:

Date form received by agency:	12/22/2011
Facility name:	Not reported
Facility address:	45168 WATERPOINTE TERRACE ASHBURN, VA 22011
EPA ID:	VAP407201124
Mailing address:	HUNGARY SPRING ROAD RICHMOND, VA 23228
Contact:	RANDOLPH S MOORE
Contact address:	HUNGARY SPRING ROAD RICHMOND, VA 23228
Contact country:	US
Contact telephone:	(804) 772-6709
Contact email:	RANDOLPH.S.MOORE@VERIZON.COM
EPA Region:	Not reported
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	VERIZON VIRGINIA INC
Owner/operator address:	Not reported

(Continued) **1014921953**

Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/01/1991
Owner/Op end date: Not reported

Owner/operator name: VERIZON VIRGINIA INC
Owner/operator address: HUNGARY SPRING ROAD
RICHMOND, VA 23228
Owner/operator country: US
Owner/operator telephone: (804) 772-6709
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1991
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 07/14/2011
Site name: VERIZON VIRGINIA INC - 57050
Classification: Large Quantity Generator

Violation Status: No violations found

C11 **BAROODY MARIE RESIDENCE** **VA LTANKS** **S118368536**
ENE **20396 WHITE OAK DR** **N/A**
1/2-1 **STERLING, VA 20165**
0.617 mi.
3259 ft. **Site 1 of 3 in cluster C**

Relative:
Higher

Actual:
264 ft.

LTANKS:
Region: NVRO
CEDS Facility Id: 200000881387
Case Status: **Open**
Pollution Complaint #: 20163035
Reported: 08/31/2015

C12
ENE
1/2-1
0.634 mi.
3349 ft.

CHAMBLIN WALKER RESIDENCE
20376 WHITE OAK DR
STERLING, VA 20165

VA LTANKS **S104896065**
N/A

Site 2 of 3 in cluster C

Relative:
Higher

Actual:
273 ft.

LTANKS:

Region:	NVRO
CEDS Facility Id:	200000079638
Case Status:	**Closed**
Pollution Complaint #:	19932118
Reported:	04/26/1993

C13
ENE
1/2-1
0.634 mi.
3349 ft.

CHAMBLIN/WALKER RESIDENCE (SLS)
20376 WHITE OAK DRIVE
LOUDOUN, VA 20165

VA LUST **S103458792**
N/A

Site 3 of 3 in cluster C

Relative:
Higher

Actual:
273 ft.

LUST REG NO:

Region:	NO
Facility ID:	3026852
Status:	**Open**
Tank Size:	0
Product:	Not reported
Release Date:	04/26/1993
Closed Date:	Not reported
Case Type:	Alternate Water Supply
Case Officer:	Mark L. Miller
Pollution Complaint #:	93-2118
Permit Number:	0
Priority:	1

14
NE
1/2-1
0.680 mi.
3589 ft.

COONEY THOMAS J AND LOURINE W RESIDENCE
20261 DAIRY LN
STERLING, VA 20165

VA LTANKS **S117622727**
N/A

Relative:
Lower

Actual:
234 ft.

LTANKS:

Region:	NVRO
CEDS Facility Id:	200000879703
Case Status:	**Closed**
Pollution Complaint #:	20153127
Reported:	01/04/2015

15
NNE
1/2-1
0.710 mi.
3751 ft.

SHAFFER WELL
20170 YOUNGS CLIFF RD
STERLING, VA 20165

VA LTANKS **S108106486**
N/A

Relative:
Lower

Actual:
220 ft.

LTANKS:

Region:	NVRO
CEDS Facility Id:	200000087008
Case Status:	**Closed**
Pollution Complaint #:	19901313

SHAFFER WELL (Continued) **S108106486**

Reported: 04/04/1990

Count: 2 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LOUDOUN	S103771697	QUARLES/SHELL	900 SULLY ROAD	20166	VA LUST
LOUDOUN	S103457870	STUDIBAKER RESIDENCE	YOUNGS CLIFF ROAD	20165	VA LUST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: N/A
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 04/05/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 04/18/2016
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/08/2015	Telephone: 703-603-8704
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 04/08/2016
Number of Days to Update: 64	Next Scheduled EDR Contact: 07/18/2016
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: 800-424-9346
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 04/05/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 08/01/2016
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 08/01/2016
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: Department of Environmental Quality
Telephone: 804-698-4236
Last EDR Contact: 03/17/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: N/A

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Management Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/09/2015
Number of Days to Update: 59

Source: Department of Environmental Quality
Telephone: 804-698-4238
Last EDR Contact: 04/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG WC: Leaking Underground Storage Tank List

Leaking underground storage tank site locations. Includes: counties of Alleghany, Bedford, Botetourt, Craig, Floyd, Franklin, Giles, Henry, Montgomery, Patrick, Pulaski, Roanoke; cities of Bedford, Clifton Forge, Covington, Martinsville, Radford, Roanoke, Salem.

Date of Government Version: 06/04/2015
Date Data Arrived at EDR: 06/05/2015
Date Made Active in Reports: 07/07/2015
Number of Days to Update: 32

Source: Department of Environmental Quality West Central Regional Office
Telephone: 540-562-6700
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

LUST REG NO: Leaking Underground Storage Tank Tracking Database

Leaking underground storage tank site locations. Includes: counties of Arlington, Caroline, Culpeper, Fairfax, Fauquier, King George, Loudoun, Louisa, Madison, Orange, Prince William, Rappahannock, Spotsylvania, Stafford; cities of Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas, Manassas Park.

Date of Government Version: 05/18/2004
Date Data Arrived at EDR: 05/22/2004
Date Made Active in Reports: 07/09/2004
Number of Days to Update: 48

Source: Department of Environmental Quality Northern Regional Office
Telephone: 703-583-3800
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG PD: Leaking Underground Storage Tank Sites
Leaking underground storage tank site locaitons. Includes: counties of Amelia, Brunswick, Charles City, Chesterfield, Dinwiddie, Essex, Gloucester, Goochland, Greensville, Hanover, Henrico, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northumberland, Powhatan, Prince George, Richmond, Surry, Sussex, Westmoreland; cities of Colonial Heights, Emporia, Hopewell, Petersburg.

Date of Government Version: 12/02/2014
Date Data Arrived at EDR: 12/04/2014
Date Made Active in Reports: 01/16/2015
Number of Days to Update: 43

Source: Department of Environmental Quality Piedmont Regional Office
Telephone: 804-527-5020
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Quarterly

LUST REG SC: Leaking Underground Storage Tanks
Leaking underground storage tank site locations. Includes: counties of Amherst, Appomattox, Buckingham, Campbell, Charlotte, Cumberland, Halifax, Lunenburg, Mecklenburg, Nottoway, Pittsylvania, Prince Deward; cities of Danville, Lynchburg.

Date of Government Version: 09/06/2013
Date Data Arrived at EDR: 09/06/2013
Date Made Active in Reports: 09/17/2013
Number of Days to Update: 11

Source: Department of Environmental Quality, South Central Region
Telephone: 434-582-5120
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

LUST REG SW: Leaking Underground Storage Tank Database
Leaking underground storage tank site locations. Includes: counties of Bland, Buchanan, Carroll, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, Wythe; cities of Bristol, Galax, Norton.

Date of Government Version: 07/15/2013
Date Data Arrived at EDR: 07/18/2013
Date Made Active in Reports: 09/16/2013
Number of Days to Update: 60

Source: Department of Environmental Quality Southwest Regional Office
Telephone: 276-676-4800
Last EDR Contact: 04/11/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: No Update Planned

LUST REG TD: Leaking Underground Storage Tank Sites
Leaking underground storage tank site locations. Includes: counties of Accomack, Isle of Wight, James City, Northampton, Southampton, York; cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, Williamsburg.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 07/05/2013
Date Made Active in Reports: 09/16/2013
Number of Days to Update: 73

Source: Department of Environmental Quality Tidewater Regional Office
Telephone: trofoia@deq.vir
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

LUST REG VA: Leaking Underground Storage Tank List
Leaking underground storage tank site locations. Includes: counties of Albemarle, Augusta, Bath, Clarke, Fluvanna, Frederick, Greene, Highland, Nelson, Page, Rockbridge, Rockingham, Shenandoah, Warren; cities of Buena Vista, Charlottesville, Harrisonburg, Lexington, Staunton, Waynesboro, Winchester.

Date of Government Version: 12/06/2011
Date Data Arrived at EDR: 12/08/2011
Date Made Active in Reports: 01/16/2012
Number of Days to Update: 39

Source: Department of Environmental Quality Valley Regional Office
Telephone: 540-574-7800
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 04/27/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/27/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/29/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 04/29/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/26/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/29/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/29/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Quarterly

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/27/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

LTANKS: Leaking Petroleum Storage Tanks
Includes releases of petroleum from underground storage tanks and aboveground storage tanks.

Date of Government Version: 02/03/2016
Date Data Arrived at EDR: 03/03/2016
Date Made Active in Reports: 03/21/2016
Number of Days to Update: 18

Source: Department of Environmental Quality
Telephone: 804-698-4010
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/11/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Varies

UST: Registered Petroleum Storage Tanks
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 02/03/2016
Date Data Arrived at EDR: 03/03/2016
Date Made Active in Reports: 04/18/2016
Number of Days to Update: 46

Source: Department of Environmental Quality
Telephone: 804-698-4010
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

AST: Registered Petroleum Storage Tanks
Registered Aboveground Storage Tanks.

Date of Government Version: 02/03/2016
Date Data Arrived at EDR: 03/03/2016
Date Made Active in Reports: 04/18/2016
Number of Days to Update: 46

Source: Department of Environmental Quality
Telephone: 804-698-4010
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 04/29/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/29/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/27/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/29/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/27/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/29/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/26/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Semi-Annually

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/29/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Quarterly

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Controls Sites Listing
A listing of sites with Engineering Controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 12/30/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/04/2016
Number of Days to Update: 30

Source: Department of Environmental Quality
Telephone: 804-698-4228
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

INST CONTROL: Voluntary Remediation Program Database
Sites included in the Voluntary Remediation Program database that have deed restrictions.

Date of Government Version: 12/30/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/04/2016
Number of Days to Update: 30

Source: Department of Environmental Quality
Telephone: 804-698-4228
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/01/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VRP: Voluntary Remediation Program
The Voluntary Cleanup Program encourages owners of elected contaminated sites to take the initiative and conduct voluntary cleanups that meet state environmental standards.

Date of Government Version: 12/30/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/04/2016
Number of Days to Update: 30

Source: Department of Environmental Quality
Telephone: 804-698-4228
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Site Specific Assessments
To qualify for Brownfields Assessment, the site must meet the Federal definition of a Brownfields and should have contaminant issues that need to be addressed and a redevelopment plan supported by the local government and community. Virginia's Department of Environmental Quality performs brownfields assessments under a cooperative agreement with the U.S. Environmental Protection Agency at no cost to communities, property owners or, prospective purchasers. The assessment is an evaluation of environmental impacts caused by previous site uses similar to a Phase II Environmental Assessment.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 01/28/2016
Date Made Active in Reports: 03/21/2016
Number of Days to Update: 53

Source: Department of Environmental Quality
Telephone: 804-698-4207
Last EDR Contact: 04/27/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2015
Date Data Arrived at EDR: 12/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/22/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/27/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/21/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/26/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/24/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

SPILLS: Prep/Spills Database Listing

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment. PREP staff often work to assist local emergency responders, other state agencies, federal agencies, and responsible parties, as may be needed, to manage pollution incidents. Oil spills, fish kills, and hazardous materials spills are examples of incidents that may involve the DEQ's PREP Program.

Date of Government Version: 02/03/2016
Date Data Arrived at EDR: 03/03/2016
Date Made Active in Reports: 03/21/2016
Number of Days to Update: 18

Source: Department of Environmental Quality
Telephone: 804-698-4287
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

SPILLS BRL: Prep/Spills Database Listing

A listing of spills locations located in the Blue Ridge Regional area, Lynchburg.

Date of Government Version: 09/18/2009
Date Data Arrived at EDR: 09/18/2009
Date Made Active in Reports: 10/06/2009
Number of Days to Update: 18

Source: DEQ, Blue Ridge Regional Office
Telephone: 434-582-6218
Last EDR Contact: 11/28/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Varies

SPILLS WC: Prep Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/21/2009
Date Data Arrived at EDR: 09/29/2009
Date Made Active in Reports: 10/30/2009
Number of Days to Update: 31

Source: Department of Environmental Quality, West Central Region
Telephone: 540-562-6700
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

SPILLS VA: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 08/08/2012
Date Data Arrived at EDR: 08/09/2012
Date Made Active in Reports: 10/05/2012
Number of Days to Update: 57

Source: Department of Environmental Quality, Valley Regional Office
Telephone: 540-574-7800
Last EDR Contact: 05/06/2013
Next Scheduled EDR Contact: 08/19/2013
Data Release Frequency: Quarterly

SPILLS TD: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/17/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/06/2009
Number of Days to Update: 13

Source: Department of Environmental Quality, Tidewater Region
Telephone: trofoia@deq.vir
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: Quarterly

SPILLS SW: Reportable Spills

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 01/21/2010
Date Data Arrived at EDR: 01/22/2010
Date Made Active in Reports: 02/16/2010
Number of Days to Update: 25

Source: Department of Environmental Quality, Southwest Region
Telephone: 276-676-4839
Last EDR Contact: 07/13/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: No Update Planned

SPILLS PD: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 10/20/2009
Date Data Arrived at EDR: 10/29/2009
Date Made Active in Reports: 12/03/2009
Number of Days to Update: 35

Source: Department of Environmental Quality, Piedmont Region
Telephone: 804-527-5020
Last EDR Contact: 02/06/2012
Next Scheduled EDR Contact: 05/21/2012
Data Release Frequency: Quarterly

SPILLS NO: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/29/2009
Date Made Active in Reports: 10/30/2009
Number of Days to Update: 31

Source: Department of Environmental Quality, Northern Region
Telephone: 703-583-3864
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

SPILLS PC: Pollution Complaint Database

Pollution Complaints Database. The pollution reports contained in the PC database include the initial release reporting of Leaking Underground Storage Tanks and all other releases of petroleum to the environment as well as releases to state waters. The database is current through 12/1/93. Since that time, all spill and pollution reporting information has been collected and tracked through the DEQ regional offices.

Date of Government Version: 06/01/1996
Date Data Arrived at EDR: 10/22/1996
Date Made Active in Reports: 11/21/1996
Number of Days to Update: 30

Source: Department of Environmental Quality
Telephone: 804-698-4287
Last EDR Contact: 03/08/2010
Next Scheduled EDR Contact: 06/21/2010
Data Release Frequency: No Update Planned

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 09/01/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 43

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/15/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/15/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/03/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/09/2016
Next Scheduled EDR Contact: 08/22/2016
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/25/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2015
Date Data Arrived at EDR: 08/26/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/25/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/12/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/08/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 03/18/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 28

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 05/06/2016
Next Scheduled EDR Contact: 08/22/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 04/15/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 04/26/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/08/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/04/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/15/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 05/09/2016
Next Scheduled EDR Contact: 08/22/2016
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/07/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/09/2016
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 44

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/02/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (215) 814-5000
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 04/18/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 03/01/2016
Date Data Arrived at EDR: 03/03/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

AIRS: Permitted Airs Facility List
A listing of permitted Airs facilities.

Date of Government Version: 03/03/2016
Date Data Arrived at EDR: 03/04/2016
Date Made Active in Reports: 03/21/2016
Number of Days to Update: 17

Source: Department of Environmental Quality
Telephone: 804-698-4000
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

CEDS: Comprehensive Environmental Data System
Virginia Water Protection Permits, Virginia Pollution Discharge System (point discharge) permits and Virginia Pollution Abatement (no point discharge) permits.

Date of Government Version: 03/10/2016
Date Data Arrived at EDR: 03/11/2016
Date Made Active in Reports: 05/06/2016
Number of Days to Update: 56

Source: Department of Environmental Quality
Telephone: 804-698-4077
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Semi-Annually

COAL ASH: Coal Ash Disposal Sites
A listing of facilities with coal ash impoundments.

Date of Government Version: 07/29/2009
Date Data Arrived at EDR: 07/31/2009
Date Made Active in Reports: 08/21/2009
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: 804-698-4285
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

DRYCLEANERS: Drycleaner List
A listing of registered drycleaners.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 12/10/2015
Date Made Active in Reports: 02/04/2016
Number of Days to Update: 56

Source: Department of Environmental Quality
Telephone: 804-698-4407
Last EDR Contact: 04/11/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Varies

ENFORCEMENT: Enforcement Actions Data
A listing of enforcement actions.

Date of Government Version: 03/22/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 05/06/2016
Number of Days to Update: 31

Source: Department of Environmental Quality
Telephone: 804-698-4031
Last EDR Contact: 04/04/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/12/2016
Date Data Arrived at EDR: 02/16/2016
Date Made Active in Reports: 03/21/2016
Number of Days to Update: 34

Source: Department of Environmental Quality
Telephone: 804-698-4205
Last EDR Contact: 04/28/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information listing
Solid waste financial assurance information.

Date of Government Version: 02/03/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 03/21/2016
Number of Days to Update: 45

Source: Department of Environmental Quality
Telephone: 804-698-4123
Last EDR Contact: 04/28/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Varies

TIER 2: Tier 2 Information Listing
A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 09/01/2015
Date Made Active in Reports: 11/16/2015
Number of Days to Update: 76

Source: Department of Environmental Quality
Telephone: 804-698-4159
Last EDR Contact: 04/22/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Annually

UIC: Underground Injection Control Wells
A listing of underground injection controls wells.

Date of Government Version: 02/02/2016
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 03/21/2016
Number of Days to Update: 46

Source: Department of Mines, Minerals and Energy
Telephone: 276-415-9700
Last EDR Contact: 05/06/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/23/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Virgina.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/20/2014
Number of Days to Update: 203

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Virgina and at the Regional VA Levels.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/15/2014
Number of Days to Update: 198

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/18/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/12/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/06/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/18/2016
Next Scheduled EDR Contact: 08/01/2016
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 804-692-1900

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

RT 7/GEORGE WASH BLVD OVERPASS - PHASE I
45050 RUSSELL BRANCH PKWY
ASHBURN, VA 20147

TARGET PROPERTY COORDINATES

Latitude (North):	39.048922 - 39˚ 2' 56.12''
Longitude (West):	77.439057 - 77˚ 26' 20.61''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	288924.6
UTM Y (Meters):	4324828.5
Elevation:	240 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5948990 STERLING, VA
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

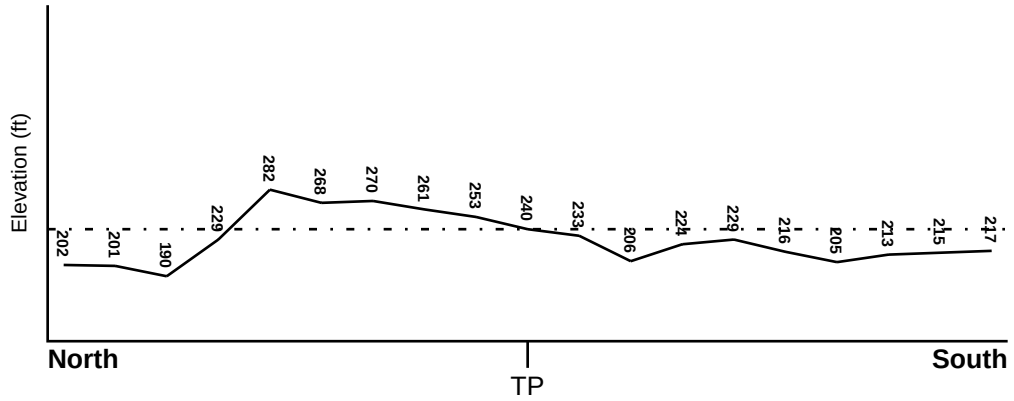
TOPOGRAPHIC INFORMATION

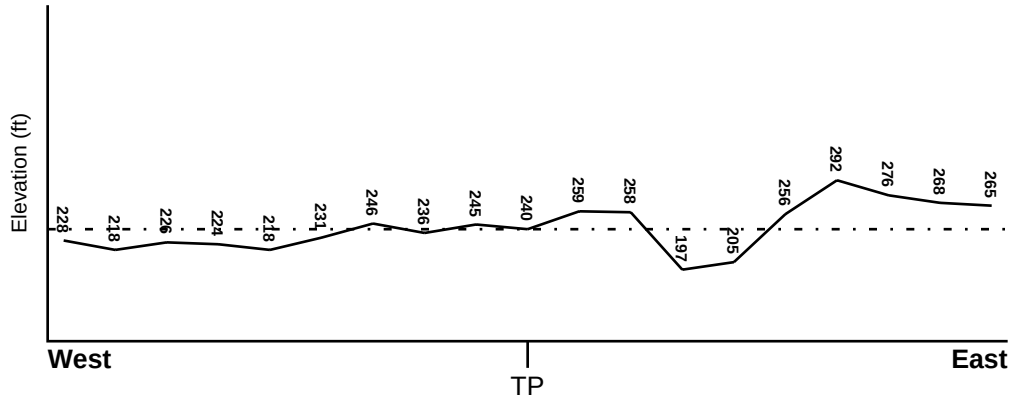
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 240 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
LOUDOUN, VA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 51107C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
STERLING	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Mesozoic
System:	Triassic
Series:	Triassic mafic intrusives
Code:	Tri *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	JACKLAND
Soil Surface Texture:	silt loam
Hydrologic Group:	Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
Soil Drainage Class:	Not reported

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	HIGH
Depth to Bedrock Min:	> 60 inches
Depth to Bedrock Max:	> 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	10 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
2	10 inches	15 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.06	Max: 6.00 Min: 4.50
3	15 inches	40 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.06 Min: 0.00	Max: 7.80 Min: 4.50
4	40 inches	65 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 2.00 Min: 0.60	Max: 7.80 Min: 4.50

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: gravelly - silt loam
loam

Surficial Soil Types: gravelly - silt loam
loam

Shallow Soil Types: clay loam
clay
very gravelly - silt loam
very gravelly - loam
silty clay loam
gravelly - silty clay loam

Deeper Soil Types: sandy loam
weathered bedrock
silty clay loam
unweathered bedrock

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40001206422	1/2 - 1 Mile ENE
2	USGS40001206423	1/2 - 1 Mile WNW
3	USGS40001206430	1/2 - 1 Mile NE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

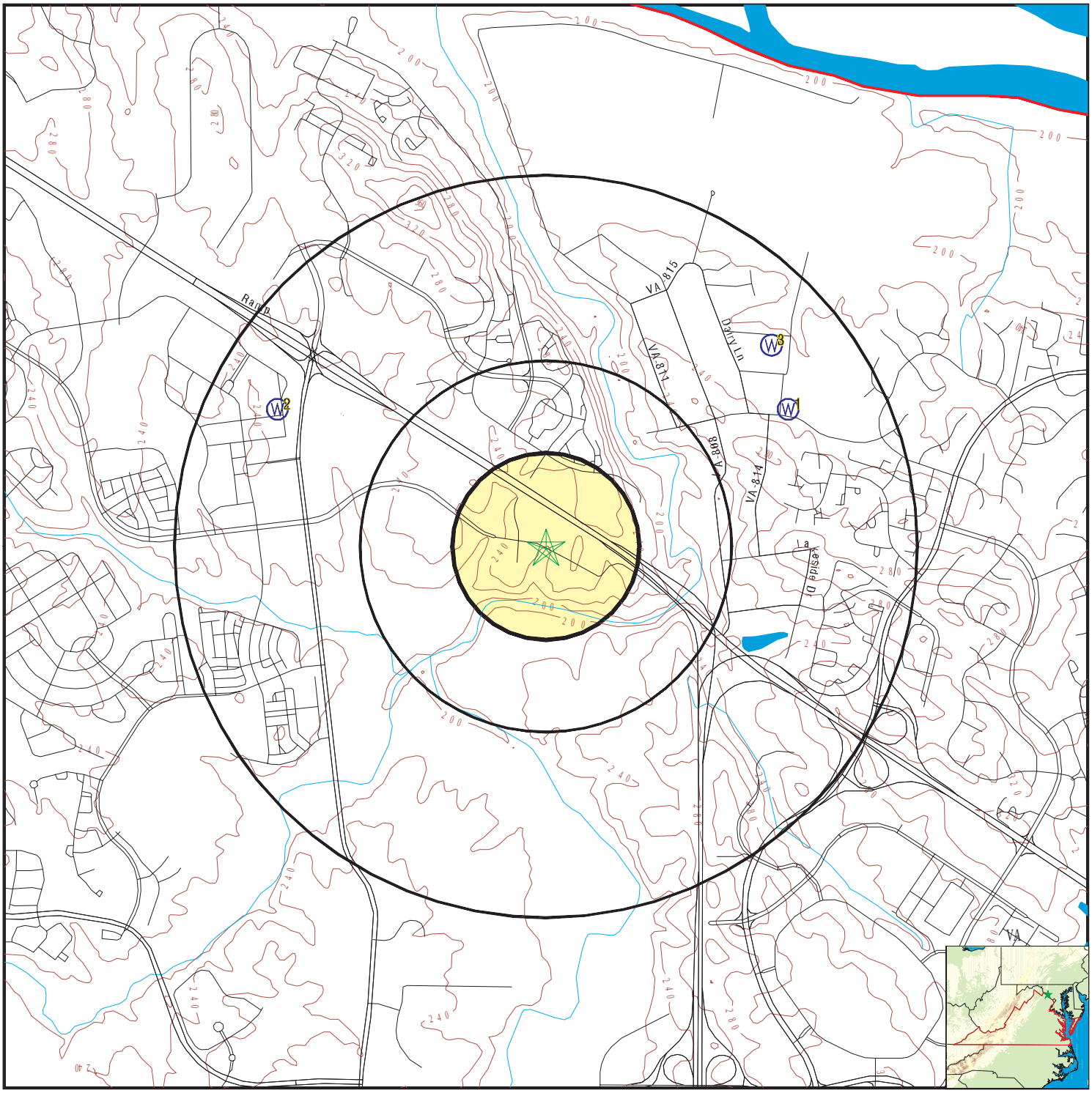
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 4615723.2s



County Boundary
Major Roads
Contour Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data

N

SITE NAME:	RT 7/George Wash Blvd Overpass - Phase I	CLIENT:	KCI Technologies, Inc.
ADDRESS:	45050 Russell Branch Pkwy Ashburn VA 20147	CONTACT:	Douglas Talaber
		INQUIRY #:	4615723.2s
LAT/LONG:	39.048922 / 77.439057	DATE:	May 11, 2016 9:53 am

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Map ID Direction Distance Elevation	Database	EDR ID Number
1 **ENE** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40001206422**

Org. Identifier:	USGS-VA		
Formal name:	USGS Virginia Water Science Center		
Monloc Identifier:	USGS-390315077253801		
Monloc name:	51W 10E		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	02070008	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	39.0542747
Longitude:	-77.426932	Sourcemap scale:	24000
Horiz Acc measure:	10	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	233.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	194
Welldepth units:	ft	Wellholedepth:	194
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

---

2 **WNW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40001206423**

Org. Identifier:	USGS-VA		
Formal name:	USGS Virginia Water Science Center		
Monloc Identifier:	USGS-390315077271001		
Monloc name:	51W 3E		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	02070008	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	39.0542746
Longitude:	-77.4524885	Sourcemap scale:	24000
Horiz Acc measure:	10	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	240.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Balls Bluff Formation		

Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	225
Welldepth units:	ft	Wellholedepth:	225
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

3
NE
1/2 - 1 Mile
Lower

FED USGS **USGS40001206430**

Org. Identifier:	USGS-VA		
Formal name:	USGS Virginia Water Science Center		
Monloc Identifier:	USGS-390324077254101		
Monloc name:	51W 9E		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	02070008	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	39.0567747
Longitude:	-77.4277654	Sourcemap scale:	24000
Horiz Acc measure:	10	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	225.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for LOUDOUN County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for LOUDOUN COUNTY, VA

Number of sites tested: 6

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.083 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.050 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Virginia Public Water Supplies
Source: Department of Health, Office of Water Programs
Telephone: 804-786-1756

OTHER STATE DATABASE INFORMATION

Virginia Oil and Gas Wells
Source: Department of Mines, Minerals and Energy
Telephone: 804-692-3200
A listing of oil and gas well locations

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

EPA Region 3 Statistical Summary Readings
Source: Region 3 EPA
Telephone: 215-814-2082
Radon readings for Delaware, D.C., Maryland, Pennsylvania, Virginia and West Virginia.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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Appendix D

Correspondence/Documentation

Tracking Number: _____

Request for File Information
Loudoun County Health Department

Note: A tax map number, PIN (property identification number), or a property address MUST be provided to process any request

Date of Request: 05 / 17 / 2016

Property Owner(s): Loudon Square Storage, LLC c/o Baco Realty Corp.

Property Address: 45050 RUSSELL BRANCH PKWY, ASHBURN VA 20147

Tax Map Number: _____

PIN: 040-47-6675-000

Info Requested By: Douglas Talaber

Requestor's Address: 936 Ridgebrook Rd, Sparks, MD 21152

Telephone #: (410) 316 - 7869 Fax #: (410) 316 - 7935

Description of Information Needed: Storage tanks, remediation activity , environmental (env) violations, env inspections, env investigations, spills or other environmental activities.

Note: By completing this form you are requesting access to the general information in the records of the Loudoun County Health Department. Complaint information (LEX) and post-installation inspection information related to onsite sewage disposal systems (online RME)) are contained in other databases. Requesting information from these other databases may increase processing cost and/or processing time. If you would like copies of information contained in these databases, please check one or both of these boxes. □ **LEX (Complaint Database)** □ **Online RME**

File Search Requests May Take Up To FIVE (5) days to Process

****

FOR OFFICE USE ONLY

Plats (Black & White ONLY)	_____	x $3.00	=	_____
Number of Copies	_____	x $0.08	=	_____
Number of CD's*	_____	x $5.00	=	_____
Staff Time	_____	x _____	=	_____
		Total Cost	=	_____

Completion Information

Date Completed:

_____ / _____ / _____

Completed By:

_____

We accept either cash or check. Please make checks payable to County of Loudoun.

Staff Comments: _____

_____

*Not all information is available in digital format

Tracking Number: _____

Request for File Information
Loudoun County Health Department

Note: A tax map number, PIN (property identification number), or a property address MUST be provided to process any request

Date of Request: 05 / 17 / 2016

Property Owner(s): Accenture Federal Services LLC

Property Address: 45145 RESEARCH PL ASHBURN VA 20147

Tax Map Number: _____

PIN: 039-18-2610-000

Info Requested By: Douglas Talaber

Requestor's Address: 936 Ridgebrook Rd, Sparks, MD 21152

Telephone #: (410) 316 - 7869 Fax #: (410) 316 - 7935

Description of Information Needed: Storage tanks, remediation activity , environmental (env) violations, env inspections, env investigations, spills or other environmental activities.

Note: By completing this form you are requesting access to the general information in the records of the Loudoun County Health Department. Complaint information (LEX) and post-installation inspection information related to onsite sewage disposal systems (online RME)) are contained in other databases. Requesting information from these other databases may increase processing cost and/or processing time. If you would like copies of information contained in these databases, please check one or both of these boxes. □ **LEX (Complaint Database)** □ **Online RME**

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Number of CD's*	_____	x $5.00	=	_____
Staff Time	_____	x _____	=	_____
		Total Cost	=	_____

Completion Information

Date Completed:

_____ / _____ / _____

Completed By:

_____

We accept either cash or check. Please make checks payable to County of Loudoun.

Staff Comments: _____

_____

*Not all information is available in digital format

Tracking Number: _____

Request for File Information
Loudoun County Health Department

Note: A tax map number, PIN (property identification number), or a property address MUST be provided to process any request

Date of Request: 05 / 17 / 2016

Property Owner(s): A&N Development, LLC (Goddard School in Ashburn)

Property Address: 45091 RESEARCH PL ASHBURN VA 20147

Tax Map Number: _____

PIN: 039-17-8435-000

Info Requested By: Douglas Talaber

Requestor's Address: 936 Ridgebrook Rd, Sparks, MD 21152

Telephone #: (410) 316 - 7869 Fax #: (410) 316 - 7935

Description of Information Needed: Storage tanks, remediation activity , environmental (env) violations, env inspections, env investigations, spills or other environmental activities.

Note: By completing this form you are requesting access to the general information in the records of the Loudoun County Health Department. Complaint information (LEX) and post-installation inspection information related to onsite sewage disposal systems (online RME)) are contained in other databases. Requesting information from these other databases may increase processing cost and/or processing time. If you would like copies of information contained in these databases, please check one or both of these boxes. □ **LEX (Complaint Database)** □ **Online RME**

File Search Requests May Take Up To FIVE (5) days to Process

****

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Number of Copies	_____	x $0.08	=	_____
Number of CD's*	_____	x $5.00	=	_____
Staff Time	_____	x _____	=	_____
		Total Cost	=	_____

Completion Information

Date Completed:

_____ / _____ / _____

Completed By:

_____

We accept either cash or check. Please make checks payable to County of Loudoun.

Staff Comments: _____

_____

*Not all information is available in digital format

Tracking Number: _____

Request for File Information
Loudoun County Health Department

Note: A tax map number, PIN (property identification number), or a property address MUST be provided to process any request

Date of Request: 05 / 17 / 2016

Property Owner(s): VISA USA, Inc. (VISA Operations Center)

Property Address: 44901 RUSSELL BRANCH PKWY ASHBURN VA 20147

Tax Map Number: _____

PIN: 040-46-4286-000

Info Requested By: Douglas Talaber

Requestor's Address: 936 Ridgebrook Rd, Sparks, MD 21152

Telephone #: (410) 316 - 7869 Fax #: (410) 316 - 7935

Description of Information Needed: Storage tanks, remediation activity , environmental (env) violations, env inspections, env investigations, spills or other environmental activities.

Note: By completing this form you are requesting access to the general information in the records of the Loudoun County Health Department. Complaint information (LEX) and post-installation inspection information related to onsite sewage disposal systems (online RME)) are contained in other databases. Requesting information from these other databases may increase processing cost and/or processing time. If you would like copies of information contained in these databases, please check one or both of these boxes. □ **LEX (Complaint Database)** □ **Online RME**

File Search Requests May Take Up To FIVE (5) days to Process

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FOR OFFICE USE ONLY

Plats (Black & White ONLY)	_____	x $3.00	=	_____
Number of Copies	_____	x $0.08	=	_____
Number of CD's*	_____	x $5.00	=	_____
Staff Time	_____	x _____	=	_____
		Total Cost	=	_____

Completion Information

Date Completed:

_____ / _____ / _____

Completed By:

_____

We accept either cash or check. Please make checks payable to County of Loudoun.

Staff Comments: _____

_____

*Not all information is available in digital format

Tracking Number: _____

Request for File Information
Loudoun County Health Department

Note: A tax map number, PIN (property identification number), or a property address MUST be provided to process any request

Date of Request: 05 / 17 / 2016

Property Owner(s): Loudon County Transit – Ashburn North

Property Address: _____

Tax Map Number: 45151 RUSSELL BRANCH PKWY ASHBURN VA 20147

PIN: 040-38-3790-000

Info Requested By: Douglas Talaber

Requestor's Address: 936 Ridgebrook Rd, Sparks, MD 21152

Telephone #: (410) 316 - 7869 Fax #: (410) 316 - 7935

Description of Information Needed: Storage tanks, remediation activity , environmental (env) violations, env inspections, env investigations, spills or other environmental activities.

Note: By completing this form you are requesting access to the general information in the records of the Loudoun County Health Department. Complaint information (LEX) and post-installation inspection information related to onsite sewage disposal systems (online RME)) are contained in other databases. Requesting information from these other databases may increase processing cost and/or processing time. If you would like copies of information contained in these databases, please check one or both of these boxes. □ **LEX (Complaint Database)** □ **Online RME**

File Search Requests May Take Up To FIVE (5) days to Process

****

FOR OFFICE USE ONLY

Plats (Black & White ONLY)	_____	x $3.00	=	_____
Number of Copies	_____	x $0.08	=	_____
Number of CD's*	_____	x $5.00	=	_____
Staff Time	_____	x _____	=	_____
		Total Cost	=	_____

Completion Information

Date Completed:

_____ / _____ / _____

Completed By:

_____

We accept either cash or check. Please make checks payable to County of Loudoun.

Staff Comments: _____

_____

*Not all information is available in digital format

Tracking Number: _____

Request for File Information
Loudoun County Health Department

Note: A tax map number, PIN (property identification number), or a property address MUST be provided to process any request

Date of Request: 05 / 17 / 2016

Property Owner(s): Strayer University

Property Address: 45150 RUSSELL BRANCH PKWY, ASHBURN VA 20147

Tax Map Number: _____

PIN: 040-48-4818-000

Info Requested By: Douglas Talaber

Requestor's Address: 936 Ridgebrook Rd, Sparks, MD 21152

Telephone #: (410) 316 - 7869 Fax #: (410) 316 - 7935

Description of Information Needed: Storage tanks, remediation activity , environmental (env) violations, env inspections, env investigations, spills or other environmental activities.

Note: By completing this form you are requesting access to the general information in the records of the Loudoun County Health Department. Complaint information (LEX) and post-installation inspection information related to onsite sewage disposal systems (online RME)) are contained in other databases. Requesting information from these other databases may increase processing cost and/or processing time. If you would like copies of information contained in these databases, please check one or both of these boxes. □ **LEX (Complaint Database)** □ **Online RME**

File Search Requests May Take Up To FIVE (5) days to Process

****

FOR OFFICE USE ONLY

Plats (Black & White ONLY)	_____	x $3.00	=	_____
Number of Copies	_____	x $0.08	=	_____
Number of CD's*	_____	x $5.00	=	_____
Staff Time	_____	x _____	=	_____
		Total Cost	=	_____

Completion Information

Date Completed:

_____ / _____ / _____

Completed By:

_____

We accept either cash or check. Please make checks payable to County of Loudoun.

Staff Comments: _____

_____

*Not all information is available in digital format

Appendix E

Sanborn Map Report

RT 7/George Wash Blvd Overpass - Phase I

45050 Russell Branch Pkwy

Ashburn, VA 20147

Inquiry Number: 4615723.3

May 11, 2016

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

05/11/16

Site Name:	Client Name:
RT 7/George Wash Blvd Overp	KCI Technologies, Inc.
45050 Russell Branch Pkwy	936 Ridgebrook Rd.
Ashburn, VA 20147	Sparks, MD 21152
EDR Inquiry # 4615723.3	Contact: Douglas Talaber

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by KCI Technologies, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 0611-490B-AA8A

PO # 12159091.A05

Project Rt 7/GW Blvd Overpass-Phase I

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 0611-490B-AA8A

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

KCI Technologies, Inc. (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

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Appendix F

Historic Aerial Photographs

INQUIRY #: 4615723.12
YEAR: 1974
= 500'
N
EDR

INQUIRY #: 4615723.12
YEAR: 1967
= 500'
N
EDR

INQUIRY #: 4615723.12

YEAR: 1963

= 500'

N

EDR

INQUIRY #: 4615723.12
YEAR: 1957
= 500'
N
EDR

INQUIRY #: 4615723.12
YEAR: 1950
= 500'
N
EDR

INQUIRY #: 4615723.12
YEAR: 1943
= 500'
N
EDR

INQUIRY #: 4615723.12

YEAR: 1937

= 500'

N

EDR

RT 7/George Wash Blvd Overpass - Phase I

45050 Russell Branch Pkwy

Ashburn, VA 20147

Inquiry Number: 4615723.12

May 11, 2016

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

05/11/16

Site Name:

RT 7/George Wash Blvd Overp
45050 Russell Branch Pkwy
Ashburn, VA 20147
EDR Inquiry # 4615723.12

Client Name:

KCI Technologies, Inc.
936 Ridgebrook Rd.
Sparks, MD 21152
Contact: Douglas Talaber

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2011	1"=500'	Flight Year: 2011	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2008	1"=500'	Flight Year: 2008	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2002	1"=500'	Flight Date: April, 07 2002	USGS
2000	1"=750'	Flight Date: March, 26 2000	USGS
1998	1"=750'	Flight Date: April, 06 1998	USGS
1994	1"=750'	Flight Date: March, 17 1994	USGS
1988	1"=500'	Acquisition Date: April, 11 1988	USGS/DOQQ
1980	1"=500'	Flight Date: March, 27 1980	USGS
1979	1"=500'	Flight Date: July, 07 1979	USGS
1974	1"=500'	Flight Date: October, 04 1974	USGS
1967	1"=500'	Flight Date: September, 12 1967	USDA
1963	1"=500'	Flight Date: March, 24 1963	USGS
1957	1"=500'	Flight Date: October, 21 1957	USDA
1950	1"=500'	Flight Date: June, 02 1950	USGS
1943	1"=500'	Flight Date: September, 13 1943	USGS
1937	1"=500'	Flight Date: December, 10 1937	USGS

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

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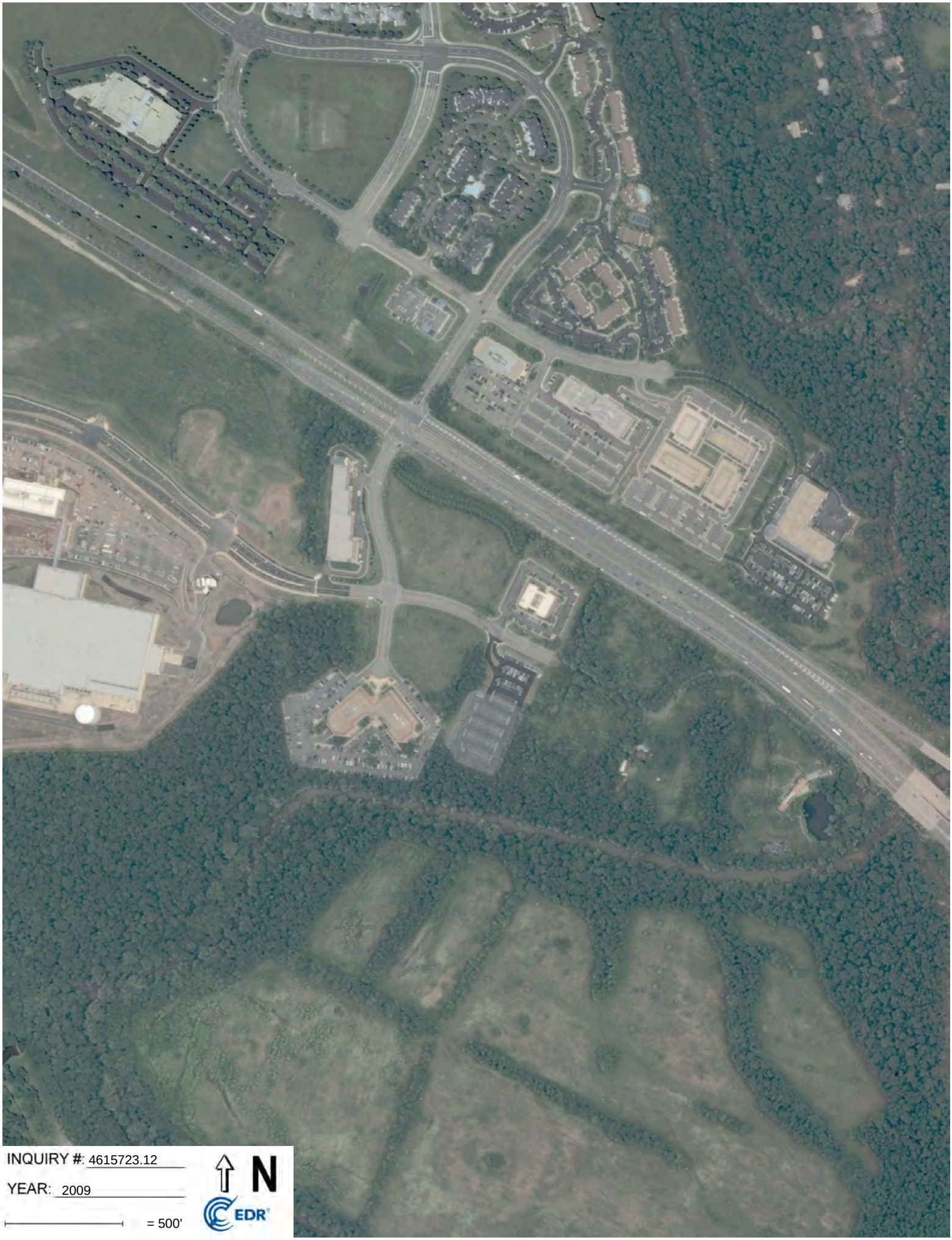
INQUIRY #: 4615723.12
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 4615723.12
YEAR: 2011
= 500'
N
EDR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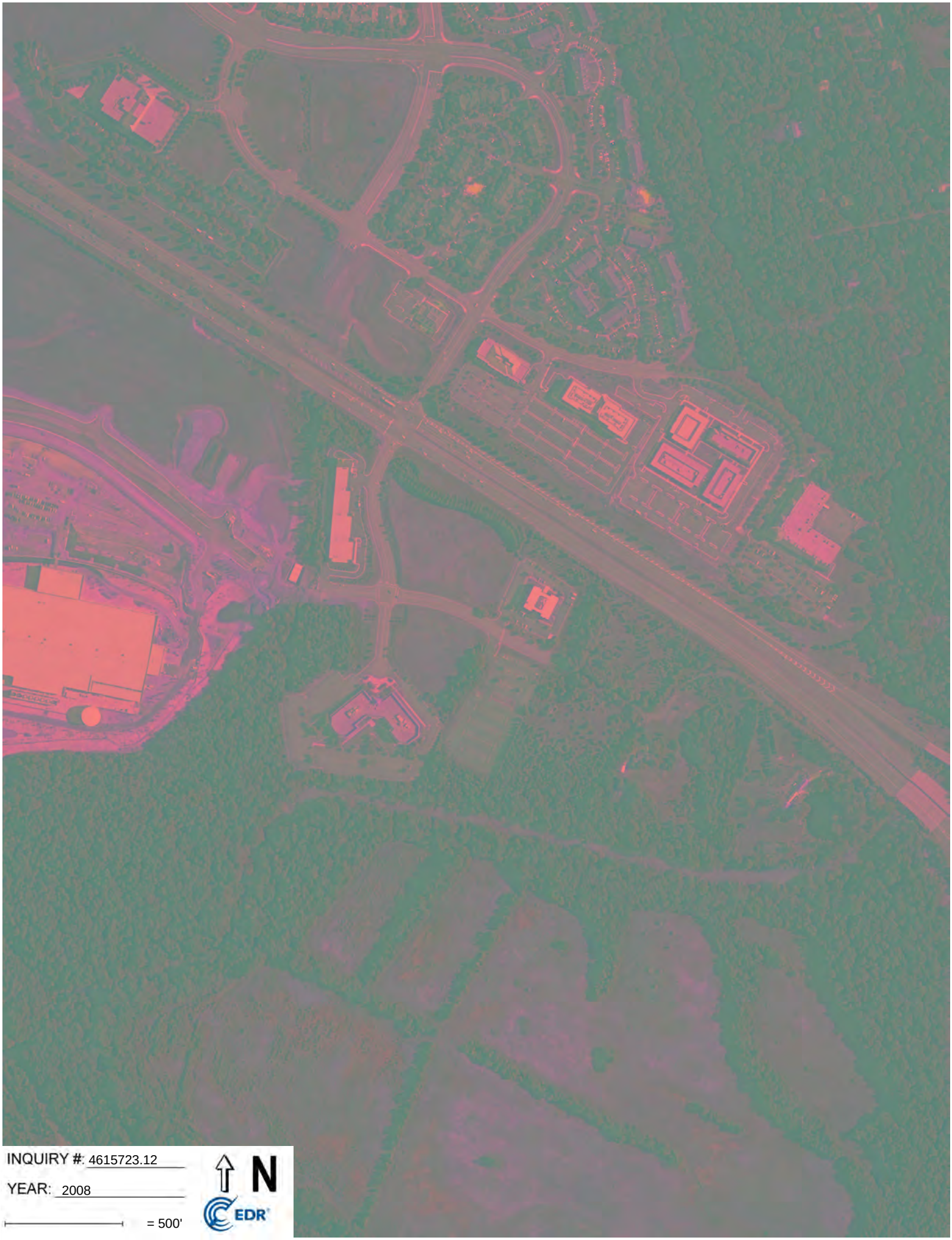
YEAR: 2009
= 500'
N
EDR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YEAR: 2008
= 500'
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EDR

INQUIRY #: 4615723.12
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 4615723.12
YEAR: 2002
= 500'
N
EDR

INQUIRY #: 4615723.12
YEAR: 2000
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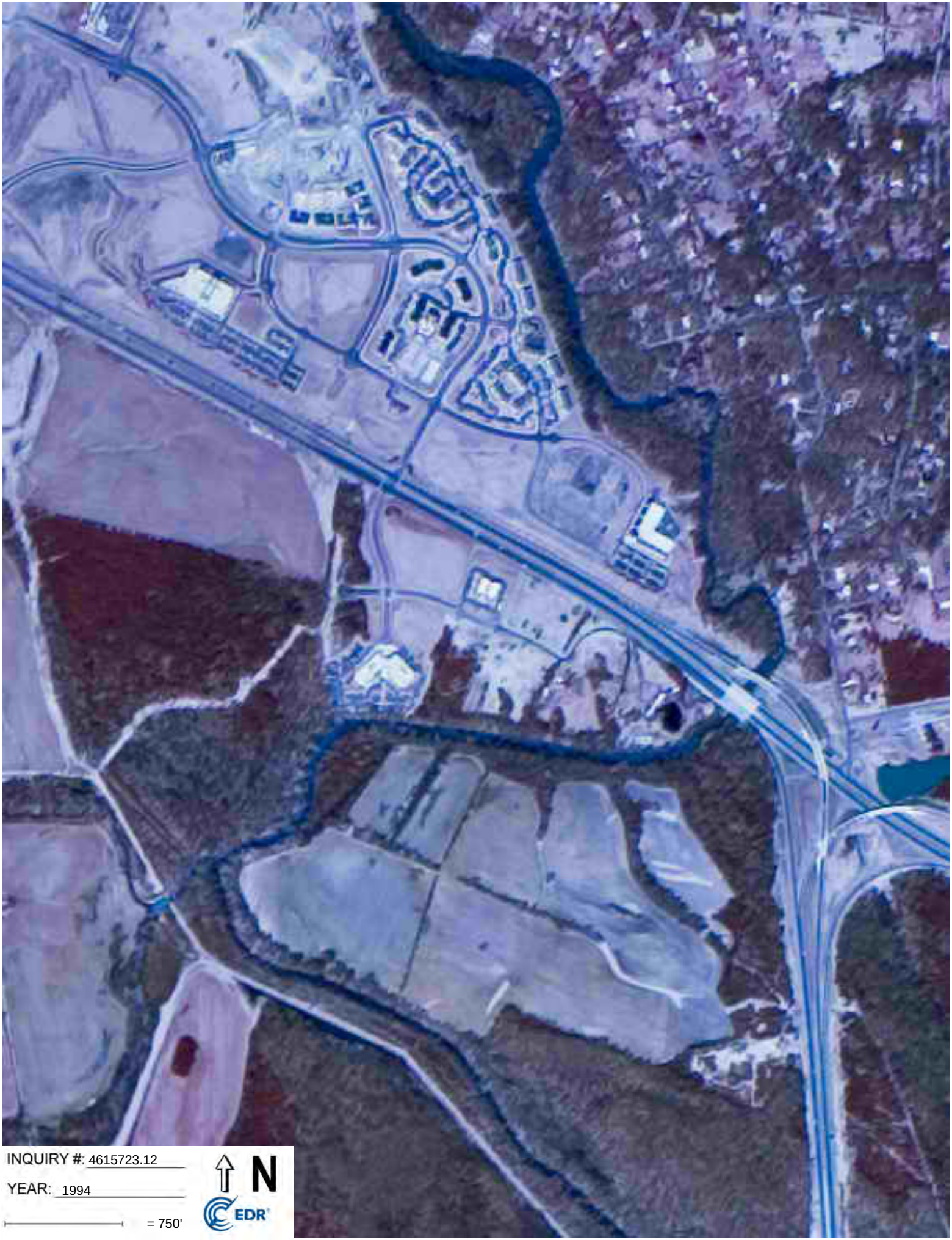
EDR

INQUIRY #: 4615723.12
YEAR: 1998
= 750'
N
EDR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YEAR: 1994
= 750'
N
EDR

INQUIRY #: 4615723.12
YEAR: 1988
= 500'
N
EDR

INQUIRY #: 4615723.12
YEAR: 1980
= 500'
N
EDR

INQUIRY #: 4615723.12
YEAR: 1979
= 500'
N
EDR

Appendix G

Historic Topographic Maps

RT 7/George Wash Blvd Overpass - Phase I

45050 Russell Branch Pkwy

Ashburn, VA 20147

Inquiry Number: 4615723.4

May 11, 2016

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

05/11/16

Site Name:	Client Name:
RT 7/George Wash Blvd Overp	KCI Technologies, Inc.
45050 Russell Branch Pkwy	936 Ridgebrook Rd.
Ashburn, VA 20147	Sparks, MD 21152
EDR Inquiry # 4615723.4	Contact: Douglas Talaber

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by KCI Technologies, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	12159091.A05	**Latitude:**	39.048922 39° 2' 56" North
Project:	Rt 7/GW Blvd Overpass-Phase	**Longitude:**	-77.439057 -77° 26' 21" West
		UTM Zone:	Zone 18 North
		UTM X Meters:	288930.01
		UTM Y Meters:	4325036.74
		Elevation:	239.81' above sea level

Maps Provided:

2013	1908
1995	1894
1984	1893
1980	
1972	
1968	
1952	
1944	

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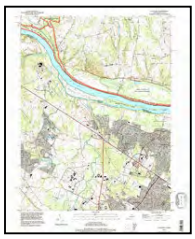
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2013 Source Sheets

Sterling
2013
7.5-minute, 24000

1995 Source Sheets



Sterling
1995
7.5-minute, 24000
Aerial Photo Revised 1995

1984 Source Sheets

Sterling
1984
7.5-minute, 24000
Photo Revised 1984
Aerial Photo Revised 1981

1980 Source Sheets

Sterling
1980
7.5-minute, 24000
Photo Revised 1980
Aerial Photo Revised 1977

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1972 Source Sheets

Sterling
1972
7.5-minute, 24000
Photo Revised 1972
Aerial Photo Revised 1972

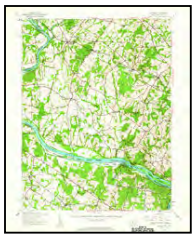
1968 Source Sheets

Sterling
1968
7.5-minute, 24000
Aerial Photo Revised 1963

1952 Source Sheets

Sterling
1952
7.5-minute, 24000
Aerial Photo Revised 1943
Edited 1942

1944 Source Sheets



Seneca
1944
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1908 Source Sheets

Seneca
1908
15-minute, 62500

1894 Source Sheets

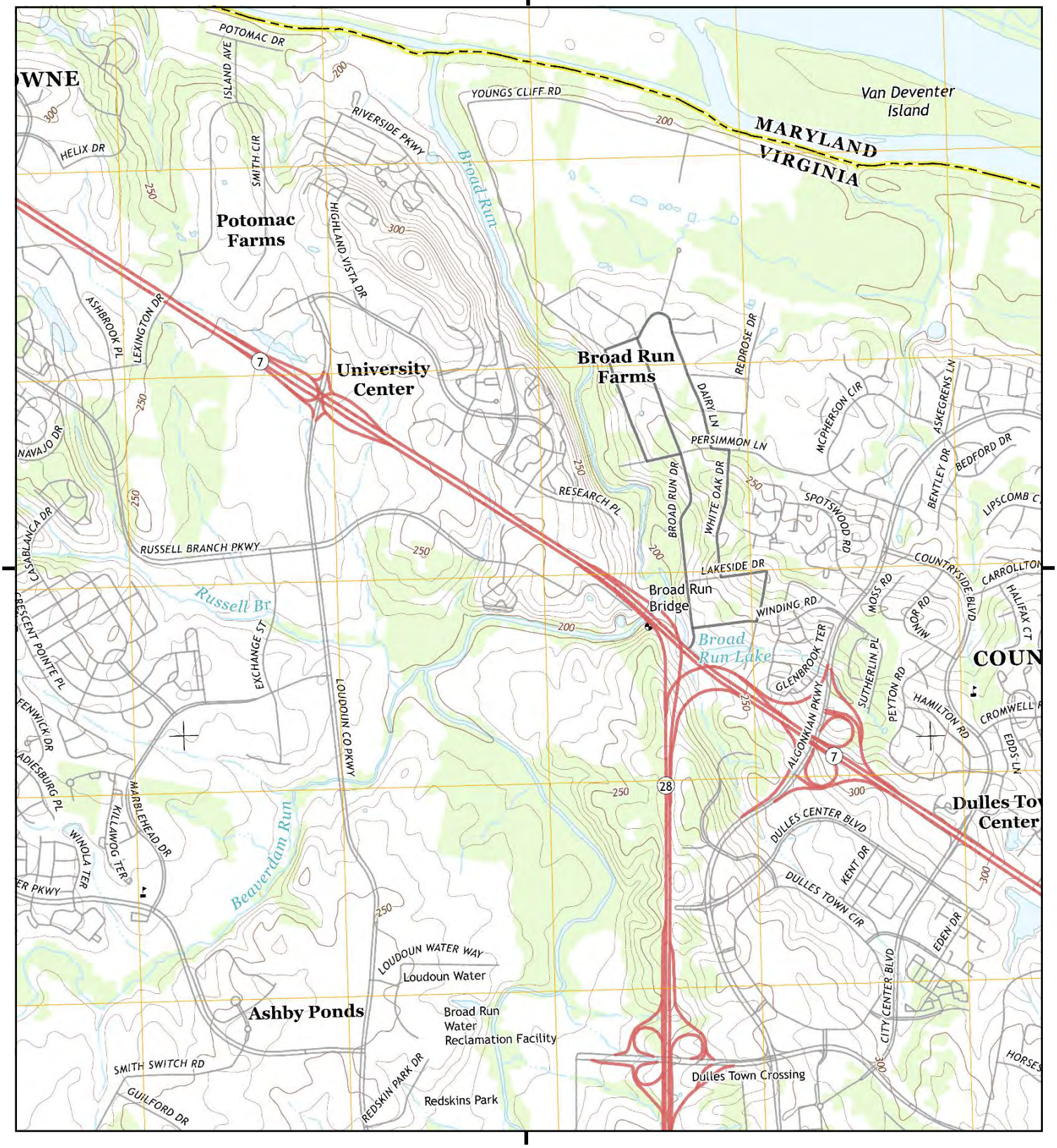
Frederick
1894
30-minute, 125000

1893 Source Sheets

Frederick
1893
30-minute, 125000

Historical Topo Map

2013



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

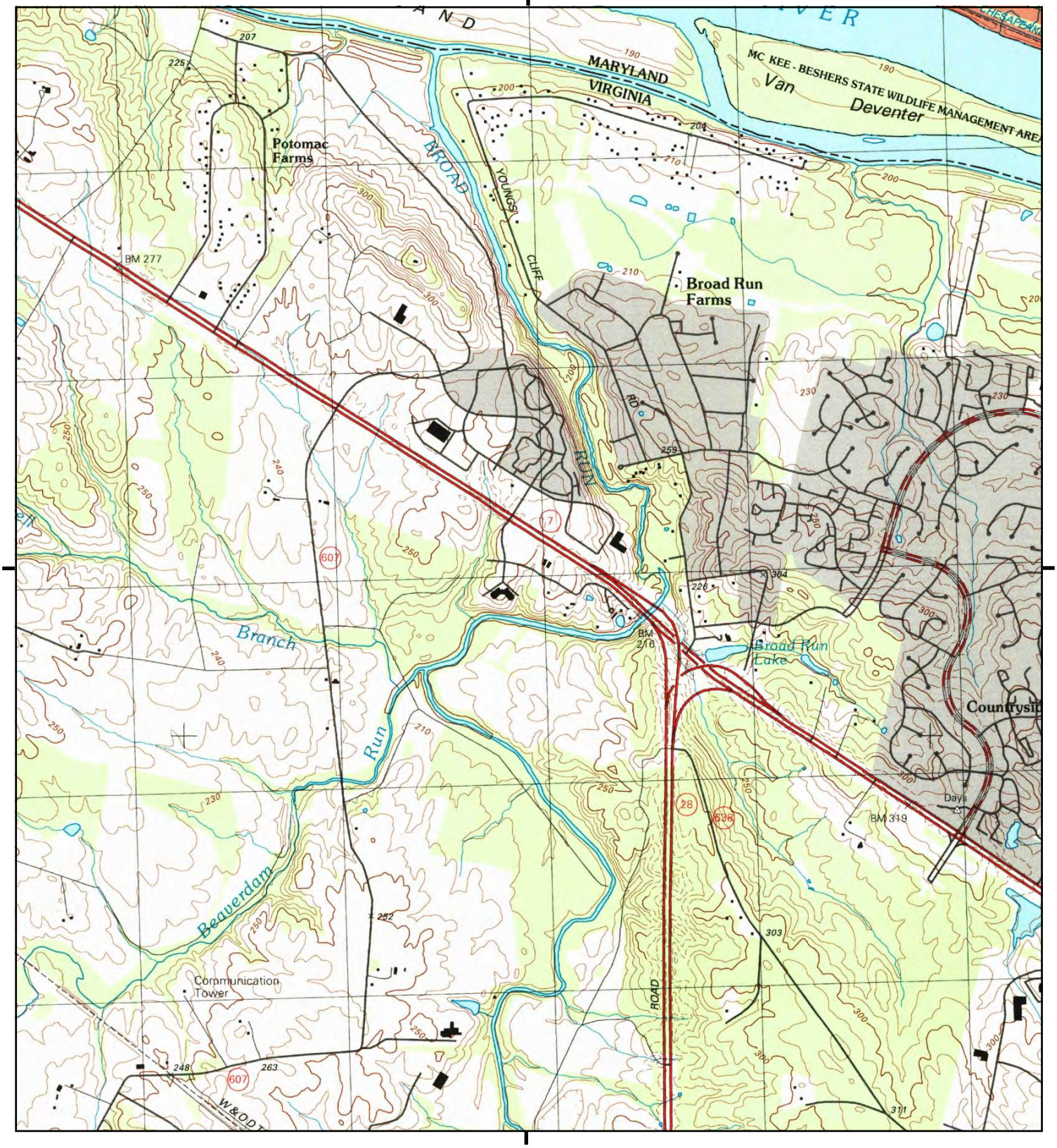
TP, Sterling, 2013, 7.5-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

Historical Topo Map

1995



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

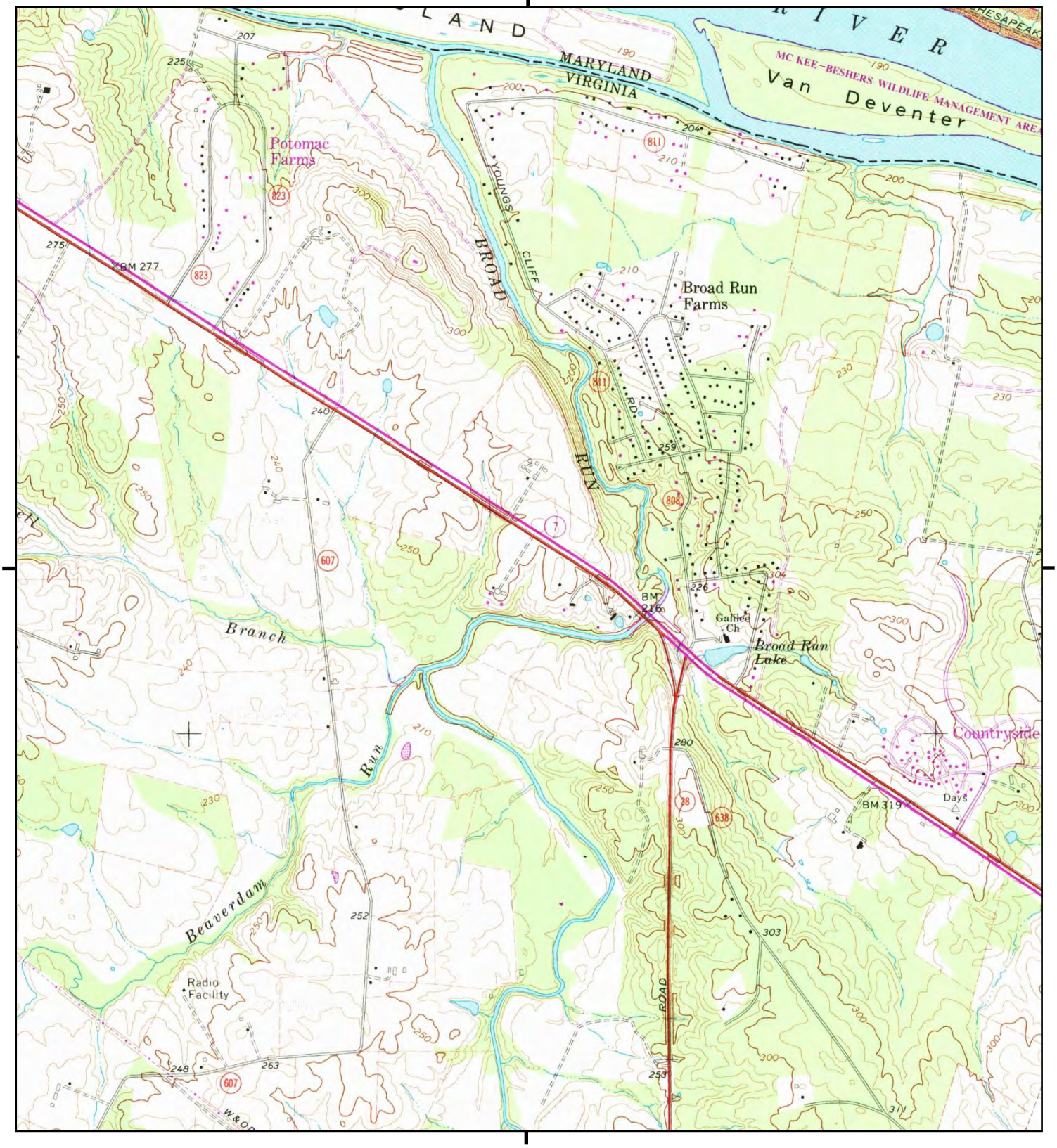
TP, Sterling, 1995, 7.5-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

Historical Topo Map

1984



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

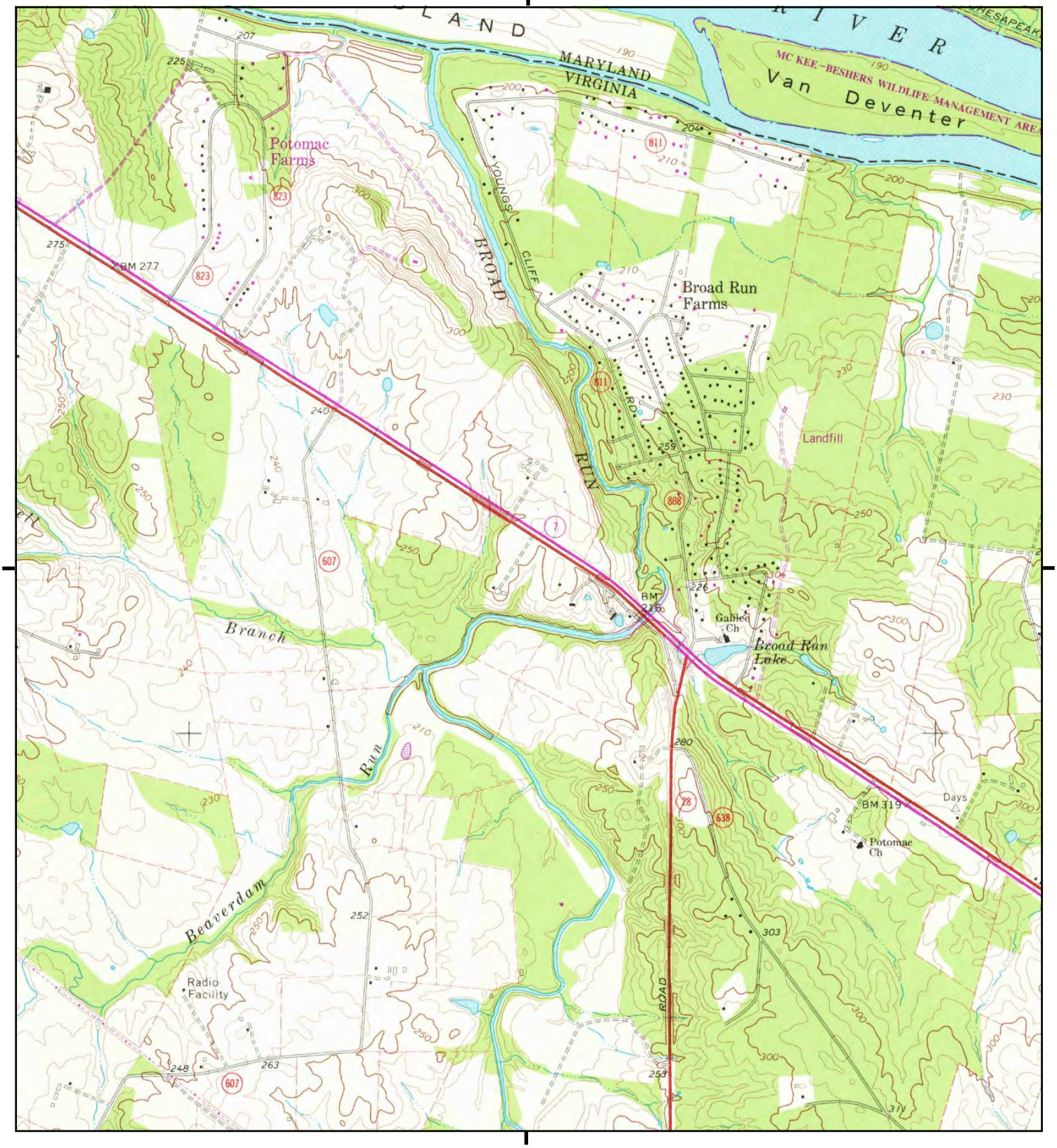
TP, Sterling, 1984, 7.5-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

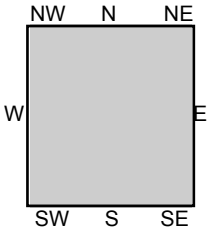
Historical Topo Map

1980



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



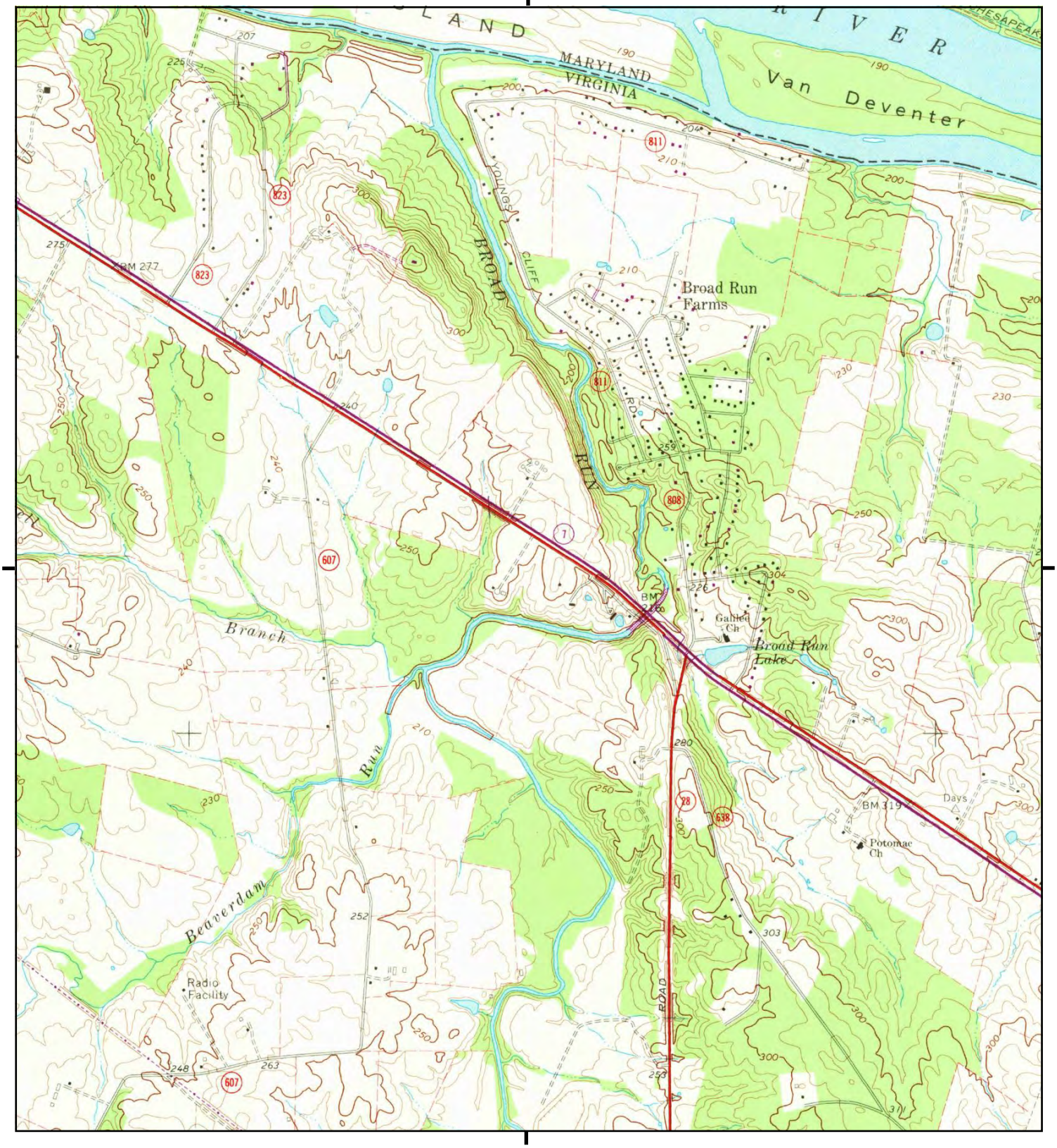
TP, Sterling, 1980, 7.5-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

Historical Topo Map

1972



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

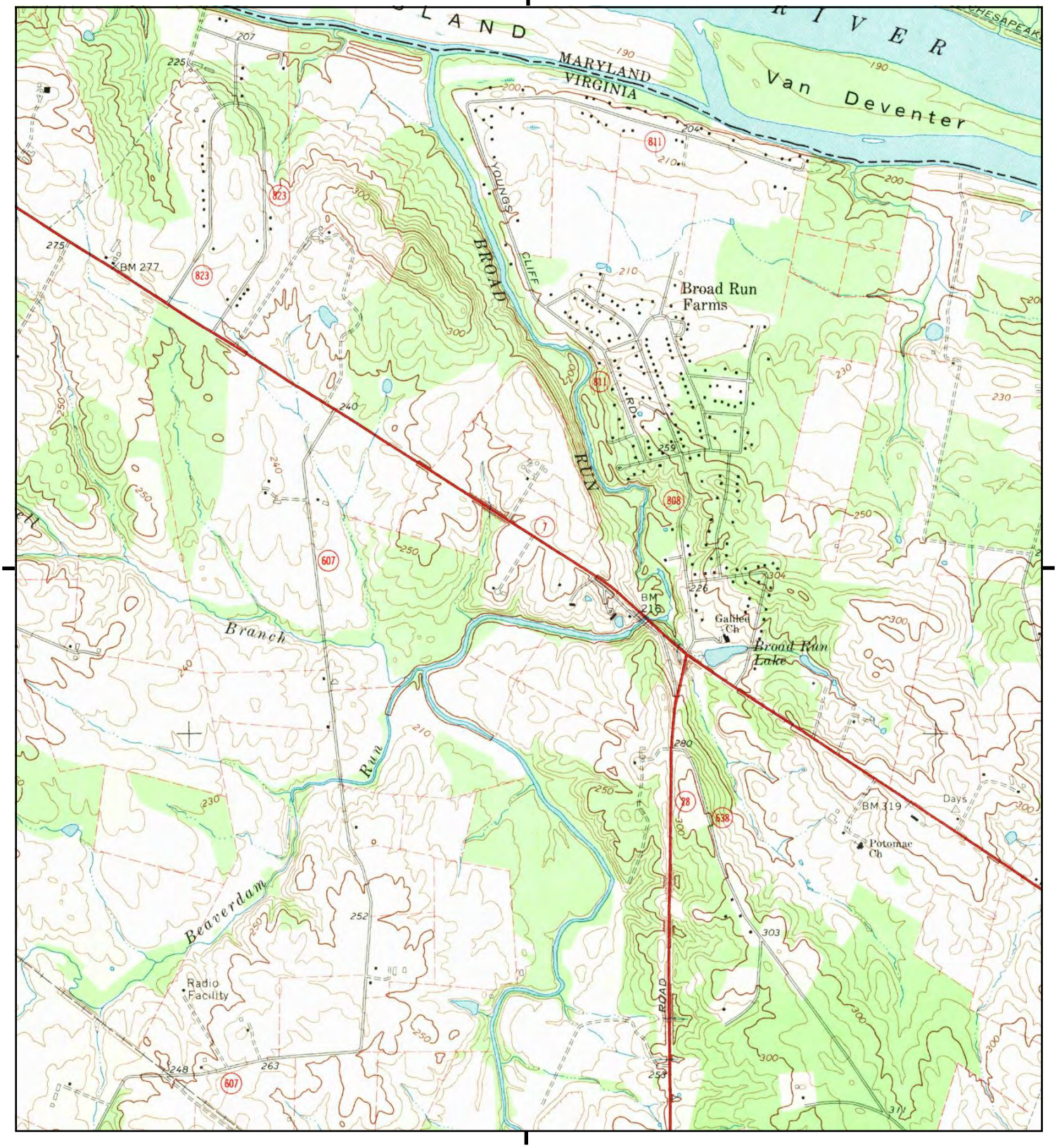
TP, Sterling, 1972, 7.5-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

Historical Topo Map

1968



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

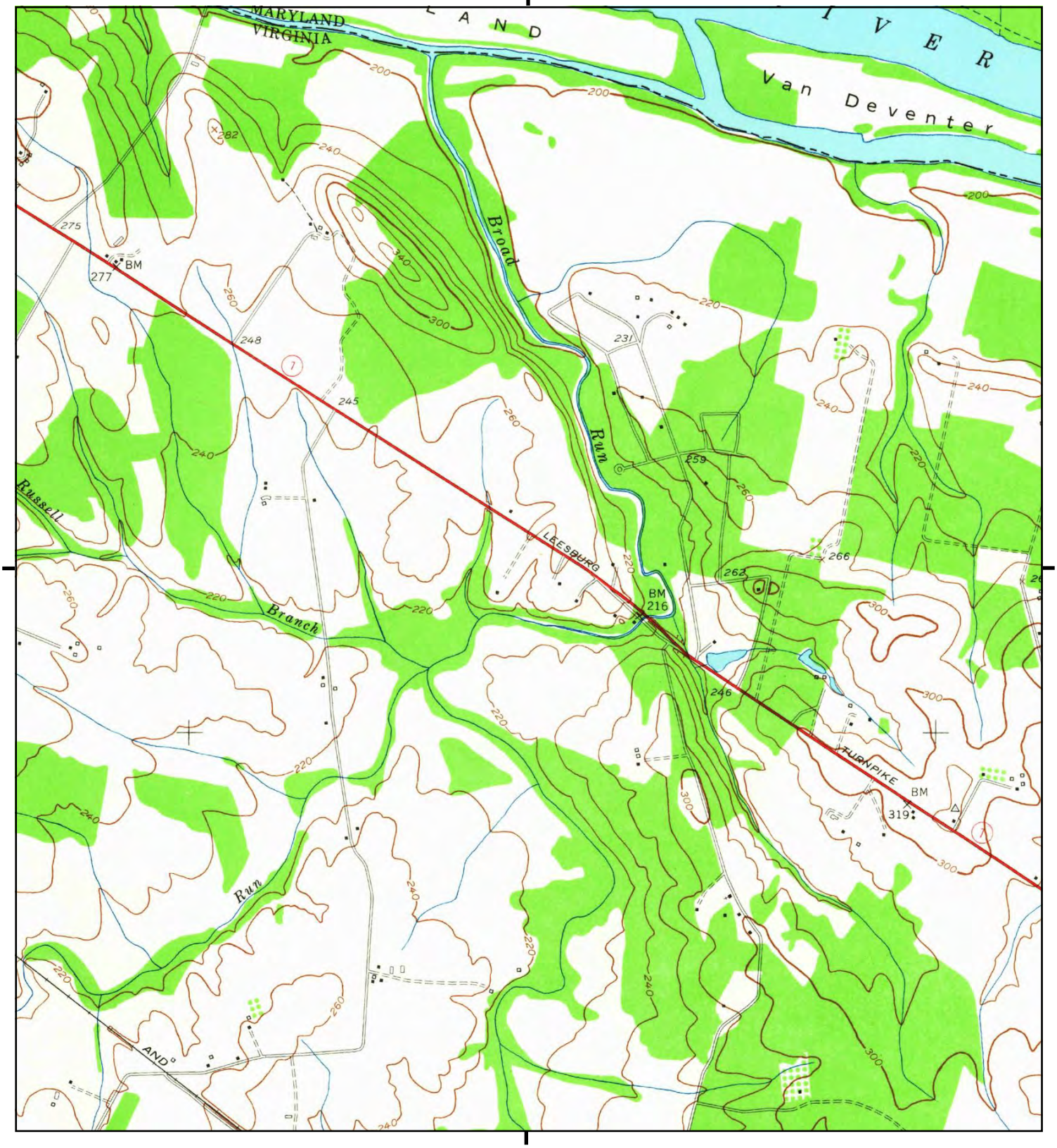
TP, Sterling, 1968, 7.5-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

Historical Topo Map

1952



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

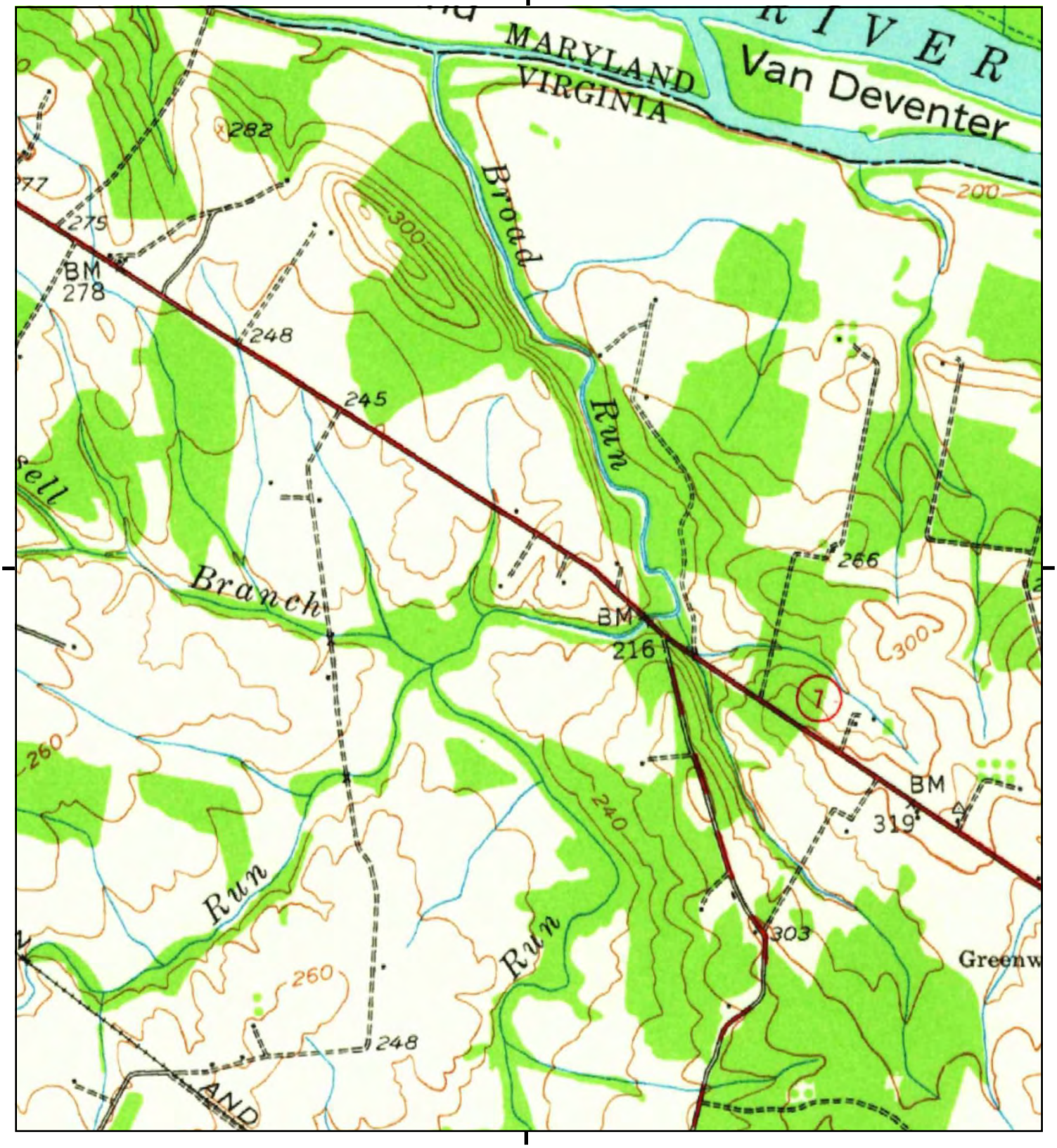
TP, Sterling, 1952, 7.5-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

Historical Topo Map

1944



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

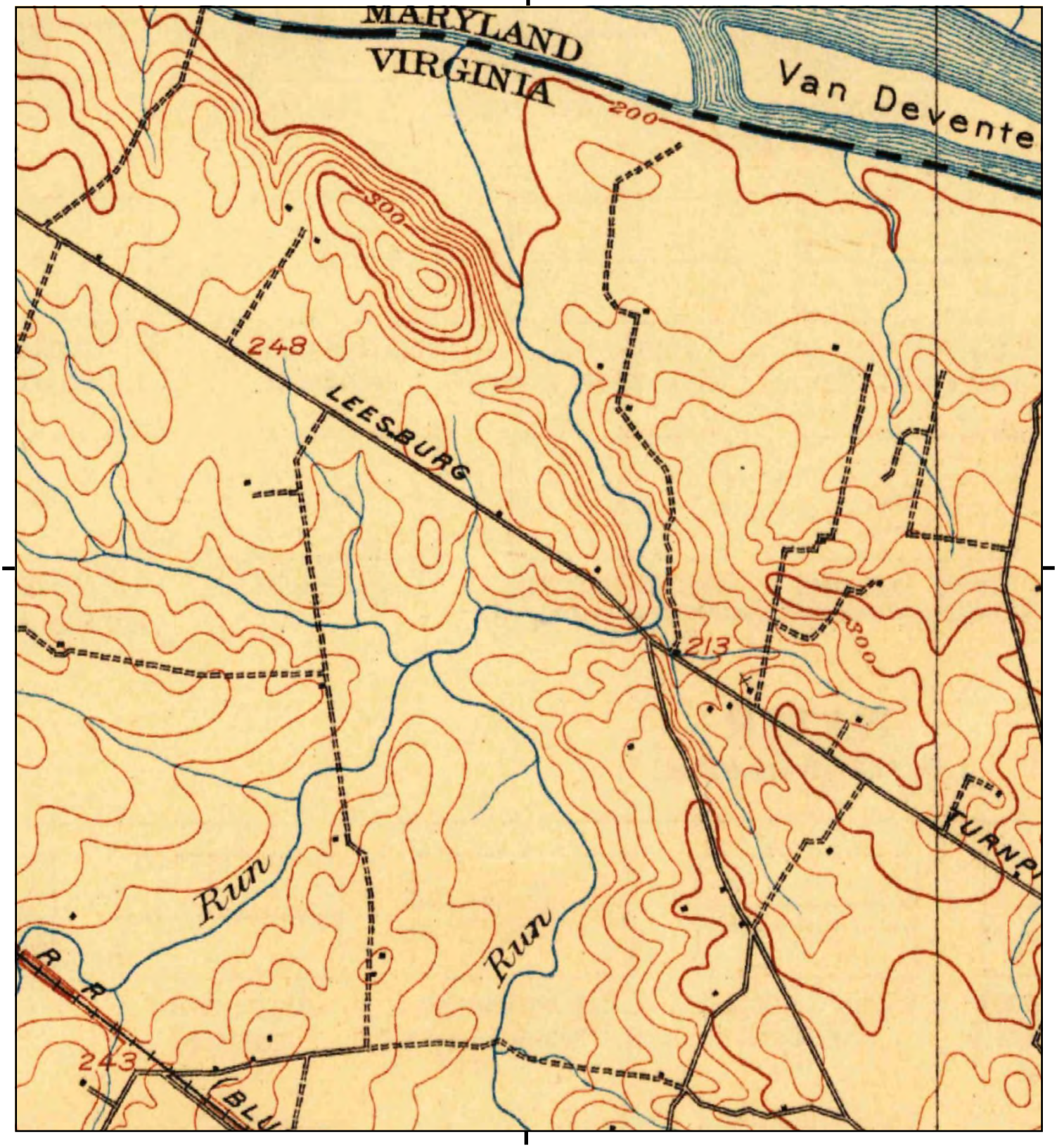
TP, Seneca, 1944, 15-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

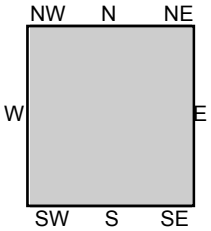
Historical Topo Map

1908



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



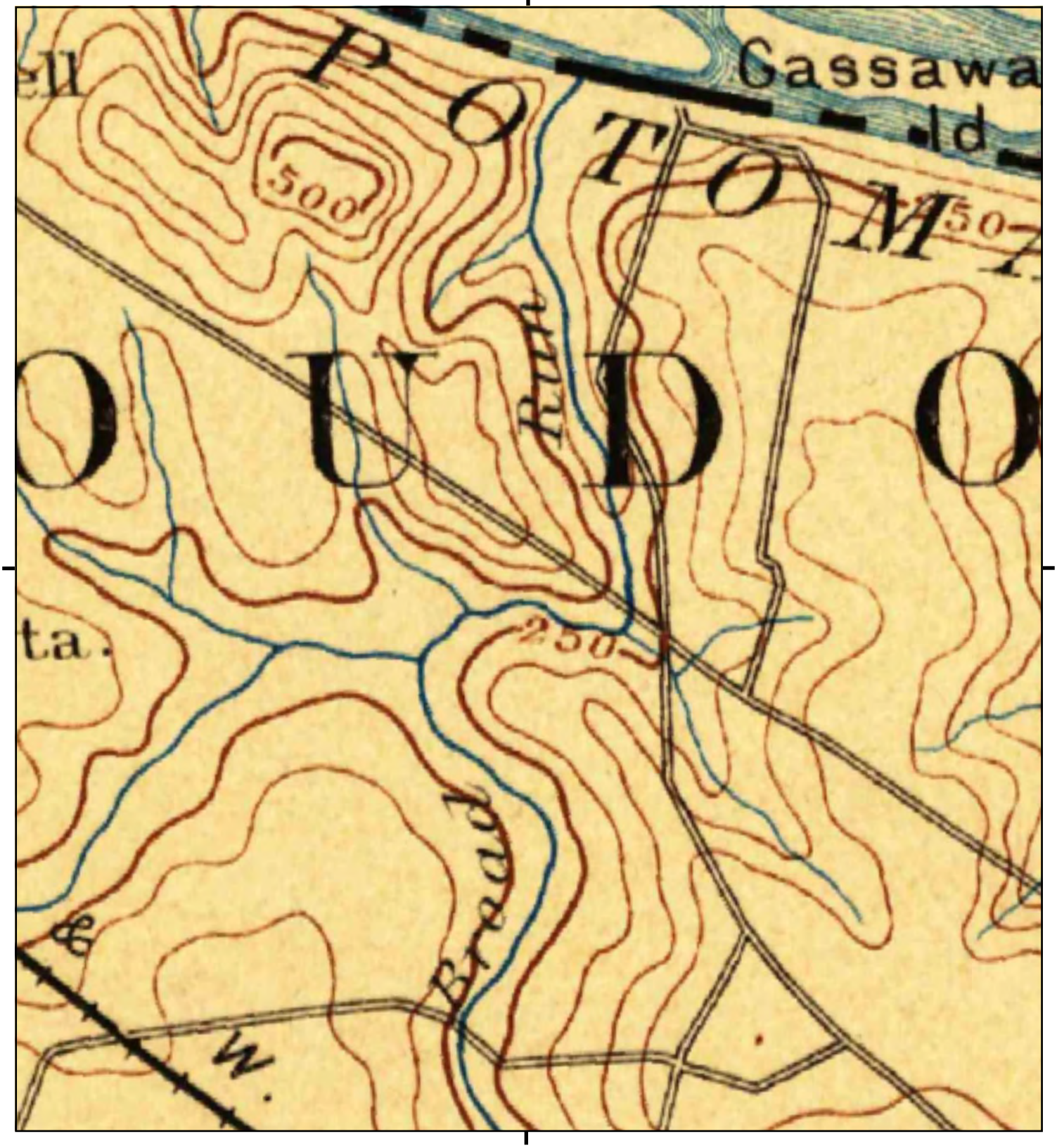
TP, Seneca, 1908, 15-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

Historical Topo Map

1894



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

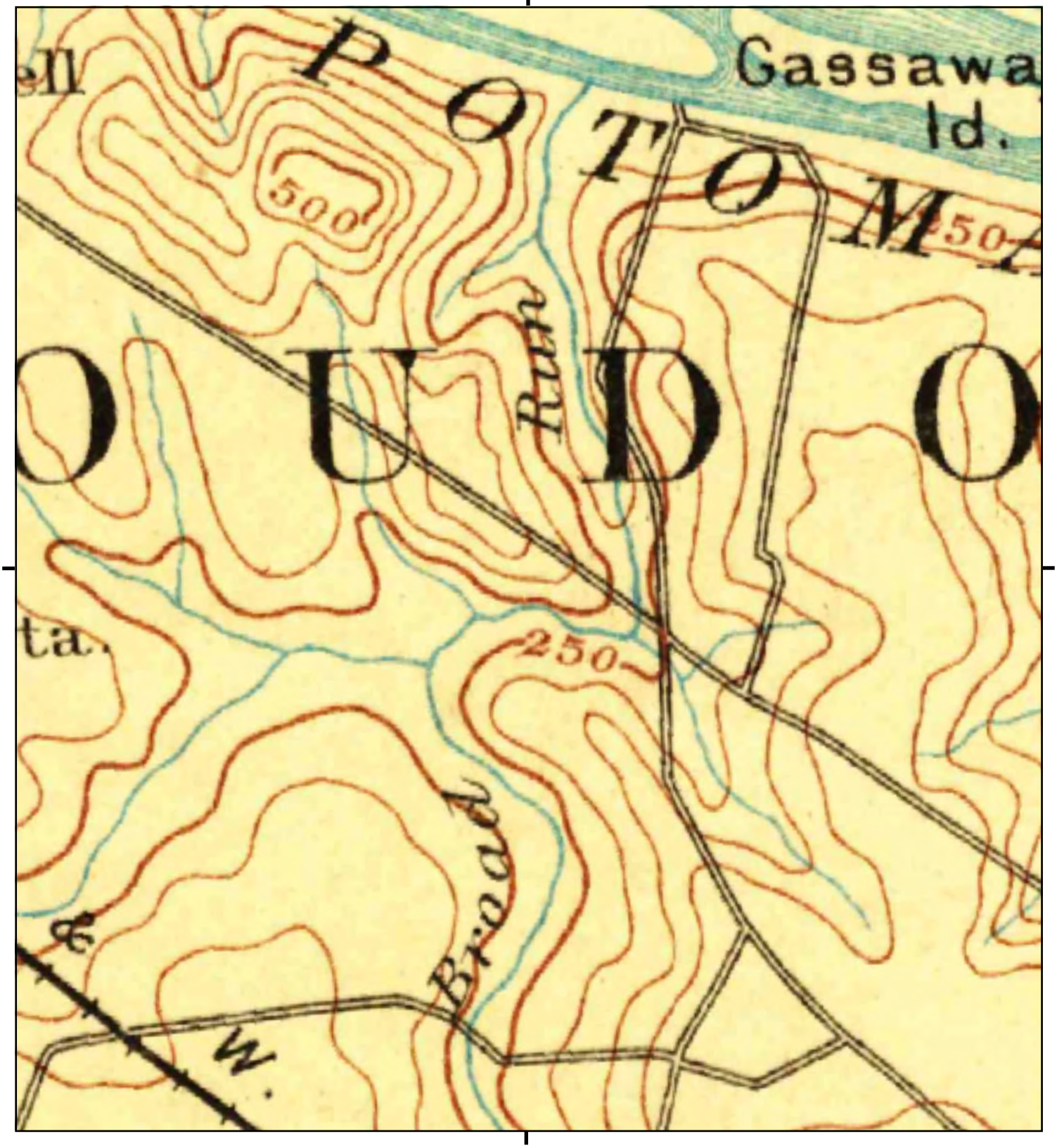
TP, Frederick, 1894, 30-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

Historical Topo Map

1893



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Frederick, 1893, 30-minute

SITE NAME: RT 7/George Wash Blvd Overpass - Phas
ADDRESS: 45050 Russell Branch Pkwy
Ashburn, VA 20147
CLIENT: KCI Technologies, Inc.

N

Appendix H

EDR City Directory

RT 7/George Wash Blvd Overpass - Phase I
45050 Russell Branch Pkwy
Ashburn, VA 20147

Inquiry Number: 4615723.5
May 11, 2016

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2013	☑	☐	Cole Information Services
2008	☑	☐	Cole Information Services
2003	☑	☐	Cole Information Services
1999	☑	☐	Cole Information Services
1995	☑	☐	Cole Information Services
1992	☑	☐	Cole Information Services
1987	☐	☐	Haines Criss-Cross Directory

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FINDINGS

TARGET PROPERTY STREET

45050 Russell Branch Pkwy
Ashburn, VA 20147

Year	*CD Image*	*Source*	
RUSSELL BRANCH PKWY			
1987	-	Haines Criss-Cross Directory	Street not listed in Source
RUSSELL BRANCH PKWY			
2013	pg A1	Cole Information Services	
2008	pg A2	Cole Information Services	
2003	pg A3	Cole Information Services	
1999	pg A4	Cole Information Services	
RUSSELL BRANCH PKY			
1995	pg A5	Cole Information Services	
1992	pg A6	Cole Information Services	

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

RUSSELL BRANCH PKWY 2013

43600	ST DAVIDS EPISCOPAL CHURCH
	TOPLINE LOCKSMITH
43900	MINNIELAND ACADEMY
45005	INOVANT VISA
	VISA OCX
45050	SECURITY PUBLIC STORAGE
45150	ALLSTATE
	FRIENDS & COMPANY
	GRADUATE SCHOOL OF ISLAMIC & SOCIA
	HERITAGE EDUCATION TRUST
	RUSSELL BRANCH PARTNERS LLC
	STRAYER UNIVERSITY
45191	ALFRED HURLEY
45241	MEHDI PAHLAVANI
45291	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✓	-	Cole Information Services

RUSSELL BRANCH PKWY 2008

43675	BELMONT COUNTRY CLUB
43880	TOLL BROTHERS INC
45150	CORDOBA UNIVERSITY
	GRADUATE SCHOOL OF ISLAM
	HUNTLEY NYCE & ASSOCIATES
	STRAYER UNIVERSITY
45191	ALFRED HURLEY
45241	MEHDI PAHLAVANI
45291	STEPHEN SMITH

Target Street	Cross Street	Source
✓	-	Cole Information Services

RUSSELL BRANCH PKWY 2003

43880	TOLL BROTHERS BLMNT CNTRY CLUB
45150	HUNTLEY NYCE & ASSOCS
	SIRIUS MANAGEMENT TECHNOLOGIES
	STRAYER UNIVERSITY
45191	ALFRED HURLEY
45241	MEHDI PAHLAVANI
45291	STEPHEN SMITH

Target Street	Cross Street	Source
✓	-	Cole Information Services

RUSSELL BRANCH PKWY 1999

45150	CHECKFREE CORPORATION DEVELOPMENT OFFICE
	HUNTLEY NYCE & ASSOCIATES LIMITED
	INTERNATIONAL SOCIETY CAROTID ARTERY THERAPY
	MEDICORP
	PARSAY MO INS
	STRAYER COLLEGE ASHBURN CAMPUS
	VAW
45241	ERIN MCNAMARA

Target Street	Cross Street	Source
✓	-	Cole Information Services

RUSSELL BRANCH PKY 1995

45150	HUNTLEY NYCE & ASSOC
	INTERNATIONAL BUSINESS & TECH
	INTL BUS&TECH CNSLT
	NATIONWDE INS SALES
	NATIONWIDE INSURANCE CO
	PRUDENTIAL INSURANCE CO
	STRAYER COLLEGE LOUDOUN CAMPUS

Target Street	Cross Street	Source
✓	-	Cole Information Services

RUSSELL BRANCH PKY 1992

45150 ALLSTATE INSURANCE
INTL BUS CNSLTS INC

Appendix I

Environmental Lien Search

RT 7/George Washington Blvd Overpass - Phase I
45050 Russell Branch Pkwy
Ashburn, VA, 20147

Inquiry Number: 4615723.7
May 17, 2016

The EDR Environmental LienSearch™ Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Environmental LienSearch™ Report

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.

Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental LienSearch™ Report

TARGET PROPERTY INFORMATION

ADDRESS

RT 7/George Washington Blvd Overpass - Phase I
45050 Russell Branch Pkwy
Ashburn, VA, 20147

RESEARCH SOURCE

Source 1: Loudoun County Assessor
Source 2: Loudoun County Clerk of the Circuit Court

PROPERTY INFORMATION

Deed 1

Type of deed:	Special Warranty Deed
Title is vested in:	Indus Re, LLC
Title received from:	LSQ Limited Partnership
Deed dated:	7/13/2004
Date recorded:	7/29/2004
Instrument:	20040729-0077919
Comments:	
Legal description:	See attached deed copy if available
Legal current owner:	Indus Re, LLC
Property identifier:	040-47-9351-000

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☑

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found ☐ Not Found ☑

EDR Environmental LienSearch™ Report

DEED EXHIBIT

THIS DOCUMENT WAS PREPARED
IN THE COMMONWEALTH OF VIRGINIA
BY, ~~AND AFTER RECORDATION, PLEASE RETURN TO~~:
ELLEN F. DYKE, ESQUIRE,
VENABLE LLP,
8010 TOWERS CRESCENT DRIVE, SUITE 300,
VIENNA, VIRGINIA 22182

Return to:
First American Title Insurance Co.
1801 K Street, NW, Suite 200K
Washington, DC 20006
Attn: Clare Ursano #85191

TAX MAP PARCELS: ##40-47-9351, 40-48-1243, 40-48-2933

DEED

Consideration $1,906,575.00

Grantee's name & address

INDUS RE, LLC
c/o INDUS Holdings, LLC
1951 Kidwell Drive, 8th Floor
Vienna, VA 22182
Attention: Donald Shoff

THIS SPECIAL WARRANTY DEED ("Deed") is made as of this 13th day of July, 2004, by and between **LSQ LIMITED PARTNERSHIP**, a Virginia limited partnership, Grantor or party of the first part; and **INDUS RE, LLC,** a Virginia limited liability company, Grantee or party of the second part.

WITNESSETH, that in consideration of the sum of Ten Dollars ($10.00), and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the said party of the first part does hereby grant and convey, with Special Warranty, unto the said party of the second part, in fee simple, the land and premises, with the improvements, easements and appurtenances thereunto belonging, situate, lying and being in Loudoun County, Virginia, described on Exhibit A attached to and made a part of this Deed ("**Property**").

TO HAVE AND TO HOLD the Property, together with all and singular the rights, rights of way, privileges, hereditaments, easements and appurtenances pertaining thereto unto the use and benefit of the party of the second part, its successors and assigns, in fee simple forever.

THIS CONVEYANCE is made subject to easements, conditions and restrictions of record insofar as they lawfully affect the Property.

By acceptance of this Deed, the party of the second part agrees, on its own behalf and on behalf of its heirs, successors, and assigns, that upon request by the party of the first part and/or any party to whom such right is specifically granted by the party of the first part (as evidenced by an instrument recorded in the Office of the Clerk of the Circuit Court of Loudoun County, Virginia ("**Clerk's Office**")), the then title holder of the Property shall subject the Property to the effect and operation of the Amended and Restated Protective Covenants for Loudoun Square Business Park ("**Restated Covenants**") in the form attached to and made a part of this Deed as Exhibit B (subject to such modification as the party of the first part or its

Instr:20040729-0077919 Pg: 1 OF 25
Loudoun County, VA
07/29/2004 9:28:02AM Grantor Tax Pd
Gary M. Clemens, Clerk $1907.00

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permitted designee(s) may reasonably request and the party of the second part or the then owner of the Property shall have approved, such approval not to be unreasonably withheld, delayed or conditioned; provided, however, the party of the first part shall not be required to obtain such approval of the party of the second part for any such modification which does not adversely affect the party of the second party and/or the Property), whereupon the Property shall be subjected to the effect and operation of the Restated Covenants to the same extent as, and if, the Restated Covenants were recorded prior to the recordation of this Deed, except for any approvals, authorizations or waivers previously granted to the party of the second part or its heirs, successors, or assigns pursuant to the Protective Covenants for Loudoun Square Business Park which was recorded in the Office of the Clerk in Deed Book 0981 at Page 1413, as modified by the Deed of Correction to Protective Covenants recorded in the Office of the Clerk in Deed Book 2037 at Page 1858, shall not be rendered invalid by reason of the recordation of the Restated Covenants. The provisions of this paragraph shall be deemed covenants running with the land; provided, however, that (a) the foregoing covenant shall terminate and be of no further force or effect (i) on the date that the party of the first part or any party to whom the rights under such covenant have been granted no longer owns any Lot in the property described in the Exhibits attached to the Restated Covenants, or (ii) if, upon the exercise of such rights, all of the Lots in the property described in the Exhibits attached to the Restated Covenants shall not be subjected to the effect and operation of the Restated Covenants, and (b) the party of the second part, notwithstanding anything to the contrary set forth herein, shall have no obligation to subject the Property to the effect and operation of the Restated Covenants if an owner of any Lot in the property described in the Exhibits attached to the Restated Covenants fails or refuses to subject such Lot to the effect and operation of the Restated Covenants, and the party seeking to effect such recordation is unable to cause such failing or refusing owner to subject such owner's Lot to the effect and operation of the Restated Covenants.

IN TESTIMONY WHEREOF, on the day and year first hereinbefore written, the said party of the first part has caused these presents to be signed and delivered as its own free act and deed.

PARTY OF THE FIRST PART:

LSQ Limited Partnership,
a Virginia limited partnership

AG-LSQ Holdings, Inc.,
a Virginia corporation, general partner

By: D Eisenstat (SEAL)
Name: DAVID H. EISENSTAT
Title: AUTHORIZED OFFICER

DISTRICT OF COLUMBIA:

I HEREBY CERTIFY that on this 13th day of July, 2004, before the subscriber, a Notary Public for the District of Columbia aforesaid, personally appeared DAVID H. EISENSTAT, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and did acknowledge before me that he executed and delivered the same for the purposes therein expressed as his act and deed.

IN TESTIMONY WHEREOF , I have affixed my official seal the date above written.

[SEAL]

Laura L. Dunning
Notary Public

Laura L. Dunning
Notary Public, District of Columbia
My Commission Expires March 31, 2005

EXHIBIT A

TO SPECIAL WARRANTY DEED

Lots Two (2), Three (3) and Four(4), LOUDOUN SQUARE, as shown on a plat attached to the Deed of Dedication, Subdivision and Easement recorded March 14, 1988 in Deed Book 981 at Page 1399 among the land records of Loudoun County, Virginia.

EXHIBIT B

RESTATED COVENANTS

AMENDED AND RESTATED PROTECTIVE COVENANTS FOR LOUDOUN SQUARE BUSINESS PARK

THESE AMENDED AND RESTATED PROTECTIVE COVENANTS FOR LOUDOUN SQUARE BUSINESS PARK ("Covenants") are made and entered into this ___ day of _____ , 2000, by LSQ LIMITED PARTNERSHIP and LSQ ONE LIMITED PARTNERSHIP (together, "Grantor"), who have the full power and authority to subject the Property described in Exhibit A attached hereto and made part hereof to the operation and effective of these Covenants. These Covenants supersede the Protective Covenants for Loudoun Square Business Park recorded in Deed Book 981, Page 1413 among the Land Records of Loudoun County, Virginia.

ARTICLE I - PURPOSE

It is the purpose of these covenants to assure that the Loudoun Square Business Park will be harmoniously developed and maintained with high standards for quality and aesthetics, to minimize disturbing influences on neighboring properties and to contribute to a pleasant working environment. Because the orderly and attractive development of the Park enhances the value of each owner's investment in the Park, owners and developers of sites in the Park should be encouraged to assure high quality development in the Park through mutual cooperation and by enforcing not only the letter but the spirit of this Declaration. This Declaration is designed to complement local government and municipal regulations, and where conflicts occur, the more rigid requirement shall prevail.

ARTICLE II - DEFINITIONS

Unless the context otherwise specifies or requires, each term defined in this Article II shall, for all purposes of this Declaration, have the following meanings:

A. ARCHITECTURAL REVIEW BOARD. The term "Board" shall mean the Architectural Review Board created pursuant to Article IV.

B. BUILDING. The term "Building" shall include both the main portion of any building and all projections or extensions thereof, including garage, outside platforms and docks, carports, canopies, porches, and outbuildings.

C. BUSINESS PARK. The term "Business Park" or "Park" shall mean the real Property described in Exhibit A attached hereto and made a part hereof and known as "Loudoun Square Business Park", as augmented or reduced pursuant to the provisions of this Declaration.

D. COMMON AREA. The term "Common Area" shall mean and refer to each of the greenbelt area and landscape reserves or other areas reserved for use by the Owners

Association in a deed, recorded plat or easement, for the purposes of providing green space for aesthetic and/or recreational or other common purposes (including without limitation storm water retention basins) as may be established by the Grantor from time to time.

E. DECLARATION. The term "Declaration" shall mean this Amended and Restated Declaration of Protective Covenants for the Park, as the same may, from time to time, be amended, in accordance with the terms of this Declaration.

F. GRANTOR. The term "Grantor" shall mean LSQ Limited Partnership and LSQ One Limited Partnership, and to the extent the context of this Declaration reasonably requires, either or both of the parties constituting Grantor and further, to the extent provided in this Declaration, their successors and assigns.

G. IMPROVEMENTS. The term "Improvements" shall mean any and all buildings, outbuildings, underground installations, slope alterations, roads, driveways, parking areas, fences, screening walls and barriers, retaining walls, stairs, deck, windbreaks, plantings, planted trees and shrubs, poles, lights, signs, loading areas and all other structures or landscaping improvements of every type and kind.

H. OCCUPANT. The term "Occupant" shall be all-inclusive add shall mean any person or entity which occupies a part of the Park as a Property Owner, lessee or licensee or in any other capacity.

I. PLAN. The term "Plan" or "Plans" shall mean two sets of (l) detailed final plans showing the proposed location of all Improvements of any kind or nature to be constructed, including any and all buildings or other structures, parking areas, drives, service areas, loading docks (if any), and drainage system; (2) exterior elevations and building sections showing the design, including front, rear and side elevations, together with a description of exterior building materials, color and trim finishes, (3) landscaping and sprinkler system plan; and (4) exterior lighting plans including parking areas (indicating lighting type, style, and location), graphics and sign specifications.

J. PROPERTY OWNER. The term "Property Owner" or "Owner" shall mean the legal or beneficial owner of a part or all of the Park. The term "Property Owner" or "Owner" shall not include any party secured by, or trustee named in, any Deed of Trust, or the mortgage of a Mortgage, or any other person who holds title to or an interest in all or any part of the Park as security for a loan, unless and until such party obtains or acquires fee simple title to such portion of the Park through purchase, foreclosure or otherwise. In the case of any long term ground lease, the lessor and lessee under such ground lease shall have the right to specify which of them shall have the rights and duties of the Owner, but in the absence of specification the ground lessee shall be the Owner.

K. PROTECTIVE COVENANTS. The term "Park Protective Covenants," "Protective Covenants" and "Covenants" shall mean the Protective Covenants set forth in this Declaration, as they may from time to time be amended or supplemented.

L. SITE. The term "Site" shall mean any of the subdivided lots shown on Exhibit B attached hereto and made a part hereof. If a Property Owner develops two (2) or more contiguous subdivided lots as a single project containing only one Building, the subdivided lots comprising said project shall constitute one Site.

ARTICLE III

PROPERTY SUBJECT TO THE PARK PROTECTIVE COVENANT

A. GENERAL DECLARATION. Grantor hereby declares that the Business Park and every part thereof is and shall be owned (legally and beneficially), leased, or otherwise occupied, conveyed, hypothecated, encumbered, or otherwise transferred, developed, improved, built upon or otherwise used, subject to the Park Protective Covenants contained herein, which are declared and agreed to be in furtherance of the purpose set forth in Article I. These Protective Covenants shall constitute a covenant real, running with the land comprising the Business Park and every part thereof and with any interest in the Park or any part thereof for all purposes and shall be binding upon and inure to the benefit of Grantor and all Property Owners, lessees, licensees and Occupants, and their heirs, successors and assigns, as set forth in this Declaration.

B. PROHIBITION ON ADDITION OF OTHER REAL PROPERTY TO PARK. The Park shall only include the real property described in Exhibit A to these Covenants.

ARTICLE IV - ARCHITECTURAL REVIEW BOARD

There is hereby created an Architectural Review Board which shall be organized as follows:

A. BOARD COMPOSITION. The Board shall consist of three persons, one of whom shall be an Architect licensed to practice in Virginia. The right to appoint and remove all members to the Board shall be and is hereby vested solely in Grantor until such time as Grantor has conveyed twenty-nine percent (29%) of its interest in the real Property included within the Park. When Grantor no longer has the right to appoint the members of the Board, said right shall vest in the Association (as hereinafter defined), with one member of the Board being the elected chief officer of the Association and the remaining two members elected by the Board of Directors of the Association.

B. VOTING. Any action by the Board shall be taken by the vote in person, by proxy or by consent of two of the three members of the Board.

C. APPROVAL REQUIRED. No Improvements shall be constructed, erected, installed, reconstructed, altered, maintained or permitted to remain in the park until the plans for such Improvements shall have been submitted to and approved in writing by the Board in accordance with the terms hereof. The Plan shall be submitted in writing by the Owner or Occupant of the particular part of the Park, or its authorized agent. No construction of any kind (including clearing or grading) shall be commenced upon any Site without the Board's prior written approval of the Plan for such construction as set forth herein. All improvements built

within the Park shall be constructed in accordance with the Plans as the same are finally approved by the Board. Notwithstanding the express intention of these Protective Covenants that the approval of the Board be granted on the basis of final plans, all Owners are strongly encouraged to provide to the Board, for informal review and comment, schematic designs, design development drawings and preliminary site plans so that issues or problems can be identified and corrected with the minimum expense and delay. All changes to Plans must be similarly submitted to and approved by the Board. Notwithstanding anything in this Paragraph to the contrary, no submission to, or approval of, the Board shall be required in connection with any improvement or retrofit inside a building which is not visible from the exterior of such building.

D. BASIS FOR APPROVAL. The Board shall have the right to disapprove the Plans submitted to it if they are (i) not in accordance with the Protective Covenants, (ii) incomplete. or (iii) deficient in any material respect from an engineering or design standpoint, all as reasonably determined by the Board. In this connection the Board may base its approval or disapproval on, among other things, the adequacy of site dimensions, quality of exterior materials and finishes, quality and adequacy of landscaping, quality and design of exterior fenestration, conformity and harmony of external design with neighboring sites and types of operations and uses thereof, relation of topography, grade and finished ground elevation of the Site being improved to that of neighboring Sites, proper facing of main elevation with respect to nearby streets, adequacy of screening of mechanical and air conditioning equipment of any rooftop installation, including satellite dishes or antennae, and conformity of the Plans to the purpose and general plan and intent of the Protective Covenants.

E. RESULT OF INACTION. The Board shall approve or disapprove the Plans within thirty (30) days after receipt thereof. Any disapproval of the Plans or any portion thereof shall contain a reasonably detailed statement of the reason for disapproval and suggestions for improvement or revision which, if adopted fully, would lead to or result in Plan approval. The aforesaid 30-day period for the Board's review of the Plans shall not commence until the Plans, in complete and final form, have been received by the Board. If the Board fails either to approve or disapprove said Plans within the period above provided, it shall be conclusively presumed that the Board has approved said Plan.

F. EXPIRATION OF APPROVAL. If work is not commenced within one year from the date of such approval, then the approval given pursuant to this Article shall be deemed revoked by the Board, unless the Board, in writing, extends the time for commencing work. In any event, all work covered by such approval shall be completed within one year of the commencement thereof, except that the period for completion of such improvements shall be extended in the event delays due to strikes, fires, national emergencies, critical materials shortages, or other events of force majeure beyond the reasonable control of the Owner, Occupant, or its agent.

G. LIABILITY. All persons having an interest of any kind or nature in the Park are placed on notice that Board review of the Plans is intended to assure compliance with these Covenants and is based to a large degree on subjective and aesthetic factors. The Board does not conduct an independent structural or engineering analysis, review geotechnical reports, or otherwise review in any way the structural integrity, soundness, or fitness for a particular purpose of any Improvements. Neither Grantor, the Board, nor any member thereof, nor any agent of Grantor or the Board shall have any liability of any kind to any person in conjunction with performance of the duties of the Board.

ARTICLE V - PROPERTY OWNERS' ASSOCIATION

A. CREATION AND MEMBERSHIP. At such time as any area in the Park (exclusive of those portions deducted or conveyed for streets, roads, boulevards, parks and other public purposes) has been conveyed to parties other than Grantor or a designated affiliate of Grantor, or at such earlier date as the Grantor may elect, Grantor shall establish a Property Owners' Association ("Association") that shall be a nonprofit organization incorporated in the Commonwealth of Virginia for the purposes hereinafter set forth. The Grantor shall appoint the original Board of Directors of the Association, who shall adopt Bylaws for the Association. The Owner of each Site within the Park shall be a member of the Association, and shall be bound by the Association's Bylaws. The Association shall assume the duties and functions of the Grantor pursuant to these Covenants, and other functions of the Association shall include, but not be limited to, management of the Park, maintenance of all Common Areas including any storm water management basins or ponds located within Common Areas, representation of the Park Owners and tenants in community and government hearings possibly affecting the Park, and enforcement of this Declaration. The Grantor shall have the right to convey title to the Association and the Association shall accept title to any and all Common Areas including any storm water management basins or other facilities located within any Common Area.

B. ASSESSMENTS. The Association shall have the right to assess, and members of the Association shall pay, annual and special assessments to cover costs of operating the Association and performing its functions with respect to the Park as set forth herein or in the Bylaws. Such assessments, and the members' voting power as members of the Association, shall be apportioned on the basis of the ratio of the total square footage of land owned by each member within the Park in relation to the total square footage of land within the Park (exclusive of Common Areas) in accordance with the Bylaws. The annual assessments levied by the Association shall be used for operations and performance of the duties of the Association, including without limitation the operation, maintenance, and repair of the Common Areas, the payment of taxes and insurance thereon, the cost of landscape maintenance and repair, the payment of utility bills on common facilities (including water for sprinkler systems), the maintenance, repair, and replacement of the common elements located at the entrances of the Park, on dedicated streets and medians accepted by VDOT, and of the flood plain areas, drainage facilities, and retention ponds serving the Park, and for the cost of labor, equipment, materials, management and supervision of all of the foregoing.

In addition the annual assessments, the Association may levy special assessments to defray the cost of any construction or reconstruction, unexpected repair or replacements made by the Association in the Common Areas. Special assessments shall be due and payable on the date fixed by the Association when authorizing such special assessment.

The assessments, together with such interest thereon and costs of collection therefor as hereinafter provided, shall be a charge and continuing lien against the Owner of such real property as of the effective date of such assessment. Any such lien shall be subordinate, however, to the lien, operation and effect of any mortgage or deed of trust theretofore or thereafter encumbering such land. Each such assessment, together with such interest thereon and

costs of collection, shall also be the personal obligation of the person or entity who was the Owner of such land at the time the assessment was levied. Co-owners shall be jointly and severally liable for the entire amount of the assessment. In no event, however, shall any lender holding an interest in such land as security for the repayment of indebtedness be liable for any such assessments and charges unless such lender acquires title to the land.

Assessments on land that first become subject to assessments during a calendar year shall be prorated on a calendar year basis for the remainder of such year. Assessments are due and payable within 30 days (or 60 days in the case of special assessments) of billing to an Owner. The Association shall keep records of such assessments open for inspection by any Owner or lender. Overdue assessments shall accrue interest at the highest rate deemed appropriate by the Association, but in no event greater than three percent (3%) higher than the annual yield rate on six-month U.S. Treasury Bills. If an assessment remains overdue for more than 30 days from due date (60 days in the case of special assessments), the Association may bring an action in law or in equity and there shall be added to the amount of such assessments all reasonable attorney's fees and costs incurred by the Association in such actions.

Notwithstanding anything in this Paragraph B to the contrary, the Association shall not be required to pay for any obligations, or to construct (or the repair of negligent or defective construction of) any amenities, pursuant to any proffers affecting the Park.

ARTICLE VI - SITE DEVELOPMENT

A. SITE SIZE. Site size requirements are to be in accordance with the Loudoun County Zoning Ordinance.

B. GROUP COVERAGE. No Building shall occupy more than forty-five percent (45%) of the total area of the site.

C. YARDS AND SETBACKS. The following are minimum requirements for each Site (measured from property line):

1. Front yard (facing street) setback shall be a minimum of fifty (50) feet. Corner lots shall be considered as having two front yards.

2. Rear and side yard setbacks shall be a minimum of twenty-five (25) feet.

D. AUTOMOBILE PARKING. Each Site shall be improved with off-street automobile parking, and no parking will be permitted on any street, driveway entrance, or any place other than in approved parking spaces. The Grantor or the Association shall have the unqualified right to take any and all legal measures to prevent unauthorized parking on streets and driveways within the Park, including ticketing, towing, complaints to appropriate public authorities and any other available measures. Parking areas shall be constructed in accordance with the Loudoun County Zoning Ordinance. Paved parking areas larger than twenty (20) parking spaces shall have landscaped islands and areas intermittently spaced, as approved by the Board. All parking must be screened from the roadway by berms and plantings.

All other parking requirements are subject to the applicable Loudoun County Zoning Ordinance.

The intent of this provision is to eliminate the need for any on-street parking. If parking requirements increase as a result of a change in use or number of employees, the Board may in its reasonable discretion require the Property Owner or Occupant to provide additional off-street parking, at such Owner's or Occupant's expense, if any portion of its real property reasonably can be converted to a parking area.

E. SCREENING OF TRUCK PARKING AND LOADING AREAS. Truck parking and truck loading shall be permitted only in side and rear yards which do not face the roadways. All truck parking and loading areas shall be separated from car parking areas and shall be adequate screened from all roadways and adjacent lots by a fence (or other approved screening method) approved by the Board or by adequate landscape screening. Any masonry screen wall shall be subject to the same restrictions as are set forth herein for construction of exterior walls. All plantings shall be staggered to maximize density and the centers of all plants shall not be more than five feet apart in length or depth.

F. OUTSIDE STORAGE. No outside storage of any type will be permitted without the prior written approval of the Board. No such approval shall be granted unless the outside storage area shall be totally enclosed with an approved screen so that storage is not visible from the office area of neighboring property or the street.

G. LANDSCAPING. The entire area of any site containing a building shall be landscaped, except for areas covered by Buildings and paved areas. The natural beauty of the Park will be enhanced by the preservation of as many existing trees as is reasonably possible, especially along site boundaries, parking and landscaped areas. The landscape plan submitted to the Board for approval as part of the Plans shall indicate such things as the preservation of existing trees, the planting of trees, shrubs and grass and installation of earth berms and screens. The planting of hardwood or other deciduous trees or long-term shade, beautification and soil retention in the Park will be viewed with particular favor by the Board in assessing landscaping plans. Landscaping, as approved by the Board, shall be installed within ninety (90) days of occupancy or completion of the installation of the exterior walls and roof of the buildings, whichever occurs first.

H. PLANTING. Planting shall conform with the type, size and spacing determined by Grantor at a later date.

I. PRESERVATION OF PLANTING STRIPS. Berms, trees, shrubs, ground cover and lawn design along the access roads shall conform to the design of the typical loop or secondary road section and plan to be determined by Grantor at a later date. Maintenance of landscaping in Common Areas and access easement areas shall be through a common maintenance program and assessment performed by the Association.

J. EXTERIOR LIGHTING. All exterior lighting shall be designed, erected, altered and maintained in accordance with the Plans as approved by the Board. Lighting shall be compatible and harmonious throughout the Park and shall be in keeping with the specific function of the Building. Automobile and truck parking areas shall be illuminated, and the light sources shall be screened to prevent visible glare from the street.

K. SIGNAGE.

The size, shape, design and location of all signs shall be shown on the Plans submitted to the Board for approval. In no event shall the size, design, amount, configuration or location of signage exceed or violate that permitted by the Loudoun County Zoning Ordinance. In addition, each Site is limited to a maximum total of two (2) signs, with a total area of one hundred (100) square feet, and the largest of such signs may not exceed sixty (60) square feet of area. The foregoing two (2) sign limitation does not include or restrict an address sign located on each building and having a maximum area of four (4) square feet. All signs shall adhere to the following standards:

1. One sign per Site shall be detached from the building and located at the site entry to display the building address. The sign shall be located no closer than twenty-five (25) feet from any public roadway.

2. One sign per building may be attached to the building but may not extend above the roofline. The sign shall consist of individual cut-out letters no greater than 18 inches in height. Letters shall have a natural metal or black baked enamel finish or other approved material. No sign shall have exposed neon lights or flashing lights. If signs are to be illuminated, each letter must be back lighted.

3. Site traffic and information signs shall conform to VDOT standards, and shall be mounted as determined by Grantor at a later date.

4. There may be one temporary sign per lot for persons offering the building for sale or lease. This sign may also include the names of builders, architects, engineers and lenders involved in the construction of the project. The temporary sign shall not exceed thirty-two (32) square feet and shall be removed within thirty (30) days after the earlier to occur to completion of sale or full leasing of the building. Temporary sign design shall conform to requirements established by Grantor at a later date.

5. The foregoing signage requirements may be waived by the Board on a case-by-case basis, if the proposed signage has been approved by Loudoun County by special exception or otherwise complies with Loudoun County requirements.

L. DRAINAGE. All flood plains located within the property shall be preserved as a natural landscape area not to be filled or modified in any way without prior approval of Loudoun County and the Board. Planting of hardwood trees in flood plain areas is encouraged. Drainage plans and facilities shall comply with all rules, regulations and requirements of the Loudoun County Engineering Department and/or any other governmental authority having jurisdiction thereof.

Specific design for any storm water management system should follow the following basic guidelines.

1. The course of proposed drainage channels should generally follow the drainage patterns of the existing topography.

2. During construction all surface runoff must be retained on site.

3. During construction, erosion and sediment controls must be provided in accordance with Loudoun County regulations.

4. Lawn areas should utilize grass swales to collect and distribute surface runoff. These should be designed to operate on a minimum of 10 year storm frequency.

5. Where grass channels are inadequate, naturalistic channels or rip-rap may be utilized. Such channels should be heavily planted to resemble natural beds of small streams. Concrete drainage channels of any sort will not be permitted.

6. Roof drainage is to be channeled through downspouts located within the building and linked directly to an underground system or drainage channel. No exterior downspouts or gutters will be permitted.

7. Drainage facilities shall be designed to accommodate the drainage requirements of upstream sites, whether or not such sites have been developed.

M. SITE DESIGN. Emphasis on the Park as a total integrated complex is encouraged. Building design expressions in terms of massing, scale, color and circulation shall relate to adjacent buildings and the total development, and shall acknowledge basic site considerations and overall traffic circulation patterns. When multiple structures are planned for a Site as part of a single ownership or project, they shall be designed in a unified architectural and spatial manner.

N. CONSTRUCTION. No construction buildings, mobile or otherwise, or any building material, or construction vehicles shall be located or stored within street rights-of-way. During construction, the Owner shall be responsible for keeping the Site, rights-of-way and easements, sidewalks, street curbs, gutters, and catch basins in reasonably neat condition, preventing the accumulation of trash, and shall prevent runoff of soil from the Site onto adjacent property or the streets, which also include soil tracked on streets by construct ion vehicles and construction activities. Any such soil tracked on street shall be washed off or otherwise removed by Owner or Owner's contractor no less frequently than weekly.

O. GOVERNMENT REGULATIONS. Notwithstanding the foregoing, Owners shall comply with all Loudoun County ordinances, rules and regulations, and all proffers and conditions, which may from time to time, relate to the development of a site.

ARTICLE VII - BUILDING MATERIALS AND DESIGN

A. EXTERIOR WALLS. Material shall be approved by the Board and shall be one or more of the following or their respective approved equal:

1. BRICK shall be hard burned clay - color and texture to be approved.

2. STONE shall have a weathered face or shall be polished, fluted or broken-faced. No quarry-faced stone shall be used except in retaining walls.

3. CONCRETE MASONRY. Unit shall be those generally described by the National Concrete Masonry Association as "Customized Architectural Concrete Masonry Units" or shall be broken-faced brick-type units with marble aggregate. There shall be no exposed concrete block on the exterior of any building. Any concrete masonry units that have a grey cement color shall be coated with a coating approved by the Board.

4. CONCRETE may be poured in-place or precast. Textured finishes, except in special cases approved by the Board, shall be coated. Precast units which are not uniform in color shall be coated. Coating shall be an approved cementatious or an epoxy-type with a life expectancy of not less than ten (10) years.

B. CANOPIES. No canopies with visible will hangers will be permitted. Design of canopies shall be in keeping with the design of the building. No awnings of any type shall be permitted.

C. UTILITIES AND EQUIPMENT. No articles, goods, materials, incinerators, storage tanks, refuse containers or like equipment shall be kept in open view in front of any buildings or exposed to public view from any neighboring properties. Water towers, on-site utility services, storage tanks, transformers, pump houses, towers, vents or structures or equipment shall be architecturally compatible and screened from public view. All roof mounted equipment shall be screened from view as approved by the Board.

ARTICLE VIII - PERMITTED AND PROHIBITED USES

A. PERMITTED USES. Unless otherwise specifically prohibited herein, any industrial or commercial operation meeting the requirements of the applicable county and state ordinances will be permitted, provided such operation and use is performed and carried out entirely within a building designed and constructed in such manner that the operation and use shall not fall within the prohibited use described below.

B. PROHIBITED USES. Approval from any public agency notwithstanding, no operation will be permitted which creates objectionable noise, smoke, odors or which in any way, in the reasonable opinion of the Board, will constitute a nuisance or degrade the value of the property within the Park. No rubbish or debris of any kind shall be placed or permitted to accumulate upon or adjacent to any Site, except in approved waste containers.

C. BUILDING REPAIR. No Building, landscaping or Improvements in the Park shall be permitted by its Owner or Occupant to fall into disrepair, and each such building, landscaping or Improvements shall at all times be kept in good condition and repair, properly maintained and adequately painted or otherwise finished.

D. RIGHT OF ENTRY. During reasonable hours, subject to reasonable security requirements, Grantor, the Board and their authorized representatives shall have the right to enter

any part of the Park, but not the inside of Buildings for the purpose of ascertaining whether these Covenants have been or are being complied with. Any such entry and any entry pursuant to Article X.3 hereof shall constitute an authorized entry and Grantor, the Board, or their agents and representatives shall not be deemed guilty of trespass by reason thereof.

E. VARIANCE. The Board is hereby authorized and empowered to grant reasonable variances from provisions of this Declaration or any portion hereof, in order to overcome practical difficulties and to prevent unnecessary hardship in the application of the provisions contained herein, provided, however, that said variances shall not materially injure any of the Property or Improvements in the Park. No variance granted pursuant to the authority granted herein shall constitute a waiver of any provisions of this Declaration as applied to any other Property Owner or Site.

ARTICLE IX - DURATION, MODIFICATION AND REPEAL

A. DURATION OF PROTECTIVE COVENANTS. The Park Protective Covenants shall continue and remain in full force and effect at all times with respect to the Park and each part thereto (subject, however, to the right to amend and repeal the same as provided for herein) for a period beginning with the recordation of this Declaration with the Office of the Clerk of the Loudoun County Circuit Court, and ending twenty (20) years thereafter, and shall be automatically extended thereafter for successive periods of ten (10) years each, subject to termination as provided hereby.

B. TERMINATION AND MODIFICATION. This Declaration, or any provisions hereof, or any Protective Covenants herein, may be terminated, modified or amended, with the written consent of the Owners of eighty percent (80%) of the land area of the Park based on the number of square feet of real Property in the Park, but excluding any Common Areas or public roads; provided that each such termination, extension, modification or amendment shall apply uniformly to all Property in the Park; and further provided, that so long as either party constituting the Grantor owns any part of the Park, no such termination, extension, modification or amendment shall be effective without the written approval of such party(s) constituting Grantor. No such termination, extension, modification or amendment shall be effective until a written instrument setting forth the terms thereof, and referring to the Deed Book and Page Number where these Covenants and any amendments hereto have been recorded, have been executed by the Owners of eighty percent (80%) of the Park (and, if necessary, by the required party(s) constituting Grantor) and recorded with the Clerk of the Loudoun County Circuit Court; provided, however, that any part of the Park which is conveyed or dedicated by any party(s) constituting Grantor for use as a public roadway or other public use shall be conveyed or dedicated free and clear of the Protective Covenants by execution and delivery of a deed or instrument of dedication by Grantor.

ARTICLE X - ENFORCEMENT

A. PREVENTIVE REMEDIES. Grantor, the Board or any Property Owner may proceed at law or in equity to prevent the violation of the Covenants.

B. GRANTOR'S AND/OR BOARD'S RIGHTS. Grantor and the Board or their duly authorized agents shall have the right, upon reasonable notice, at any time and from time to time following violation or breach of the Covenants, without any liability to the Property Owner or Occupant for trespass or otherwise, to enter upon the Site as to which said violation or breach exists and to summarily abate and remove, repair, replace or install at the sole cost and expense of the Property Owner thereof, any Building, Improvements or landscaping, thing or condition that may be or exist there contrary to the Covenants (including, without in any way limiting the generality of the foregoing, the care and maintenance of landscaping, care and maintenance of Improvements, removal of trash and debris, abatement of nuisances, removal or relocation of signs, etc.) or to prosecute a proceeding at law or in equity against the person or persons who have violated or are attempting to violate any of the Covenants, to enjoin or prevent them from doing so, to cause said violation to be remedied or to recover damages for said violation. In the event pursuant to this paragraph, Grantor, the Board or their duly authorized agents enter upon any real Property for the purpose of abating, removing, repairing or replacing any violation of these Covenants, the Property Owner of such real Property shall promptly reimburse Grantor or the Board, as the case may be, for the cost thereof. Payment of such amount shall be secured by a lien against the Site and Improvements thereon of such Owner, which lien may be foreclosed in any manner provided by law. Such lien shall, however, be inferior to any vendor's lien, mortgage or deed of trust of record. If such amount is not paid in full within 20 days after such Owner is billed therefor by Grantor or the Board, then Grantor or the Board, as the case may be, may institute appropriate action to enforce the collection of such amount, together with interest from the billing date at the highest rate then permissible under the laws of the Commonwealth of Virginia, but not to exceed an annual rate of three percent (3%) above the yield rate on six-month Treasury Bills. If such suit is brought for collection of such indebtedness or the foreclosure of any lien securing payment thereof, Grantor or the Board, as the case may be, shall also be entitled to recover their reasonable attorney's fees and all costs of such suit. Nothing contained herein shall impose any duty or obligation on Grantor or the Board to exercise such remedies.

C. OTHER PARTY'S RIGHTS. In addition, any other party for whose benefit the Covenants inure shall have the right in the event of violation or breach of the Covenants (except as ~~qualified by Article X)~~ to prosecute a proceeding at law or in equity against the person or persons who have violated or who are attempting to violate the Covenants to enjoin or prevent them from doing so or to cause said violation to be remedied, but no Owner or Occupant shall have any lien rights whatsoever as to any other Site, Owner or Occupant.

D. CUMULATIVE REMEDIES. The remedies hereby specified are cumulative, and this specification shall not be deemed to preclude any other party to whose benefit the Covenants inure from resorting to any other remedy provided hereunder or at law, in equity or under any statute.

E. FAILURE TO ENFORCE NOT A WAIVER OF RIGHTS. No delay or failure on the part of an aggrieved party to invoke any available remedy in respect to a violation of any of the Covenants shall be held to be a waiver by that party of (or an estoppel of that party to assert) any right available to him upon recurrence or continuance of said violation or the

occurrence of a different violation, nor shall there be construed upon Grantor a duty to take any action to enforce the Covenants.

F. ASSIGNMENT OF RIGHTS AND DUTIES. Any and all of the rights, powers and reservations of Grantor herein contained may be assigned to the Association which will assume the duties of Grantor pertaining to the particular rights, powers and reservations assigned, and upon the Association's evidencing its consent in writing to accept such assignment and assume such duties, the Association shall, to the extent of such assignment, have the same rights and powers and be subject to the same obligations and duties as are given to and assumed by Grantor herein. Any assignment or appointment made under this Section shall be in recordable form and shall be recorded with the Office of the Clerk of the Loudoun County Circuit Court. If at any time Grantor ceases to exist and has not made such an Assignment, the rights and obligations of the Grantor shall automatically vest in the Association.

G. CONSTRUCTIVE NOTICE AND ACCEPTANCE. All Owners and Occupants, by acceptance of a deed conveying title to a part of the Park, or the execution of said contract for the purpose thereof or the acceptance of a lease or license therefor, or the taking possession thereof, whether from Grantor or a subsequent Property Owner or Occupant, shall accept such deed, contract, lease, license or possession upon and subject to each and all of the Protective Covenants, and also the jurisdiction, rights and powers of Grantor and its successors and assigns, and by such acceptance shall for himself, his heirs, personal representatives, successors and assigns and to and with the other Property Owners and Occupants to keep, observe, comply with and perform the Covenant, whether or not any reference to this Declaration is contained in the instrument by which such people or entity acquired an interest in said real property. Notwithstanding the foregoing, Owners and Occupants agree to refer to the Protective Covenants in deeds, leases and licenses covering any portion of the Park and to make the Protective Covenants binding upon all Owners and Occupants.

H. WAIVER. Neither Grantor, the Board or any member thereof nor their successors or assigns shall be liable to any Property Owner or Occupant of real property subject to the Protective Covenants by reason of any mistake in judgment, negligence, nonfeasance, action or inaction or for the enforcement or failure to enforce the Covenants or any part thereof. Every Property Owner or Occupant, by acquiring his interest in the Park agrees that he will bring any action or suit against Grantor, its successors or assigns or the Committee or any member thereof, from time to time, to recover any such damages or to seek equitable relief.

I. MUTUALITY, RECIPROCITY, RUNS WITH LAND. The Protective Covenants as originally recorded and as amended from time to time and recorded with the Clerk of the Circuit County of Loudoun County are made for the direct, mutual and reciprocal benefit of each and every part of the Park, and the latest version of the Protective Covenants shall apply to all Property Owners and Occupants; shall create mutual, equitable servitudes upon each part of the Park in favor of every other part of the Park; shall create reciprocal rights and obligations between the respective Property Owners and Occupants and privity of contract and estate between all Property Owners and Occupants of Real Property in the Park, their heirs, successors and assigns; and shall, as to the Property Owner or Occupant of each part of the Park, his heirs, successors, and assigns, operate as covenants running with the land for the benefit of all other parts of the Park and the Property Owners and Occupants thereof.

ARTICLE XI - MISCELLANEOUS PROVISIONS

A. RESERVATION OF UTILITY EASEMENTS. Grantor hereby reserves the right, for its own use and benefit, and for the use and benefit of each of its grantees and their transferees and assigns, to create or to cause any Property Owner to create, at any time, temporary or perpetual easements for the purpose of locating, installing and maintaining utility and drainage lines over, under, or across any and all lands within the Park, provided, however, that all such easements shall be confined to areas upon which Buildings cannot be constructed in accordance with the terms of these Protective Covenants or the then existing applicable zoning ordinances. The Owner or Occupant of any Property within the Park and any of its assignees shall have the right at all reasonable times to enter upon any land covered by these Covenants to install thereon, at the expense of such Owner or Occupant, utilities and drainage lines for the use and benefit of its own respective Site; provided, however, that any such person shall restore said land, at his own expense, to as nearly as practicable the same condition as existed prior to each such entry, installation or maintenance. The Grantor and the Owner of any Site shall have the right to assign the benefit of any such easement to any electric company, gas company, telephone company, County of Loudoun, or other public utility of the Commonwealth of Virginia, or any subdivision thereof for the purpose of installing, operating and maintaining utilities. For the purpose hereof "utilities" shall include gas mains and lines, electric and telephone cables and lines, fiber optic cables and lines, water supply mains and lines, and other facilities of the nature from time to time commonly regarded as utilities. No conveyance by Grantor of any lot, parcel or site within the Park, or any interest therein, shall be deemed to be, or construed as, a conveyance or a release of the right to create easements as herein reserved, even though such conveyance purports to convey such lot or lots in fee simple or purports to convey Grantor's entire interest therein.

B. AGREEMENT NOT TO APPLY FOR REZONING. Every Property Owner or Occupant, by acquiring his interest in the Park, agrees that he will not bring any action or suit, except with the written approval of the Grantor, its successors or assigns including, after the sale by Grantor of all of its Property in the Park, the Association, to change the zoning or apply for a variance or special exception of any portion of the Park.

C. FURTHER ASSURANCES. Each Owner, upon request of Grantor or the Association, shall, within seven (7) days after being requested to do so, execute in recordable form any agreements reasonably necessary or appropriate to effect these Protective Covenants.

D. EFFECT OF INVALIDATION. If any provision of the Protective Covenants is held to be invalid by any court, the invalidity of such provision shall not affect the validity of the remaining provisions of the Covenants which shall continue unimpaired, in full force and effect.

E. NOTICE. Any and all notice or other communication required or permitted by this Declaration or by law to be served on or given to Grantor shall be in writing and shall be deemed given when deposited in the United States mail, first-class postage prepaid, registered or certified, addressed to Grantor as follows:

c/o The John G. Shooshan Company, Inc.
4001 North Fairfax Drive
Suite 125
Arlington, Virginia 22203

For purposes of this paragraph, Grantor may change its address by recordation of a notice of change of address in the office where these covenants are recorded. Notice to any Property Owner, or to any Occupant holding under any Property Owner shall be deemed duly served when delivered or deposited in the United States mail, first-class postage prepaid, addressed to the address of the real property so owned or occupied.

[SIGNATURES FOLLOW]

IN WITNESS WHEREOF, Grantor has executed this Instrument as of the date first written above.

WITNESS:

By: _____
Name: _____

By: _____
Name: _____

LSQ LIMITED PARTNERSHIP

By: AG –LSQ Holdings, general partner

By: _____
Name: _____

LSQ ONE LIMITED PARTNERSHIP, a Virginia limited partnership

By: AG Building Inc., general partner

By: _____
Name: _____
Title: _____

By: CEI Realty, Inc., general partner

By: _____
Name: _____
Title: _____

STATE OF VIRGINIA)
) ss:
COUNTY OF FAIRFAX)

The foregoing instrument was acknowledged before me this ___ day of _____, 2000 by _____.

[SEAL]

_____
Notary Public

My Commission Expires:

_____

STATE OF VIRGINIA)
) ss:
COUNTY OF FAIRFAX)

The foregoing instrument was acknowledged before me this ___ day of _____, 2000 by _____.

[SEAL]

_____
Notary Public

My Commission Expires:

_____

STATE OF VIRGINIA)
) ss:
COUNTY OF FAIRFAX)

The foregoing instrument was acknowledged before me this ___ day of _____, 2000 by _____.

[SEAL]

_____
Notary Public

My Commission Expires:

_____

CONSENT

By its execution of the foregoing Covenants, Richard W. Kline, Jr., Trustee under that certain Deed of Trust and Security Agreement, recorded in the Office of the Clerk of the Circuit Court of Loudoun, Virginia, in Deed Book 1714, at page 1165 ("Deed of Trust"), hereby consents to the foregoing Covenants for the purpose of subjecting the lien, effect and operation of the Deed of Trust to the Covenants to the same extent as, and if, the Covenants had been recorded immediately prior to the recordation of the Deed of Trust.

_____
Richard W. Kline, Jr., Trustee

STATE OF _____)
) ss:
COUNTY OF _____)

The foregoing instrument was acknowledged before me this ___ day of _____, 2000 by _____.

[SEAL]

_____
Notary Public

My Commission Expires:

_____

EXHIBIT A TO RESTATED COVENANTS

[The Exhibit will be prepared prior to the recordation of the instrument to which it relates and will be the then lot designations of all those lots, parcels and pieces of real property consisting of (a) Lots 1, 2, 3, 4, 5-A, 10-A and 12 in Loudoun Square, Loudoun County Virginia as shown on the Deed of Dedication, Subdivision and Easement recorded on March 14, 1988 in Deed Book 981 at Page 1399 in the Office of the Clerk of the Circuit Court of Loudoun County, Virginia, and (b) Lot 8-A in Loudoun Square, Loudoun County, Virginia as shown on the _____ recorded on _____ in Deed Book ____ at Page ____ in the Office of the Clerk of the Circuit Court of Loudoun County, Virginia.]

EXHIBIT B TO RESTATED COVENANTS

EXHIBIT B

[This Exhibit will be prepared prior to the recordation of the instrument to which it relates and will be a graphic description of the real property described in the immediately preceding Exhibit A.].