



I-495 & I-270 Managed Lanes Study

# **APPENDIX D**

## **Compensatory Stormwater Mitigation Plan**

### **June 2022**



U.S. Department  
of Transportation

**Federal Highway  
Administration**

**MDOT** MARYLAND DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

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## ABBREVIATIONS AND ACRONYMS

COMAR	Code of Maryland Regulations
CR	Cultural Resources
CTB	Concrete Traffic Barrier
DEIS	Draft Environmental Impact Statement
DOE	Determination of Eligibility
DNR	Department of Natural Resources
DSD	Dam Safety Division
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESC	Erosion and Sediment Control
ESD	Environmental Site Design
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
GIS	Geographic Information System
HAZMAT	Hazardous Materials
HUC	Hydrologic Unit Code
IART	Impervious Area Requiring Treatment
IAT	Impervious Area Treated
JPA	Joint Permit Application
LWCF	Land and Water Conservation Fund Act
LOD	Limit of Disturbance
MDE	Maryland Department of the Environment
MDOT	Maryland Department of Transportation
MHT	Maryland Historic Trust
MLS	Managed Lane Study
MNCPPC	Maryland National Capital Park and Planning Commission
MOS	Maintenance of Streamflow
MOU	Memorandum of Understanding
MOT	Maintenance of Traffic
NEPA	The National Environmental Policy Act
NR	Natural Resources
NTW/W	Nontidal Wetlands and Waterways
OH	Overhead
P3	Public Private Partnership
PA	Programmatic Agreement
PAX	Patuxent River Watershed
POS	Program Open Space
PRD	Plan Review Division
PSOC	Potential Sites of Concern

ROE	Right of Entry
ROW	Right-of-Way
RTE	Rare, Threatened, and Endangered
SDEIS	Supplemental Draft Environmental Impact Statement
SHA	State Highway Administration
SWM	Stormwater Management
TR	Technical Requirement
UG	Underground
USACE	United States Army Corps of Engineers
WAS	Washington Metro Watershed
WR	Water Resources

# 1 INTRODUCTION

The Federal Highway Administration (FHWA), as the Lead Federal Agency, and the Maryland Department of Transportation State Highway Administration (MDOT SHA), as the Local Project Sponsor, are preparing an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) for the Public-Private Partnership (P3) I-495 & I-270 Managed Lanes Study (MLS). The MLS is evaluating potential transportation improvements to portions of the I-495 and I-270 corridors within Montgomery County and Prince George's County, Maryland and Fairfax County, Virginia. The MLS extends along I-495 from south of the George Washington Memorial Parkway in Virginia to just west of Maryland 5, I-270 East and West Spurs in their entirety, and along I-270 from its intersection with the I-270 East and West Spurs to its intersection with I-370. FHWA and MDOT SHA identified the Preferred Alternative: Alternative 9 – Phase 1 South and documented this decision in the Supplemental Draft Environmental Impact Statement (SDEIS) published on October 1, 2021. The Preferred Alternative focuses on building a new American Legion Bridge and delivering two high-occupancy toll (HOT) managed lanes in each direction on I-495 from the George Washington Memorial Parkway in Virginia to west of MD 187 on I-495, and on I-270 from I-495 to north of I-370 and on the I-270 east and west spurs (**Figure 1-1**).

The purpose of this document is to present the compensatory, or off-site, stormwater management (SWM) mitigation approach and SWM potential from these off-site locations, since it is likely that the SWM water quality requirements will not be able to be met along the work area, also referred to as on-site, and the Developer's responsibilities during final design to meet the SWM requirements. This document also details the methodologies, assumptions and evaluations used for this planning level study to support the Joint Permit Application (JPA) and NEPA documentation for the compensatory SWM mitigation sites preliminarily cleared. This document focuses on the compensatory SWM requirements for the Preferred Alternative as presented in the FEIS. Over 2,000 compensatory SWM sites were identified for evaluation, but through discipline evaluations, field assessments, further development of the on-site and compensatory SWM, and coordination with regulatory agencies, the number of compensatory SWM sites preliminary cleared was reduced to 67. An excess of compensatory SWM, as presented in this Plan, is provided to ensure the SWM potential provided is adequate to cover the Preferred Alternative SWM requirements as the Developer performs final design and permitting.

Efforts have been made throughout the planning process to avoid and minimize impacts to private property as well as historic and environmental resources, while still achieving compensatory SWM mitigation requirements. Despite these efforts, impacts to property and resources are unavoidable due to the extensive network of environmental resources located adjacent to and within existing MDOT SHA right-of-way (ROW). Impacts to resources have been avoided and minimized to the greatest extent practicable at this time through the planning level effort and site selection.

**Figure 1-1: I-495 & I-270 Preferred Alternative Limits**



## 2 **MANAGED LANES STUDY STORMWATER MANAGEMENT REQUIREMENTS**

According to the Code of Maryland Regulations (COMAR), “the management of stormwater runoff is necessary to reduce stream channel erosion, pollution, siltation and sedimentation, and local flooding”. The quantification of the SWM required, water quality and water quantity, for a project is determined by the amount of existing impervious area and proposed impervious area located within the NEPA Limit of Disturbance (LOD). While the Maryland Department of the Environment (MDE) and MDOT SHA *Water Quality Banking Agreement* indicates SWM quantity requirements must be met on-site for any given project, the SWM quality requirements, while desirable to be met on-site, can be met elsewhere within the same MDE 6-digit watershed. While SWM quality requirements can be met anywhere within the same MDE 6-digit watershed, locations close to the project LOD are prioritized to keep mitigation as close to the project impacts as practicable with hierarchical preference to locating opportunities for SWM quality requirements in the MDE 12-Digit Watersheds where impacts occur before moving out to the MDE 8-Digit Watersheds and ultimately the MDE 6-Digit Watershed. Additional SWM requirement information is included in the SWM section of the FEIS, refer to Chapter 3, Section 3.1.6.

The MLS limits extend into two (2) MDE 6-digit watersheds : Washington Metropolitan Watershed (WAS – No. 021402), and Patuxent River Watershed (PAX – No. 021311). The Preferred Alternative is located entirely within MDE WAS 6-Digit Watershed.

This document focuses on meeting the SWM requirements in Maryland, while Virginia has its own SWM requirements, which must also be met. All SWM requirements for the portion of the Preferred Alternative that is in Virginia, like Maryland, should be met on-site to the greatest extent practicable. If all SWM requirements cannot be met on-site, approved SWM crediting/banking off-site or an established payment in lieu agreement must be provided. In addition, the roadway and/or drainage changes associated with Preferred Alternative in Virginia cannot worsen existing conditions or create any adverse conditions. The work in Virginia will not generate a need for off-site impacts.

### 2.1 **Joint Permit Application Requirements**

Compensatory SWM sites may impact regulated wetlands, waterways, and floodplain resources, and any unavoidable impacts must be authorized by United States Army Corps of Engineers (USACE) and MDE through a JPA. The I-495 & I-270 Managed Lanes Study JPA, revised based on the Preferred Alternative, will include estimated impacts to regulated resources from the construction of compensatory SWM facilities. The public, including all adjacent property owners impacted by the compensatory SWM sites, will be notified of the JPA and will be provided an opportunity to comment on potential impacts during the JPA approval process.

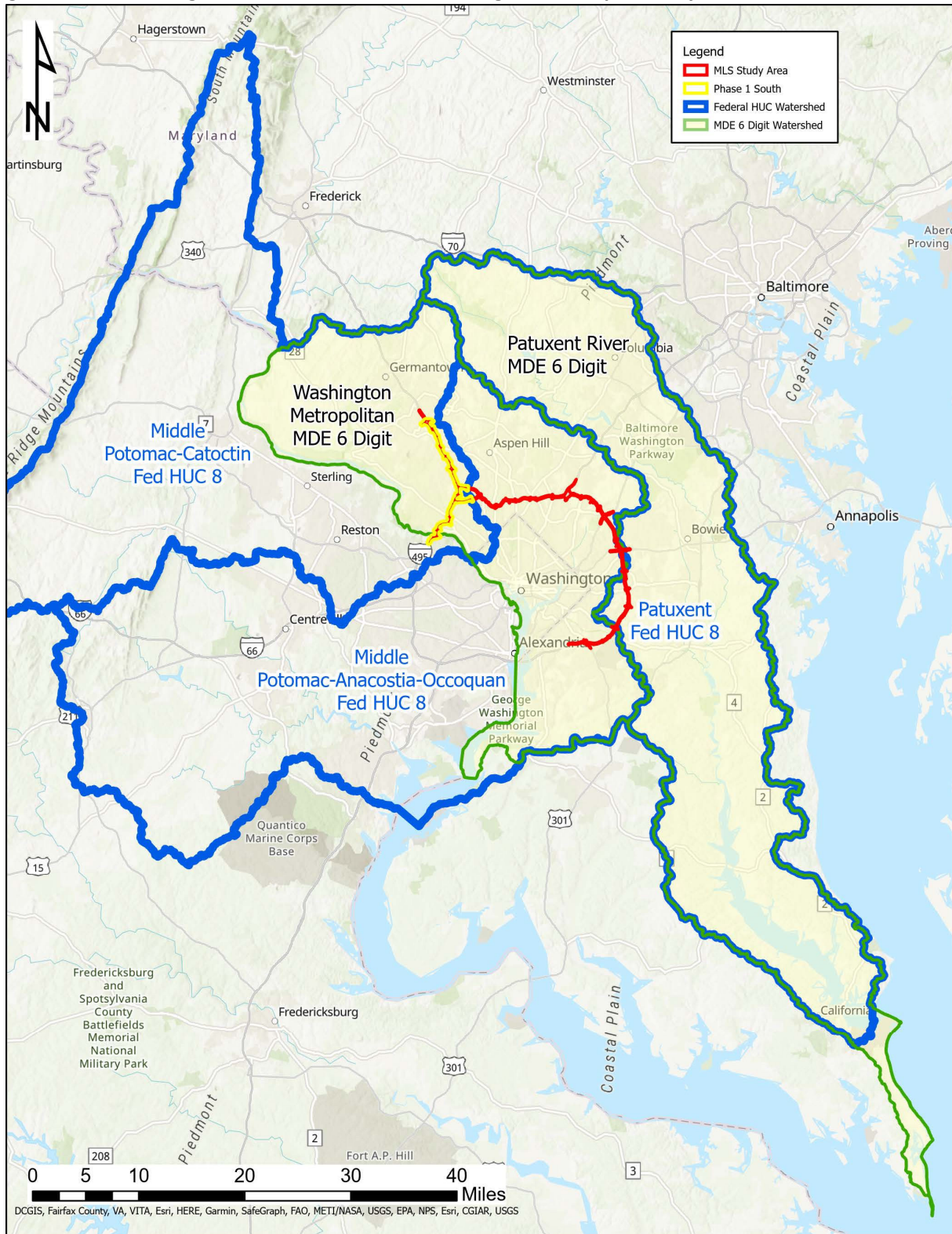
For regulated wetland, waterway, and floodplain impacts, USACE and MDE mitigation emphasizes a watershed approach to mitigate impacts, with impacts mitigated within the same Federal 8-Digit Hydrologic Unit Codes (HUC). SWM quality requirements, on the other hand, must be met within the same

MDE 6-Digit Watershed within which stormwater impacts would occur. Since the Federal 8-Digit HUCs and MDE 6-Digit Watersheds are different (**Figure 2-1**), it is possible that compensatory SWM mitigation efforts to meet SWM quality requirements could be met outside the Federal 8-Digit HUCs where environmental resources are impacted, but within the appropriate MDE 6-Digit Watershed.

The I-495 & I-270 Managed Lanes Study JPA includes off-site compensatory SWM sites within the Federal 8-Digit HUCs where roadway impacts occur, the Middle Potomac-Catoctin (02070008) and Middle Potomac-Catoctin-Occoquan (02070010) Federal 8-Digit HUCs.



**Figure 2-1: MDE 6-Digit Watersheds and Federal 8-Digit HUCs Impacted by Preferred Alternative Limits**



## 2.2 Documentation of On-Site Stormwater Management

The Preferred Alternative SWM requirement and estimated on-site SWM treatment have been documented in the SWM section of the FEIS (Chapter 3, Section 3.1.6) and are based on the Preferred Alternative as presented in the FEIS. The SWM requirements have been updated since publication of the SDEIS and the Draft Compensatory SWM Plan (SDEIS, Appendix C) which included compensatory SWM information for the entire 48-mile MLS limits.

The SWM section of the FEIS (Chapter 3, Section 3.1.6) outlines the methodology and assumptions used to determine the water quality, or Impervious Area Requiring Treatment (IART), and water quantity requirements triggered by the Preferred Alternative work. Since water quantity must be met on-site, the SWM section of the FEIS prioritized SWM facility locations to meet quantity control requirements first, then provided quality control where feasible. The focus of this document is the IART requirements for water quality that are anticipated to be needed offsite for the Preferred Alternative.

## 2.3 On-Site Stormwater Management and Compensatory (Off-Site) Stormwater Mitigation

The I-495 and I-270 corridors are in heavily urbanized areas with numerous resources that limit the amount of SWM that can be provided practically on-site. The on-site constraints are discussed in detail in the SWM section of the FEIS (Chapter 3, Section 3.1.6). While the Developer will be incentivized to provide as much on-site SWM as possible, it is likely that the entire IART requirement will not be provided on-site. Therefore, SWM sites located outside the Preferred Alternative LOD, but within the MDE WAS 6-Digit Watershed, are likely to be required. Based on a hierarchical preference for compensatory SWM, priority will be given to SWM sites which are located in the same MDE 12-Digit Watersheds impacted by the Preferred Alternative LOD, followed by the MDE 8-Digit Watersheds impacted prior to those in the MDE 6-Digit Watershed. SWM sites located outside the Preferred Alternative LOD are considered compensatory SWM sites.

**Table 2-1** presents the estimated on-site Impervious Area Treated (IAT) and subsequent compensatory SWM mitigation IART based on further SWM evaluation efforts by the Developer, which incorporated feedback from MDE and other regulatory agencies regarding proximity to the Preferred Alternative LOD, minimizing impacts, and SWM site type (i.e. SWM facilities, stream restoration). Given the assumptions and constraints presented in the SWM section of the FEIS, the total estimated IAT that can be met on-site is less than required for the Preferred Alternative. This results in a need for IAT to be provided outside the Preferred Alternative LOD.

The intent of the analysis in this document is to provide an excess of compensatory SWM sites for the Developer's use in final design. By providing an excess of sites, the Developer can reduce impacts where possible, account for loss of sites that may be infeasible during final design, and provide for variation during final design. Therefore, the potential compensatory IAT presented in this Plan exceeds the target compensatory IART requirement.

**Table 2-1: Preferred Alternative SWM Requirements**

<b>MDE 6-Digit Watershed</b>	<b>Preferred Alternative, SWM IART Requirement (AC)</b>	<b>Estimated On-Site Preferred Alternative SWM IAT Provided (AC)</b>	<b>Target Compensatory Preferred Alternative SWM IART Requirement (AC)</b>
Washington Metropolitan (No. 021402)	209.98	207.59	2.39

### 3 COMPENSATORY STORMWATER MITIGATION SITE ASSESSMENT

To ensure full compliance with environmental requirements, impacts of the potential compensatory SWM sites were evaluated by the following disciplines: water resources, cultural resources, forestry, hazardous materials, maintenance of traffic, wetlands and waterways, right-of-way, parks/Section 4(f), structures, utilities, and constructability. In addition to the desktop evaluations, field assessments were performed by the water resources, forestry, and wetlands and waterways disciplines to determine existing field conditions.

The following sections detail the desktop evaluations for all disciplines and if applicable the field assessments performed to support the initial site selection of over 2000 compensatory SWM sites to the subsequent avoidance and minimization efforts which resulted in the 67 compensatory SWM sites preliminarily cleared and included in this Plan.

#### 3.1 Water Resources Site Search Desktop Evaluation

To identify potential compensatory SWM site locations, the Water Resources (WR) discipline performed desktop evaluations based on Geographic Information System (GIS) data, aerial imagery, and street view information. For the purposes of this evaluation, three (3) types of sites were identified; (1) potential SWM facilities, both Chapter 3 and Chapter 5<sup>1</sup>, in or adjacent to existing MDOT SHA ROW, (2) stream restoration sites, and (3) pavement removal sites. When discussing the compensatory SWM sites in this document, it will refer to SWM facility, stream restoration, and pavement removal sites collectively. Compensatory SWM sites were initially identified within the MDE WAS and PAX 6-Digit Watershed and Federal MPC, MPA, and PXT 8-Digit HUCs. After selection of the MDOT SHA Preferred Alternative, the focus shifted to Compensatory SWM sites within the MDE WAS 6-Digit Watershed and Federal MPC 8-Digit HUC. After receiving feedback from MDE and other regulatory agencies on the site search efforts to support the SDEIS, additional site search efforts within a 0.5 mile buffer of the Preferred Alternative corridor and MDE 12-Digit Watershed impacted by the Preferred Alternative were performed to identify as many

<sup>1</sup> Chapter 3 facilities are structural water quality facilities including ponds, wetlands, infiltration practices (infiltration trench or basin), filtering systems (surface and underground sand filters, bioretention facilities, etc.) and open channels. Chapter 5 facilities, also known as Environmental Site Design (ESD) facilities, are small-scale treatment practices including alternative surfaces, non-structural practices, micro-scale practices (swales, micro-bioretention facilities). For the purposes of this Plan, a focus was placed on micro-scale practices to provide treatment.

compensatory SWM sites close to the Preferred Alternative LOD as feasible. These additional site search efforts occurred after the publication of the SDEIS.

Ultimately compensatory SWM sites were preliminarily cleared based on further analysis and development of the on-site and compensatory SWM. Further analysis focused on sites within the MDE 12-digit and/or 8-digit watersheds impacted by Preferred Alternative which minimized impacts to private properties and environmental resources with only SWM facility sites preliminarily cleared for inclusion in this Plan and JPA. Stream restoration sites were not considered for inclusion in the final compensatory SWM sites due to a hierarchical preference as a last resort measure, behind the use of Chapter 3 and Chapter 5 SWM facilities, for water quality mitigation.

The WR discipline developed eight (8) protocols to ensure consistency in identifying potential sites; (1) a site search desktop evaluation protocol for identifying SWM facility and pavement removal sites, (2) a site search desktop evaluation protocol for identifying stream restoration sites, (3) a site search desktop evaluation protocol for identifying stream restoration sites within the 0.5 mile buffer from the Preferred Alternative LOD, (4) GIS data management of the SWM sites, (5) GIS data management of the stream restoration sites, (6) a field assessment protocol for SWM facility sites, (7) a field assessment protocol for stream restoration sites, and (8) a QA/QC protocol. The protocols can be found in **Appendix A**.

In general, potential SWM facility sites were identified to maximize impervious area draining to the site and proximity to the existing MDOT SHA ROW, while minimizing impacts to private properties and historic or environmental resources (parks, trees, wetlands, waterways, 100-year floodplains, etc.). Each SWM facility is expected to meet a minimum of 1-inch treatment credit, which will provide full (100%) impervious area treatment credit for MDOT SHA impervious area. This means that the amount of MDOT SHA impervious area draining to the site is equal to the resultant IAT credit. For all non-MDOT SHA existing impervious area draining to the site, or for pavement removal, half (50%) of the impervious area treated or removed is the resultant IAT credit. The guidance given in the *Maryland Stormwater Design Manual, Volumes I and II*, dated October 2000, was used to select the appropriate SWM facility type to provide the full IAT credit.

Potential stream restoration sites were identified from a list of stream sites that were researched for stream mitigation and other previous NEPA efforts. Additional stream restoration sites, selected during the 0.5-mile buffer and MDE 12-Digit Watershed efforts, were identified by the WR discipline by reviewing these areas. All stream restoration sites were identified based on their current conditions, demonstrating systematic impairments with unstable degradation/depositional areas, maximizing the treatment of an equivalent acreage of impervious area. The impervious treatment credit potential for stream restoration sites is assumed to be 0.01 IAT acre credit per linear foot of stream restored. This value is taken from MDE's *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits*, dated August 2014. The credit potential of 0.01 IAT credit per linear foot stream restored is considered a conservative estimate for the efforts detailed in this plan. During final design, the IAT credit that can be received for the stream restoration sites should be re-evaluated using an MDE approved method to determine the final crediting available.



Unlike the SWM facility and pavement removal locations, stream restoration sites are generally located outside the existing MDOT SHA ROW and would potentially include impacts to private properties and public parkland and environmental resources. If these sites were selected, stream restoration designs would be reviewed by MDE and USACE to ensure the design provides sufficient overall functional uplift of the site. Mitigation may be required, depending on the site-specific impacts. During design, tree loss associated with construction of compensatory SWM facilities would be minimized to the maximum extent practicable, while still fulfilling the project purpose. MDOT SHA and the Developer would coordinate with the landowner and MD Department of Natural Resources (DNR) to determine appropriate mitigation for tree loss, including replanting on-site when possible. Although stream restoration sites are considered impacts, the impacts are generally considered improvements to the property impacted.

Over 2,000 compensatory SWM sites were originally identified by the WR team for further evaluation in the WAS and PAX 6-Digit Watersheds, which cover the entire MLS limits. If during the WR discipline desktop evaluation a site was determined to impact known historic properties or significant environmental resources, the site was not pursued further and was removed from consideration. After completion of the WR discipline desktop evaluation, over 1,000 compensatory SWM sites, or more specifically potential LODs, were identified as viable by the WR discipline and further evaluated by all disciplines to meet the compensatory SWM IART requirements for the entire MLS. The site numbers were further reduced during all disciplines' evaluations, based on the selection of the Preferred Alternative, and further on-site and compensatory SWM analysis as discussed in **Section 3.5**.

The WR desktop evaluation can be found in **Appendix A**.

## 3.2 All Discipline Desktop Evaluations

All disciplines listed below (**Table 3-1**) performed desktop evaluations to determine impacts to environmental features, private properties, and cultural resources and to inform the compensatory SWM site LODs. In addition to the desktop evaluations, the WR and Natural Resources (NR) Disciplines conducted field assessments to document existing field conditions (refer to **Section 3.3**). All evaluations were completed using the best data available at the time. The Developer will be responsible for ensuring the accuracy of the information provided, furthering the design, and reducing impacts where feasible.

The discussions included are overviews of the various discipline evaluations performed. Detailed information can be found in each discipline's corresponding appendix as shown in in **Table 3-1** and a summary of each discipline's evaluation can be found in **Table 5-2**. **Table 5-2** includes the sites included in this Plan which are preliminarily cleared to support the I-495 & I-270 Managed Lanes Study JPA, FEIS, and ROD.

**Table 3-1: All Discipline Appendices**

Water Resources Evaluation	<b>Appendix A</b>
Cultural Resources (Archaeology and Historic Standing Structures) Evaluation	<b>Appendix B</b>
Forestry Evaluation	<b>Appendix C</b>
Hazardous Materials Evaluation	<b>Appendix D</b>
Maintenance of Traffic Evaluation	<b>Appendix E</b>
Wetlands and Waterways Evaluation	<b>Appendix F</b>
Right-of-Way Evaluation	<b>Appendix G</b>
Section 4(f)/Parks Evaluation	<b>Appendix H</b>
Structures Evaluation	<b>Appendix I</b>
Utilities Evaluation	<b>Appendix J</b>
Constructability Evaluation	<b>Appendix K</b>

### 3.2.1 Cultural Resources (Archeology and Historic Standing Structures)

The Cultural Resources (CR) discipline reviewed each compensatory SWM site to determine if conflicts exist with historic properties and/or archaeological sites based on available GIS data. The CR discipline also identified the level of difficulty in clearing a site during design and construction based on potential historical and/or archaeological impacts and agency consultation that may be required to clear those sites.

### 3.2.2 Forestry

The Natural Resources (NR) discipline conducted a forestry review of each compensatory SWM site using GIS data to determine potential impacts to specimen trees and forest canopies. Field evaluations were performed for each site to verify existing conditions. Refer to **Section 3.3** below for additional information pertaining to the field assessments performed.

### 3.2.3 Geotechnical

During the desktop evaluation stage, the Geotechnical discipline did not perform an evaluation, but were available to consult as needed.

### 3.2.4 Hazardous Materials

The Hazardous Materials (HAZMAT) discipline reviewed each compensatory SWM site to determine conflict with Potential Sites of Concern (PSOC) that include sites such as industrial facilities, service stations, dry cleaners, etc. that could have contaminated soils, groundwater, soil vapor, or debris using an environmental database search, historical aerial photographs, topographic maps, and other publicly available sources of information. HAZMAT identified the risk associated with each site based on their proximity to a PSOC.

### 3.2.5 Maintenance of Traffic

The Maintenance of Traffic (MOT) discipline reviewed each compensatory SWM site to determine the complexity of MOT based on current MDOT SHA design standards and implementation during construction operations at each site. These determinations were made using aerial imagery and street view information.

### 3.2.6 Wetlands and Waterways

The NR discipline conducted a preliminary wetlands and waterways desktop review of each compensatory SWM site using readily available GIS data prior to conducting field delineations of wetlands and waterways at each site. Refer to **Section 3.3** below for additional information pertaining to the field assessments performed.

All compensatory SWM sites have been reviewed for Rare, Threatened, and Endangered (RTE) species under Section 7 of the Endangered Species Act (ESA) of 1973 (16 U.S.C. Sections 1531-1544). Any sites that could potentially impact RTE species were modified or eliminated to ensure that RTE species are not impacted.

### 3.2.7 Right-of-Way

The ROW discipline reviewed each compensatory SWM site to determine potential property impacts and level of difficulty in acquiring needed property interests based on existing MDOT SHA ROW information and GIS data. Required property could be acquired through fee simple or easement acquisitions with private owners and Memorandum of Understanding (MOU) or Right of Entry (ROE) agreements with public agencies for temporary or permanent property rights for construction, inspection, and maintenance. Public agencies may require property interests formalized in deeds.

### 3.2.8 Section 4(f)

The Section 4(f) discipline reviewed the compensatory SWM sites for potential conflict with identified Section 4(f) properties based on GIS data and aerial imagery. Section 4(f) properties consist of both public parks and National Register of Historic Places-listed or eligible historic sites. This review of Section 4(f) properties was limited to potential conflicts with public parks as historic sites are addressed separately by the Cultural Resources discipline. The Section 4(f) discipline also preliminarily assessed the severity of impact each compensatory SWM site would have on the Section 4(f) properties identified.

Review of the compensatory SWM sites located on public parkland did not consider the source of funding used to acquire or develop the park properties as funding information was not available at the time of this review. Therefore, involvement of Section 6(f) Land and Water Conservation Fund Act (LWCF) funding or Maryland Program Open Space (POS) funding has not yet been determined. Involvement of either of these programs could influence the viability of potential compensatory SWM sites as both programs strongly discourage the conversion of land acquired or developed with funding from the programs and require that replacement property of equal or greater value be provided for any land converted from public recreational use.

In response to feedback received from FHWA, efforts were taken to further reduce or eliminate the potential use of Section 4(f) property for compensatory SWM sites. As a result of those efforts and since the compensatory SWM requirements could be met using sites with no Section 4(f) impacts, all compensatory SWM facility and pavement removal sites that would incur a use of Section 4(f) properties were eliminated. Conversely, if a compensatory SWM stream restoration site would occur on Section 4(f) property, since the purpose associated with the stream restoration site is preserving or enhancing an activity, feature, or attribute that qualifies the property for Section 4(f) protection, they would be expected to qualify as an exception from the requirements of Section 4(f) as set forth in 23 CFR 774.13(g). At this time, no stream restoration sites are included in this Plan due to a hierarchical preference as a last resort measure, behind the use of Chapter 3 and Chapter 5 SWM facilities, for water quality mitigation.

### **3.2.9 Structures**

The Structures discipline reviewed compensatory SWM sites which were identified as potential structural SWM facilities (underground SWM facilities) or those sites which would require or impact structural features, such as retaining walls, to determine design feasibility and constructability concerns based on information provided by the WR discipline, aerial imagery, and street view information.

### **3.2.10 Survey**

During the desktop evaluation stage, the Survey discipline did not perform an evaluation, but were available to consult as needed.

### **3.2.11 Utilities**

The Utilities discipline reviewed each compensatory SWM site to determine utility impacts based on surface indicators seen in aerial imagery, street view information, or WR/NR field photos and GIS data.

### **3.2.12 Constructability**

The Constructability discipline reviewed each compensatory SWM facility sites to determine design feasibility and potential site access and conflicts based on information provided by the WR discipline, aerial imagery, and street view information.

## **3.3 Field Assessments**

The WR and NR disciplines performed field assessments in addition to the desktop evaluations summarized in the section above. Field assessments for these disciplines were deemed essential to accurately document existing conditions, set a feasible LOD, and determine environmental impacts at the compensatory SWM sites.

### **3.3.1 Water Resources**

The WR discipline performed field assessments of each compensatory SWM site to identify existing features, verify drainage patterns to confirm the potential impervious area draining to the site, identify site constraints (including surface utility indicators, slopes along site, trees, and other environmental



resources along site), and document the SWM site and MDOT SHA outfall conditions. Information and data collected during the site visits were subsequently shared with all disciplines to assist in their evaluations.

The pertinent results from the WR discipline field assessments can be found in **Appendix A**.

### 3.3.2 Natural Resources (Forestry and Wetlands and Waterways)

The NR discipline also performed field assessments of each compensatory SWM site. During the field assessments, specimen trees were identified and forest boundaries were verified. In addition, wetland and waterway delineations were conducted, captured in GIS format, and provided to all disciplines for reference. Regulatory agency field reviews of the wetland and waterway delineations are in-process as of April 2022.

Summaries of the NR field assessments can be found in **Appendix C** and **Appendix F**. In addition, the environmental resources identified during the field assessments can be found on the mapping provided in **Appendix L** and resource impacts can be found in the tables provided in **Appendix M**.

## 3.4 NEPA Limit of Disturbance Determination

The LOD at each site, as initially determined by the WR discipline, was based on the desktop evaluation. The LOD was set based on potential facility type with consideration given to filter media depth and outfall requirements, freeboard requirements, and grading potential. Additional considerations included access during construction; typical construction methods; and consideration for Erosion and Sediment Control (ESC)/Maintenance of Streamflow (MOS) measures. All factors were evaluated while limiting impacts to historic properties and environmental resources.

The LODs developed by the WR discipline were vetted by all disciplines during their desktop evaluations and/or field assessments. If any discipline indicated that the LOD should be expanded or refined, the WR discipline revised the LOD accordingly and recirculated for review. Typically, the following LOD adjustments were made:

- A. Additional LOD for MOT considerations, construction staging and stockpile areas, and structural constructability concerns.
- B. Reduction of LOD to avoid or minimize impacts to trees, wetlands, waterways, historic properties, archaeological sites, private properties, parklands, or other as identified during discipline reviews.
- C. Additional LOD or reduction of LOD based on WR discipline field visits and based on existing site conditions and constraints.

The removal or refinement of LODs, as indicated above, were completed to avoid and minimize impacts to historic properties and environmental resources as identified. In addition to reducing the LODs, sites were removed from consideration after the WR field assessments and subsequent discipline evaluations identified site constraints, limited impervious area draining to the site, impacts to historic properties or archaeological sites, environmental concerns and/or significant environmental resources impacts. Additional sites were removed from consideration due to impacts to (1) Section 4(f) properties identified

as parkland and historic properties, including potential archaeological sites, and (2) after the NR field assessments identified significant impacts to environmental features. Refer to **Table 3-2** for the full list of avoidance and minimization efforts to date. Further avoidance and minimization will occur during the final design by the Developer.

The LODs for each compensatory SWM site can be found on the mapping provided in **Appendix L** and the LOD impacts can be found in the tables provided in **Appendix M**.

### 3.5 Avoidance and Minimization

While avoidance and minimization of impacts to identified historic properties and environmental resources, including trees, wetlands, and waterways, occurred at the desktop evaluation and field assessment stages, avoidance and minimization efforts will continue under the Developer during design of any compensatory SWM site. If during final design compensatory SWM sites are added or modified, resulting in a Section 4(f) use of a public park or historic property, evaluation of additional avoidance and minimization measures will be required in consultation with Maryland Historic Trust (MHT) and under Section 4(f) and would be subject to a re-evaluation of all environmental documents and modification of permits as needed. For sites that have impacts to trees, wetlands, and waterways, further efforts to avoid and minimize impacts to these resources must be taken. Avoidance and minimization efforts to date are shown in **Table 3-2**, while the progression of sites preliminarily cleared for incorporation into this Plan is shown in **Table 3-3**.

**Table 3-2: Compensatory SWM Avoidance and Minimization Efforts Summary for MLS**

Compensatory SWM Stage	Number of Sites Removed from Consideration	Reason
WR Desktop Evaluations	1,064	Significant impacts to private properties and environmental resources, limited impervious area draining to site, and impractical site conditions.
All Disciplines Desktop Evaluations & WR Field Assessments	367	Significant impacts to visually confirmed environmental resources, limited impervious area draining to site, and difficult site conditions as well as environmental concerns (documented HAZMAT spill site, etc.) and significant impacts to historic properties and potential archaeological sites.
Section 4(f) Property Impacts	48	Impacts to Section 4(f) properties identified as parkland.
NR Field Assessments	84	Significant impacts to environmental resources.
Further SWM Analysis and Agency Feedback	743	Reduction due to further development of on-site and compensatory SWM analysis and feedback from regulatory agencies
Total Sites Removed from Consideration:	2,306	

**Table 3-3: Compensatory SWM Sites Progression for Preferred Alternative**

Compensatory SWM Site Stage	Number of Sites
Sites Identified by WR Team During Desktop Evaluation	2,373
Sites Delivered to All Disciplines (removed 1,064 sites <sup>2</sup> determined not feasible during WR Team Desktop Evaluation)	1,309
Vetted Compensatory SWM Sites for MLS (removed 499 sites <sup>2</sup> through NEPA vetting process)	810
Sites Preliminarily Cleared for Preferred Alternative (removed 743 sites <sup>2</sup> based on further SWM analysis and Agency feedback)	67

<sup>2</sup>See **Table 3-2** for more information

For additional avoidance and minimization requirements as part of the compensatory SWM efforts, please refer to the *Final Avoidance, Minimization, and Impacts Report* (FEIS, Appendix N) and the I-495 & I-270 Managed Lanes Study JPA.

## 4 FINAL DESIGN RESPONSIBILITY

### 4.1 Further Analysis and Final Design

As previously indicated, all discipline evaluations were completed using the best information available at the time this document was prepared. The Developer will act on behalf of MDOT SHA in final design and construction. The developer will be required to review and verify that the data sources used for the evaluations are current and should incorporate any new data that has become available and re-evaluate the compensatory SWM sites accordingly. In addition, the Developer is responsible for coordination with private and public property owners for approval for any compensatory SWM sites preliminarily cleared for use that result in impacts to properties outside the MDOT SHA ROW.

The discussions included in this section are overviews of what can be expected regarding obtaining final clearances and permits during design and construction under each discipline. More information can be found in each discipline's corresponding appendix presented in **Table 3-1**.

#### 4.1.1 Cultural Resources (Archaeology and Historic Standing Structures)

All evaluations from the CR discipline are recommendations and the Developer will be required to verify and coordinate with Local, State, and Federal entities during final design to obtain clearances for the compensatory SWM sites that may conflict with historic and archaeological sites.

#### 4.1.2 Forestry

The Developer will be responsible for conducting forest assessments and determining the final forest impacts during permitting of the final design at each compensatory SWM site and obtaining Maryland

Reforestation Law (MD Natural Resources Code § 5-103) approval. In addition, opportunities for on-site reforestation should be identified by the Developer, and where those opportunities exist, the Developer will be responsible for preparing a landscape plan in accordance with MDOT SHA standards to mitigate as much forest impact on site as feasible. For forest impacts that cannot be mitigated on-site, the Developer can refer to the Maryland Reforestation Law Mitigation Site Search Report to identify potential mitigation opportunities according to the Maryland Reforestation Law mitigation hierarchy.

#### **4.1.3 Geotechnical**

The Developer will be responsible for obtaining all soil borings and test pits to support the final design and permitting for the compensatory SWM sites. All soil borings and test pits should conform to Federal and MDOT SHA standards.

#### **4.1.4 Hazardous Materials**

Additional investigation by the Developer will be required to characterize soil and groundwater conditions at the compensatory SWM sites. If contaminated materials are found on or adjacent to a site, an MDE approved plan documenting the handling, disposal, and/or capping the contaminated materials will be required by MDE.

#### **4.1.5 Maintenance of Traffic**

The Developer will be responsible for the final MOT design in accordance with MDOT SHA design standards at each compensatory SWM site. In addition, the Developer will be responsible for obtaining an MOT permit from MDOT SHA or any local jurisdiction and an MDOT SHA Access Permit as applicable.

#### **4.1.6 Wetlands and Waterways**

The Developer shall continue to avoid and minimize impacts to wetlands and waterways during final design and will be responsible for determining the final wetland and waterways impacts at each compensatory SWM site. The Developer is responsible for modifying the appropriate permits from MDE and USACE for impact changes to wetlands, waterways, and floodplains from those approved under the I-495 & I-270 Managed Lanes Study JPA. If final design results in increased impacts to wetlands and waterways, the Developer shall identify mitigation to compensate for additional impacts. For compensatory SWM not approved under the I-495 & I-270 Managed Lanes Study JPA, the Developer will be responsible for obtaining USACE and non-tidal wetlands and waterways (NTW/W) approvals including any permit modification, ensuring adequate mitigation is included to compensate for impacts, and notifying adjacent property owners prior to construction.

#### **4.1.7 Right-of-Way**

The Developer will be responsible for identifying and obtaining the temporary and permanent easements and/or fee simple acquisitions necessary to construct, operate and maintain the compensatory SWM sites. This also includes obtaining surveyed metes and bounds information for all existing easement, ROW, and parcel lines to determine final impact numbers.

#### **4.1.8 Section 4(f)**

All evaluations from the Section 4(f) discipline presented in this Plan are preliminary in nature and do not include assessments of Section 106 properties. Based on feedback received from FHWA, there are no compensatory SWM sites which would result in a Section 4(f) impact included in this Plan. While no stream restoration sites have been preliminarily cleared for inclusion in this Plan, if a compensatory SWM stream restoration site were included it is anticipated that the stream restoration sites would qualify as an exception from the requirements of Section 4(f).

It is possible that changes made during final design could result in additional Section 4(f) use. If the use of one or more Section 4(f) properties is determined during final design to be necessary, the Developer will be required to verify impacts, evaluate avoidance and minimization measures, and coordinate with MDOT SHA, FHWA, and any relevant officials with jurisdiction over Section 4(f) properties to obtain Section 4(f) approval. If entities, such as Maryland National Capital Park and Planning Commission (MNCPPC), approve the use of their Section 4(f) properties for SWM, the use of the property would require Section 4(f) approval; however, additional mitigation efforts would not be required if the property owner concurs to the site use.

#### **4.1.9 Structures**

The Developer will be responsible for the final structural design for any sites that require a structural component in accordance with MDOT SHA design standards at each compensatory SWM site.

#### **4.1.10 Survey**

The Developer will be responsible for surveying the metes and bounds of all existing easements, ROW, and parcel lines and for the development of plats for permitting and construction activities. In addition, the Developer will be responsible for surveying existing conditions (including ground elevations, structural elevations, environmental features, utility locations, etc.) at each compensatory SWM site to be used for final design.

#### **4.1.11 Utilities**

The Developer will be responsible for the final utility designations, including survey and test pits, and relocation designs for any compensatory SWM sites where there is a utility conflict. All utility designations and relocation designs must be in accordance with MDOT SHA and the individual utility company's design standards. The Developer will also be responsible for obtaining all appropriate permits and/or agreements from the individual utility companies.

#### **4.1.12 Constructability**

The Developer will be responsible for the final design and construction in accordance with MDOT SHA standards at each compensatory SWM site within the LODs identified to the maximum extent practicable.

#### 4.1.13 Water Resources

The Developer will be responsible for final design of all compensatory SWM sites to ensure the IART goals of the Preferred Alternative are met, and the site designs follow MODT SHA and MDE design standards. This includes obtaining permits from MDOT SHA Plan Review Division (PRD), MDE NTW/W, and MDE Dam Safety Division (DSD) as applicable for each site. As part of the permitting process, the Developer will be required to follow the three-step procedure presented in MDE's *2000 Maryland Stormwater Design Manual, Volumes I & II* in selecting on-site and off-site locations best suited for achieving the SWM water quality requirements. Furthermore, the Developer will comply with any agreements referenced in the approved Water Quality Certificate to fully permit the sites through MDOT SHA and MDE.

## 4.2 Permitting Requirements

Beyond typical requirements described in **Section 4.1**, the Developer must follow all current Local, State, and Federal design standards and regulations. It will be the responsibility of the Developer to ensure use of the latest design standards and regulations, including any updated standards for climate change once they are adopted in Maryland and/or Virginia. In addition, commitments that are part of the JPA or EIS, requirements as indicated in the Technical Requirements (TR) or Section TRs, and agreements established during the P3-Developer Programmatic Agreement (PA) process must be met.

## 5 CONCLUSION

Based on the 67 compensatory SWM sites preliminarily cleared, see **Figure 5-1** and **Table 5-2** this Compensatory SWM Mitigation Plan provides sufficient acres of water quality treatment (IAT) for the Preferred Alternative to meet the requirement, and even exceeds the compensatory IART requirement, for the Developer to determine site feasibility and final design. This document and the sites preliminarily cleared present a workable plan to meet the Preferred Alternative SWM IART requirements. See **Table 5-1** for potential Preferred Alternative IAT credit provided by the compensatory SWM sites and **Appendix A** for detailed information.

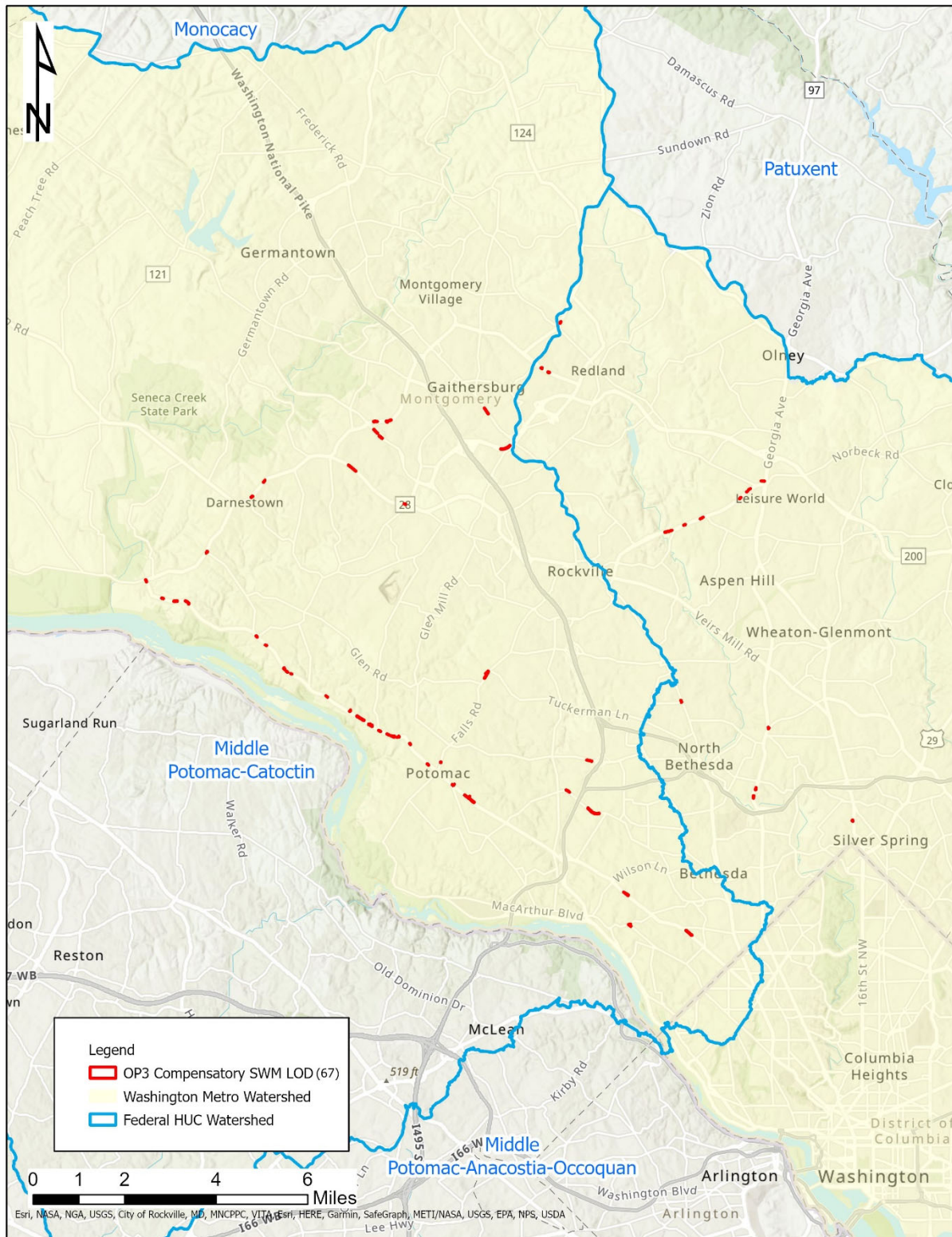
**Table 5-1 Preferred Alternative Compensatory SWM Potential**

MDE 6-Digit Watershed	Target Compensatory Preferred Alternative SWM IART Requirement (AC)	Compensatory Preferred Alternative IAT Potential <sup>3</sup> (AC)
Washington Metropolitan (No. 021402)	2.39	27.39

<sup>3</sup> The compensatory IAT potential provided is more than the compensatory IART requirement. The intent is to provide an excess of compensatory SWM sites for the Developer's use in final design to further reduce impacts where possible and account for sites which may prove not feasible during final design.



**Figure 5-1: Preferred Alternative Compensatory SWM Sites within the MDE Washington Metropolitan 6-Digit Watershed (Federal Middle Potomac – Catoclin 8-Digit HUC shown for reference)**



The Developer is not required to use any of the compensatory SWM sites presented in this document. If the Developer chooses to find alternate or additional locations or provide SWM on-site to meet the Preferred Alternative water quality requirements, the Developer will be responsible for the full vetting of those sites, including all coordination efforts, and the re-evaluation of environmental documents and modification of permits as needed. Alternate locations could include County/City projects currently in progress or locations separately identified by the Developer. The final impacts, consisting of sites from this document and/or others, should not exceed those presented in the I-495 & I-270 Managed Lanes Study JPA.

The Developer is encouraged to avoid and minimize impacts to historic and environmental resources and utilize sites as close to the Preferred Alternative LOD as feasible during final design. In addition, if the Developer can find alternate sites that would have no or fewer impacts, doing so is encouraged and the full vetting and permitting of those sites are the responsibility of the Developer and final impacts should not exceed those presented in the I-495 & I-270 Managed Lanes Study JPA, EIS, and this document. If the final impacts based on final design of any compensatory SWM site exceeds those identified, the discipline evaluations as presented in this document would be subject to re-evaluation.

The Developer can also buy IAT credits to meet the compensatory SWM water quality requirements, but will be responsible for obtaining final approval for the IAT credit received, including all negotiations and coordination required. Like buying IAT credits, if as a result of using alternate locations a splitting or sharing of SWM IAT occurs the Developer will also be responsible for obtaining final approval for the IAT credit received, including all negotiations and coordination required.

To assist the Developer in being able to quickly begin SWM site selections and final design, **Table 5-2** is offered to provide a high-level overview of potential impacts at each of the 67 compensatory SWM sites preliminarily cleared for inclusion in this Plan to meet the SWM quality requirement. The Developer will be required to select compensatory SWM sites located in the MDE WAS 6-Digit Watershed and Federal MNC 8-Digit HUC impacted by the proposed work before moving to other sites due to the requirements discussed in **Section 2** and **Section 3** of this document. The compensatory SWM sites in **Table 5-2** are those that fall within the MDE WAS 6-Digit Watershed and are sites that meet both the MDE SWM and I-495 & I-270 Managed Lanes Study JPA requirements. All compensatory SWM sites preliminarily cleared are within the same MDE 12-Digit and/or 8-Digit Watersheds which are impacted by the Preferred Alternative LOD.

For a full list of all sites vetted by all disciplines as discussed in this Plan, see **Appendix O**. Note the information provided in **Appendix O** is not being used in support of this Plan, the I-495 & I-270 Managed Lanes Study JPA, FEIS, or ROD and includes sites which were removed from consideration during avoidance and minimization efforts. The information provided in **Appendix O**, along with all sites identified by the WR Discipline, has been provided to the Developer for their reference in final design. It should be noted, use of any compensatory SWM sites not included in **Table 5-2** would require a re-evaluation of discipline evaluations, environmental documents, and modification of permits as needed.



Table 5-2: Compensatory SWM Menu of Sites

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Stream Use Class	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1") (AC)	Discipline Ratings									
						Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-1805	021402	02070008	I-P	SWM Facility - Ch 5	0.58	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3305	021402	02070010	III	SWM Facility - Ch 5	0.47	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-3601	021402	02070010	I	SWM Facility - Ch 5	0.39	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3602	021402	02070008	I-P	SWM Facility - Ch 5	0.40	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-3603	021402	02070010	I	SWM Facility - Ch 5	0.82	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-3604	021402	02070010	I	SWM Facility - Ch 5	0.46	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-3612	021402	02070010	I	SWM Facility - Ch 5	0.19	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3613	021402	02070008	I-P	SWM Facility - Ch 5	0.40	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-3614	021402	02070008	I-P	SWM Facility - Ch 5	0.65	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-3615	021402	02070010	IV	SWM Facility - Ch 5	0.29	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-3616	021402	02070010	III	SWM Facility - Ch 5	0.70	Minor	Clear	Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	UG
WAS-3617	021402	02070008	I-P	SWM Facility - Ch 5	0.63	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3618	021402	02070008	I-P	SWM Facility - Ch 5	0.84	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3622	021402	02070008	I-P	SWM Facility - Ch 5	1.06	Moderate	Clear	No Impact	Low	Long Term	Moderate	Minor	None	N/A	OH & UG
WAS-3625	021402	02070010	I	SWM Facility - Ch 5	0.22	Minor	Moderate	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-3634	021402	02070010	I	SWM Facility - Ch 5	0.29	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3635	021402	02070010	I	SWM Facility - Ch 5	0.40	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3637	021402	02070010	IV	SWM Facility - Ch 5	0.43	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3638	021402	02070010	IV	SWM Facility - Ch 5	0.31	Significant	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3656	021402	02070010	I	SWM Facility - Ch 5	0.73	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Stream Use Class	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1") (AC)	Discipline Ratings									
						Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-3658	021402	02070010	I	SWM Facility - Ch 5	0.76	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4058	021402	02070008	I-P	SWM Facility - Ch 5	0.70	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4059	021402	02070008	I-P	SWM Facility - Ch 5	0.76	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4067	021402	02070008	I-P	SWM Facility - Ch 5	0.51	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	UG
WAS-4068	021402	02070008	I-P	SWM Facility - Ch 5	0.89	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4072	021402	02070008	I-P	SWM Facility - Ch 5	0.66	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4091	021402	02070008	I-P	SWM Facility - Ch 5	1.19	Moderate	Clear	No Impact	Moderate	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-4098	021402	02070008	I-P	SWM Facility - Ch 5	0.08	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-4099	021402	02070008	I-P	SWM Facility - Ch 3	0.82	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4517	021402	02070010	IV	SWM Facility - Ch 5	0.44	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4518	021402	02070010	IV	SWM Facility - Ch 5	0.39	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4519	021402	02070010	IV	SWM Facility - Ch 5	0.43	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4521	021402	02070010	IV	SWM Facility - Ch 5	0.69	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4607	021402	02070008	I-P	SWM Facility - Ch 5	0.38	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4613	021402	02070008	I-P	SWM Facility - Ch 5	0.38	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4615	021402	02070008	I-P	SWM Facility - Ch 5	0.26	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-4622	021402	02070008	I-P	SWM Facility - Ch 5	0.12	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4624	021402	02070008	I-P	SWM Facility - Ch 5	0.20	Moderate	Minor	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4625	021402	02070008	I-P	SWM Facility - Ch 5	0.10	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4626	021402	02070008	I-P	SWM Facility - Ch 5	0.54	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Stream Use Class	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1") (AC)	Discipline Ratings									
						Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-4627	021402	02070008	III-P	SWM Facility - Ch 5	0.13	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4628	021402	02070008	III-P	SWM Facility - Ch 5	0.24	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	None
WAS-4629	021402	02070008	I-P	SWM Facility - Ch 5	0.13	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-4630	021402	02070008	I-P	SWM Facility - Ch 5	0.47	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4631	021402	02070008	I-P	SWM Facility - Ch 5	0.33	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4632	021402	02070008	I-P	SWM Facility - Ch 5	0.11	Moderate	Clear	Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4633	021402	02070008	I-P	SWM Facility - Ch 5	0.20	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4635	021402	02070008	I-P	SWM Facility - Ch 5	0.38	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4637	021402	02070008	I-P	SWM Facility - Ch 5	0.01	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4638	021402	02070008	I-P	SWM Facility - Ch 5	0.59	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-4639	021402	02070008	I-P	SWM Facility - Ch 5	0.58	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-4640	021402	02070008	I-P	SWM Facility - Ch 5	0.40	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4641	021402	02070008	I-P	SWM Facility - Ch 5	0.07	Moderate	Clear	Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	OH & UG
WAS-4642	021402	02070008	I-P	SWM Facility - Ch 5	0.28	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4644	021402	02070008	I-P	SWM Facility - Ch 5	0.30	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4645	021402	02070008	I-P	SWM Facility - Ch 5	0.15	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4646	021402	02070008	I-P	SWM Facility - Ch 5	0.39	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4647	021402	02070008	I-P	SWM Facility - Ch 5	0.28	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4651	021402	02070008	I-P	SWM Facility - Ch 5	0.24	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4652	021402	02070008	I-P	SWM Facility - Ch 5	0.23	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Stream Use Class	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1") (AC)	Discipline Ratings									
						Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-4653	021402	02070008	I-P	SWM Facility - Ch 5	0.11	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4655	021402	02070008	I-P	SWM Facility - Ch 5	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-4656	021402	02070008	I-P	SWM Facility - Ch 5	0.21	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-4657	021402	02070008	I-P	SWM Facility - Ch 5	0.34	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4658	021402	02070008	I-P	SWM Facility - Ch 5	0.23	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
WAS-4659	021402	02070008	I-P	SWM Facility - Ch 5	0.10	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4660	021402	02070008	I-P	SWM Facility - Ch 5	0.19	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH

<sup>4</sup> Discipline Ratings (See corresponding Discipline Appendices presented in **Table 3-1** for more information):

- Constructability – No impact = No constructability issues apparent.  
 Minor = Construction is possible with relatively modestly impactful methods and average cost. Sites may need MOT, CTB (Concrete Traffic Barrier), or may have a constrained layout affecting productivity. Sand Filters may need shoring but utilities are not an issue and MOT is relatively simple.  
 Moderate = Construction is possible with conventional methods and above average cost but requires significantly more effort than the Minor category. Additional MOT methods may be necessary. Shoring, whether trench boxes or other designed methods would be required to complete the work safely. Overhead and underground utilities may be in close proximity warranting additional safeguards, but not to the level that relocation is required.  
 Significant = Construction is possible, but only with majorly impactful methods and higher cost. Sites may have extremely heavy traffic that will require significant MOT to ensure worker safety. Sites may have observable utilities that would need timely and expensive relocation in order work safely (relocation of poles, etc.) Site may have extremely limited access that will require unusual methods with slower production.
- CR – Clear = No conflict with known or likely historic or archaeologic site(s). No further survey or evaluation recommended at this time.  
 Minor = Minor conflict with known historic or archaeologic site(s). Determination of eligibility (DOE) form for standing structure likely required.  
 Moderate = Moderate conflict with known historic or archaeologic site(s). DOE form for standing structure and/or evaluation of historic properties likely required.  
 Significant = Significant conflict with historic or archaeological site. Phase 1 archaeological survey and/or significant coordination with other agencies likely required.
- Forestry – No Impact = No specimen trees or forests identified on-site.  
 Impact = Specimen trees or forests identified on-site.
- HAZMAT – Low = Environmental impacts are unlikely to be encountered within the limits of that LOD. Either had no documented releases or prior releases at PSOCs within or in close proximity to the LOD were documented to be adequately remediated.  
 Moderate = Insufficient information has been obtained to-date to make a clear risk determination of environmental impacts with that LOD, and environmental impacts cannot be completely ruled out.  
 High = Potentially having impacted soil and groundwater within the limits of LOD. Have documented releases within their boundaries or are located within or adjacent to PSOCs with known environmental impacts and thus, have the greatest potential to be impacted by petroleum or other hazardous/regulated materials.
- MOT – No MOT = No MOT required  
 Temp/Daily = Temporary/Daily shoulder closures likely required  
 Long term = Long term shoulder closures with barriers likely required  
 Complex = Complex MOT design likely required
- Wetlands and Waterways – No impact = Zero functional loss to wetlands or waterways.  
 Minor = Impacts to resources do not result in functional losses that are not partially compensated by the stormwater activity.  
 Moderate = Impacts <50% of the site and re-configuration of the site may reduce impacts to an acceptable level.  
 Significant = Impacts >50% of the site is covered by wetlands or waterways and construction of the site would result in functional loss.  
 Self-Mitigating = Regulatory agencies would not require impacts to be mitigated as the waterway and/or wetland function would improve.
- ROW – Minor = Site is located entirely within existing MDOT SHA ROW and no property acquisitions or easements required.  
 Medium = Site is located partially on private property, acquisition or easements will be required.  
 Hard = Site is located partially on parkland or WMATA property, acquisition or easements will be required.
- Section 4(f) – None = No impact to 4(f) properties.  
 Low = Fringe impact on 4(f) properties but would likely result in *de minimis* impacts.  
 Moderate = Impact to 4(f) properties likely to be interpreted as an adverse effect resulting in Individual 4(f).  
 Severe = impact is significant compared to size of the 4(f) property/resource.
- Structures – Minimal = No structural issues.  
 Moderate = Concerns associated with utilities, slope severity/stability, or potential modifications to existing structures that would require engineering/innovative solutions.  
 Major = Structure is not recommended without further study and investigation or existing structures may be negatively impacted by construction.
- Utilities – None = No observed utility surface indicators to indicated underground (UG) utilities or overhead (OH) utility features.  
 OH = OH utilities only observed along site.  
 OH & UG = OH and UG utilities observed along site.  
 UG = UG utilities only observed along site.  
 Not Feasible = Utility relocation not feasible.

## 6 REFERENCES

(n.d.) *Code of Maryland Regulations*. Legislature of the State of Maryland.  
<http://www.dsd.state.md.us/COMAR/ComarHome.html>

(May 1992, Updated July 2001). *Water Quality Banking Agreement*. Maryland Department of the Environment and Maryland Department of Transportation State Highway Administration.

(October 2000, Revised May 2009). *2000 Maryland Stormwater Design Manual, Volumes I & II*. Center for Watershed Protection and Maryland Department of the Environment Water Management Administration.

(December 2011). *2011 Maryland Standards and Specifications for Soil and Erosion and Sediment Control*. Maryland Department of the Environment Water Management Administration.

(August 2014). *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits*. Maryland Department of the Environment.

(June 2020). *I-495 & I-270 Manage Lanes Study, Draft Environmental Impact Statement and Draft Section 4(f) Evaluation*. U.S. Department of Transportation Federal Highway Administration and Maryland Department of Transportation State Highway Administration.

(October 2021). *I-495 & I-270 Manage Lanes Study, Supplemental Draft Environmental Impact Statement and Draft Section 4(f) Evaluation*. U.S. Department of Transportation Federal Highway Administration and Maryland Department of Transportation State Highway Administration.

(TBD). *I-495 & I-270 Manage Lanes Study, Final Environmental Impact Statement and Draft Section 4(f) Evaluation*. U.S. Department of Transportation Federal Highway Administration and Maryland Department of Transportation State Highway Administration.

(TBD). *I-495 & I-270 Managed Lane Study Joint Federal/State Application (JPA)*. Applicant: Maryland Department of Transportation State Highway Administration.

(TBD). *Final Avoidance, Minimization, and Impacts Report*. U.S. Department of Transportation Federal Highway Administration and Maryland Department of Transportation State Highway Administration.

## APPENDIX A – WATER RESOURCES EVALUATION

## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX A: Water Resources Desktop Evaluations & Field Assessments**

#### **1. Background**

The Stormwater Management (SWM) concept developed for the Final Environmental Impact Statement (FEIS) prepared in support of the National Environmental Policy Act (NEPA) efforts for the Public Private Partnership (P3) I-495 and I-270 Managed Lanes Study (MLS) has indicated that it is likely that not all SWM water quality requirements, or impervious area requiring treatment (IART), can be provided practically within the MLS area and will need to be provided elsewhere, thus requiring compensatory SWM mitigation sites outside the MLS Limit of Disturbance (LOD) in order to meet the full SWM water quality requirements. For the purposes of SWM water quality, all compensatory SWM mitigation must occur in the same Maryland Department of the Environment (MDE) 6-Digit Watersheds impacted by the MLS, with hierarchal preference given to mitigation locations within the same MDE 12-Digit Watershed and 8-Digit Watershed as the project LOD. For the Joint Permit Application (JPA), environmental impacts and ground disturbances should be mitigated within the same Federal 8-Digit Hydrologic Unit Codes (HUC).

On behalf of the Maryland Department of Transportation State Highway Administration (MDOT SHA) Water Resources (WR) discipline led the effort in identifying potential compensatory SWM sites to mitigate for SWM water quality that cannot be met on-site. Identified compensatory SWM sites include potential Chapter 5 and Chapter 3 SWM facilities adjacent to Maryland Department of Transportation State Highway Administration (MDOT SHA) roadways and properties, stream restoration sites, and pavement removal sites within the MDE Washington Metropolitan Watershed (WAS – No. 021402), and Patuxent River Watershed (PAX – No. 021331) for the entire MLS and MDE WAS Watershed for the MDOT SHA Preferred Alternative (Alternative 9 – Phase 1 South). The WR discipline identified over 2,000 potential compensatory SWM sites, which included SWM facility, pavement removal, and stream restoration sites, identified to meet the SWM water quality requirements of the MLS. Based on the selection of the Preferred Alternative, further analysis and development of the on-site SWM by the Developer, and efforts to meet SWM water quality requirements closer to the Preferred Alternative LOD while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites. The 67 sites preliminary cleared for inclusion in the Compensatory SWM Plan, are mainly Chapter 5 “ESD” facilities with one Chapter 3 “structural facility. Based on a SWM hierarchal preference to use Chapter 3 and Chapter 5 SWM facilities for water quality mitigation over stream restoration, no stream restoration sites are included. The compensatory SWM sites preliminary cleared are to support the JPA, the FEIS, and Record of Decision (ROD).

In general, the Preferred Alternative water quality requirements are estimated as shown below. See the main document for a full listing of the SWM requirements.

**Table A-1: Preferred Alternative SWM Requirements, On-Site vs. Compensatory**

<b>MDE 6-Digit Watershed</b>	<b>SWM IART Requirement (AC)</b>	<b>Estimated On-Site SWM IAT Provided (AC)</b>	<b>Target Compensatory SWM IART Requirement (AC)</b>
Washington Metropolitan (No. 021402)	209.98	207.59	2.39



## 2. Methodology and Assumptions

The WR discipline methodologies, assumptions, and data management process are documented in the (1) *I-495\_I-270 P3 Compensatory Site Search Protocol*, (2) *I-495\_I-270 P3 Compensatory WQ Stream Site Search Protocol* and (3) *I-495\_I-270 P3 Compensatory WQ Stream Sites Search Protocol (0.5-mile project buffer search)* (Site Search Protocols), (4) *I-495\_I-270 P3 Compensatory SWM Site Search GIS Workflow* and (5) *I-495\_I-270 P3 Compensatory WQ Stream Site Search GIS Workflow* (GIS Workflows), (6) *I-495/I-270 P3 Compensatory SWM Site Search Field Form* and (7) *I-495\_I-270 P3 Compensatory WQ Stream Site Search Field Form* (Field Forms), and (8) *I-495/270 P3 Compensatory SWM Program Virtual Desktop QA/QC Protocol* (QA/QC) provided with this Appendix. It should be noted, not all information referenced in these documents is provided in this document directly, but the intent is to demonstrate the workflow and data management process that the WR discipline implemented for their desktop evaluations and field assessments. The pertinent information that impacts and supports the compensatory SWM water quality credits has been provided.

The base data utilized to perform the WR discipline desktop evaluations include aerial imagery, street view information, field assessment data, and the following Geographic Information System (GIS) data, plus the base data utilized and provided by other disciplines:

- Anne Arundel, Calvert, Charles, Howard, Montgomery, Prince George's, and St. Mary's County and P3 Light Detection and Ranging (LiDAR) Elevation Data
- State of Maryland County and Municipal boundaries, MDOT SHA District boundaries, MDOT SHA Maintenance Shop boundaries, and MDE 6-Digit Watershed boundaries
- Montgomery County, Prince George's County, and MDOT SHA impervious areas
- MDOT SHA and Prince George's County National Pollution Discharge Elimination System (NPDES) drainage data, including channel and storm drain conveyances and structures, existing SWM facilities and their associated drainage areas
- Anne Arundel, Calvert, Charles, Frederick, Howard, Montgomery, Prince George's, and St. Mary's County; Montgomery and Prince George's County Municipal; and MDOT SHA roadways
- Maryland Transportation Authority (MDTA) and MDOT SHA Total Maximum Daily Load (TMDL) data; including planned SWM facility locations, SWM facilities currently under construction, existing SWM facilities and associated drainage areas.
- Areas of exclusion where no potential compensatory SWM sites should be considered. Areas of exclusion were identified as locations where existing SWM facilities exist and the impervious area within their defined drainage areas is currently being treated.
- State of Maryland-owned properties
- United States Department of Agriculture (USTORMDRAIN) Soil Survey Geographic Database (SSURGO) soils data
- Federal Emergency Management Agency (FEMA) delineated floodplains
- Fish and Wildlife Services (FWS) National Wetlands Inventory (NWI) and MD Department of Natural Resources (DNR) delineated wetlands

Additional information regarding the WR discipline base data can be found in the GIS Workflows provided later in this Appendix.

When a site was identified by the WR discipline, a site name designating the MDE 6-Digit Watershed combined with a sequential number and a LOD was delineated with consideration of existing MDOT

SHA Right-of-Way (ROW), MDE SWM facility type, maximization of impervious area draining to the site, construction access and staging/stockpile areas, constructability, maintenance of traffic, and erosion and sediment control and maintenance of streamflow. In addition, the LOD was set with consideration of freeboard requirements, grading, revised drainage area with offsite diversion of drainage, and roadside safety (guardrail or other).

The WR discipline conducted field visits for each site and associated LOD. During the field assessments the WR discipline verified existing drainage patterns, existing impervious area within the contributing drainage area to each site, site accessibility for construction/maintenance of traffic, and existing site conditions/constraints, including visual indicators for sub-grade and above-grade utilities, slopes, vegetation, trees and other environmental features, roadway sections and features (signage, fire hydrant, guardrail) within the LOD, outfall condition and overall feasibility.

These LODs were also distributed to other disciplines for further evaluation. Feasibility of the sites was determined based on the evaluations performed by Cultural Resources (Archeology and Historic Standing Structures), Forestry, Hazardous Materials, Maintenance of Traffic, Wetlands and Waterways, ROW, Section 4(f), Structures, and Utility. These evaluations are provided under separate appendices.

Upon receipt of other discipline comments, the LOD and site were re-evaluated by the WR discipline to determine a final LOD and feasibility status of each site. The LOD at each site was modified, to the maximum extent possible for a desktop/planning evaluation, to ensure inclusion of the recommendations for MOT and roadway (or sidewalk) adjustments; construction access; avoidance and minimization of impacts to natural, cultural, and archeological resources; feasibility to meet vertical elevation connections for SWM facility outfalls or discharges to existing storm drain networks; storm drain re-configurations; and outfall stabilizations.

MDE and MDOT SHA guidance documents, criteria, and requirements for SWM facilities, stream restoration, and pavement removal were followed when determining the potential Impervious Area Treated (IAT) credit at each site. Table A-2 describes how the IAT values calculated for each site and stream reach were determined:

**Table A-2 – IAT Crediting Assumptions**

Compensatory SWM Site Type	Notes	IAT Credit
SWM Facility (Ch 3 and Ch 5)	Facilities treating: 1. $\geq 1.0$ inch of runoff from impervious areas draining to the facility 2. $< 1.0$ inch of runoff from impervious areas draining to the facility	1. 100% existing MDOT SHA impervious area (acres) + 50% non-MDOT SHA impervious area (acres) draining to facility = IAT credit 2. IAT credit will be pro-rated proportionally based on the amount of runoff in inches treated.
Stream Restoration		1 acre per 100 LF of stream restored = IAT credit
Pavement Removal		50% impervious area removed (acre) = IAT credit

Because the WR evaluations have been based primarily on GIS and field data the Developer with MDOT SHA will be responsible for obtaining other detailed data, including survey, and conduct additional reviews of sites as necessary to progress designs of any of the compensatory SWM facilities.

### 3. Results

Table A-5 below, summarizes pertinent information from the desktop evaluations and field assessments performed by the WR discipline for the 67 compensatory sites preliminarily cleared. For the other discipline data utilized to inform each site, please refer to each discipline's Appendix as presented in the main document. Table A-5 summarizes the potential (1) Site Name (indicating MDE 6-Digit Watershed) (2) SWM Facility Type (Chapter 3, Chapter 5) (3) LOD area (4) IAT for WQ credit (PE=1") and (5) WR discipline comments for the sites.

### 4. Conclusion

Of the over 2,000 potential compensatory SWM sites initially identified by WR discipline, a total of 67 sites vetted by the WR Team and all other disciplines were preliminarily cleared to address the IART deficit for Preferred Alternative. See Table A-3 and Table A-4 for the breakdown of compensatory SWM sites identified and potential IAT provided.

**Table A-3 – Potential IAT Provided by Compensatory SWM Sites**

<b>MDE 6-Digit Watershed</b>	<b>Target Compensatory SWM IART requirement (AC)</b>	<b>Potential Compensatory SWM IAT (AC)</b>	<b>Number of Compensatory SWM Sites Identified</b>
Washington Metropolitan (No. 021402)	2.39	27.39	67

**Table A-4 – Potential IAT by Compensatory SWM Site Type**

<b>MDE 6-Digit Watershed</b>	<b>Potential SWM IAT by Chapter 5 SWM Facilities (AC - # of Sites)</b>	<b>Potential SWM IAT by Chapter 3 SWM Facilities (AC - # of Sites)</b>	<b>Potential SWM IAT by Pavement Removal (AC - # of Sites)</b>	<b>Potential SWM IAT by Stream Restoration (AC - # of Sites)</b>
Washington Metropolitan (No. 021402)	26.57 – 66 sites	0.82 – 1 site	0 – 0 sites	0 – 0 sites

The Developer will be responsible for completing detail design and permitting of any selected SWM site, regardless of its inclusion in this list. Any compensatory SWM site will need to be designed in accordance with MDE and MDOT SHA standards, criteria, and regulations as well as any commitments in the JPA and agreements between the Developer and MDOT SHA.

Applicable permits for compensatory SWM and stream restoration designs that the Developer may be required to obtain are:

- MDOT SHA Plan Review Division (PRD) Permit for SWM, ESC, and small pond review
- MDE Wetlands & Waterways (W/W) Permit for impacts to wetlands and waterways
- MDE Dam Safety Division (DSTORMDRAIN) Permit for SWM facilities and/or roadway which are classified as dams under MD Code 378

**Table A-5 – Water Resources Desktop Evaluation and Field Assessment Summary Table for SWM Facility Sites.**

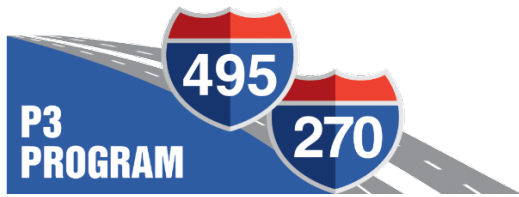
Site Name (1)	Potential SWM Facility Type (2)	Potential LOD Area (AC) (3)	Potential IAT for WQ Credit (Pe = 1") (AC) (4)	Comments (5)
WAS-1805	SWM Facility - Ch 5	2.56	0.58	TMDL Site Name MO-MP-0149. A bypass system may be required to divert drainage from offsite area in order to qualify for Chapter 5 WQ credit and/or reduce the size of a proposed facility. Proximity to private residence. Potential to daylight outfall to the west via riprap or pipe to existing storm drain structures further to the west.
WAS-3305	SWM Facility - Ch 5	0.28	0.47	Existing roadside grassy open space near commercial area. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment. Overhead utilities will make it hard to grade in BSW but otherwise a good potential site to treat some portion of the road. Can be tied into the existing SD system.
WAS-3601	SWM Facility - Ch 5	0.25	0.39	Existing roadside open space near commercial property. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3602	SWM Facility - Ch 5	0.49	0.40	Existing roadside open space near residential property. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment. Low hanging, dry utilities, but possible to place BSW opposite of road from cables, several feet away from overhead cables/poles. Curb cut construction required to direct water underneath the sidewalk. U
WAS-3603	SWM Facility - Ch 5	0.44	0.82	Existing roadside open space near school. NPDES database shown does not match field conditions (drainage structures and associated systems not shown). There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment. A bypass system may be required to divert drainage from offsite area in order to qualify for Chapter 5 WQ credit and/or reduce the size of a proposed facility.
WAS-3604	SWM Facility - Ch 5	0.36	0.46	Existing roadside grassy open space. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3612	SWM Facility - Ch 3	0.29	0.19	Existing roadside grassy open space.
WAS-3613	SWM Facility - Ch 5	0.35	0.40	Existing roadside grassy open space. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3614	SWM Facility - Ch 5	0.28	0.65	Existing roadside grassy open space. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3615	SWM Facility - Ch 5	0.22	0.29	Existing roadside open space with landscaping trees. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3616	SWM Facility - Ch 5	0.28	0.70	Existing roadside open space. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3617	SWM Facility - Ch 5	1.49	0.63	Existing roadside overgrown space. A bypass system may be required to divert drainage from offsite area in order to qualify for Chapter 5 WQ credit and/or reduce the size of a proposed facility.
WAS-3618	SWM Facility - Ch 5	1.05	0.84	Existing median with vegetation. A bypass system may be required to divert drainage from existing impervious area that is currently treated by an existing upstream NPDES SWM facility.
WAS-3622	SWM Facility - Ch 5	0.89	1.06	Existing roadside grassy open space near commercial building. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3625	SWM Facility - Ch 5	0.37	0.22	Existing roadside grassy open space. NPDES database shown does not match field conditions (drainage structures and associated systems not shown, in the incorrect location, or draining the wrong direction). There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3634	SWM Facility - Ch 5	0.16	0.29	Existing median grassy open space with landscaping trees. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3635	SWM Facility - Ch 5	0.12	0.40	Existing median grassy open space with landscaping trees. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3637	SWM Facility - Ch 5	0.27	0.43	Existing median grassy open space with landscaping trees. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3638	SWM Facility - Ch 5	0.13	0.31	Existing median grassy open space with landscaping trees. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.
WAS-3656	SWM Facility - Ch 5	0.21	0.73	Existing median grassy open space with landscaping trees. There appears to be a possibility to adjust existing storm drain configurations/drainage patterns and/or add additional storm drain systems to allow for more impervious area treatment.

Site Name (1)	Potential SWM Facility Type (2)	Potential LOD Area (AC) (3)	Potential IAT for WQ Credit (Pe = 1") (AC) (4)	Comments (5)
WAS-3658	SWM Facility - Ch 5	0.86	0.76	Existing median grassy open space with concrete channel. There appears to be a possibility to remove the concrete channel.
WAS-4058	SWM Facility - Ch 5	0.64	0.70	Existing open space within grassy median. No trees within LOD. A bypass system may be required to divert drainage from existing impervious area that is currently treated by an existing upstream NPDES SWM facility. Site previously identified during TMDL efforts as MOGr1-RKK-149.
WAS-4059	SWM Facility - Ch 5	0.92	0.76	Existing open space near existing sidewalk. Existing SWM pond adjacent to potential facility. NPDES database does not match field conditions there are additional outfall pipes for the facility not shown. Trees at outfall.
WAS-4067	SWM Facility - Ch 5	0.84	0.51	Existing open space near existing sidewalk. Trees along LOD.
WAS-4068	SWM Facility - Ch 5	0.71	0.89	Existing open space within grassy median. No trees within LOD.
WAS-4072	SWM Facility - Ch 5	1.19	0.66	Existing open space within grassy median. Trees within the LOD.
WAS-4091	SWM Facility - Ch 5	2.03	1.19	Existing open space within grassy median. Site previously identified during TMDL efforts as MOGr1-RKK-197a. A bypass system may be required to divert drainage from offsite area in order to qualify for Chapter 5 WQ credit.
WAS-4098	SWM Facility - Ch 5	0.59	0.08	Existing open space near existing sidewalk. Significant hazardous materials concerns (if groundwater contamination is identified within LOD, see HAZMAT comments) which are being considered to have little to no risk to SWM BMP functionality with the use of industry standard protection measures in design and during construction.
WAS-4099	SWM Facility - Ch 3	0.24	0.82	Existing open space near existing sidewalk. Stable at potential outfall. No trees within BMP footprint. Trees within the outfall.
WAS-4517	SWM Facility - Ch 5	0.12	0.44	Existing curb within LOD. Potential to outfall into existing inlet.
WAS-4518	SWM Facility - Ch 5	0.14	0.39	Existing curb within LOD. Potential to daylight outfall into existing wooded channel.
WAS-4519	SWM Facility - Ch 5	0.22	0.43	Existing curb within LOD. Potential to daylight outfall into existing wooded channel.
WAS-4521	SWM Facility - Ch 5	0.13	0.69	No existing curb within LOD. Potential to outfall into existing storm drain system.
WAS-4607	SWM Facility - Ch 5	0.32	0.38	Located adjacent to residential property. It appears that the sump is located at the middle of the potential facility location. Potential BMP can be graded as a single facility which can outfall at the ditch that runs along Country Glen Ct. The outfall ditch appears to be in stable condition.
WAS-4613	SWM Facility - Ch 5	0.23	0.38	Located within median. There appears to be a possibility to adjust existing storm drain configuration to allow for more impervious area treatment. Potential facility can outfall into an existing inlet which appears to be in stable condition. This area is located adjacent to MDOT SHA District 3 Access Permit No. 19APMO03620 (CPSC Park).
WAS-4615	SWM Facility - Ch 5	0.36	0.26	Located adjacent to residential property. There appears to be a possibility to remove existing curb to allow for more impervious area treatment. Trees at outfall, but no trees impacted by potential facility footprint. Outfall appears stable.
WAS-4622	SWM Facility - Ch 5	0.36	0.12	Open space between roadway exit ramp from MD 112 to Esworthy Road and roadway entrance ramp to MD 112 from Esworthy Road located within SHA ROW. Potential facility can outfall into wide swale. End section of roadway culvert located downstream of the facility which also outfalls into this wide swale located under MD 112 is separated and minor outfall erosion observed. Trees located within wide swale at downstream end, but no trees impacted by potential facility footprint.
WAS-4624	SWM Facility - Ch 5	0.35	0.20	Open space adjacent to recreational property. Potential to remove gravel area located next to MD 190 shoulder for facility construction. Potential facility can outfall into existing swale which will discharge to ditch located along the recreational property. No tree impacts by potential facility footprint.
WAS-4625	SWM Facility - Ch 5	0.29	0.10	Open space adjacent to residential property. Potential facility can outlet into an existing inlet. Existing inlet appears to be in stable condition. There appears to be a possibility to remove existing curb to allow for more impervious area treatment. Previously part of MDOT SHA TMDL Site Search as MO-MP-0123.

Site Name (1)	Potential SWM Facility Type (2)	Potential LOD Area (AC) (3)	Potential IAT for WQ Credit (Pe = 1") (AC) (4)	Comments (5)
WAS-4626	SWM Facility - Ch 5	0.72	0.54	Open space located along super elevated roadway draining towards the proposed site, closed section roadway, close to residential property. Potential facility can outlet in to ditch which will daylight upstream of driveway culvert. Driveway culvert covered with the vegetation. There appears to be a possibility to remove existing curb to allow for more impervious area treatment. Large trees located along fence of the farmland. No tree impacts by potential facility construction.
WAS-4627	SWM Facility - Ch 5	0.29	0.13	Open space adjacent to residential property. Potential facility can outfall into an existing inlet. Existing inlet appears to be in stable condition. Large trees located along fence. No tree impacts by potential facility construction.
WAS-4628	SWM Facility - Ch 5	0.48	0.24	Open space adjacent to residential property. Super elevated roadway drains to the potential facility. Potential facility can outfall into wide swale which drains towards the residential property. Trees and woody vegetation within facility area. Possible tree impacts by facility construction.
WAS-4629	SWM Facility - Ch 5	0.38	0.13	Open space adjacent to meadow area. Super elevated roadway drains to the potential facility. Potential facility can outfall into wide swale located within meadow area. Wide swale appears to be in stable condition. Potential BMP is located close to Watkins View Lane which will be constructed in future.
WAS-4630	SWM Facility - Ch 5	0.28	0.47	Open space adjacent to residential property. Potential facility can be outfall at 24" RCP cross culvert located under MD 190. Trees at outfall, but no trees impacted by potential facility footprint. Outfall appears stable.
WAS-4631	SWM Facility - Ch 5	0.13	0.33	Open space adjacent to residential development and meadow area. Potential facility can outfall into an existing inlet which appears to be in stable condition. Trees within facility area. Possible tree impacts by facility construction.
WAS-4632	SWM Facility - Ch 5	0.28	0.11	Open space located adjacent to residential development. Potential facility can outfall into roadway side ditch which appears to be in stable condition. Trees and woody vegetation at outfall ditch, but no trees impacted by potential facility footprint. Previously part of MDOT SHA TMDL Site Search as MO-MP-0135. Per hazmat review, record of HAZMAT spills which may impact groundwater and pollutant flow within proximity to SWM.
WAS-4633	SWM Facility - Ch 5	0.19	0.20	Open space located adjacent to residential development. Culvert located under Beall Spring Road (12" RCP) collects runoff from MD 190 drains to the site area. Culvert is filled with sediment. Potential facility can outfall into roadway culvert which appears to be in stable condition. Previously part of MDOT SHA TMDL Site Search as MO-MP-0130.
WAS-4635	SWM Facility - Ch 5	0.30	0.38	Open space adjacent to residential development. Some portion of MD 190 has existing curb which drains via curb cut to the site area. Potential facility can outfall at 12" CMP pipe located under MD 190. 12" CMP pipe is eroded and undermined at the upstream end which outfalls into an existing brick inlet. Outfall receiving culvert may require additional stabilization and repair. Per hazmat review, record of HAZMAT spills which may impact groundwater and pollutant flow within proximity to SWM.
WAS-4637	SWM Facility - Ch 5	0.23	0.01	Open Space located adjacent to residential property. Some portion of River Road and Smokey Quartz Lane intersection has curb at downstream end of the site. Potential facility can outfall into an existing inlet which appears to be in good condition. Existing driveway culvert is located upstream of an existing inlet which is 15" CMP filled with sediment.
WAS-4638	SWM Facility - Ch 5	0.86	0.59	Open Space located between River Road (MD 190) and Swains Lock Terrace Rd. Potential facility can outfall into an existing inlet which appears to be in stable condition. Existing sidewalk may need to be relocated for potential facility construction. Previously part of MDOT SHA TMDL Site Search as MO-MP-0137.
WAS-4639	SWM Facility - Ch 5	1.01	0.58	Open Space located between River Road (MD 190) and Swains Lock Road. Potential facility can outfall into existing ditch which appears to be in stable condition. Existing curb removal may be required to direct runoff towards the proposed facility. Trees and woody vegetation at outfall ditch, but no trees impacted by potential facility footprint. Previously part of MDOT SHA TMDL Site Search as MO-MP-0136.
WAS-4640	SWM Facility - Ch 5	0.47	0.40	Open Space located adjacent to residential property. Potential facility can into an existing inlet which appears to be in moderate condition. Broken bricks at the floor of inlet. Outfall inlet may require additional repair. Existing inlet outfall across MD 190 and sidewalk through end section and the outfall appears to be in stable condition. Trees and woody vegetation at ultimate outfall, but no trees impacted by potential facility footprint.
WAS-4641	SWM Facility - Ch 5	0.32	0.07	Open Space located adjacent to residential property. Potential facility can outfall into existing inlet appears to be in stable condition. Existing inlet outfall across MD 190 and sidewalk through end section and the outfall appears to be in stable condition. Trees and woody vegetation at ultimate outfall, but no trees impacted by potential facility footprint. Two existing inlets which drains to potential site are not in NPDES database. Also, NPDES database shows outfall is located just north of Md 190 which is incorrect. The outfall extends beyond the MD 190 and sidewalk.



Site Name (1)	Potential SWM Facility Type (2)	Potential LOD Area (AC) (3)	Potential IAT for WQ Credit (Pe = 1") (AC) (4)	Comments (5)
WAS-4642	SWM Facility - Ch 5	0.38	0.28	Open Space located between River Road (MD 190) and sidewalk. Potential facility can outfall into an existing wide swale. Existing wide swale appears to be in stable condition. Previously part of MDOT SHA TMDL Site Search as MO-MP-0138.
WAS-4644	SWM Facility - Ch 5	0.30	0.30	Open Space located adjacent to residential development. Potential facility can outfall into an existing sump inlet. Existing inlet manhole cover was sealed and outfall for the existing inlet could not be verified in the field.
WAS-4645	SWM Facility - Ch 5	0.97	0.15	Open space located adjacent to residential development. Existing outfall swale which is an outfall appears to be in stable condition, existing bamboo present in wide swale. The culvert shown under River Road in NPDES database could not located on site. Potential relocation of an existing sidewalk. Previously part of MDOT SHA TMDL site search as MO-MP-0139.
WAS-4646	SWM Facility - Ch 5	0.37	0.39	Open space located between River Road (MD 190) and sidewalk. Existing outfall ditch appears to be in stable condition. Woody vegetation and some trees around outfall. Previously part of MDOT SHA TMDL site search as MO-MP-0140.
WAS-4647	SWM Facility - Ch 5	0.30	0.28	Open space located adjacent to residential properties. Existing inlet appears to be in stable condition which outfalls into 12" RCP culvert located under River Road which outfalls into an existing channel located west of River Road. Existing culvert is partially filled with sediment and outfall channel is eroded. Outfall channel may require additional stabilization. Medium offsite from private residence. A bypass system may be required to divert drainage from offsite area in order to reduce the size of a proposed facility. Previously part of MDOT SHA TMDL site search as MOGr1-RKK-299. No trees may be impacted by potential facility footprint.
WAS-4651	SWM Facility - Ch 5	0.26	0.24	Open space located adjacent to residential development. Closed storm drain system collects roadway drainage from River Road (MD 190). Recent improvements at Elementary school were observed during site visit. Three inlets and one manhole were found which connects to an existing stormdrain system and directs runoff from MD 190 to the facility. Existing manhole which can be potential outfall appears to be in stable condition. small offsite draining from residential community.
WAS-4652	SWM Facility - Ch 5	0.43	0.23	Open space located adjacent to residential property. Existing ditch located along Persimmon Tree Road which can be potential outfall appears to be in stable condition. Per hazmat review, record of HAZMAT spills which may impact groundwater and pollute flow within proximity to SWM.
WAS-4653	SWM Facility - Ch 5	0.14	0.11	Open space located adjacent to residential property. Existing inlet which may be potential outfall is in good condition which outlets across the Falls Road. Medium offsite from adjacent residential community. A bypass system may be required to divert drainage from offsite area in order to reduce the size of a proposed facility.
WAS-4655	SWM Facility - Ch 5	0.93	0.14	Open space located adjacent to residential development. Existing brick inlet which may be potential outfall located along Newbridge Drive appears to be in stable condition. Brick inlet outlets across the Newbridge drive. Minor erosion around the inlet. Inlet may require additional stabilization. Previously part of MDOT SHA TMDL site search MO-MP-0145.
WAS-4656	SWM Facility - Ch 5	0.49	0.21	Open space located adjacent to residential development. Existing manhole located along the Newbridge Drive can be potential outfall for the facility. There was signs of erosion between the Newbridge Drive and sidewalk. Existing manhole shows signs of erosion. These may require additional stabilization and repair. The 60" RCP from the manhole outfalls into the existing ditch which has erosion.
WAS-4657	SWM Facility - Ch 5	0.60	0.34	Open space adjacent to residential development. Existing swale which may be potential outfall appears to be in stable condition. The culvert shown under River Road in NPDES data shows wrong flow direction. The existing culvert flows from south to north. Previously part of MDOT SHA TMDL site search as MO-MP-0146.
WAS-4658	SWM Facility - Ch 5	0.34	0.23	Open space adjacent to residential development. Existing swale appears to be in stable condition which is an existing outfall and drains to culvert located under MD 190. There is a new construction entrance at the downstream end of site. New construction for residence in progress within site area. The culvert shown under River Road in NPDES data shows wrong flow direction. The existing culvert flows from south to north. Potential tree impact by facility construction.
WAS-4659	SWM Facility - Ch 5	0.47	0.10	Open space located adjacent to residential development. Existing outfall ditch appears to be in stable condition. Woody vegetation observed in the existing ditch. Woody vegetation exists between site area and wooden fence for residential property.
WAS-4660	SWM Facility - Ch 5	1.57	0.19	Open space located adjacent to commercial property. Existing outfall swale appears to be in stable condition.



# I-495/I-270 P3 Compensatory SWM Program

## SWM Desktop and Field Evaluation Protocol

### 1.0 PURPOSE

The purpose of this protocol is to define consistent desktop and field evaluation (DFE) procedures for assessing compensatory stormwater (SWM) opportunities that meet water quality (WQ) requirements ( $P_E$  of 1.0 inch) for the MDOT SHA I-495 & I-270 Public-Private Partnership (P3) Program. Since multiple GEC consultant teams are assigned to DFE's, it is critical that the factors considered in making recommendations for sites are applied in a consistent manner. The decision-making process must be clearly documented, and the key considerations identified for future use.

The P3 compensatory SWM DFE process involves multiple steps, described in the following sections: File Management & Version Control, Planning and Preparation, Performing Evaluations, and Recording Results. The initial DFE evaluations are to be GIS-based investigations using ESRI's ArcGIS Desktop software, (Version 10.5 and later) augmented by field investigations. Important guidance and procedures for the GIS-based investigations are provided in the supplemental document, [I-495 I-270 P3 Compensatory SWM Site Search GIS Workflow.docx](#), hereafter referred to as "**GIS Workflow.**"

#### URL

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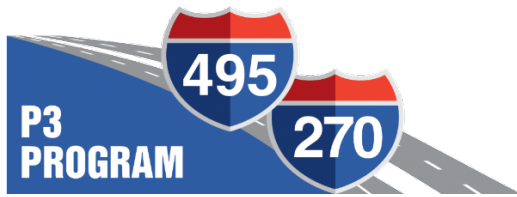
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At the onset of this compensatory SWM site search, a target Impervious Area Requiring Treatment (IART) has been defined for each of the two (2) watersheds located within the project corridor. For the Washington Metropolitan Area Watershed (02-14-02), the initial assessment of IART is 340 acres with a target IART >425 acres. For the Patuxent River Watershed (02-13-11), the initial assessment of IART is 32 acres with a target IART >40 acres. To facilitate this task, the P3 corridor and phased construction sections have been divided into working zones and assigned to each consultant team. Additional reevaluation efforts are made within 0.5 mile from MLS limit of disturbance to find SWM sites.

The P3 compensatory SWM consultant teams include:

- |                                      |   |
|--------------------------------------|---|
| 1. NMP Engineering Consultants (NMP) | 3. WSP (WSP)                            |
| 2. RJM Engineering (RJM)             | 4. Whitman, Requardt & Associates (WRA) |



## 2.0 **FILE MANAGEMENT & VERSION CONTROL**

File management and version control are important aspects of maintaining consistency and accuracy throughout the task. This task will require multiple GEC member firms to work collaboratively and share files in order to maintain efficiency. For these reasons ALL pertinent files, as listed in the following discussion, shall be maintained in ProjectWise. To be able to track progress and to back up critical work performed within the base files (controlled by NMP) and the working files of each firm, when uploading files to ProjectWise, a new version letter, number, or date from the current version will be assigned to each individual file. Earlier versions will not be overwritten or deleted. Refer to Section 4.0 of the **GIS Workflow** for details.

Note that the hot links in this protocol, formatted in **bold underline**, are “ctrl-clickable.” The [ProjectWise addresses](#) are also included with certain hot links.

The ProjectWise location for all files to be used for this GIS investigation is as follows:

Parent folder: [E. GIS](#)

URL

[pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\](#)

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Subfolder: [gisdata](#)

URL

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Individual folders under this folder are assigned to each consulting team and house the working GIS map exchange document (\*.mxd) and the working geodatabases (\*.gdb) for each assigned zone. These \*.mxd and \*.gdb files are editable by the respective consulting teams. These shall be maintained by each consultant.

The [gisdata](#) subfolder contains the following subfolder which houses the zipped versions of base file geodatabases (\*.gdb) to be used by ALL consultants for the DFE evaluations.



Subfolder: [basedata](#)

URL

<pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\basedata\>

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A versioned spreadsheet is stored in this subfolder to document the data resources that have been integrated into the geodatabases and the date for when each base file data was last updated.

#### [Compensatory SWM Review Basedata Contents.xlsx](#)

URL

[pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\basedata\Compensatory\\_SWM\\_Review\\_Basedata\\_Contents.xlsx](pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\basedata\Compensatory_SWM_Review_Basedata_Contents.xlsx)

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All of the [basedata](#), as listed in the above spreadsheet, to be used for the site searches is incorporated into the versioned (zipped) geodatabase. This is a living geodatabase to be managed and edited by NMP only. NMP will notify the compensatory SWM consultant firms when a new version has been created on ProjectWise for download and extraction for use.

#### [Compensatory SWM Review Basedata.gdb.zip](#)

URL

[pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\basedata\Compensatory\\_SWM\\_Review\\_Basedata.gdb.zip](pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\basedata\Compensatory_SWM_Review_Basedata.gdb.zip)

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### **3.0 PLANNING & PREPARATION**

1. Coordination and Training:



- NMP will provide training to consultants describing the step-by-step process of using, reviewing and editing the data and grids provided by MDOT SHA and others. Consultant GIS leads and staff performing the actual task must contact NMP for GIS training.
  - Information fields in project-associated databases and the methodology for completing the updates necessary for submittal will be explained during training.
  - The applicable base data gathered and referenced are from a variety of resources and local, state, and federal government agencies and is anticipated to be updated as noted below.
2. The [Compensatory\\_SWM\\_Review\\_Basedata.gdb](#) file is a dynamic GIS database that will be updated regularly. Any additional information determined necessary for completing the task will be provided to consultant teams as it becomes available. The consultants must communicate any requests for additional base data to NMP.
  3. Weekly Microsoft Teams meetings will be conducted to relay additional data, guidance, and instruction and to resolve any GIS and technical issues that may arise.
  4. Use of GIS and geodatabases under the development and control of multiple disciplines outside of the P3 compensatory SWM Team is required. Accessing and linking to those geodatabases for the compensatory SWM task is managed through a ProjectWise data management utility.

#### Data Management

##### URL

<pw:\\shavmpwx.shacadd.ad.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\Data Management\>

##### URN

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#### Subfolder: Discipline LOD Databases

##### URL

<pw:\\shavmpwx.shacadd.ad.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\Data Management\Discipline LOD Databases>

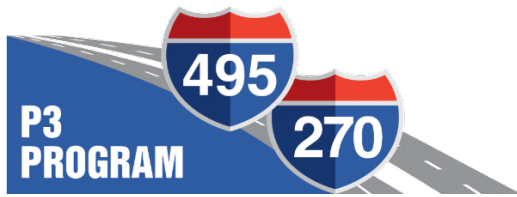
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<pw://shavmpwx.shacadd.ad.mdstate:SHAPWP3/Documents/D{918525f3-a5be-405e-8b98-bbfaaf3fdc5c}>

#### Subfolder: Discipline basedata

##### URL

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#### **4.0 GENERAL CONSIDERATIONS FOR PERFORMING EVALUATIONS**

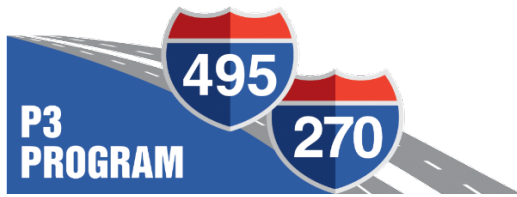
Refer to the **GIS Workflow** for details in performing DFE evaluations.

1. SWM Site Search areas have been defined to be outside of the P3 Limit of Disturbance (LOD), in the Washington Metropolitan and Patuxent River Watersheds. The watersheds cover parts of Montgomery, Prince George's, Howard, Anne Arundel, Calvert, and Charles Counties. Investigations shall be performed within MDOT SHA right-of-way and state-owned properties to the maximum extent possible before searching in non-MDOT SHA right-of-way areas.
2. Navigate the SWM Site Search GIS data in accordance with this document and the GIS Workflow.
3. MDE SWM Chapter 3 and Chapter 5 facilities are allowed for meeting the WQ requirements. Quantity control for compensatory SWM is not required.
4. Virtual "walk-through" screening: Consultants shall evaluate MDOT SHA-owned impervious area (or other potential impervious area) within the provided zones. This is done by "walking" the areas in GIS and locating sites where impervious runoff can be collected and treated. The following describes the process and features to be referenced during this initial assessment.
  - Features to avoid to the maximum extent possible: Potential sites shall be avoided if they include features, listed but not limited to below:
    - i. partially to completely wooded sites where the Best Management Practice (BMP) footprint would be 30% or more wooded;
    - ii. steep fill slopes unsuitable for a BMP;
    - iii. existing BMPs and their drainage areas;
    - iv. hazardous soils or contaminated sites;
    - v. culturally sensitive sites;
    - vi. perennial or intermittent waterways or mapped wetlands (both DNR and NWI layers) or floodplains which would conflict directly with a new SWM BMP (not including the outfall);
    - vii. MDOT SHA NPDES and TMDL sites (constructed);
    - viii. BMP retrofits (not to be considered);
    - ix. P3 On-site SWM sites;
    - x. private property;
    - xi. toll roads; or
    - xii. other prohibitive feature or characteristic.
  - Features requiring additional consideration: For sites not impacted by the "features to avoid", additional criteria, listed but not limited to below, shall be assessed and any possible issues to be explored during the field investigation stage.
    - i. site accessibility for construction and maintenance;
    - ii. available right-of-way;





- iii. highway safety grading limits;
  - iv. adequate site outfall;
  - v. hazardous/contaminated soils;
  - vi. future development and community planning;
  - vii. significant utility conflicts;
  - viii. proximity to airports (MAA criteria for SWM); or
  - ix. other limiting conditions.
- Additional criteria not included in the above listings shall be evaluated as well as deemed necessary by the consultants and the NEPA team and other disciplines. Sites that shall clearly require obtaining additional right-of-way shall be clearly flagged in the data comments.
  - Removal of impervious areas, such as within MDOT SHA park and rides and shoulders, may be an option in meeting SWM WQ requirements.
  - Excess state-owned land may be available for P3 compensatory SWM use.
  - Consultants shall request input from OP3 water resources managers regarding any questionable sites.
5. When a potential site is identified, a BMP LOD “polygon”, along with polygons for drainage areas and impervious areas, shall be drawn by the consultant and the pertinent data fields in the respective attributes table completed according to Section 5.0 in the **GIS Workflow**. The identification of initial feasibility (IIF) BMPs shall be placed as features in the Geodatabase Feature Classes embedded in the respective SWM Search geodatabases.
- Naming convention for each SWM Site within the Washington Metropolitan (WAS) and Patuxent (PAX) watersheds is as follows, per respective firm:
- | Firm | WAS - Sites | PAX - Sites | Example Name        |
|------|-------------|-------------|---------------------|
| RJM  | 0001 - 2000 | 0001 - 2000 | WAS-0001; PAX-2000  |
| WRA  | 2001 - 3000 | 2001 - 3000 | WAS-2001; PAX -3000 |
| WSP  | 3001 - 4000 | 3001 - 4000 | WAS-3001; PAX-4000  |
| NMP  | 4001 - 5000 | 4001 - 5000 | WAS-4001; PAX-5000  |
6. Each firm shall conduct an internal quality assurance/quality control (QA/QC) of the selected sites prior to requesting issuance of property owner notifications for non-invasive / invasive field work and distribution to other disciplines for additional feasibility reviews. The QA/QC is to be tracked using the Site\_Status Field in the respective firm’s OP3\_SWM\_Potential\_Site feature classes. The site status settings are: working, vetted, NEPA, published, and dropped. Refer to Section 3.1. of the **GIS Workflow** for detail descriptions and additional guidance.
- Recording and tracking using the Site\_Status Field are dynamic efforts as selected sites are QA/QC’d internally and externally (outside of the P3 compensatory SWM team). For example, when a site moves from ‘working’ status to ‘vetted’ status, it has the potential to be re-assigned to ‘working’ status during the multi-disciplinary reviews and internal QA/QC and will require further reviews.
  - Comments are critical to document decision-making for site selection and through the vetting and review processes, both internally and externally. Use of the Comments Field in the



respective firm's OP3\_SWM\_Potential\_Site feature classes is required. Where character limitations in the field exist, an alternative document shall be prepared and made available for others.

- A Site\_History geodatabase table has been developed to record the history of the decision-making process for each site. Details of how this document may be added or accessed within the GIS network are found in Section 3.5 of the **GIS Workflow**.
7. With the approval of the OP3 water resources managers, request distribution of non-invasive site access notifications to property owners adjacent to IIF BMP locations and if within 25 feet of the P3 LOD or BMP LOD, where applicable. Notifications shall be made for IIF BMPs on a weekly basis in accordance with the property owner notification team.
  8. Non-invasive "drive-by" field investigations or site visits within MDOT SHA right-of-way do not require property owner notifications.
  9. If the field investigation will be conducted along a roadway with posted speeds greater than 50 mph, and for a time greater than 15 minutes, maintenance of traffic (MOT) will be required. A request for MOT will be made to the appropriate MDOT SHA P3 team to coordinate.
  10. Within 1 week (or time determined by MDOT SHA P3 real estate team) of property owner notification of IIF BMPs submission, complete additional field investigation of sites to further assess:
    - i. access;
    - ii. obstructions;
    - iii. confirmation of and/or changes in land use;
    - iv. confirmation of and/or changes in impervious areas;
    - v. confirmation of and/or changes in drainage patterns;
    - vi. confirmation of and/or presence of environmental features;
    - vii. confirmation of and/or presence of utilities; and
    - viii. use of area by adjacent property owners or the local community.

11. Complete IIF BMP Field Investigation Form: [Field Form](#).

URL

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<pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/D{e9fc9327-ab51-4c8a-9282-718306b8e102}>

Request additional investigation by OP3 NEPA/environmental and utilities teams to assess further impacts.



12. Concurrently with review by NEPA, environmental and utilities teams of probable feasibility (PF) of BMP implementations, identify preliminary drainage areas, on-site (MDOT SHA-owned), and off-site impervious area treated, along with potential facility types and footprints, and LODs as described in the **GIS Workflow**.
13. Assign each PF BMP a site number using the following numbering scheme: Watershed – Site Number (4 digit). For example, WAS-0001 is Site 1 in the Washington Metropolitan watershed. Consultant firms will be assigned with the range of numbers, in 1000 increments, to use.

## **5.0 RECORDING RESULTS**

Consultants should follow the protocol set forth in this document and in the **GIS Workflow** when preparing and recording the results of the DFE. The following is a general list of the main fields to be included in the DFE data package for distribution to the P3 Construction Contractor.

1. The results of the DFE are to be compiled as a listing of PF BMPs provided in GIS and tabular formats with the primary information including the IIF BMP LOD “polygon,” the PF BMP drainage area and impervious area and PF BMP footprint as described in the **GIS Workflow**.
2. Update compensatory SWM DFE in the working geodatabases using the various fields in the attributes tables as defined in the GIS Workflow.



# I-495/I-270 P3 Compensatory SWM Program

## WQ Stream Desktop and Field Evaluation Protocol

### **1.0 PURPOSE**

The purpose of this protocol is to define consistent desktop and field evaluation (DFE) procedures for assessing compensatory stream site opportunities to meet water quality (WQ) requirements for the MDOT SHA I-495 & I-270 Public-Private Partnership (P3) Program. The decision-making process must be clearly documented, and the key considerations identified for future use.

The P3 Compensatory WQ Stream Site DFE process involves multiple steps, described in the following sections: File Management & Version Control, Performing Evaluations and Recording Results. The initial DFE evaluations are to be GIS-based investigations using ESRI's ArcGIS Desktop software, (Version 10.5 and later) augmented by field investigations. Important guidance and procedures for the GIS-based investigations are provided in the supplemental document, [I-495 I-270 P3 Compensatory WQ Stream Site Search GIS Workflow.docx](#), hereafter referred to as "**GIS Workflow.**"

#### URL

[pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\Engineering\D. Reports - White Papers\Site Search Protocol\I-495\\_I-270 P3 Offsite SWM Site Search GIS Workflow.docx](pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\Engineering\D. Reports - White Papers\Site Search Protocol\I-495_I-270 P3 Offsite SWM Site Search GIS Workflow.docx)

#### URN

<pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/D{07cc6eee-6127-4252-9747-02f4564f0481}>

### **2.0 FILE MANAGEMENT & VERSION CONTROL**

File management and version control are important aspects of maintaining consistency and accuracy throughout the task. To maintain consistency with the offsite SWM search, ALL pertinent files, as listed in the following discussion, shall be maintained in ProjectWise. To be able to track progress and to back up critical work performed within the basefiles (controlled by NMP) and the working files, when uploading files to Projectwise, a new version letter, e.g. A, B, etc., will be assigned to each individual file. Earlier versions will not be overwritten or deleted. Refer to Section 4.0 of the **GIS Workflow** for details.

Note that the hot links in this protocol, formatted in **bold underline**, are "ctrl-clickable." The [ProjectWise addresses](#) are also included with certain hot links.



The ProjectWise location for all files to be used for this GIS investigation is as follows:

Parent folder: [E. GIS](#)

URL

pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\

URN

pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/P{a5630a07-f59d-4dc5-add3-0dd0e69313f4}/

Subfolder: [gisdata](#)

URL

pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\

URN

pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/P{32199d4e-18ee-41ea-b4d9-6596274a2a54}/

The [gisdata](#) subfolder contains the following subfolder which houses the zipped versions of base file geodatabases (\*.gdb) to be used by ALL consultants for the DFE evaluations.

Subfolder: [basedata](#)

URL

pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\basedata\

URN

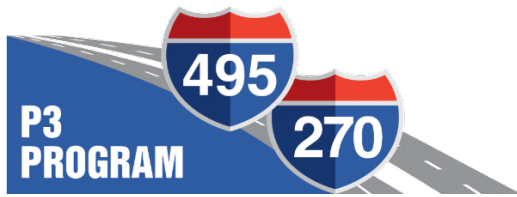
pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/P{21ee2020-344f-439b-ab6b-0fe567987b1b}/

A versioned spreadsheet is stored in this subfolder to document the data resources that have been integrated into the geodatabases and the date for when each base file data was last updated.

[Compensatory SWM Review Basedata Contents.xlsx](#)

URL

pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\basedata\Compensatory\_SWM\_Review\_Basedata\_Contents.xlsx



URN

<pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/D{7a653a7d-151a-46bc-a9bd-c8df81ffa419}>

All of the [basedata](#), as listed in the above spreadsheet, to be used for the site searches is incorporated into the versioned (zipped) geodatabase. This is a living geodatabase to be managed and edited by NMP only. NMP will notify the consultant firms when a new version has been created on Projectwise for download and extraction for use.

#### Compensatory SWM Review Basedata.gdb.zip

URL

[pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\\Documents\\OP3\\13- I495-I270 CR P3- Program Team\\13.17 Mitigation Projects\\13.17 Compensatory SWM\\13.17.04 Drainage\\CADD and GIS\\E. GIS\\gisdata\\basedata\\Compensatory\\_SWM\\_Review\\_Basedata.gdb.zip](pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\\Documents\\OP3\\13- I495-I270 CR P3- Program Team\\13.17 Mitigation Projects\\13.17 Compensatory SWM\\13.17.04 Drainage\\CADD and GIS\\E. GIS\\gisdata\\basedata\\Compensatory_SWM_Review_Basedata.gdb.zip)

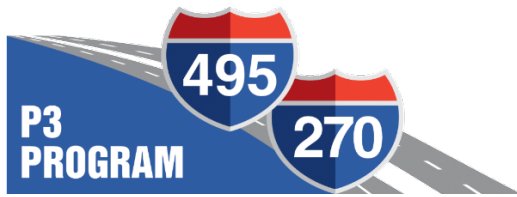
URN

<pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/D{bb5cf365-d645-4b2e-bf9d-28eb5c474f7c}>

### **3.0 GENERAL CONSIDERATIONS FOR PERFORMING EVALUATIONS**

Refer to the **GIS Workflow** for details in performing DFE evaluations.

1. The site search begins with evaluation of sites that were screened as part of the P3 site search for mitigation efforts performed by others for the 1-495/I-270 P3 project. The consultant (WSP) shall evaluate the GIS layers created under the stream mitigation site search efforts and the data recorded in the "Stream Mitigation Field Site Assessment Form". The notes taken during these efforts shall help in determining initial assessment of the site for WQ credit feasibility. The search shall be focused within the Washington Metropolitan and Patuxent River Watersheds.
2. Navigate the Compensatory WQ Stream Site Search GIS data in accordance with this document and the GIS Workflow.
3. The following describes the process and features to be referenced during the initial assessment.
  - Features requiring consideration: criteria listed but not limited to below, shall be assessed and any possible issues to be explored during the field investigation stage.
    - i. site accessibility for construction and maintenance;
    - ii. significant utility conflicts;
    - iii. impacts to forested riparian buffer;
    - iv. private property;
    - v. confined valley with steep slopes (constructability);
    - vi. private property structures within floodplain;
    - vii. in-line downstream SWM facilities;
    - viii. culturally sensitive sites;
    - ix. other limiting conditions.



When a potential site is identified, an LOD “polygon”, along with an existing stream alignment displaying limits of stream restoration shall be drawn by the consultant and the pertinent data fields in the respective attributes table completed according to Section 3.0 in the **GIS Workflow**. The identification of initial feasible LOD shall be placed as features in the Geodatabase Feature Classes embedded in the Compensatory WQ Streams geodatabase.

4. Once initial desktop feasibility is concluded, the consultant firm shall perform the visual field assessment to evaluate the site condition and feasibility of obtaining WQ credit if a stream restoration is completed. The consultant firm performing the investigations shall verify that right of entry agreements are active within the parcels required to be accessed to complete the visual field assessment. Considerations to be evaluated during the site visual assessment include but are not limited to:
  - i. Site access;
  - ii. Utility conflicts;
  - iii. Potential permitting issues;
  - iv. Vertical stability/bank erodibility;
  - v. Riparian Vegetation;
  - vi. Debris/Channel Blockage;
  - vii. Recommended limits of restoration;
  - viii. General remarks.
5. The firm shall conduct an internal quality assurance/quality control (QA/QC) of the selected sites prior to requesting issuance of property owner notifications for non-invasive / invasive field work and distribution to other disciplines for additional feasibility reviews. The QA/QC is to be tracked using the Site\_Status Field in the respective firm’s OP3\_Stream\_Potential\_Site feature classes. The site status settings are: working, vetted, NEPA, published, and dropped. Refer to Section 3.1. of the **GIS Workflow** for detail descriptions and additional guidance.
  - Recording and tracking using the Site\_Status Field are dynamic efforts as selected sites are QA/QC’d internally and externally (outside of the P3 Offsite SWM team). For example, when a site moves from ‘working’ status to ‘vetted’ status, it has the potential to be re-assigned to ‘working’ status during the multi-disciplinary reviews and internal QA/QC and will require further reviews.
  - Comments are critical to document decision-making for site selection and through the vetting and review processes, both internally and externally. Use of the Comments Field in the respective firm’s OP3\_Stream\_Potential\_Site feature classes is required. Where character limitations in the field exist, an alternative document shall be prepared and made available for others.
  - A Site\_History geodatabase table has been developed to record the history of the decision-making process for each site. Details of how this document may be added or accessed within the GIS network are found in Section 3.3 of the **GIS Workflow**.





6. With the approval of the OP3 water resources managers, request distribution of non-invasive site access notifications to property owners adjacent to stream sites locations and if within 25 feet of the LOD, where applicable.
7. Site visits within MDOT SHA right-of-way do not require property owner notifications.
8. If the field investigation will be conducted along a roadway with posted speeds greater than 50 mph, and for a time greater than 15 minutes, maintenance of traffic (MOT) will be required. A request for MOT will be made to the appropriate MDOT SHA P3 team to coordinate.
9. For sites that a right of entry is not active and/or property notifications have not sent from previous stream mitigation efforts, within 1 week (or time determined by MDOT SHA P3 real estate team) of property owner notification, complete field investigation of site.
10. Complete Stream Field Assessment Form: [Field Form](#).

URL

[pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\Engineering\D. Reports - White Papers\Field Form\I-495\\_I-270 P3 Compensatory WQ Stream Site Search Field Form.docx](pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\Engineering\D. Reports - White Papers\Field Form\I-495_I-270 P3 Compensatory WQ Stream Site Search Field Form.docx)

URN

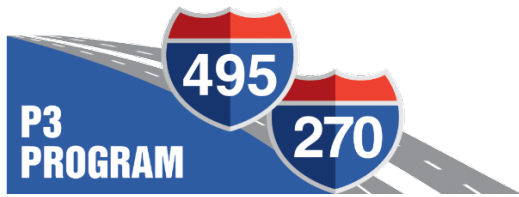
<pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/D{9a23630e-9877-4786-9789-99d7da169209}>

Request additional investigation by OP3 NEPA/environmental and utilities teams to assess further impacts.

#### **4.0 RECORDING RESULTS**

Consultants should follow the protocol set forth in this document and in the **GIS Workflow** when preparing and recording the results of the DFE.

1. The results of the DFE are to be compiled as a listing of Stream Restoration Sites provided in GIS and tabular formats with the primary information including the stream restoration LOD “polygon” and the proposed stream restoration limits as described in the **GIS Workflow**.
2. Update P3 Compensatory WQ Stream Site DFE in the working geodatabases using the various fields in the attributes tables as defined in the GIS Workflow.



# I-495/I-270 P3 MLS Compensatory Program

## Desktop and Field Evaluation Procedure (0.5-mile project buffer search)

### **1.0 PURPOSE**

The purpose of this document is to define desktop and field evaluation (DFE) procedures adopted for assessing compensatory stream site opportunities to meet water quality (WQ) requirements for the MDOT SHA I-495 & I-270 Public-Private Partnership (P3) Program within a 0.5-mile buffer of the project. The decision-making process is clearly documented, and the key considerations identified for future use.

The P3 Compensatory WQ Stream Site DFE process involved multiple steps, described in the following sections: File Management & Version Control, Desktop Evaluations, Visual Site Observation, Post Processing of Field Data, and Recording Results. The initial DFE evaluations were GIS-based investigations using ESRI's ArcGIS Desktop software, augmented by field investigations. Important guidance and procedures for the GIS-based investigations are provided in the supplemental document, [I-495 I-270 P3 Compensatory WQ Stream Site Search GIS Workflow.docx](#), hereafter referred to as “**GIS Workflow.**”

#### URL

[pw:\\shavmpwx.shacadd.ad.mdot.mdstate:SHAPWP3\Documents\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\Engineering\D. Reports - White Papers\Site Search Protocol\I-495\\_I-270 P3 Compensatory WQ Stream Site Search GIS Workflow.docx](pw:\\shavmpwx.shacadd.ad.mdot.mdstate:SHAPWP3\Documents\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\Engineering\D. Reports - White Papers\Site Search Protocol\I-495_I-270 P3 Compensatory WQ Stream Site Search GIS Workflow.docx)

#### URN

<pw://shavmpwx.shacadd.ad.mdot.mdstate:SHAPWP3/Documents/D{7364a56e-29d0-4675-b480-d7ceb2742ee>

### **2.0 FILE MANAGEMENT & VERSION CONTROL**

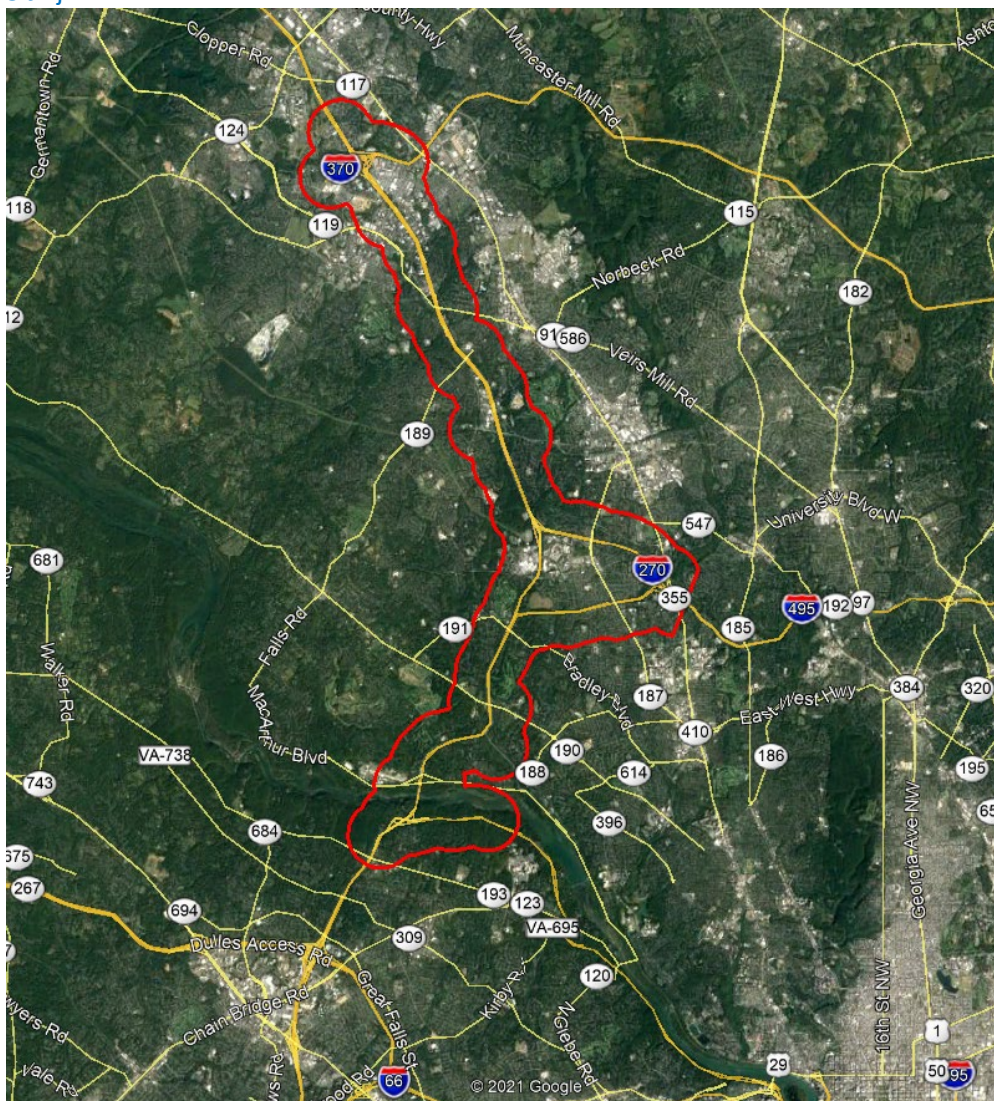
To maintain consistency, ALL pertinent files, as listed in the following discussion, will be maintained in ProjectWise. To be able to track progress and to back up critical work performed within the basefiles and the working files, when uploading files to ProjectWise, a new version letter, e.g. A, B, etc., will be assigned to each individual file. Earlier versions will not be overwritten or deleted. Refer to Section 4.0 of the **GIS Workflow** for details.



URL

URN

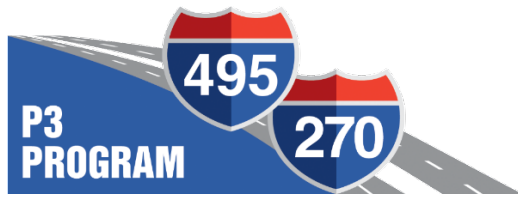
pw://shavmpwx.shacadd.ad.mdodt.mdstate:SHAPWP3/Documents/D{b2f4a641-4ff9-40d7-a273-ada21fff23b1}



**Figure 1. Aerial view of the buffer limits**





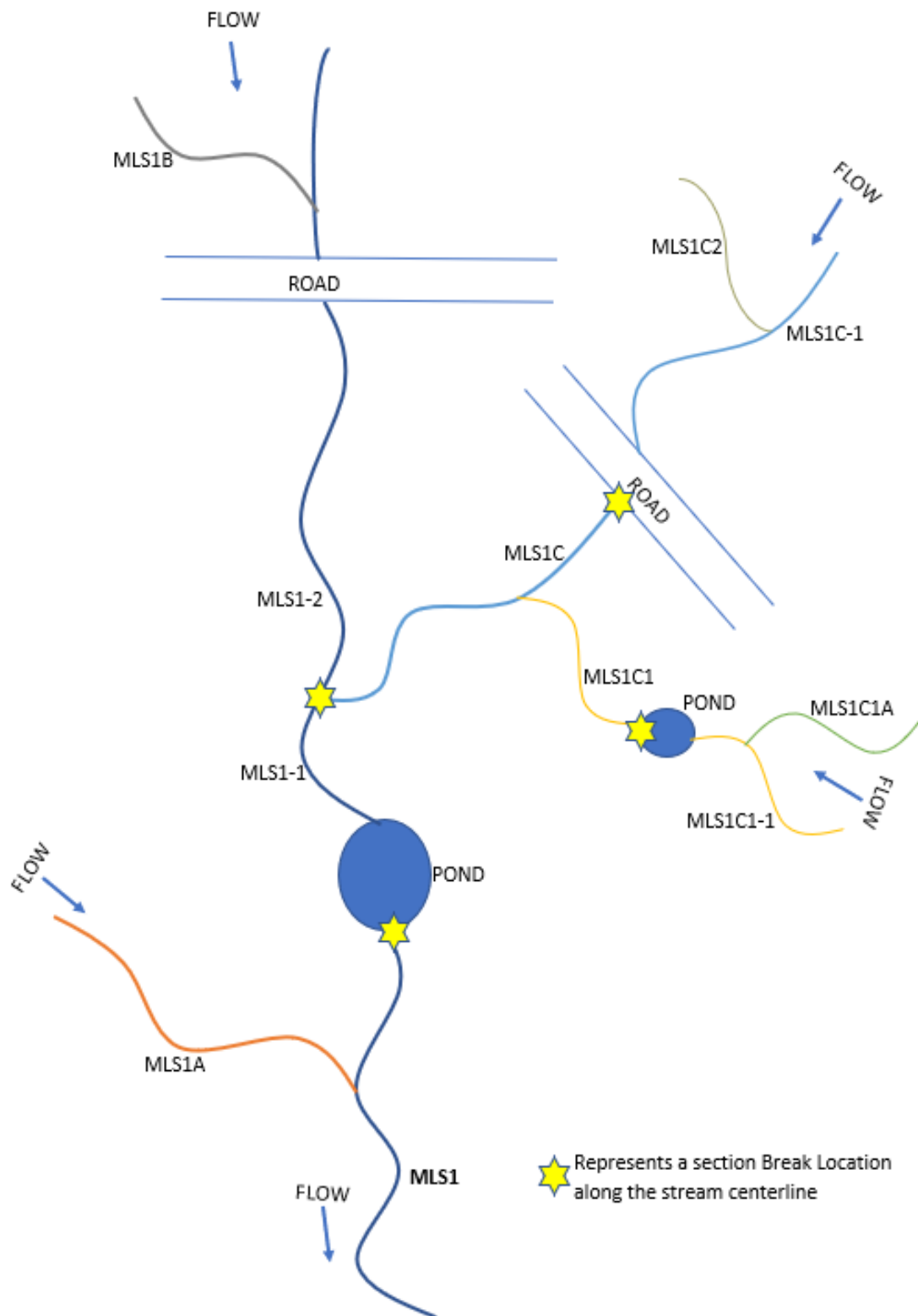


### Stream Name Selection

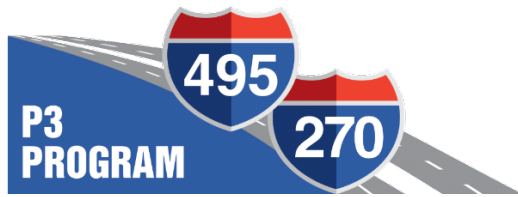
Once the stream centerlines are depicted within the 0.5-mi buffer polygon, the stream sections were provided with unique IDs. There are total of seven sub-watersheds exiting the buffer polygon. The mainstem of each sub-watershed exiting the buffer polygon were identified and labeled from MLS1 through MLS7.

Below are the examples of stream naming convention for a stream system in a sub-watershed exiting the buffer polygon:

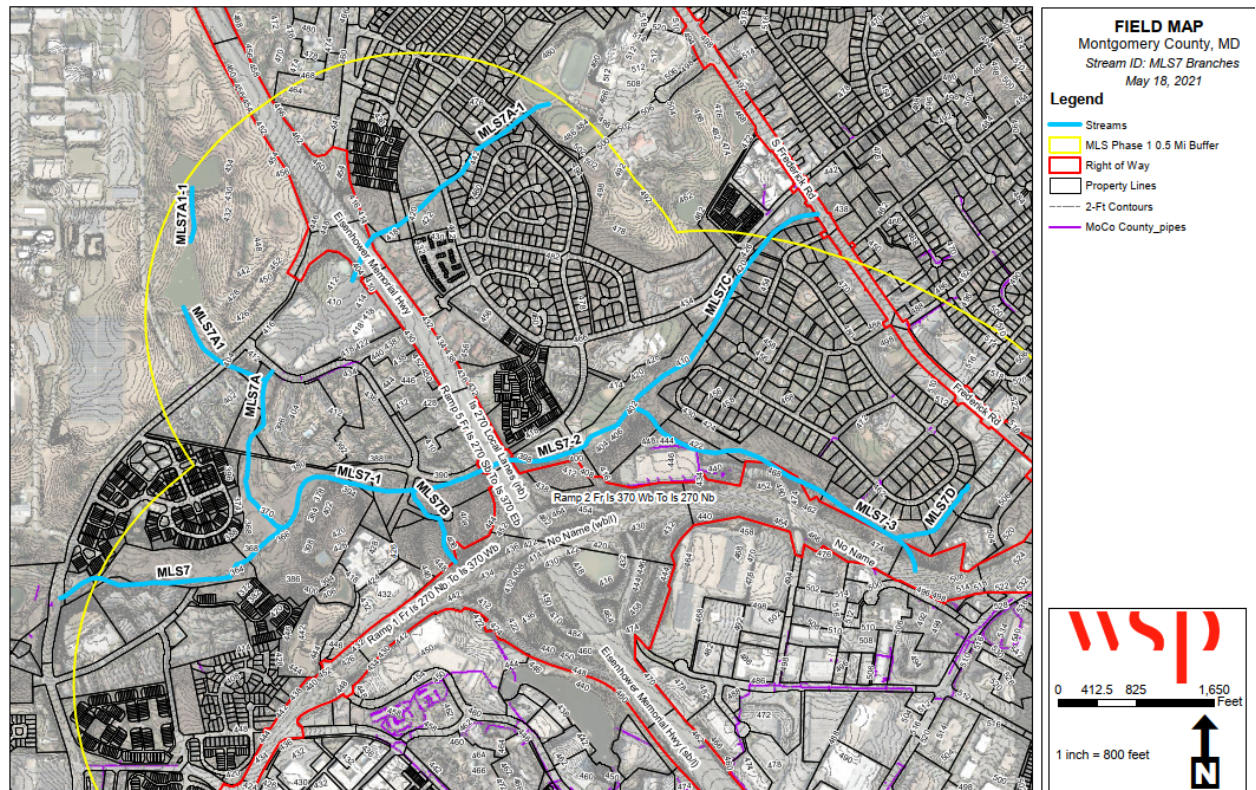
- Always start stream ID from the downstream section of the main channel such as MLS1 in example figure shown below.
- While walking upstream from the downstream most point (exit point at the buffer LOD in case of the main channels, and confluence with the main channel in case of the tributaries), if the stream channel is segmented for some reasons and another section starts at a point (location of yellow star in below figure), the sections upstream are labeled by adding -1, -2, -3, and so on to the original name of the downstream most channel segment, in an ascending order, for each time the particular stream channel is segmented. In example figure shown below, the main channel MLS1 is divided into two more segments along upstream areas (by breaking it: one near the Pond, and another at the confluence with the tributary MLS1C). Hence, the section just upstream of MLS1 is labeled as MLS1-1, and the section upstream of MLS1-1 is labeled as MLS1-2.
- Tributaries and sub-tributaries are labeled by adding letter and numbers respectively in an ascending order to the end of the original name of the downstream channel segment. In the example below, there are three tributaries to the main channel MLS1 and are labeled as MLS1A, MLS1B, and MLS1C. Tributary MLS1C has two tributaries named as MLS1C1 and MLS1C2. Tributary of MLS1C1 has a tributary named as MLS1C1A.







Once all the stream segments were provided with their unique identification label, field maps were created that were printed and taken by the field team during the Visual Site Observation that was performed in the next phase. An example of field map is shown below.



#### 4.0 Visual Site Observation:

A Visual Site Observation was performed, mostly from the MDOT SHA Right of Way, to evaluate the site condition and feasibility of obtaining WQ credit if a stream restoration is completed. Before conducting the Visual Site Observation, the team identified the stream sites that are already identified as projects within the buffer polygon. A two-person field crew performed the visual observation of identified stream sites starting on 5/19/2021. The team started the field observation from northern most sub-watershed (MLS7) and continued towards the southern sites.

During the visual observations, the team took pictures, marked on the field maps, and made notes of the stream sites existing conditions. The team noted the following different parameters, as applicable, based on visual observations at each stream site the team were able to visit.

- Channel geomorphic conditions such as channel dimensions, and entrenchment
- Riparian vegetation condition
- Channel bed material
- Existing stream stabilization/instream structures/restoration work performed
- Bank erosion/headcuts/channel stability





- Constraints/structures

#### **5.0 Post Processing of Field Data:**

When a potential site is identified, an LOD “polygon”, along with an existing stream alignment displaying limits of stream restoration was drawn and the pertinent data fields in the respective attributes table were completed according to Section 3.0 in the GIS Workflow.

After completion of each field visit, the team preliminarily categorized the streams as recommended sites, sites that needed further internal review, and sites that are not recommended based on the field observations and data collected.

The team conducted an internal quality assurance/quality control (QA/QC) of the selected sites. The QA/QC was tracked using the Site\_Status Field. The site status settings are working, vetted, NEPA, published, and dropped. Refer to Section 3.1. of the GIS Workflow for detail descriptions and additional guidance. Site selection was performed based on the visual observations of the following existing field parameters:

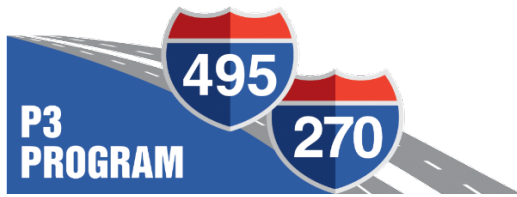
- Stream banks erosion
- Stream bed stability
- Riparian vegetation condition
- Existing stream stabilization/structures/restoration work performed
- Possible design and construction constraints
- Permitting Issues
- Site accessibility for construction
- Public and private property impact

The LOD of the sites chosen for recommended stream restoration were reviewed internally and finalized after addressing field notes, field photos, construction access and applicable comments from the team.

A Site\_History geodatabase table was developed to record the history of the decision-making process for each site. The “Site\_Name” attribute was provided as this is the initial LOD provided for comment. Details of how this document may be added or accessed within the GIS network are found in Section 3.3 of the GIS Workflow.

#### **6.0 RECORDING RESULTS**

The team followed the protocol set forth in the GIS Workflow when preparing and recording the results of the DFE. The results of the DFE were compiled as a listing of Stream Restoration Sites provided in GIS and tabular formats with the primary information including the stream restoration LOD “polygon” and the proposed stream restoration limits as described in the GIS Workflow.



# I-495/I-270 P3 Compensatory SWM Program

## Desktop Evaluation - GIS Workflow

### **1.0 PURPOSE**

The purpose of this document is to define the procedure for the GIS aspects of the desktop evaluation portion of the compensatory stormwater management (SWM) site search. Since multiple GEC consultant teams are assigned to Desktop and Field Evaluations (DFE), it is critical that the factors considered in making recommendations for sites are applied in a consistent manner. This protocol is intended to be a supplement to the I-495/I-270 P3 Compensatory SWM Program DFE [Protocol](#).

### **2.0 PROJECT DATA**

Please see the I-495/I-270 P3 Compensatory SWM Program DFE [Protocol](#) for the project data workflow. Below are the ProjectWise links to the folders (in bold-type) of project data to be used for the compensatory SWM searches.

#### **Parent folder: [E. GIS](#)**

URL

<pw://shavmpwx.shacadd.ad.mdod.state:SHAPWP3/Documents/OP3\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\>

URN

<pw://shavmpwx.shacadd.ad.mdod.state:SHAPWP3/Documents/P{a5630a07-f59d-4dc5-add3-0dd0e69313f4}/>

#### **Subfolder: [gisdata](#)**

URL

<pw://shavmpwx.shacadd.ad.mdod.state:SHAPWP3/Documents/OP3\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\>

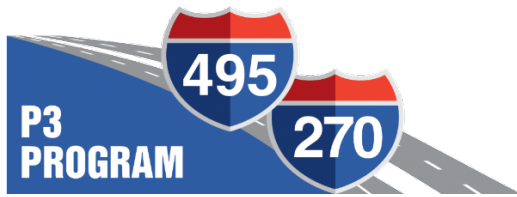
URN

<pw://shavmpwx.shacadd.ad.mdod.state:SHAPWP3/Documents/P{32199d4e-18ee-41ea-b4d9-6596274a2a54}/>

#### **Subfolder: [basedata](#)**

URL

<pw://shavmpwx.shacadd.ad.mdod.state:SHAPWP3/Documents/OP3\13- I495-I270 CR P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\basedata\>



URN

<pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/P{21ee2020-344f-439b-ab6b-0fe567987b1b}/>

Versions of the spreadsheet ([Compensatory SWM Review Basedata Contents.xlsx](#)) are saved in the basedata folder to document the data resources that have been integrated into the corresponding versions of the basedata geodatabases.

The [gisdata](#) subfolder also contains the working databases for each firm to edit to add their potential sites and to track progress made. Each firm has an assigned folder inside the [gisdata](#) subfolder that contains team geodatabases. Team geodatabases for SWM searches are defined by the firm and team number, for example, NMP\_Team1\_SWM Search.gdb, and include five specific feature classes: OP3\_SWM\_Potential\_Site, OP3\_SWM\_Potential\_Site\_DA, OP3\_SWM\_Potential\_Site\_IMP, OP3\_Potential\_Footprint, and SWM\_Site\_Search\_Grids which are discussed in detail in this protocol.

### **3.0 TEAM GEODATABASE OVERVIEW**

This section highlights the SWM site selection team database, the feature classes in those databases, and the intended use of them. Team geodatabases on ProjectWise will be “exported to create a local managed copy,” on the user’s computer and locked on ProjectWise. Users will “Update the Server Copy” at the end of every day that worked is performed. A new ProjectWise version of the team database will be created on a weekly basis to maintain the file history in ProjectWise. Each team database will be imported on Fridays to allow for updates and merging by the GIS data manager.

Users are assigned numbered grids in which to perform a guided site search.

#### **3.1 OP3 SWM Potential Site (OP3\_SWM\_Potential\_Site) GIS Feature class**

##### **Overview**

For the desktop evaluation the OP3\_SWM\_Potential\_Site feature class will store the Limit of Disturbance (LOD) of each potential SWM Best Management Practice (BMP)

##### **Data Editing**

Upon the review of each grid, the user performing the desktop evaluation will open an editing session and “draw” a potential stormwater BMP LOD and update the following bulleted fields of the attributes table within the feature class:

- **DESIGN\_SUB** - Domain D\_Desg\_Subcategory
  - This field presents a dropdown menu with an extensive list of values.
  - It will be to the discretion of the user to choose and populate the appropriate value detailing the type of BMP appropriate to the location.
  - If a field investigation reveals that a different BMP type would be better, please update this field during this stage.



- **CNTY\_CODE** – Domain D\_Cnty\_Code
  - This field presents a dropdown menu with a list of counties in Maryland
  - It will be up to the user to choose the appropriate county where the potential BMP is located.
- **SITE\_NAME**
  - Please name the sites as per the [I-495/I-270 P3 Compensatory SWM Program Desktop and Field Evaluation Protocol](#) Performing Evaluations Section 7. Assign each BMP LOD a site number using the following numbering scheme: XXX-0001. XXX is to be replaced by the watershed abbreviation that the site is in, either WAS or PAX. Numbers for the site have been assigned to each firm. No site name will be repeated.
- **PRELIM\_IMP\_V\_TREATED\_ONSITE**
  - This field tracks the preliminary on-site impervious area treated in acres. The user can fill this field in from the Impervious feature class.
- **PRELIM\_IMP\_V\_TREATED\_OFFSITE**
  - This field tracks the preliminary offsite impervious area treated in acres. The user can fill this field in from the Impervious feature class.
- **SITE\_TYPE** – Domain P3\_SiteTreatmentType
  - This field presents the user with a dropdown list of two values. It will be up to the discretion of the user to choose and populate the appropriate value.
  - List of Values: “SWM” or “Pavement Removal”
- **FAC\_TYPE** – Domain FacType
  - This field presents the user with a dropdown list of two values. It will be up to the discretion of the user to choose and populate the appropriate value.
  - List of Values: “Chapter 3” or “Chapter 5”
- **SOURCE** – Domain P3\_Source
  - This field presents the user with a dropdown list of three values. It will be up to the discretion of the user to choose and populate the appropriate value.
  - List of Values: “P3 Desktop Search”, “TMDL Site Search,” or “Excess Land.”
- **SITE\_STATUS** – Domain P3SiteStatus
  - This field presents the user with a dropdown list of six values. It will be up to the discretion of the user to choose and populate the appropriate value.
  - List of Values:
    - “1. Working” – Data has been created and/or under QC review
    - “2. Vetted” – Data has been internally reviewed
    - “3. NEPA” – final vetting has been done (take into consideration all the data from all disciplines) and has been incorporated into NEPA assessments
    - “4. Published” – Data has been published/released in the JPA, FEIS or other public documentation



- “5. Dropped” – Data dropped, please add reason to NOTES field
  - **\*NOTE:** With any change of status the date changed field needs to be updated and an entry needs to be added to the SITE\_HISTORY table.
- **DATE\_UPDATED** – Date
  - This field is to be used to keep track of the LOD was last updated or the last status change. If the LOD has been updated or the status has changed update the data to reflect the most recent date of a change.
- **COMMENTS**
  - This field is to be used for general comments or to elaborate on the design subcategory selection. Please enter very detailed comments in this section. The consultant is limited to 250 characters. Avoid redundant or obvious word choice, e.g., “site is good for BMP.” Please be clear and understandable and make use of the space available.
  - If applicable, new, more detailed comments should be added per the results of the field investigation.
- **PROP\_NOT\_REQ** – Domain Yes/No
  - This field presents the user with a dropdown list of Yes and No. It is up to the user to decide if this site requires property owners to be notified for field inspections.
- **WATERSHED** – Domain P3\_Watershed
  - This field present the user with a dropdown list of the two six-digit watersheds in which the BMP is located. The user will choose which watershed the feature is located.
  - List of Values: “Patuxent River” or “Washington Metropolitan”
- **ROW\_NEEDED** – Domain Yes/No
  - This field will present the user with a dropdown list of Yes and No. It is up to the user to decide if additional ROW or an easement would be need for the feature.
- **QAQC\_INT** – Domain Yes/No
  - This field will present the user with a dropdown list of Yes and No. It is used to track if an internal review of the site has taken place.
- **PLAN\_COMMENT**
  - This field is to be used for comments to be included in the SWM plan. To ensure that comments and language used in the comment were consistent, Standard language can be found on ProjectWise here: [Comp SWM Plan Comments \(Standard Language\).xlsx](#)  
pw://shavmpwx.shacadd.ad.mdodot.mdstate:SHAPWP3/Documents/D{cb046ef2-8e87-4cbe-892e-d6fc4bbe7cee}
  - No prescriptive or specific design information should be included in these comments as to avoid telling a developer what to do at a site. No information



which will be covered by another discipline will be included in the comments to avoid conflicting information.

- **POST\_NEPA\_SITE\_CHANGES** – Domain P3\_LOD\_NEPA\_Update
  - This field will present the user with a dropdown pick list. It is used to track changes to the team database after the submission to the NEPA team.
  - List of Values:
    - “NEPA 4f Requested” – Change was requested by the Parks (4f) review group
    - “NEPA CR Requested” - Change was requested by the Cultural Resources review group
    - “WR Excess Land Parcel” – Site was added with a excess land review parcel
    - “FEIS/DEIS Comment” – Received a comment from the FEIS/DEIS review
    - “NEPA NR Requested” – Change was requested by the Natural Resources review group
    - “Other” – Change was requested for reason not listed or site was added for reason not listed
    - “Public Entity” – Change was requested or site was added on the direction of a public entity (i.e. MNCPPC, Montgomery County, The City of Rockville,...etc)
    - “WR Team Site Search” – New site was identified during the ½ mile from alignment review
- **POST\_NEPA\_SITE\_CHANGES\_DESC**
  - This field is used for comments for when the POST\_NEPA\_SITE\_CHANGES field is used. The user should elaborate on what changes were made to the site and why.

### 3.2 OP3 SWM Potential Site DA (OP3\_SWM\_Potential\_Site\_DA) GIS Feature class

#### Overview

For the desktop evaluation the **OP3\_SWM\_Potential\_Site\_DA** feature class will store the drainage area for each potential SWM BMP.

#### Data Editing

Upon the review of each grid, the user performing the desktop evaluation will open an editing session and “draw” a drainage area to the potential stormwater BMP and update the following bulleted field within the feature class:

- **TREATMENT\_AREA**
  - This field tracks the preliminary total drainage area in Acres.
  - Users can use the calculate geometry tool to update this field at the end of the day or upon creation of each feature.



- **SITE\_NAME**
  - This name will match the corresponding field in the OP3\_SWM\_Potential\_Site feature class.

### 3.3 OP3 SWM Potential Site Impervious (OP3\_SWM\_Potential\_Site\_IMP) GIS Feature Class

#### Overview

For the desktop evaluation the OP3\_SWM\_Potential\_Site\_IMP feature class will store the impervious area within the drainage area to be treated by each potential SWM BMP.

#### Data Editing

Upon the review of each grid, the user performing the desktop evaluation will open an editing session and “draw” an area around the impervious area to be treated by the potential SWM BMP and update the following bulleted field within the feature class:

- **TREATMENT\_AREA**
  - This field tracks the preliminary impervious area treated in acres. The user can use GIS tools to “clip” the impervious area shape or hand “draw” the area and use the calculate geometry tool to get this number. This will include onsite and offsite drainage area in separate field.
- **SITE\_NAME**
  - This name will match the corresponding field in the OP3\_SWM\_Potential\_Site feature class.

### 3.4 OP3 Potential Footprint (OP3\_Potential\_Footprint) GIS Feature Class

#### Overview

For the desktop evaluation the OP3\_Potential\_Footprints will store the potential footprint of a SWM facility and will track the site name as well as the area in square feet.

#### Data Editing

Upon the review of each grid, the user performing the desktop evaluation will open an editing session and “draw” a footprint to the potential SWM BMP and update the following bulleted field within the feature class:

- **SITE\_NAME**
  - This name will match the corresponding field in the OP3\_SWM\_Potential\_Site feature class.

### 3.5 SWM Site Search Grids (SWM\_Site\_Search\_Grids) GIS Feature Class

#### Overview

For the desktop evaluation the SWM\_Site\_Search\_Grids feature class will allow users to track their progress through their evaluation area and avoid duplicating efforts by other team members.





### Data Editing

Upon the review of each grid, the user performing the desktop evaluation will open an editing session and change the progress to either “In Progress” or “Completed”

- **GRID\_STATUS** – Domain Grid\_Status
  - This field presents a dropdown list to the user of three statuses; “Not Started”, “In Progress” and “Completed”. “Not Started” is the default value and is meant to show that the grid has not yet been reviewed. “In Progress” should be selected when the user has completed the review of portions of the grid but not all and the user is finished with the workday. “Completed” should be selected with the review of that grid has been completed.
- **PageName**
  - This field shows the grid number is used for numbering and tracking of grid statuses.

## 3.5 Site History (SITE\_HISTORY) Geodatabase Table

### Overview

For the desktop evaluation the **SITE\_HISTORY** table will store the history of each site. Any status change or geometry change to an LOD after creation should have a corresponding entry in this table

### Data Editing

Upon a status change or geometry change to an LOD, the user performing the desktop evaluation will open an editing session and add a record to the table and update the following bulleted field within the table:

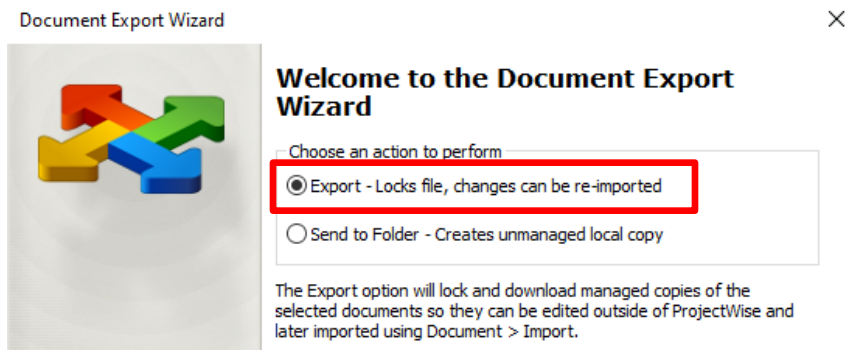
- **SITE\_NAME**
  - This name will match the corresponding field in the OP3\_SWM\_Potential\_Site feature class.
- **SITE\_STATUS\_UP** - Domain P3SiteStatus
  - This field will present the user with a dropdown list with the SITE\_STATUS options from section 3.1.
- **DATE** – Date
  - This field is to be used to keep track when the update occurred. Enter the date of the change being made.
- **DESC**
  - This field is to be used to describe why the change is being made to the status or LOD.

## 4.0 DATA SETUP

In order to work with GIS file geodatabases in ProjectWise, users will export all the files in the Team geodatabases to a folder with the same name as the Team geodatabase. For example, NMP\_Team1\_SWM\_Search.gdb is the folder in ProjectWise. User will create a folder



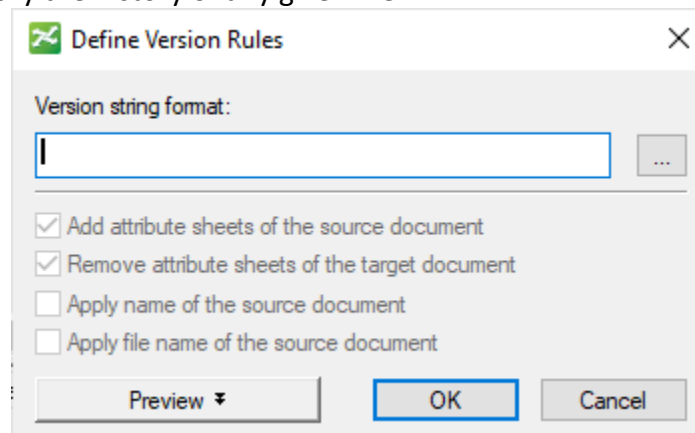
C:\GEC\Compensatory\_SWM\_Search\NMP\_Team1\_SWM\_Search.gdb on the computer being used for the site search. The contents of NMP\_Team1\_SWM\_Search.gdb on ProjectWise will be **exported and locked** to folder on the working computer.



Users will update the server copy of the Team geodatabases after each day working on them. Versioning and importing of the team geodatabases that are being worked on should be done on a weekly basis.

To version the files in the team geodatabases:

- Select all the files and then right click on the selected files.
- Go to **New > Version**
- In the **Define Version** Rules dialog box, add the next sequential letter, number, or date from the current version. For example, if the current version is "A", put "B" or if the current version is "10/09", put a date after 10/09 (the date used should be the date the version is created) in the dialog box. Note that ProjectWise updates the sequence number of a file each time a version is made. The file's sequence number can also be used to identify the history of any given file.



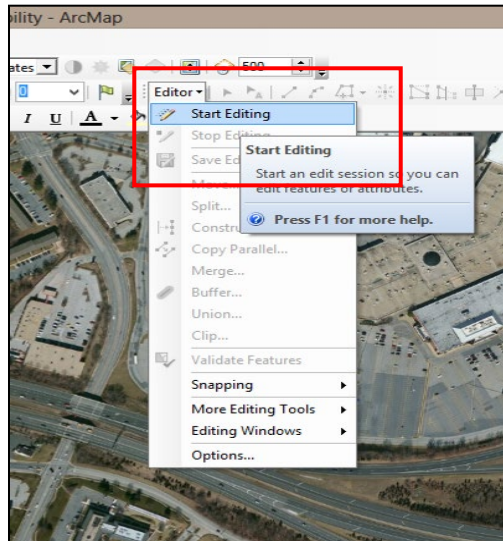
## **5.0 GIS DESKTOP EVALUATION**

The exercise below will support the desktop evaluation process and workflows.

### **5.1 Add a potential SWM LOD**

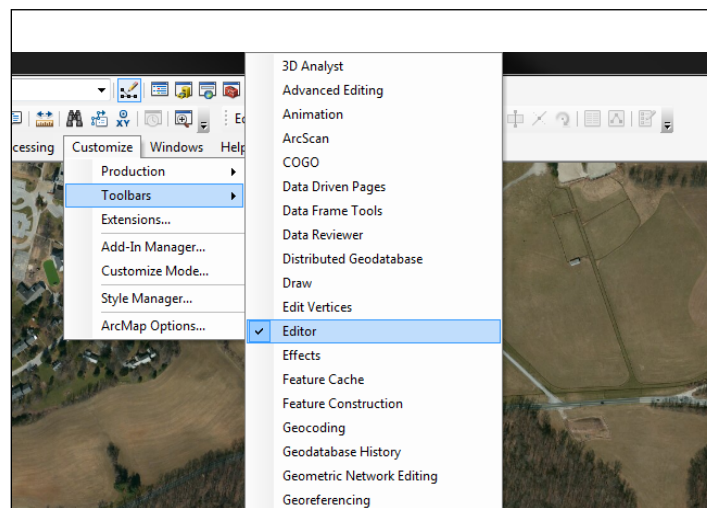
#### **5.1.1 Step 1 – Starting an Editing Session**

- Start a new editing session by clicking **Start Editing** in the **Editor** drop-down menu. The location of the Editor menu may vary from user to user.



NOTE: A spatial error may pop up, please hit continue.

- Choose the feature class to be edited.
- If the Editor menu is not displayed on the screen go to **Customize > Toolbars** and select **Editor**.



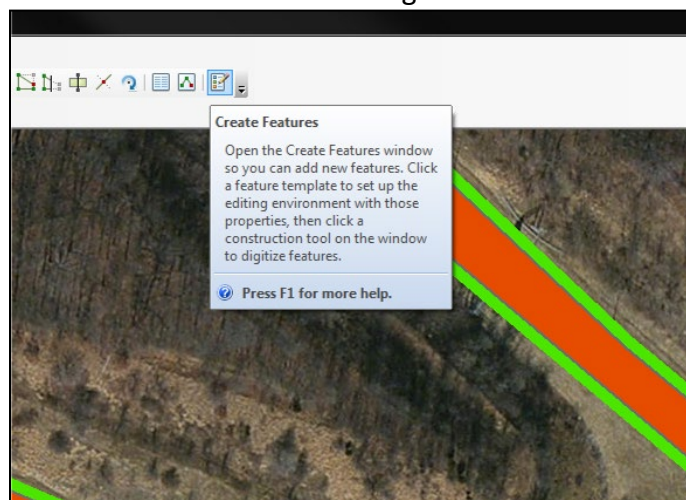
### 5.1.2 Step 2 – Editing the feature classes in team databases

Empty feature class called **OP3\_SWM\_Potential\_Site**, **OP3\_SWM\_Potential\_Site\_DA**, **OP3\_SWM\_Potential\_Site\_IMP**, **OP3\_Potential\_Footprint**, and **SWM\_Site\_Search\_Grid** have been created to provide the opportunity for the consultant to place potential feature locations on the map. During the desktop review, the subject matter expert can draw the LOD of conceptual features in potential locations using this feature class.

- If an editing session is not open, right-click on any of the layers in the team gdb's feature classes in the **Table of Contents** and select **Edit Features > Start Editing**



- Select the **Create Features** icon in the editing toolbar.



- A create feature window will appear with templates for each feature.
- If the feature class does not appear in the Create Features window, select the Organize



Templates icon

- A window will appear displaying the current feature templates.
- Click **New Template** in the **Organize Feature Templates** window.
- Check the feature for which you want to create a new template.
- Since the feature has been symbolized in advance with one symbol, click **finish** then click **close** to begin editing.
- A crosshair will appear on the map allowing you to draw a polygon with three (3) or more sides, representing the conceptualized stormwater feature's LOD.
- By moving the mouse and clicking at each vertex, the feature will be drawn. Double click when finished drawing each feature.



- You can pan and zoom about the map at any time to find new locations within the assigned grids.
- In order to create more features after panning and zooming, click on the feature template in the **Create Features** window one again.
- Each time a new feature is drawn, a unique record for that feature will be created in its attribute table. The user will fill out the field information discussed above for this feature class.

### 5.1.3 Step 3 – Calculating the Acres of a Feature

After a feature is drawn the user is able to use built-in ArcMap tools to calculate the area. It is recommended for this to be done in an editing session. This is so the user will be able to undo any mistakes using **Edit > Undo**. If the user is not in an editing session, this is not possible, and ArcMap will show the user a warning window when this occurs. Also, the user has the choice of doing this to many features at once or 1 feature at a time.

- In ArcMap, open the attribute of the feature class where the feature(s) are located.
- Select the row of the desired feature(s) in the attribute table. To do this select the grey box to the left of the first column in the table. To select multiple features either drag the mouse down the boxes or hold the Ctrl key and select the desired row.

Table

SWMFAC\_DA

	OBJECTID *	Shape *	FACILITY_ID	TREATMENT_AREA	CNTY_CODE	MD_WSHED	MD_MSHOP	MD_DISTRICT
	1	Polygon	27ab2707-4d6c-486e-8f89-5d4e6fa52328	5.372391	15	02-14-02	10	3
	2	Polygon	d43efa51-aa69-4566-8424-d8eda2b5660d	12.998518	15	02-14-02	10	3
	3	Polygon	1210bceb-45ae-4063-b5dd-18273c92a4b5	4.181161	15	02-14-02	11	3
	4	Polygon	5a29e3aa-c7e3-433a-880e-9ebc10f23fea	13.038292	02	02-13-11	18	5
	5	Polygon	8143427d-a4c1-40a3-9909-037b0b230427	3.624475	08	02-13-11	21	5
	6	Polygon	824dfd33-d65f-4e4c-86e7-295ca3f08f4b	0.211135	08	02-13-11	21	5

Grey Box

- Right click on the desired field and choose "Calculate Geometry"




- If the user is not in an editing session a warning window will pop up. Click No, open an edit session and repeat the previous steps.
- The Calculate Geometry window will appear. Set the options to match the screen shot below:

- The field will be populated with the acres of the selected sites.

#### 5.1.4 Step 4 – Copying a feature from the TMDL data layers

If a user would like to copy a feature from a TMDL data layer into a P3 Team Geodatabase follow these steps below:

- With an edit session open for the **OP3\_SWM\_Potential\_Site** feature class, select the TMDL feature to be copied using the select tool .
- From the main tool bar menu select **Edit > Copy**. Then select **Edit > Paste**.
- A window will pop up asking the user to select the target layer. Use the drop-down menu to choose the **OP3\_SWM\_Potential\_Site** feature class.

- Some attribute information should copy over all well. Be sure to update the site name and any other missing attribute information. Also, double check the Preliminary Impervious value. This may have changed from the time between when the TMDL team carried out their site selection to now.





## 6.0 Appendices

### 6.1 TMDL Database Notes

#### 6.1.1 Washington Metropolitan Area Watershed 02-14-02 (340 ac compensatory IART, target > 425 ac)

TMDL Database Layer	Description
1.A NewStormwater_SiteSelection	planned TMDL*
1.B GrassSwales_SiteSelection	planned TMDL GS credit*
1.C GrassSwales_ProjectShelved	planned TMDL GS credit*
1.D NewStormwater_Restoration	built TMDL, should already be recorded in NPDES SWMFAC
1.E NewStormwater_DA_Restoration	built TMDL DA
1.G IA_Removal	built TMDL pavement removal

\* Before copying viable planned sites to working geodatabase (change shapes as needed and verify IA treated), check if planned sites already have existing NPDES SWM in place.

#### 6.1.2 Patuxent River Area Watershed 02-13-11 (32 ac compensatory IART, target > 40 ac)

TMDL Database Layer	Description
2.A SWM_BMP_Planned_PatuxentRiver	planned and built TMDL*, contains Column GEN_COM that explains the rationale of various site status, contains Column SOURCE that records the original type of the TMDL study.
2.B Grass_Swale_Planned	planned TMDL GS credit *, contains Column GEN_COM that explains the rationale of various site status, contains Column SOURCE that records the original type of the TMDL study
2.D SWM_BMP_Restoration_PatuxentRiver	built TMDL, should already be recorded in NPDES SWMFAC
2.F Pavement_Removal_Site_Select	planned and built TMDL pavement removal, contains Columns DESCRIPTION and GEN_COM with more site info
2.G Pavement_Removal_Restoration	built TMDL pavement removal (only 1 site)

\* Before copying viable planned sites to working geodatabase (change shapes as needed and verify IA treated), check if planned sites already have existing NPDES SWM in place.





# I-495/I-270 P3 Compensatory SWM Program

## WQ Stream Sites Desktop Evaluation & GIS Workflow

### **1.0 PURPOSE**

The purpose of this document is to define the procedure for the GIS aspects of the desktop evaluation portion of the compensatory stormwater management (SWM) stream restoration site search. This protocol is intended to be a supplement to the I-495/I-270 P3 Compensatory WQ Stream DFE [Protocol](#).

### **2.0 PROJECT DATA**

Please see the I-495/I-270 P3 Compensatory WQ Stream DFE [Protocol](#) for the project data workflow. Below are the ProjectWise links to the folders (in bold-type) of project data to be used for the compensatory SWM searches.

#### **Parent folder: [E. GIS](#)**

URL

<pw://shavmpwx.shacadd.ad.mdod.state:SHAPWP3/Documents/OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\>

URN

<pw://shavmpwx.shacadd.ad.mdod.state:SHAPWP3/Documents/P{a5630a07-f59d-4dc5-add3-0dd0e69313f4}/>

#### **Subfolder: [gisdata](#)**

URL

<pw://shavmpwx.shacadd.ad.mdod.state:SHAPWP3/Documents/OP3\13- I495-I270 CR P3-Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04 Drainage\CADD and GIS\E. GIS\gisdata\>

URN

<pw://shavmpwx.shacadd.ad.mdod.state:SHAPWP3/Documents/P{32199d4e-18ee-41ea-b4d9-6596274a2a54}/>



**Subfolder:** [basedata](#)

**URL**

pw:\\shavmpwx.shacadd.ad.mdot.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR  
P3- Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04  
Drainage\CADD and GIS\E. GIS\gisdata\basedata\

**URN**

pw://shavmpwx.shacadd.ad.mdot.mdstate:SHAPWP3/Documents/P{21ee2020-344f-439b-  
ab6b-0fe567987b1b}/

Versions of the spreadsheet ([Compensatory SWM Review Basedata Contents.xlsx](#)) are saved in the basedata folder to document the data resources that have been integrated into the corresponding versions of the basedata geodatabases.

### **3.0 TEAM GEODATABASE OVERVIEW**

This section highlights the Stream site selection team database, the feature classes in those databases, and the intended use of them. Team geodatabases on ProjectWise will be “exported to create a local managed copy,” on the user’s computer and locked on ProjectWise. Users will “Update the Server Copy” at the end of every day that worked is performed. A new ProjectWise version of the team database will be created on a weekly basis to maintain the file history in ProjectWise. Each team database will be imported on Fridays to allow for updates and merging by the GIS data manager.

#### **3.1 OP3 Stream Potential Site (OP3\_Stream\_Potential\_Site) GIS Feature class**

##### **Overview**

For the desktop evaluation the OP3\_Stream\_Potential\_Site feature class will store the Limit of Disturbance (LOD) of each proposed stream restoration site for water quality treatment.

##### **Data Editing**

Upon the review of each grid, the user performing the desktop evaluation will open an editing session and “draw” a conservative proposed stream restoration LOD and update the following bulleted fields of the attributes table within the feature class:

- **OBJECTID**
  - This field presents the serial number of stream sites. User will enter a unique ID for each stream site.
- **SHAPE**
  - This field presents the type of shape of the LOD.
- **SHAPE\_LENGTH**
  - This field presents the total length of the LOD.
- **SHAPE\_AREA**
  - This field presents the total area of LOD.



- **STREAM\_LENGTH**
  - This field presents the total existing length of potential stream restoration in feet.
- **DESIGN\_SUBCATEGORY** - Domain D\_Desg\_Subcategory
  - This field presents a dropdown menu with an extensive list of values.
  - For consistency all the options for different SWM BMP are included in this database.
  - The different design subcategory has been set to stream restoration for this database.
- **COUNTY\_CODE** – Domain D\_Cnty\_Code
  - This field presents a dropdown menu with a list of counties in Maryland
  - It will be up to the user to choose the appropriate county where the proposed stream channel is located.
- **SITE\_NAME**
  - Name the stream sites based on Stream Mitigation Site Search stream ID. No site name will be repeated.
  - Assign a name with combined Stream IDs when multiple channels are recommended as one project.
- **DRAINAGE\_AREA**
  - This field presents the total drainage area in sq. mi. at the downstream point of investigation.
- **IMPERVIOUS\_AREA**
  - This field presents the total impervious area in acres within the drainage area.
- **MIN\_EQUIV\_IMP\_CREDIT**
  - This field presents the minimum estimated equivalent impervious credit in acres for the stream restoration project based on the rate of 0.01 acres/ft for all sites.
- **PLANNING\_EQUIV\_IMP\_CREDIT**
  - This field presents the estimated equivalent impervious credit in acres for the stream restoration project based on latest MDE equivalent impervious area stream restoration planning rates.
  - Equivalent impervious acre credit rate applied for Coastal plain geographic region is 0.02 acres/ft whereas the same for non-coastal plain region is 0.03 acres/ft.
- **SOURCE** – Domain P3\_Source
  - This field presents the user with a dropdown list of three values. It will be up to the discretion of the user to choose and populate the appropriate value.
  - List of Values: “Excess Land”, “TMDL Site Search,” or “P3 Site Search.”
- **MDE\_6DIGIT** – Domain P3\_MDE6Digit
  - This field is to be used to enter Maryland 6-digit watershed ID for the stream restoration project.



- **MDE8\_NAME** – Domain P3\_MDE8NAME
  - This field presents a dropdown menu with a list of Maryland 8-digit watershed name.
  - It will be up to the user to choose the appropriate watershed where the proposed stream restoration is located.
- **MDE\_8DIGIT** – Domain P3\_MDE8Digit
  - This field is to be used to enter Maryland 8-digit watershed ID for the corresponding Maryland 8-digit watershed name selected in the “MDE8\_NAME” field.
- **PHYSIOGRAPHIC\_REGION** – Domain P3\_PhysiographicRegion
  - This field presents a dropdown menu with a list of Physiographic Regions in Maryland.
  - It will be up to the user to choose the appropriate Physiographic Region where the proposed stream restoration is located.
- **PROP\_NOTIFICATION\_REQUIRED** – Domain Yes/No
  - This field presents the user with a dropdown list of Yes and No. It is up to the user to decide if this site requires property owners to be notified for field inspections.
- **SITE\_STATUS** – Domain P3\_SiteStatus
  - This field presents the user with a dropdown list of various site status. It is up to the user to choose the appropriate site status.
  - List of Values:
    - “1. Working” – Data has been created and/or under QC review
    - “2. Vetted” – Data has been internally reviewed
    - “3. NEPA” – final vetting has been done (take into consideration all the data from all disciplines) and has been incorporated into NEPA assessments
    - “4. Published” – Data has been published/released in the JPA, FEIS or other public documentation
    - “5. Dropped” – Data dropped, please add reason to NOTES field
- **ROW\_NEEDED** – Domain Yes/No
  - This field will present the user with a dropdown list of Yes and No. It is up to the user to decide if additional ROW or an easement would be need for the feature.
- **INTERNAL\_QAQC** – Domain Yes/No
  - This field will present the user with a dropdown list of Yes and No. It is used to track if an internal review of the site has taken place.
- **COMMENTS**
  - This field is to be used for general comments or to elaborate on the design subcategory selection. Please enter very detailed comments in this section. The



consultant is limited to 250 characters. Avoid redundant or obvious word choice. Please be clear and understandable and make use of the space available.

- If applicable, new, more detailed comments should be added per the results of the field investigation.
- **DATE\_UPDATED** – Date
  - This field is to be used to keep track of when the LOD was last updated or the last status change. If the LOD has been updated or the status has changed update the data to reflect the most recent date of a change.
- **DATE\_UPLOADED** – Date
  - This field is to be used to keep track of when the LOD was last uploaded.

### 3.2 OP3 Potential Stream Limits (OP3\_Potential\_Stream\_Limits) GIS Feature Class Overview

The proposed limits of restoration based on assessment of site for maximum water quality credit and uplift.

#### Data Editing

Upon the desktop review, a possible limits of stream restoration are established. The limits are revised on the field and adjustments are made based on the visual observations.

- **SITE\_NAME**
  - This name will match the corresponding field in the OP3\_Stream\_Potential\_Site feature class.

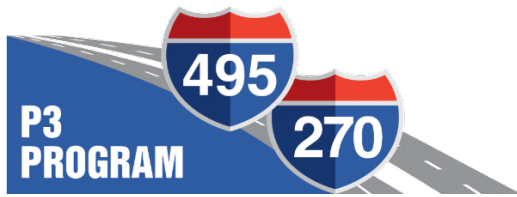
### 3.3 Site History (SITE\_HISTORY) Geodatabase Table Overview

For the desktop evaluation the **SITE\_HISTORY** table will store the history of each site. Any status change or geometry change to an LOD after creation should have a corresponding entry in this table.

#### Data Editing

Upon a status change or geometry change to an LOD, the user performing the desktop evaluation will open an editing session and add a record to the table and update the following bulleted field within the table:

- **SITE\_NAME**
  - This name will match the corresponding field in the OP3\_Stream\_Potential\_Site feature class.
- **UPDATE\_TYPE** – Domain P3UpdateType
  - This field will present the user with a dropdown list with two options, LOD or Status



- **SITE\_STATUS\_UP** - Domain P3SiteStatus
  - This field will present the user with a dropdown list with the SITE\_STATUS options from section 3.1. If the update is an LOD update leave this null. If this a status update, select the status the LOD is moving to.
- **DATE** – Date
  - This field is to be used to keep track when the update occurred. Enter the date of the change being made.
- **DESC**
  - This field is to be used to describe why the change is being made to the status or LOD.

I-495/I-270 P3 Offsite SWM Site Search Field Form		
Consultant (Inspector(s)/Company):		
Date of Inspection:		
Weather (note if precipitation occurred within last 3 days):		
County:		
Site Number (to be assigned by consultant):		
FIELD INVESTIGATION DATA		
General characteristics of site (topography, land use, etc.): (overall photo)		
Is right-of-way (ROW) observed in the field consistent with the GIS ROW layer? Take photo and describe the observed ROW.	YES  NO	
Accessibility for Construction & Maintenance (i.e. unobstructed & direct from SHA ROW or items that may affect the access - steep slopes, private property, guard rail, fencing, other reasons): (photo)		
Potential utility conflicts present on site? (overhead lines, underground lines/piping approximated by surface vaults/boxes): (photo and comments if encountered)	YES  NO	
Surface wetlands, waters, bedrock present at site?: (photo and comments if encountered)	YES  NO	
Steep slopes (15%+) present at site?: (photo and comments if encountered)	YES  NO	
Trees present on site (photo and comments about protection, removal etc. if encountered)	YES  NO	
SHA-owned impervious area draining to site (number of lanes, shoulders, approx. widths, etc.); inflow type (e.g. sheet flow, ditch flow etc.); and is it stable? (Photo and Comment)		
Proposed facility outfall type (ditch, storm drain, culvert, underdrain etc.): (photo and comments for feasibility, stability etc.)		
Existing outfall structure (ditch, storm drain, culvert, etc.) within SHA ROW located downstream of proposed facility :		



I-495/I-270 P3 Offsite SWM Site Search Field Form		
Could site be a potential hot spot (e.g. an existing fueling station, salt dome etc.)? Or is land use adjacent to site a possible hot spot?:	YES  NO	
Are there any prohibitive feature or characteristics (e.g. monument, sign structures etc.) on or near the site?: (photo and comments if encountered)	YES  NO	
To construct the BMP type, will ROW or easement acquisition be required? If so, list owner (private, local government etc. and land uses (wooded area, agriculture, open space etc.): (photo and comment for adjacent property)	YES  NO	
Potential public concerns (ROW issues, roadway frontage/sight lines, aesthetics, mosquitoes, noise, safety, general quality of living, proximity to private residences/businesses/public areas, etc.): (photo if encountered)	YES  NO	
Is there offsite drainage to the site? (Large, medium, small area). If so, difficulty of diverting offsite area around site (easy, medium, difficult): e.g. bypass ditch or storm drain system (Photo)	YES  NO	
Is there potential to adjust the existing storm drain configuration and/or existing drainage patterns to increase the impervious area contributing to a facility at this location? (Photo and note the concern associated with diverting the runoff i.e. quantity control)	YES  NO	
Should this site be removed from further consideration ( i.e. steep slopes, wooded area including large healthy trees, site is completely wooded, change in land use or ownership, major utility conflict etc.)? If yes, please explain why?	YES  NO	
Based on the results of the Field Investigation, what is the recommended proposed potential BMP type?:		
Additional general comments:		

## Field Assessment Form

### Project Details

Site Name: \_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_

Investigators: \_\_\_\_\_

### Assessment

Site Access:

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Utilities Present:

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Potential Permitting Issues:

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Vertical Stability:

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Bank Erodibility:

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Riparian Vegetation:

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Debris / Channel Blockages:

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Potential Restoration Length: \_\_\_\_\_

General Remarks:

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# I-495/I-270 P3 Compensatory SWM Program

## Virtual Desktop QA/QC Protocol

### 1.0 **PURPOSE**

The purpose of this protocol is to define Quality Assurance/Quality Control (QA/QC) procedures for ensuring consistency in assessing the feasibility of site selections for offsite compensatory stormwater (SWM) opportunities for the MDOT SHA I-495 & I-270 Public-Private Partnership (P3) Program. Since multiple GEC consultant teams are assigned to Desktop and Field Evaluations and internal QA/QC reviews, it is critical that the factors being considered during the internal QA/QC process are being applied in a consistent manner. This QA/QC protocol will also be applicable for the final offsite SWM site selections to be conveyed to the NEPA team for the FEIS.

Each firm will schedule a date and time to participate in the virtual QA/QC session using the spreadsheet, [CompSWM QAQC Schedule.xlsx](#).

#### URL

pw:\\shavmpwx.shacadd.ad.mdodt.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-  
Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04  
Drainage\Engineering\D. Reports - White Papers\Site Search QAQC Review\CompSWM  
QAQC\_Schedule.xlsx

#### URN

pw://shavmpwx.shacadd.ad.mdodt.mdstate:SHAPWP3/Documents/D{4599830f-4eb9-4629-889c-  
ceb64b59fbda}

### 2.0 **QA/QC PREPARATION**

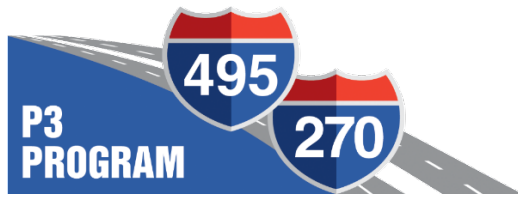
The QA/QC sessions will begin with reviews conducted by WRA with a representative from each firm (RJM, NMP, WSP) for a virtual walk-through of selected sites within the firm-designated grids. Sites to undergo QA/QC will have been determined per guidance and procedures in the supplemental documents for site selection, I-495\_I-270 P3 Offsite SWM Site Search Protocol.docx, and GIS-based investigation, I-495\_I-270 P3 Offsite SWM Site Search GIS Workflow.docx, saved on Projectwise at [Site Search Protocol](#).

#### URL

pw:\\shavmpwx.shacadd.ad.mdodt.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-  
Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04  
Drainage\Engineering\D. Reports - White Papers\Site Search Protocol\

#### URN

pw://shavmpwx.shacadd.ad.mdodt.mdstate:SHAPWP3/Documents/P{c7e8ebf8-dbca-4685-bee6-  
d073591099b5}/



It is the responsibility of each firm to provide the GIS databases and documentation to be reviewed concurrently during the QA/QC session and upload to Projectwise at [Site Search QAQC Review](#).

#### URL

pw:\\shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3\Documents\OP3\13- I495-I270 CR P3-  
Program Team\13.17 Mitigation Projects\13.17 Compensatory SWM\13.17.04  
Drainage\Engineering\D. Reports - White Papers\Site Search QAQC Review\

#### URN

pw://shavmpwx.shacadd.ad.mdod.mdstate:SHAPWP3/Documents/P{46fd4873-ab4b-43f8-a6cb-  
e257eb1dccc3}/

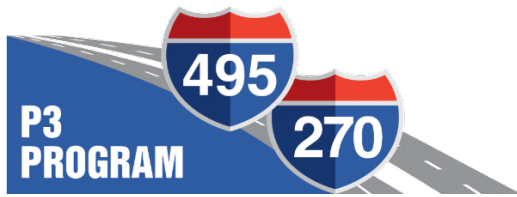
The QA/QC session will be conducted virtually via Microsoft Teams at the scheduled date and time.

### 3.0 QA/QC REVIEW

The QA/QC sessions will involve desktop sharing of ArcGIS map files with project base data and offsite SWM site search geodatabases. General details to be reviewed during QA/QC include, at a minimum:

Site ID	Confirm Firm's numbering convention is correct per SWM Site Search Protocol.	Facility Type	Chapter 5 or Chapter 3
Version of Base Data GDB	Confirm current version.	Waters / Floodplain	Consider temporary and permanent impacts.
MDOT SHA Project Portal	Check for overlap and conflicts. Use web link. <a href="https://mdot-sha-project-portal-maryland.hub.arcgis.com/">https://mdot-sha-project-portal-maryland.hub.arcgis.com/</a>	Wetlands	Consider temporary and permanent impacts.
		Existing Utilities	Existing Utilities Present / Potential Conflicts to be reviewed concurrently with field investigations and other discipline reviews
Location/Roadway		Site History Table	Confirm record is current, per status of site.
Grid ID ##	Confirm grids reviewed	OED Env Assets	Type: Managed LS or MS4 TMDL
County		TMDL Sites Adopted for P3	Identify Site and Contract of TMDL
Watershed	Washington Metropolitan (WAS) or Patuxent (PAX)	Field Visit Tracking and Forms	Upload to Projectwise when completed.
LOD drawn to estimate potential impacts for construction	Consider access, ESC, staging, MOT.	Other Discipline Reviews	Confirm issues or comments are addressed per review by others.
Drainage Area: to proposed SWM BMP	DA = acres, Confirm DA limitations for facility.	Other Relevant Exclusions	Purple Line, National Park Service
Impervious Area: to proposed SWM BMP	IA = acres, Confirm >0.1 ac	Firm's geodatabase versions	Confirm Firm's GDB on Projectwise is correctly versioned per GIS Protocol.
Potential ROW Impacts	Identify which entities are potentially impacted.	Other	

Other Disciplines Cross-Checked
Natural Resources
Cultural Resources
Hazardous: gas stations, dry cleaners, salt barns
Utilities
Forestry
Structural: SDWK rebuild, FAC cover; UG FAC exc/shoring; OHD UT complications



A spreadsheet, prepared for each firm, will be used for documenting and summarizing the QA/QC procedures and saved in [Site Search QAQC Review](#) (URL and URN linked above).

- P3 Compensatory SWM\_QAQC Protocol\_WSP.xlsx
- P3 Compensatory SWM\_QAQC Protocol\_NMP.xlsx
- P3 Compensatory SWM\_QAQC Protocol\_RJM.xlsx
- P3 Compensatory SWM\_QAQC Protocol\_WRA.xlsx

#### **4.0 QA/QC SUMMARY**

At the end of the QA/QC sessions, the QA/QC Reviewer (WRA) will provide a summary of overall comments for all firms to review and address as appropriate.



## APPENDIX B – CULTURAL RESOURCES EVALUATION

## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX B: Cultural Resources Desktop Evaluations**

#### **1. Background**

The I-495 and I-270 Managed Lanes Study (MLS), as a federal undertaking defined at 36 Code of Federal Regulations (C.F.R.) 800.16(y), is required to comply with Section 106 of the National Historic Preservation Act. Maryland Department of Transportation State Highway Administration (MDOT SHA) and the Federal Highway Administration (FHWA) will complete the Section 106 review via execution of a Programmatic Agreement (PA) that establishes review requirements on elements of the undertaking, including potential compensatory stormwater management (SWM) sites. Agencies with jurisdiction over stormwater management, including the U.S. Army Corps of Engineers, are expected to be party to the PA to satisfy their obligations under Section 106. Requirements include review of potential locations to identify any historic properties that may be affected; survey and evaluation work where merited; and assessment of effects to historic properties where they may be present. Avoidance, minimization and/or mitigation of effects to historic properties will be required as part of the PA. Because SWM elements outside the Limits of Disturbance (LOD) may be defined either prior to or after execution of the PA, all such sites are subject to applicable Section 106 requirements prior to approval by MDOT SHA and/or FHWA.

#### **2. Methodology and Assumptions**

MDOT SHA conducted preliminary evaluations of cultural resources potential for over 1000 potential SWM facility sites and potential stream restoration sites for the entire MLS. Based on the selection of the Preferred Alternative (Alternative 9 – Phase 1 South), further analysis and development of the on-site SWM, and efforts to meet SWM water quality (WQ) requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites. MDOT SHA anticipates submitting these 67 SWM sites (all of which are SWM facility sites and no stream restoration sites) to be included with permit applications as part of Section 106 consultation for the MDOT SHA Preferred Alternative. Should the developer elect or desire to use sites outside these identified locations, additional Section 106 consultation will be required. The evaluation was based on preliminary site areas provided by the MLS Team. Because no design work has been done on the individual SWM sites at the time of this review, this effort constitutes only a preliminary review of potential sites to identify recorded historic resources and archaeological sites, evaluate archaeological potential, and identify additional evaluation work that would be required, if individual sites are identified for development.

Because the potential SWM sites occur along major roadways, the Area of Potential Effects (APE) for the SWM locations has been initially defined as the LOD of the potential SWM sites. Because of the nature of SWM sites, effects to historic properties are generally not expected outside the LOD. In exceptional circumstances MDOT SHA may determine a larger APE is warranted for selected sites.

Because the cultural resources evaluations were based on preliminary information, additional review will be required for all sites as design information is developed, and all sites outside the established LOD will be subject to consultation per the requirements of the PA.

The MDOT SHA review of the potential SWM sites considered possible visual, audible, atmospheric and/or physical impacts that may occur to historic properties (both archaeological sites and standing

structures), which would diminish the integrity of any characteristics that would qualify a property for the National Register of Historic Places (NRHP). As part of Section 106 review and the PA, MDOT SHA is responsible for determining level of effort for evaluation of each site.

At this time, no field visits have been made, but individual sites have been flagged for future fieldwork. MDOT SHA based its evaluations on data found within the SHA-GIS ArcView Cultural Resources Database, including the following sources:

- The Maryland Inventory of Historic Properties, including National Register of Historic Places, Maryland Inventory of Historic Properties, and archaeological sites;
- Previous archaeological studies;
- Maryland Property View including tax parcel data;
- Historic aerial photographs and topographic maps;
- Current aerial photography;
- LiDAR; and
- USDA soils data.

## **Results**

MDOT SHA conducted preliminary evaluation of cultural resources potential for over 1000 potential SWM facility sites and potential stream restoration sites for the entire MLS. Of these, MDOT SHA anticipates submitting 67 sites (all of which are SWM facility sites and no stream restoration sites) to be included with permit applications as part of Section 106 consultation for Phase 1 South. Should the developer elect or desire to use sites outside these identified locations, additional Section 106 consultation will be required. The following tables summarize the assessment of: (1) Known historic architectural or archaeological sites at each potential location, and (2) the level of effort estimated to complete the required Section 106 consultation should the developer elect to use a particular site. In cases where known, NRHP-eligible sites are present, and those sites would be adversely impacted by the action, then avoidance, minimization, or mitigation would be developed in consultation with the Maryland Historical Trust (MHT). Completion of this process will be required before the site may be used. Previously recorded architectural resources are identified by a Maryland Inventory of Historic Properties (MIHP) number. The MIHP is a state database of architectural resources; resources given an MIHP number may or may not have been evaluated for the NRHP. Recorded archaeological resources are identified by a site number from the Maryland Archaeological Site Survey.

### **Terminology:**

Phase I Survey – archaeological field evaluation of the site to determine if any buried resources are present. This typically involves both background research and subsurface testing (typically hand-excavated test pits at regular intervals, although methods may vary depending on the site). If resources are present, Phase II Survey may be required.

Phase II Archaeological Evaluation – additional archaeological testing with additional shovel test pits and excavation units, to determine if an archaeological site is significant (eligible for the NRHP). Any sites determined by MDOT SHA to be significant (NRHP-eligible), and are within LOD require additional avoidance, minimization or mitigation efforts determined through consultation with the MHT and other parties.

Determination of Eligibility (DOE) form – for architectural resources, a DOE is typically required for structures or other resource types that will reach at least 50 years in age during the course of the project.

If a structure is determined by MDOT SHA to be eligible for the NRHP, MDOT SHA will determine if the structure would be adversely affected by development of the SWM site. If the effect would be adverse, avoidance, minimization or mitigation would be required, determined through consultation with the MHT and other parties. However, typical SWM activities often do not alter the setting of a historic structure to the extent that the effect would be adverse.

NRHP-Listed or NRHP-Eligible Property – properties that have previously been evaluated for the National Register of Historic Places and have been listed or determined eligible for listing. Where known, NRHP-eligible or NRHP-listed archaeological sites are present within LODs, avoidance, minimization or mitigation developed in consultation with the MHT will be required before the site may be used. For architectural historic properties, MDOT SHA will determine if the property would be adversely affected by development of the SWM site. If the effect would be adverse, avoidance, minimization or mitigation would be required, determined through consultation with the MHT and other parties. However, typical SWM activities often do not alter the setting of a historic structure to the extent that the effect would be adverse.

No Further Survey or Evaluation Recommended – MDOT SHA has found that there are no historic properties present, no structures requiring evaluation, and due to prior disturbance or low archaeological potential, no archaeological survey is merited. All sites in this category **still require consultation** to obtain concurrence on MDOT SHA’s finding from the MHT, and MDOT SHA’s evaluation may change if new information emerges or design/LOD changes.

The following constitutes MDOT SHA’s preliminary recommendations, and all site evaluations are subject to change if new information comes to light during the consultation process.

### 3. Conclusions

To date, MDOT SHA has conducted preliminary evaluations of the cultural resources potential for over 1000 potential SWM sites for the MLS. MDOT SHA anticipates submitting 67 sites to be included with permit applications as part of Section 106 consultation for the Preferred Alternative (Alternative 9 – Phase 1 South). Should the developer elect or desire to use sites outside these identified locations, additional Section 106 consultation will be required. However, all of these sites still require consultation to obtain the concurrence of the MHT, and MDOT SHA’s evaluation may change if new information emerges or the design/LOD changes.

MDOT SHA is considering the following 67 sites as off-site stormwater management for the Preferred Alternative; these sites will be included in the Joint Permit Application and identified in the FEIS. Any changes to the proposed SWM sites would be required to follow the process to be outlined in the project PA. No architectural historic properties are affected by the proposed SWM sites, and no additional archaeological investigations are recommended at the 67 off-site locations. MDOT SHA’s specific evaluations to date are shown in the table below.

**Table B-1. Preliminary Cultural Resources Evaluations – SWM Facility Sites.**

Site Name	Comments	Historic Properties	Further Consultation Needed	SHPO Concurrence
WAS-1805	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3305	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3601	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022

Site Name	Comments	Historic Properties	Further Consultation Needed	SHPO Concurrence
WAS-3602	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-3603	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3604	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3612	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3613	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-3614	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-3615	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3616	Pending MHT concurrence that the unevaluated Norbeck Historic District (M: 23-113) is within the APE, but associated features are	None	No further work	Requested 2/2022
WAS-3617	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-3618	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-3622	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-3625	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3634	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3635	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3637	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3638	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3656	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-3658	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-4058	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4059	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4067	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4068	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4072	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4091	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4098	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4099	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4517	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-4518	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-4519	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-4521	No historic properties identified in the site APE boundary	None	No further work	Requested 2/2022
WAS-4607	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4613	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4615	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4622	No historic properties identified in the site APE boundary	None	No further work	10/2021

Site Name	Comments	Historic Properties	Further Consultation Needed	SHPO Concurrence
WAS-4624	No effect to contributing resources	Seneca Historic	No further work	10/2021
WAS-4625	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4626	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4627	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4628	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4629	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4630	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4631	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4632	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4633	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4635	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4637	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4638	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4639	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4640	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4641	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4642	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4644	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4645	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4646	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4647	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4651	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4652	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4653	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4655	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4656	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4657	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4658	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4659	No historic properties identified in the site APE boundary	None	No further work	10/2021
WAS-4660	No historic properties identified in the site APE boundary	None	No further work	10/2021

*Note: shaded rows indicate that a response is pending from MHT.*



## APPENDIX C – FORESTRY EVALUATION

## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX C: Forestry Evaluations & Field Assessments**

#### **Background**

The I-495 and I-270 Managed Lanes Study (MLS) is subject to the Maryland Reforestation Law (MD Natural Resources Code § 5-103) administered by the Maryland Department of Natural Resources (DNR) Forest Service. The Maryland Reforestation Law regulates state-funded highway construction projects, including their associated environmental mitigation sites, that impact one acre or more of forest, requiring avoidance and minimization of forest impacts to the extent practicable and acre-for-acre mitigation on public lands for unavoidable forest impacts. After avoidance and minimization efforts have been completed and one or more acres of forest clearing is still required, forest mitigation must occur according to a hierarchy, exhausting feasible opportunities at each level before moving to subsequent levels. The mitigation hierarchy requires a preference for on-site planting within the project corridor, followed by off-site planting on public land within the affected county and watershed, purchase of credits from approved forest mitigation banks within the affected county or watershed, and payment into the Maryland Reforestation Fund. Mitigation must occur within two years or three growing seasons of the completion of project construction. The Maryland Department of Transportation State Highway Administration (MDOT SHA) will comply with the forest mitigation requirements under the Maryland Reforestation Law for the construction of the MLS, including potential stormwater management (SWM) sites associated with compensatory environmental mitigation.

On behalf of the Maryland Department of Transportation State Highway Administration (MDOT SHA), the MLS Natural Resources Team conducted a review of 1,000+ potential compensatory stormwater management (SWM) sites, SWM facility and stream restoration sites, identified to meet the SWM water quality (WQ) requirements of the MLS on a rolling basis. Based on the selection of the Preferred Alternative (Alternative 9 – Phase 1 South), further analysis and development of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites, all of which are SWM facilities. The compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impact Statement (FEIS), and Record of Decision (ROD).

Unavoidable forest impacts associated with suitable compensatory SWM mitigation sites will require forest mitigation under the Maryland Reforestation Law. This report summarizes the forest and specimen tree data collected for and required forest mitigation associated with the potential compensatory SWM mitigation sites reviewed for the MDOT SHA Preferred Alternative from September 18, 2020 to September 30, 2021.

#### **Methodology and Assumptions**

Environmental scientists conducted field reviews to evaluate potential forest and specimen tree impacts at each of the potential compensatory SWM mitigation sites. Forest is a subset of tree canopy and is defined in the Code of Maryland Regulations (COMAR, 2019) as, “a biological community dominated by trees and other woody plants covering a land area of 1 acre or larger. It includes an area that has been cut but not cleared (MD Natural Resources Code §5-103).” To determine forest impacts, environmental scientists field verified the accuracy of the tree canopy land cover GIS layer from the 1-meter resolution dataset, developed

by the Chesapeake Conservancy's Conservation Innovation Center as part of the Chesapeake Bay High-Resolution Land Cover Project. If forest was present on site and the tree cover data was inaccurate, environmental scientists sketched an accurate forest boundary using a handheld GPS. The tree canopy dataset includes areas that do not meet the definition of forest, such as hedgerows or shade trees in residential areas. If portions of the tree canopy layer were determined to represent tree covered areas other than forest, a forest boundary was drawn in the field using GIS. During the field reviews, data collection included the presence of specimen trees (yes/no), the presence of forest (yes/no), successional stage, dominant size class in inches, and condition of the forest. Up to five specimen trees were evaluated and surveyed per site. Sites with more than five specimen trees observed within the Limit of Disturbance (LOD) were recommended for removal from consideration for compensatory SWM mitigation. Tree condition assessments were conducted according to the following guidelines:

#### TREE CONDITION ASSESSMENT GUIDELINES

EXCELLENT - HEALTHY TREE WITH EXCEPTIONAL GROWTH FORM; NO VISIBLE DEFECTS; WELL-FORMED CROWN; FEW MINOR DEAD BRANCHES; THIS TREE CONDITION IS RARE.

GOOD - HEALTHY TREE; VERY MINOR DEFECTS/DECAY ACCEPTABLE WITH CALLOUS FORMING/COMPLETE; WELL-FORMED CROWN; MINOR LEAN AND/OR FEW MINOR/MAJOR DEAD BRANCHES ACCEPTABLE; VINES MAY BE GROWING ALONG TRUNK BUT NOT PRESENT WITHIN CROWN.

FAIR - HEALTH QUESTIONABLE/STRESS EVIDENT; STRUCTURALLY SOUND TREE; DEFECTS PRESENT THAT DO NOT AFFECT STRUCTURAL INTEGRITY; MODERATE LEAN; MINOR/MAJOR DEAD BRANCHES MAY BE PRESENT; CROWN NOT BROKEN OUT BUT NOT NECESSARILY WELL FORMED OR EVEN; VINES MAY BE GROWING ALONG TRUNK AND WITHIN CROWN.

EX. FAIR TREE COULD BE EXPERIENCING INSECT DAMAGE, OR EXHIBIT A GROWTH FORM THAT MAKES IT VERY SUSCEPTIBLE TO WIND DAMAGE IN AN OPEN SETTING.

POOR - SIGNIFICANT HEALTH PROBLEMS; MAY BE STRUCTURALLY UNSOUND; MAY BE DEAD OR DYING; MAY CONTAIN SIGNIFICANT DECAY; MAY HAVE BROKEN OR MISSING TOP/CROWN; MAY HAVE HEAVY LEAN; VINES MAY BE SIGNIFICANTLY AFFECTING TREE HEALTH.

NOTE: THESE GUIDELINES WERE DEVELOPED IN-HOUSE BASED ON THE PROFESSIONAL JUDGMENT OF OUR CERTIFIED ARBORISTS AND OTHER SENIOR ENVIRONMENTAL STAFF. THESE GUIDELINES SHOULD BE INCORPORATED INTO DOCUMENTS (SUCH AS FSD'S) WHENEVER A TREE ASSESSMENT IS CONDUCTED.

More detailed forest assessments will be required for Reforestation Law Compliance as design progresses to refine forest and specimen tree impact calculations for all sites that contain forest within the LODs.

#### **Results:**

Of the 67 proposed sites that were field reviewed, 11 sites have either forest and/or specimen trees within the site. Eight sites only contain forest and three sites only have specimen trees. None of the sites have both forest and specimen trees. Tables 1 and 2 included below summarize the forest and specimen tree data collected at each field reviewed compensatory SWM mitigation site.

**Table 1.** Specimen Tree and Forest Data for Field Reviewed Compensatory SWM Mitigation Sites

<b>SWM Site ID</b>	<b>Specimen Trees</b>	<b>Forest</b>	<b>Successional Stage</b>	<b>Size Class (DBH)</b>	<b>Condition</b>
WAS-1805	No	No	N/A	N/A	N/A
WAS-3305	No	No	N/A	N/A	N/A
WAS-3601	No	No	N/A	N/A	N/A
WAS-3602	No	No	N/A	N/A	N/A
WAS-3603	No	No	N/A	N/A	N/A
WAS-3604	No	No	N/A	N/A	N/A
WAS-3612	Yes	No	N/A	N/A	N/A
WAS-3613	No	No	N/A	N/A	N/A
WAS-3614	No	No	N/A	N/A	N/A
WAS-3615	No	No	N/A	N/A	N/A
WAS-3616	No	Yes	Early-Mid	6-11"	Poor
WAS-3617	No	No	N/A	N/A	N/A
WAS-3618	Yes	No	N/A	N/A	N/A
WAS-3622	Yes	No	N/A	N/A	N/A
WAS-3625	No	No	N/A	N/A	N/A
WAS-3634	No	No	N/A	N/A	N/A
WAS-3635	No	No	N/A	N/A	N/A
WAS-3637	No	No	N/A	N/A	N/A
WAS-3638	No	No	N/A	N/A	N/A
WAS-3656	No	No	N/A	N/A	N/A
WAS-3658	No	No	N/A	N/A	N/A
WAS-4058	No	No	N/A	N/A	N/A
WAS-4059	No	Yes	Early	2-6"	Fair
WAS-4067	No	No	N/A	N/A	N/A
WAS-4068	No	No	N/A	N/A	N/A
WAS-4072	No	No	N/A	N/A	N/A
WAS-4091	No	No	N/A	N/A	N/A
WAS-4098	No	No	N/A	N/A	N/A
WAS-4099	No	No	N/A	N/A	N/A
WAS-4517	No	No	N/A	N/A	N/A
WAS-4518	No	Yes	Early-Mid	6-11"	Good
WAS-4519	No	Yes	Early-Mid	2-6"	Fair
WAS-4521	No	No	N/A	N/A	N/A
WAS-4607	No	No	N/A	N/A	N/A
WAS-4613	No	No	N/A	N/A	N/A
WAS-4615	No	No	N/A	N/A	N/A
WAS-4622	No	No	N/A	N/A	N/A
WAS-4624	No	No	N/A	N/A	N/A
WAS-4625	No	No	N/A	N/A	N/A
WAS-4626	No	No	N/A	N/A	N/A

SWM Site ID	Specimen Trees	Forest	Successional Stage	Size Class (DBH)	Condition
WAS-4627	No	No	N/A	N/A	N/A
WAS-4628	No	No	N/A	N/A	N/A
WAS-4629	No	No	N/A	N/A	N/A
WAS-4630	No	No	N/A	N/A	N/A
WAS-4631	No	No	N/A	N/A	N/A
WAS-4632	No	Yes	Early-Mid	6-11"	Fair
WAS-4633	No	No	N/A	N/A	N/A
WAS-4635	No	No	N/A	N/A	N/A
WAS-4637	No	No	N/A	N/A	N/A
WAS-4638	No	No	N/A	N/A	N/A
WAS-4639	No	Yes	Mid	12-20"	Good
WAS-4640	No	No	N/A	N/A	N/A
WAS-4641	No	Yes	Mid	12-20"	Fair
WAS-4642	No	No	N/A	N/A	N/A
WAS-4644	No	No	N/A	N/A	N/A
WAS-4645	No	Yes	Early-Mid	6-11"	Fair
WAS-4646	No	Yes	Early-Mid	6-11"	Fair
WAS-4647	No	No	N/A	N/A	N/A
WAS-4651	No	No	N/A	N/A	N/A
WAS-4652	No	No	N/A	N/A	N/A
WAS-4653	No	No	N/A	N/A	N/A
WAS-4655	No	No	N/A	N/A	N/A
WAS-4656	No	No	N/A	N/A	N/A
WAS-4657	No	No	N/A	N/A	N/A
WAS-4658	No	No	N/A	N/A	N/A
WAS-4659	No	No	N/A	N/A	N/A
WAS-4660	No	No	N/A	N/A	N/A

**Table 2.** Detailed Specimen Tree Data for Field Reviewed Compensatory SWM Mitigation Sites

SWM Site ID	Tree ID	Scientific Name	Common Name	DBH	Condition
WAS-3612	T1	<i>Zelkova serrata</i>	Japanese Zelkova	31	Good-Excellent
WAS-3618	T1	<i>Quercus palustris</i>	Pin oak	30	Good
WAS-3622	T1	<i>Platanus occidentalis</i>	American sycamore	37	Good-Excellent
	T2	<i>Quercus palustris</i>	Pin oak	30	Good
	T3	<i>Fagus grandifolia</i>	American beech	31	Good-Excellent
	T4	<i>Liriodendron tulipifera</i>	Tulip poplar	32	Good-Excellent
	T5	<i>Platanus occidentalis</i>	American sycamore	36	Good

**Conclusion:**

MDOT SHA conducted environmental field reviews on 67 compensatory SWM sites identified for Phase 1 South to address compensatory SWM mitigation. Eleven of the proposed sites have either forest and/or specimen tree conflicts, including eight sites with forest and three sites with specimen trees. There are no sites with both forest and specimen tree conflicts. Specimen tree and forest impact data is summarized in the Compensatory SWM Mitigation Plan, Appendix M. The MLS, as a state-funded highway construction project that will impact over one acre of forest, is required to comply with the Maryland Reforestation Law. MDOT SHA will conduct avoidance and minimization measures to reduce forest and specimen tree impacts to the extent practicable, and provide acre-for-acre mitigation for unavoidable forest impacts associated with the construction of the MLS and its related environmental mitigation, including compensatory stormwater mitigation, according to the mitigation hierarchy specified in MD Natural Resources Code § 5-103.



## **APPENDIX D – HAZARDOUS MATERIALS EVALUATION**

## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX D: Hazardous Materials Desktop Evaluations**

#### **1. Background**

On behalf of the Maryland Department of Transportation State Highway Administration (MDOT SHA), Hazardous Materials Team conducted a review of 1,000+ potential compensatory stormwater management (SWM) sites, SWM facility and stream restoration sites, identified to meet the SWM water quality (WQ) requirements of the MLS. Based on the selection of the Preferred Alternative (Alternative 9 – Phase 1 South), further analysis and development of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites, all of which are SWM facilities. The compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impact Statement (FEIS), and Record of Decision (ROD).

Hazardous Materials Evaluations were conducted at each of the compensatory Stormwater Management (SWM) facility Limit of Disturbances (LODs). The goal of each evaluation was to identify potential soil, groundwater, soil vapor, or debris-impacted potential sites of concern (PSOCs) or Recognized Environmental Conditions (RECs) such as a chemical/petroleum storage tank on or in close proximity to the LOD that could create an unsafe or hazardous situation during any intrusive groundwork. The evaluations were conducted in modified/limited accordance with Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries as required under Section 101(35)(B) of the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Superfund Law as specified in Title 40 Code of Federal Regulations (CFR) Part 312; and the ASTM International (ASTM) Standard for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM E 1527-13).

PSOCs on or in close proximity to the LOD were identified through an LOD-specific environmental regulatory database search, as well as review of historical information such as aerial photographs, topographic maps and regulatory files via Public Information Act (PIA) requests. Taking into account the local topographic/hydraulic gradient around each LOD, the LODs were assigned an overall risk classification of “high”, “moderate” or “low.” Brief summaries of each LOD grouped by classification are provided in Attachment 1 - High Risk LODs, Attachment 2 - Moderate Risk LODs, and Attachment 3 - Low Risk LODs. A summary of the risk classification is provided in Section 3.1, below.

#### **2. Methodology and Assumptions**

##### **2.1 Environmental Database Records Review**

WSP retained Environmental Risk Information Services, Inc. (ERIS) to search federal, state and tribal regulatory databases to identify environmental issues that have been reported for each LOD within the study area. PSOCs that have the greatest potential to have caused environmental contamination are those that have had releases or spills of hazardous substances or petroleum products located upgradient, adjacent to, or within the LOD. Regional topography and proximity to water resources (e.g., streams, rivers and ponds) were taken into account to determine local groundwater flow in the vicinity of each LOD.

For this limited hazardous materials evaluation, a modified search distance of 1/8<sup>th</sup> mile was used instead of the standard ASTM E 1527-13 and AAI Standard (40 CFR 312.26(c)) search radii distances for the initial hazardous materials screen of each LOD, as PSOCs with environmental impacts (e.g., leaking

underground storage tanks [LUSTs] and known petroleum/hazardous material releases within 1/8<sup>th</sup> mile of the LOD) are believed to pose the greatest risk to the LODs. Additionally, with the use of watershed-wide database searches, additional screening of PSOCs beyond 1/8<sup>th</sup> mile of the LOD was conducted to identify Resource Conservation and Recovery Act (RCRA)-Corrective Action sites, CERCLA Superfund sites, federal/state/Department of Defense (DoD) Facilities, Maryland Department of Environment (MDE) Land Restoration Program (LRP) sites, MDE Voluntary Cleanup Program (VCP) sites, and Brownfields sites, as well as gas stations and industrial facilities with known releases that would not have been identified in the initial database search. A summary of PSOCs identified on or near each LOD is provided in the LOD-specific Project Area Site Descriptions screening reports for each LOD in Attachment 4.

## 2.2 Regulatory File Review

A PIA was submitted to MDE for additional records on PSOCs believed to have a high to moderate risk of impacting one of the LODs. Examples of PSOCs for which additional environmental regulatory documentation was requested include gas stations, properties with closed and/or open underground storage tanks (USTs)/aboveground storage tanks (ASTs), MDE Oil Control Program (OCP) sites, reported hazardous materials/petroleum spills, MDE LRP sites, MDE VCP sites, Brownfield sites, drycleaners, and industrial properties that currently store or historically stored substantial amounts of hazardous materials/wastes.

PIA requests for PSOC-specific regulatory information included, but were not limited to, soil and groundwater investigation summary reports, spill incident reports, tank removal closure reports, and storage tank registration information. PIA requests were submitted to MDE through multiple rounds of requests throughout the span of this project. Regulatory documentation that was subsequently provided by MDE and reviewed as part of this project is disseminated throughout this report and its attachments.

In addition to reviewing historical regulatory documentation and case files provided by MDE, available information on the MDE OCP's Case Information and Underground Storage Tank Facility Summary websites were reviewed for supplementary information on petroleum releases and USTs, and MDE's LRP Project Site Mapping online database was also reviewed in regard to any sites enrolled in MDE State Brownfield and VCP. Pertinent PSOC-specific information identified from MDE's online data sources is disseminated throughout this report and attachments.

## 2.3 Historical Imagery Review

Historical imagery sources, including aerial photographs, topographic maps, and Fire Insurance Maps (when available) were used to evaluate past and present land use activities within and in the vicinity of each LOD within the study area project corridor. Selected images, as well as summaries of the historical imagery review, are included in each LOD-specific Project Area Site Descriptions summary sheet in Attachment 4, as well as incorporated into the risk ranking rationale summaries for each LOD, provided in Section 3.2 - Evaluations of the Limit of Disturbances

## 2.4 Limitations

WSP identified the following limitations during this hazardous materials evaluation:

- The site reconnaissance of the LODs was not conducted during these hazardous materials evaluations; however, photographs and site reconnaissance summaries provided by other disciplines were reviewed to assist in understanding current conditions of the LODs.
- In some instances, historical resources (e.g., fire insurance maps) were unavailable for the LOD and surrounding area due to lack of coverage. Additionally, some of the aerial photographs were

of poor quality. Based on these types of insufficient historical records, it may be difficult to determine an adequate history of the LOD and surrounding area.

- Regulatory documents that have been provided thus far by MDE were provided electronically, which left the decision on what was relevant to MDE personnel.
- Title records and environmental lien searches for the properties that the LODs were situated on were not reviewed.

### **3. Results**

#### **3.1 Ranking System**

Based on the ranking system criteria provided below, all the identified LODs included in the I-495/I-270 Managed Lane Study (MLS) project are to be assigned a risk classification (i.e., high, moderate or low) based on the potential of environmental impacts being present within or in close proximity to the LOD.

#### **High Risk:**

- A REC is present within the LOD (e.g., USTs, ASTs, historical uses, etc.);
- Historical aerial imagery and maps indicate that ground-disturbing activities (e.g., excavations, landfilling) has occurred within the LOD (note: ground-disturbing activities associated with construction of roadways/sidewalks or residential/commercial structures is not considered a concern);
- The LOD is located on or within 300 feet hydraulically downgradient or less than 100 feet upgradient/cross-gradient of the following PSOCs:
  - An open or closed MDE OCP case(s) that has a documented release and cleanup associated with the case, but no other information available (requires a PIA request) or regulatory information indicates that the LOD has been impacted;
  - A closed VCP, LRP, or Superfund site; or Land-Use Controls (LUCs) have been imposed on the PSOC, but no other information available (requires a PIA request) or regulatory information indicates that the LOD has been impacted; or
  - The PSOC has multiple historical or active USTs with documented releases, but no other information available (requires a PIA request) or regulatory information indicates that the LOD has been impacted.
- A Hazardous Materials Information Resource System (HMIRS)/Maryland Spills Database (MDE SPILLS) incident involving a hazardous material/petroleum occurring within the LOD without information summarizing remediation efforts or clean-up or available information states that residual contamination is still present or could be potentially present within the LOD (requires a PIA request) or regulatory information indicates that the LOD has been impacted;
- The LOD is located on or abuts a PSOC that manages or disposes of regulated/hazardous waste/materials onsite with documented violations and has a high potential of impacting area within the LOD or regulatory information indicates that the LOD has been impacted.

Following review of MDE files obtained via a PIA request, if sufficient documentation was provided that confirms the LOD was either not impacted or impacts were addressed to regulatory standards, the LOD was reclassified to a low ranking. However, if the provided information was insufficient, the LOD remained classified at the high ranking.

#### **Moderate Risk:**

- Historical aerial imagery and maps indicate that ground-disturbing activities (e.g., excavations, landfilling) has occurred on land abutting the LOD (note: ground-disturbing activities associated with construction of roadways/sidewalks or residential/commercial structures is not considered a concern);

- The LOD is between 300 feet to 500 feet hydraulically downgradient or 100 feet to 200 feet hydraulically upgradient/cross-gradient of the following PSOCs:
  - An open or closed MDE OCP case(s) that has a documented release and cleanup associated with the case, but no other information available (requires a PIA request);
  - A closed VCP, LRP, or Superfund site; LUCs have been imposed on the PSOC, but no other information available (requires a PIA request); or
  - The PSOC has multiple historical or active USTs with documented releases, but no other information available (requires a PIA request).
- A PSOC adjacent to the LOD has an active or closed AST or UST less than 550 gallons with no documented releases;
- The LOD is located within 100 feet of a PSOC that has multiple historical or operable USTs, but no records of spills or OCP cases;
- A HMIRS/MDE SPILLS incident involving hazardous material/petroleum product greater than 25 gallons occurred on the abutting property or within 50 feet of the LOD, without information summarizing remediation efforts or clean-up (requires a PIA request);
- The LOD is located on or abuts a RCRA-large quantity generator (LQG), small quantity generator (SQG) or conditionally exempt small quantity generator (CESQG) and/or very small quantity generator (VSQG) with documented violation notices (requires a PIA request).

Following review of MDE files obtained via a PIA request, if sufficient documentation was provided to support that impacts to the LOD do not exist, the LOD was reclassified to a low ranking. However, if the provided information was insufficient, the LOD remained classified at the moderate ranking.

#### **Low Risk:**

- The LOD and/or abutting properties have no history of contamination or spills;
- The LOD is less than 500 feet hydraulically downgradient or greater than 200 feet hydraulically upgradient/cross-gradient of a PSOC; however, substantial documentation on remedial efforts and effectiveness have determined the LOD was not impacted;
- The LOD is greater than 500 feet hydraulically downgradient or greater than 200 feet hydraulically upgradient/cross-gradient from any identified PSOCs;
- A HMIRS/MDE SPILLS incident involving hazardous material/petroleum product less than 25 gallons occurred greater than 50 feet of the LOD, without information summarizing remediation efforts or clean-up;
- Any REC or PSOC that would in any other instance be categorized as a high/moderate concern that is separated from the LOD by a body of water or stream;
- The LOD/abutting properties are currently or historically listed as a RCRA LQG, SQG, CESQG/VSQG, Non Generator (NON GEN) without documented violations or releases;
- A property is listed in a database that most likely would have no environmental impact on the LOD (e.g., national pollution discharge elimination system [NPDES], air permit [AIRS]);
- The LOD has undergone significant redevelopment as a non-petroleum/hazardous waste handling site;
- PSOC was found to be erroneously mislabeled or mapped.

When discernable, the distance from a REC (e.g., USTs) within a PSOC to the LOD was used in lieu of the distance from the PSOC boundary to the LOD.

#### **Potential Sites of Concern (PSOCs):**

- Industrial facilities;
- Service stations;
- Auto repair facilities;

- Commercial/State/County facilities maintenance yards;
- Automotive pools;
- Manufacturing facilities;
- Sites with petroleum/regulated substance-containing ASTs and USTs;
- Landfills (active/inactive);
- Sites with active/inactive remediation systems;
- Disposal pits and lagoons;
- Dry cleaners;
- Federal/State/County/Department of Defense (DoD) facilities; or
- PSOCs with documented land-use, engineering, or administrative controls.

### 3.2 Evaluations of the Limit of Disturbances

To document all the information gathered on each LOD, an LOD-specific Project Area Site Description summary sheet was created (Attachment 4). The LOD-specific summary sheet provides brief summaries of the current and historical uses of the surrounding area, and brief summaries of PSOCs identified in the environmental database records, as well as any regulatory information received and reviewed from MDE. Based on the probability of each PSOC to have impacted soil and groundwater within the boundaries of the LOD, each PSOC was then given a ranking of high, moderate, or low risk using the ranking system provided in Section 3.1. An overall ranking for each LOD of high, moderate, or low risk was then selected based on the highest ranking/rankings given to PSOCs within the vicinity of the LOD. Of the 67 SWM facility LOD sites evaluated, 60 LODs were classified as low risk, 4 as moderate risk, and 3 as high risk. .

#### 3.2.1 High Risk Limit of Disturbances

Based on the review of available information for the LODs, three compensatory SWM facility LODs were categorized as having a high risk of impacted soil and/or groundwater within the limits of the LOD. LODs that are classified as high risk either have documented releases within their boundaries or are located within or adjacent to PSOCs with known environmental impacts and thus, have the greatest potential to be impacted by petroleum or other hazardous/regulated materials.

To further determine the impact of PSOCs which resulted in an LOD being categorized as having a high risk for environmental impacts, additional regulatory documentation on specific incidents/cases were requested from MDE. If an LOD is still categorized as high risk after a review of all pertinent information has been conducted, environmental investigations of subsurface materials, including, but not limited to, soil and groundwater sample collection and/or geophysical surveys, within the potential areas of disturbance may be required to characterize and quantify the impacts, to assist developing plans and protocols to protect worker safety, as well as the surrounding environment. See Attachment 1 for a table that lists all LODs categorized as high risk, along with a ranking rationale summary for each high risk LOD..

#### 3.2.2 Moderate Risk Limit of Disturbances

Based on the review of available information for the LODs, four compensatory SWM facility LODs were categorized as having a moderate risk of impacted soil and/or groundwater within the limits of the LOD. An LOD was categorized as moderate risk when insufficient information was obtained to-date to make a clear risk determination of environmental impacts with that LOD, and environmental impacts cannot be completely ruled out.

For sites that were believed to have moderate to high probability of impacting the LOD, additional regulatory documentation on specific PSOCs was requested from MDE through PIA requests; however,

in some cases, the requested files were not available for further review, as they either could not be located by MDE personnel or had been destroyed per MDE's file retention policy.

In certain cases, a precise LOD risk determination can only be made through field sampling. As an example, an active gas station is located adjacent to the north (hydraulically upgradient) of the LOD, WAS-3612. Several USTs are currently in-use, as well as several USTs have been removed throughout the years. A PIA request was submitted for additional information on the UST removal and closures; however, MDE stated that they had no historical files pertaining to the USTs removed in 1987. Without any information to determine whether impacts associated with those former USTs may still be present onsite and/or have potentially migrated into the boundary of the LOD, the only feasible option is to conduct additional investigations. See Attachment 2 for a table that lists all LODs categorized as moderate risk, along with a ranking rationale summary for each moderate risk LOD.

### 3.2.3 Low Risk Limit of Disturbances

Based on the review of available information for the LODs, 60 compensatory SWM facility LODs were categorized as low risk. This low risk ranking means that it is unlikely that environmental impacts will be encountered within the LOD's limits. Low risk LODs are sites that either had no documented releases or prior releases at PSOCs within or in close proximity to the LOD were documented to be adequately remediated. See Attachment 3 for a table that lists all LODs categorized as low risk, along with a ranking rationale summary for each low risk LOD.

## 4. Conclusions

Over 1,000+ potential compensatory stormwater management (SWM) sites identified to meet the SWM water quality (WQ) requirements of the MLS were reviewed from a hazardous materials standpoint and categorized as having either a high, moderate, or low risk of potential environmental impacts being encountered within the LOD. Based on the selection of the Preferred Alternative, further analysis and development of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites. These 67 compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impact Statement (FEIS), and Record of Decision (ROD).

The ranking classifications were based on a review of an environmental database report, historical aerial/topographic maps, review of other disciplines' site reconnaissance findings, and a review of regulatory information and documents provided by regulatory agencies through PIA requests and their managed websites/online databases (when available).

Through this evaluation, three of the SWM facility LODs were categorized as high risk. High Risk LODs are defined as LODs where releases have been documented within their boundaries or are located within or adjacent to PSOCs with known environmental impacts and thus, have the greatest potential to be impacted by petroleum or other hazardous/regulated materials.

A total of four SWM facility LODs within the study area have been categorized as moderate risk. Moderate risk sites are defined as sites where insufficient information has been obtained to-date to make a clear risk determination of environmental impacts within that LOD or site, and environmental impacts cannot be completely ruled out.

The remaining 60 SWM facility LODs were categorized as low risk, meaning that either no PSOCs were identified in the vicinity of the LOD or PSOCs identified within the vicinity of the LOD either had no



documented releases or prior releases were documented to be adequately remediated and/or were located a significant distance from the LOD where impacts to the LOD are unlikely.

Based on these findings, additional investigations are recommended to characterize soil and groundwater conditions within the LODs ranked as high or moderate risk. Proposed investigation should adequately characterize surficial and subsurface soils, as well as groundwater, if anticipated to be encountered. Sample locations should take into account locations of previous releases, former/current/ abandoned storage tanks, and inferred groundwater flow, as well as proposed soil/groundwater disturbance during construction. The laboratory analytical suite should be tailored to the contaminant(s) potentially present. Should contaminants be present at levels potentially indicative of hazardous waste, subsequent sampling utilizing Toxicity Characteristic Leaching Procedure (TCLP) is recommended.

**ATTACHMENT D-1**  
**High Risk LOD Table**

<b>LOD ID</b>	<b>High Risk LOD Table</b>  <b>Ranking Rationales</b>
<b>WAS-3616</b>	<p>The LOD is located on vacant/maintained ROW, west of Georgia Avenue (MD 97), north of Norbeck Road (MD 28), in Rockville, Maryland. The surrounding area is a mix of residential and commercial properties. Residential development is observed to begin prior to 1959. Commercial development is observed to begin in the 1960s. Development in the surrounding area continued through 2005, when the surrounding area is observed to be developed in its current configuration. The first site, a hardware/former service station approximately 75 feet south (downgradient) of the LOD, previously had 11 petroleum USTs ranging in size from 110-gallons to 550-gallon removed. In November 1989, six soil samples were collected in the vicinity of two 550-gallon gasoline USTs near the south end of the site in order to evaluate potential petroleum contamination. Noticeable petroleum odors were noted in the field during the investigation. Soil samples were analyzed for TPH and BTEX which confirmed the presence of soil contamination near the tanks as well as along the south edge of the property, which may be due to an off-site source. It was the owner's position that the contamination was primarily due to an Exxon station formerly located in the current location of Route 28. There were no additional MDE records indicating how the soil contamination was addressed. In November 1995, two 290-gallon motor oil tanks, two 110-gallon motor oil USTs, two 550-gallon gasoline USTs and one 280-gallon kerosene UST were excavated and removed from the site. PID readings from the excavation ranged from 10 and 500 ppm. No free product was encountered and the on-site MDE inspector approved backfilling of the excavation. No further work was required. Based on the information summarized above and the absence of any post-excavation analytical data to indicate otherwise, it is possible that residual concentrations of petroleum constituents could be encountered within the limits of the LOD. The second site of significant concern, an automotive sales business and tire repair shop located directly north (crossgradient) of LOD, has one closed OCP case that was opened in February 1991 and closed April 1992. Based on the information provided by MDE, a 275-gallon kerosene UST was removed on 2/28/91. The tank was approximately 40 years old and had not been used for 20 years. Upon removal, one perforation was discovered at the top of the tank. Soil screening identified a very light odor in the soil; therefore, soil was excavated from several feet below the depth of the tank and PID readings at that depth were under 50 ppm. The onsite MDE inspector granted permission to backfill the excavation site. Based on the information summarized above and the absence of any post-excavation analytical data to indicate otherwise it is possible that residual concentrations of petroleum constituents could be encountered within the limits of the LOD. Thus, further investigation may be warranted prior to any intrusive groundwater to determine whether or not impacted material is present within the boundaries of the LOD.</p>

<b>LOD ID</b>	<b>High Risk LOD Table</b>  <b>Ranking Rationales</b>
<b>WAS-4632</b>	<p>The LOD is located along the north side of River Road (MD 190), directly west of Lake Potomac Drive, in Potomac Maryland. The surrounding area is semi-rural/suburban area. Residential properties built between 1981 and 1988 on moderate size lot are to the north, east, west. The WSSC Potomac Filtration Plant is located approximately 200 feet south of the LOD, built prior to 1959 and has been expanded multiple times. There have been 27 reported spills that range in size from 1 gallon to an unknown amount, ranging from wastewater to water treatment chemicals. There are 7 USTs registered at the property, 6 of which are permanently out of use and 1 currently in use. Based on local topography, the LOD is potentially downgradient from the site. Based on a review of MDE files provided through a PIA request, five 20,000-gallon ferric chloride USTs were excavated and removed for off-site disposal in 1994. No corrective action was required based on site observation and analytical data, and MDE closed case #94-2858 MO-2. Other records reviewed included a spill report for the release of 2 gallons of oil inside a container in 2017, as well as several third party UST inspections and associated MDE correspondence. Based on the lack of documentation related to the closure of the 1,000-gallon gasoline UST, as well the majority of the spills at the facility, the facility's proximity, and its potential upgradient proximity relative to the LOD, there is a potential for impacts to the LOD.</p>
<b>WAS-4652</b>	<p>The LOD is located to the north of the intersection of River Road (MD 190) and Persimmons Tree Road, in Rockville, Maryland. The surrounding area is primarily residential with some commercial development in the surrounding area. Residential development is observed to begin by 1964 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. There have been three OCP cases and two SPILLS cases in the surrounding area. One OCP case, abutting the LOD, was opened during a residential heating oil tank closure approximately 85 feet south of the LOD. The UST along with approximately 24 tons of impacted soil were excavated from the site and disposed of at a regulated facility. Two confirmation samples were collected from the excavation and analyzed for TPH-DRO/GRO and VOCs. Detected concentrations of naphthalene (42.7mg/kg) and TPH-DRO (9,800 mg/kg) in the sample collected from the western end of the excavation, exceeded MDE's corresponding soil cleanup standards of 3.8 mg/kg (naphthalene) and 230 mg/kg (TPH-DRO), respectively. MDE allowed for the remaining impacted soil to be left in-place and the case was closed. The second case is associated with a residential property approximately 40 feet to 175 feet northwest of the LOD. The case is related to a leaking heating oil UST that was leaching oil into the basement of the residence in 1990. The UST was removed and over 1,000 gallons of petroleum impacted groundwater were collected and disposed offsite from 1991 to 1992. The case was closed after air samples were collected from the basement indicated that risk was present. No analytical data or information pertaining to efforts to characterize subsurface soil and groundwater were provided in the files reviewed; therefore, residual concentrations of petroleum constituents could be present on the property, as well as within the boundaries LOD, as the site is believed to be upgradient. Based on in the information summarized above of these two sites in close proximity to the LOD, further investigation maybe warranted prior to any intrusive groundwork to determine whether or not impacted material is present within the boundaries of the LOD.</p>

**ATTACHMENT D-2**  
**Moderate Risk LOD Table**

<b>LOD ID</b>	<b>Moderate Risk LOD Table</b>  <b>Ranking Rationales</b>
<b>WAS-3305</b>	<p>The LOD is located along the west side of Woodfield Road (MD 124) between Snouffer School Road and Lindbergh Drive, in Gaithersburg, Maryland. The surrounding area is a mix of commercial and residential developments. Commercial and residential development is observed to begin prior to 1993. The surrounding area is in its current configuration by 2005. A shopping center adjacent to the LOD had a dry-cleaning facility approximately 150 feet southeast (potentially crossgradient) of the LOD, that historically utilized chlorinated solvents in their dry-cleaning operations. Based on a review of investigation summary reports and analytical soil and groundwater data provided by MDE through a PIA request, soil and groundwater in the immediate vicinity of the LOD is not believed to be impacted by the former dry-cleaner. The shopping center also had two former 550-gallon heating oil USTs that were excavated and removed from the site in 2005 and 2007. No impacts were identified with the UST removed in 2005; however, analytical data showed detected concentrations of TPH-DRO at 85 mg/kg, two feet below the grade of the UST (approximately 7 feet bgs) that was removed in 2007. Both USTs received closure from MDE. Based on this information, residual concentrations of petroleum constituents could be encountered within the limits of the LOD based on the proximity of the former USTs. Thus, further investigation may be warranted prior to any intrusive groundwork to determine whether or not impacted material is present within the boundaries of the LOD.</p>
<b>WAS-3612</b>	<p>The LOD is located north of the intersection of Connecticut Avenue (MD 185) and University Boulevard (MD 193) in Kensington, Maryland. The LOD is surrounded by commercial development. Based on historical aerial and topographic maps, the LOD has never been developed. Development of the surrounding area began prior to 1959, with University Boulevard present and residential development in the surrounding areas. The LOD and surrounding area have been similar to their current configuration since 1988. Seventeen sites were identified within the vicinity of the LOD in the environmental database report. Six the of the sites were had listings related to active/ inactive USTs, OCP cases, and/or document spills, but were determined not be an environmental concern based on their proximity to the LOD or are believed to be either hydraulically crossgradient/ downgradient. The only site of concern identified in the database report is an active gas station, adjacent to the north of the with two gasoline USTs. On 2/10/15, a line test failure resulted in a release. According to records provided by MDE, the leak detector on the Premium STP was replaced on 11/16/15 after the old one failed a test. Testing of the system was successfully completed the same day. The site is registered with two active 12,000-gallon gasohol USTs installed on 7/1/1992; five former 4,000-gallon USTS installed in 1953 and removed on 8/3/1987; one 1,000-gallon used UST installed in 1953 and removed on 8/3/1987; and one 1,000-gallon UST of unknown contents installed in 1953 and removed on 8/3/1987. No information was available regarding the removal of the USTs in 1987. In June 2018, the two 12,000-gallon USTs were tightness tested and passed. Based on the proximity of the service station to the LOD and the lack of information regarding the UST closures in 1987, further investigation may be warranted prior to any intrusive groundwork to determine whether or not impacted material is present within the boundaries of the LOD.</p>

<b>LOD ID</b>	<b>Moderate Risk LOD Table</b>  <b>Ranking Rationales</b>
<b>WAS-3638</b>	<p>The LOD is located along the central median of Norbeck Road (MD 28), southwest of Muncaster Mill Road, in Rockville, Maryland. The LOD appears to have historically been part of an orchard based on aerial imagery from 1959 and redeveloped as part of Norbeck Road in the 1980s. The surrounding area is primarily residential with an institutional development to the northeast. The surrounding area was historically agricultural and rural residential in the 1950s with further residential development observed to begin in the 1980s. Commercial development to the north is observed to begin around 1971. The surrounding area is observed to be developed in its current configuration by 2005. A catholic school approximately 455 feet north (crossgradient) of the LOD had a 550-gallon heating oil excavated and removed from the site in August 2006. Impacted subsurface media was encountered during the UST closure, which was cleaned up/remediated and the case received closure approximately 2 months later. Based on site's inferred hydraulic gradient in relation to the LOD, impacts are unlikely. However, since the area and LOD have been utilized as an orchard in the 1950s, there is a possibility that residual concentrations of organochlorine pesticides, such as dieldrin, DDT, chlordane, and lindane may be present in soils and sediments within the boundary of the LOD. Further investigation may be warranted prior to intrusive groundwork to determine if environmental media within the LOD have been impacted.</p>
<b>WAS-4091</b>	<p>The LOD is located in the central median of I-370, west of the Frederick Road (MD 355) underpass, in Gaithersburg, Maryland. The surrounding area is a mix of commercial and residential developments to the south and residential developments among forested land to the north. Commercial and residential development began prior to 1971, and is observed in its current configuration by 2005. Three OCP cases are located between 270 feet and 455 feet from the LOD. The most concerning of which, the All State Leasing Co. located 270 feet in an apparent hydraulically upgradient direction, has documented groundwater impacts present. In March 1994, a 15,000-gallon gasoline UST was excavated and removed. PID readings up to 2,100 ppm were identified directly beneath the former UST. A monitoring well installed adjacent to the former UST exhibited a total BTEX concentration of 17,600 ug/L, well above the MDE Groundwater Standards. MDE closed the OCP case in 1999 based on the justification that the surrounding area is connected to public water. As this facility appears hydraulically upgradient of the LOD, further investigation is warranted to determine whether or not impacts from this site has impacted environmental media within the LOD. The remaining records of concern are not anticipated to have an impact on the LOD due to either their distance, hydraulic direction, or case status.</p>



**ATTACHMENT D-3**  
**Low Risk LOD Table**

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-1805</b>	<p>The LOD is located along the north side of Bradley Boulevard (MD 191), southeast of Redwood Avenue, in Bethesda, Maryland. Residential properties surround the LOD in all directions. A golf course is located further to the south. I-495 is further to the west. Based on a review of historical imagery, the area surrounding area was primarily agricultural land and residential properties prior to 1937. Residential development continued in all directions of the LOD through 2005, when the surrounding area was observed similar to its current configuration. The Lay Women's Association, approximately 95 feet to the south, was listed as having a minor air permit. Based on the type of environmental listing impacts to the LOD are unlikely.</p>
<b>WAS-3601</b>	<p>The LOD is located along the west side of Rockville Pike (MD 355), north of Edison Lane, in Rockville, Maryland. The surrounding area is commercial, consisting mostly of office buildings and retail constructed in the 1970's and 1980's. The surrounding area was observed to be developed in its current configuration in the late 1980s. Three sites between 300 feet and 655 feet of the LOD, including a former mall and existing office buildings were identified as having former USTs with documented releases; however, after a review of available information provided by MDE through a PIA request any impacts are believed to be isolated to those properties or downgradient/crossgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-3602</b>	<p>The LOD is located along north side of Bradley Boulevard (MD 191), east of Seven Locks Road, in Bethesda, Maryland. The LOD is located south of the Bethesda Country Club and St George Orthodox Church, east of the intersection of the Bradley Boulevard and Seven Locks Road. The area is considered suburban. The LOD lies along the southern boundary of Bethesda Country Club that is listed as a delisted SHWS due to the potential that irritant gases were tested on a small area of the property around WWI. Regulators determined that no testing was required and no further action was warranted. Several USTs have been removed from the site, approximately 975 feet to the north. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-3603</b>	<p>The LOD is located along the east side of Connecticut Avenue, north of Beach Drive, in Kensington, Maryland. Grace Episcopal Day School is located directly east of the LOD. Residential properties about the LOD to the west and north. Forest land followed by I-495 is to the south. The school to the east, once had an 8,000-gallon heating oil (diesel #2) UST (installed in 1960), that was excavated and removed from the site in 1999. There was no release or clean-up associated with the excavated UST; therefore, the case received closure approximately 1 month later. Additionally, the site is believed to be crossgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-3604</b>	<p>The LOD is located along the east side of Connecticut Avenue, west of Dunnel Lane, in Kensington, Maryland. Residential properties about the LOD in all directions. Based on historical imagery, residential development began prior to 1959 and continue through approximately 1988, when the surrounding area was observed to be developed in its current configuration. No records of concern in the vicinity of the LOD were identified during the environmental review.</p>

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-3613</b>	<p>The LOD is located along the south side of Democracy Boulevard, east of Taveshire Way, in Bethesda, Maryland. The surrounding area is a mix of residential and commercial developments. Residential and commercial development began prior to 1959 and continued through 1998, when the surrounding area was observed to be developed in its current configuration. The LOD is to the south across Democracy Boulevard from an indoor shopping center where there have been two closed OCP cases and several former USTs. All of these sites are located at least 500 feet from the LOD and are of low concern. There are also two sites within the shopping center that are RCRA CESQG and RCRA SQG, both with no records of violations. In addition to the shopping center, a gas station is located 515 feet from the LOD with several spills and closed OCP cases. Due to the distance of the gas station and its assumed downgradient location relative to the LOD, impacts to the LOD is unlikely from these sites, as well as the four sites listed in the environmental database report.</p>
<b>WAS-3614</b>	<p>The LOD is located along the south side of Democracy Boulevard, between I-270 and Westlake Drive, in Bethesda, Maryland. The surrounding area is a mix of commercial and residential buildings. Residential and commercial development is observed to begin prior to 1959 and continued through 1998, when the surrounding area was observed to be developed in its current configuration. The LOD is located to the south across Democracy Boulevard from an indoor shopping center where there has been two OCP closed cases and several former USTs on site. Although the addresses of the sites list the stores as 200 feet from the LOD, they both measure approximately 900 feet from the LOD and therefore are of low concern. Two additional sites are listed as RCRA SQG and RCRA CESQG with no known compliance violations. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-3615</b>	<p>The LOD is located along the north side of Norbeck Road (MD 28), west of Muncaster Mill Road (MD 115), in Rockville, Maryland. The LOD has remained vacant land since the 1950s; however, it is possible that a driveway associated with a rural residential dwelling formerly transected a portion of the LOD based on an aerial photograph from 1971. The LOD appeared to be in its current configuration by 1988. The surrounding area is primarily residential with St. Patrick's Catholic Church to the north. The surrounding residential development is observed to begin in the 1950s. Development of the church to the north is observed to begin in 1971. The area is observed to be in its current configuration by 2013. Three sites within a 0.125-mile radius of the LOD were identified with closed OCP cases and removed heating oil USTs; however, all of these are located greater than 400 feet from the LOD and are believed to be hydraulically downgradient/ crossgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>

<b>LOD ID</b>	<b>Low Risk LOD Table</b>  <b>Ranking Rationales</b>
<b>WAS-3617</b>	<p>The LOD is located along the east side of River Road (MD 190), immediately north of Brookside Drive, in Chevy Chase, Maryland. The surrounding area is a mix of commercial and residential developments. Commercial and residential development began prior to 1960, and is observed in its current configuration by 1963. Numerous sites listed on one or more environmental database were identified in the surrounding area. The most significant is a large redevelopment project occurring to the south/southwest, which encompasses multiple properties listed on either the DRYCLEANERS, UST, OCP, SHWS, VCP, LRP and/or RCRA Generator databases. Multiple Phase I and Phase II investigations associated with this large redevelopment project included an area covering a retirement center, located approximately 260 feet west of the southern portion of the LOD, along with a professional building to the southwest that includes a dry cleaner, two gas stations, and a large shopping center further to the southwest. The project entered into the MDE VCP program in 2014. Environmental investigations have detected petroleum and chlorinated constituents in soil and groundwater samples above MDE cleanup standards. The impacted areas are located to the south/southwest of the LOD, which is hydraulically crossgradient based on groundwater flow direction. Further, the investigations have determined the soil and groundwater in the vicinity of the Westwood Retirement Center, located directly west of the LOD, have not been impacted. Based on this, impacts to the LOD from these facilities appears unlikely. The remaining facilities, which included four dry cleaners, two gas stations, and illicit spills/releases, are located between 260 feet and 615 feet from the LOD, and are believed to either be hydraulically downgradient of the LOD, or upgradient, but hydraulically disconnected from the LOD by a stream. Thus, impacts to the LOD from these remaining facilities is unlikely.</p>
<b>WAS-3618</b>	<p>The LOD is located along the central of River Road (MD 190), south of Braeburn Parkway, in Bethesda, Maryland. The surrounding area is primarily residential. Residential development is observed to begin prior to 1960 and continued through 1981, when the surrounding area is observed to be developed in its current configuration. No records of concern in the vicinity of the LOD were identified during the environmental review.</p>
<b>WAS-3622</b>	<p>The LOD is located east of the intersection of Goldsboro Road (MD 614) and Massachusetts Avenue (MD 396), in Bethesda, Maryland. The surrounding area is primarily residential developments. Development of the surrounding area is observed to begin by 1960. The surrounding area is observed to be in its current configuration by 1994. Two OCP cases have been opened in the vicinity of the LOD. However, both cases have been closed and are located over 300 feet crossgradient from the LOD. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-3625</b>	<p>The LOD is located on the west side of the intersection of 16th Street, and Elkhart Street (MD 390), in Silver Spring, MD. Elkhart Street traverses the northwestern portion of the LOD. The remainder of the LOD consists mostly of grass and is surrounded by residential development. The surrounding area has been developed since at least the 1930s. Additional commercial development was observed to the south in the 1960s. By the 1980s, the surrounding area was observed to be developed similar to its current configuration. There were three sites identified within the environmental database search. Based on a review of available information the sites are not believed to have impacted the LOD based on their proximity to the LOD and/ or type of environmental database listing associated with them.</p>

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-3634</b>	<p>The LOD is located in on the south side of Norbeck Road (MD 28), between Nadine Drive and Bel Pre Road, in Rockville, Maryland. The area consists primarily of single-family residential development, mostly built in the late 1960's. One spill occurred approximately 150 feet to the west (cross-gradient) of the LOD as a result of a motor vehicle accident in 2018. Some of the material entered a storm drain and the remainder was cleaned up with an absorbent. Based on the quantity of the spill (&lt;5 gallons), impacts to the LOD are unlikely.</p>
<b>WAS-3635</b>	<p>The LOD is located within the central median of Norbeck Road (MD 28) between Nadine Drive and Bel Pre Road, in Rockville, Maryland. The area consists primarily of single-family residential development, mostly built in the late 1960's. One spill occurred approximately 340 feet to the southwest (cross-gradient) of the LOD as a result of a motor vehicle accident in 2018. Some of the material entered a storm drain and the remainder was cleaned up with an absorbent. Based on the quantity of the spill (&lt;5 gallons), impacts to the LOD are unlikely.</p>
<b>WAS-3637</b>	<p>The LOD is located along Norbeck Road (MD 28), northeast of Carrolton Road, in Rockville, Maryland. The surrounding area consists primarily of single-family residential development; the Manor Country Club is located to the south. The residential area was developed in the 1970's. A single environmental database record was found for a property located approximately 70 feet southeast (crossgradient) of the LOD, adjacent to the roadway. The ERNS 1987-1989 listing with no information provided. A PIA request was submitted for the site; however, no files were available. The release was most likely surficial in nature based on the environmental database the site is listed in. Additionally, it is believed that the site is crossgradient of the LOD. Thus, impacts are unlikely.</p>
<b>WAS-3656</b>	<p>The LOD is located on the north side of Norbeck Road (MD 28), south of Marlin Street, in Rockville, Maryland. The LOD consists of roadway a median with trees between Norbeck Rd and Norbeck Road Service Road and includes part of both these roads. The site is surrounded by residential development, other than the Rock Creek Village Shopping Center to the southwest. Development primarily occurred in the 1960's. Multiple database listings for the Rock Creek Village Shopping Center that includes the Village Exxon (approximately 320 feet southwest) and Rock Creek Village Cleaners (approximately 840 feet southwest) were identified in the environmental database report. The shopping center entered into the MDE VCP in 2011 after, and is subject to land use controls (restricted commercial or industrial, use of groundwater prohibited), based on previous environmental investigations that took place at the site, between 1997 and 2011, found PCE in soil, groundwater, and soil gas near the dry cleaner and, near the gas station, MTBE in in soil and groundwater and diesel range organics, and petroleum range organics in groundwater. Based on available information, the sites are believed to be downgradient of the LOD. Several other database listings were identified to the west/southwest (downgradient) of the LOD, which are believed to not be a concern as well. Thus, impacts to the LOD are unlikely.</p>

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-3658</b>	<p>The LOD is located along the central median of Norbeck Road (MD 28), west of Baltimore Road, in Rockville, Maryland. The area surrounding the LOD is mostly forested land with residential properties to the east. Norbeck Road was first observed in the early 1970s, prior to that the area was entirely forested land. Residential development began to the east in the early 1970s and continued until the early 1980s when the area was observed in its current configuration. A spill of approximately 5 gallons of gasoline was identified 350 feet to the east of the LOD. Based on the size of the spill and distance from the LOD, impacts to the LOD are unlikely.</p>
<b>WAS-4058</b>	<p>The LOD is located along the central median of Quince Orchard Road (MD 124), east of Great Seneca Highway (MD 119), in Gaithersburg, Maryland. The LOD is surrounded by residential development to the north and west, and by commercial development to the south and east. Based on review of historical aerial and topographic maps, the Quince Orchard Road was present in 1937 and the LOD and surrounding area are similar to current configuration by 2005. Two environmental database listings were identified in the immediate area of the LOD. A pharmaceutical facility is a SQG approximately 490 feet from the LOD, where no violations were found. A 0.25-gallon spill from a ruptured vehicular hydraulic hose occurred approximately 135 feet from the LOD and was cleaned up. Based on distance or quantity of spill, impacts to the LOD are unlikely.</p>
<b>WAS-4059</b>	<p>The LOD is located along Quince Orchard Road (MD 124), east of Twin Lakes Drive, in Gaithersburg, Maryland. The LOD is surrounded by residential development to the south and east, and by commercial development to the north and west. Based on a review of historical aerial and topographic maps, Quince Orchard Road was present by 1993 and the LOD and surrounding area are similar to current configuration by 2005. Two listings were identified in the environmental database report, including a RCRA Non Generator and spill case between 540 feet and 600 feet of the LOD. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>
<b>WAS-4067</b>	<p>The LOD is located along the east side of Great Seneca Highway (MD 199), south of Quince Orchard Road (MD 124), in Gaithersburg, Maryland. The LOD is surrounded by commercial development. Based on review of historical aerial and topographic maps the Great Seneca Highway and commercial development was observed in the 1993 aerial photograph with the LOD and surrounding area similar to their current configuration by 2005. Four environmental database listings were identified in the immediate area of the LOD. The Lowe's is crossgradient 555 feet to the west, a RCRA LQG is located abutting the LOD to the west, and a gas station is located approximately 660 feet downgradient. A biotechnology facility is located approximately 70 feet northeast of the LOD that currently has fourteen ASTs ranging in size between 50 to 20,000-gallons that hold #2 heating oil, used oil, and lubricating oil. Based on available information provided by MDE through a PIA request, there have been no substantial releases reported with the ASTs onsite. Thus, impacts to the LOD are unlikely.</p>

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-4068</b>	<p>The LOD is located along the central median of Great Seneca Highway (MD 119) north of Orchard Ridge Drive (MD 124), in Gaithersburg, Maryland. The LOD is surrounded by commercial development. Based on review of historical aerial and topographic maps the Great Seneca Highway and commercial development was observed in the 1993 aerial photograph with the LOD and surrounding area similar to their current configuration by 2005. Three environmental database listings were identified in the immediate area of the LOD. The Lowe's is crossgradient 575 feet to the west, a RCRA LQG is located to the west, and a gas station is located 340 feet crossgradient. A biotechnology facility is located approximately 115 feet northeast of the LOD that currently has fourteen ASTs ranging in size between 50 to 20,000-gallons that hold #2 heating oil, used oil, and lubricating oil. Based on available information provided by MDE through a PIA request, there have been no substantial releases reported with the ASTs onsite. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-4072</b>	<p>The LOD is located on Darnestown Road south of Tschiffely Square Road in Gaithersburg, Maryland. The LOD is in the median of Darnestown Road and adjacent travel lanes. The LOD is surrounded by residential development to the north, east, and south, and a church to the southwest. Inspiration Lake, Lake Nirvana and Lake Placid are located to the east. Based on review of historical aerial and topographic maps, Darnestown Road has been present since 1937. Residential development occurred by 1993. Two environmental database listings were identified in the immediate area of the LOD, which includes a natural gas pipeline incident 230 feet away and an elementary school (590 feet away) which is a RCRA VSQG with no reported violations. Based on the nature of the incident and distance to the LOD, respectively, impacts to the LOD are unlikely.</p>
<b>WAS-4098</b>	<p>The LOD is located along the west side of S Frederick Avenue (MD 355), northwest of W Deer Park Road, in Gaithersburg, Maryland. The surrounding area is a mix of commercial and residential developments. The surrounding area was primarily forested and agricultural land up until 1963, when residential and commercial development began to occur. Residential and commercial development continued up until 2018 when the surrounding area was observed to be developed in its current configuration. Although there are several records of concern in area surrounding the LOD, most do not involve releases or contamination or are located over 500 feet from the LOD and are of low concern. One site was listed approximately 50 feet north (upgradient) of the LOD, that had four petroleum USTs ranging in size from 550-gallons to 5,000-gallons excavated and removed from the property in 1991 and 2000 was determined to be more than 700 feet west of the LOD. No releases or impacted soil was reported during the removals. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-4099</b>	<p>The LOD is located in the ROW along S Frederick Avenue (MD 355), south of the intersection with W Deer Park Road, in Gaithersburg, Maryland. The surrounding area is a mix of commercial and residential development. Commercial and residential development is observed to begin by 1963. The surrounding area is observed to be in its current configuration by 2018. The three database listings in the vicinity of the LOD either do not involve releases or contamination or are too far away from the LOD to be of concern.</p>



<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b><i>WAS-4517</i></b>	<p>The LOD is located within the central median of Midcounty Highway (MD 124), east of the intersection with Washington Grove Lane, in Gaithersburg, Maryland. The surrounding area is primarily residential. Based on a review of historical imagery, the LOD and surrounding area were observed to be agricultural through the 1970s when residential development began. Residential development continued through 2005 when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified during this environmental review.</p>
<b><i>WAS-4518</i></b>	<p>The LOD is located along the northern side of Midcounty Highway (MD 124), east of the intersection with Washington Grove Lane, in Gaithersburg, Maryland. The surrounding area is primarily residential. Based on a review of historical imagery, the LOD and surrounding area were observed to be agricultural through the 1970s when residential development began. Residential development continued through 2005 when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified during this environmental review.</p>
<b><i>WAS-4519</i></b>	<p>The LOD is located along the northern side of Midcounty Highway (MD 124), west of Taunton Drive, in Gaithersburg, Maryland. The surrounding area is primarily residential. A middle school is located to the southeast. Based on a review of historical imagery, the LOD and surrounding area were observed as agricultural and forested land through the 1970s when residential development began. Residential development continued through 2005 when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified during this environmental review.</p>
<b><i>WAS-4521</i></b>	<p>The LOD is located in the central median of Midcounty Highway, west of Taunton Drive, in Gaithersburg, Maryland. The surrounding area is primarily residential. A middle school is located to the southeast. Based on a review of historical imagery, the LOD and surrounding area were observed as agricultural and forested land through the 1970s when residential development began. Residential development continued through 2005 when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified during this environmental review.</p>
<b><i>WAS-4607</i></b>	<p>The LOD is located off the south side of Darnestown Road (MD 28), southwest of Country Glen Court, in Darnestown, Maryland. Residential houses and open space abut the property in all directions. Development began in the early 1940s and continued up until 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-4613</b>	<p>The LOD is located along the central median of Darnestown Road (MD 28), between Argosy Drive/Dufief Mill Road and Muddy Branch Road, in Gaithersburg, Maryland. Residential properties surround the site to the north and east. A large farm is located to the west of the LOD. A medical center and old repurposed barn are located directly south of the LOD, followed by additional residential properties. Based on historical imagery, the surrounding area was primarily developed as agricultural properties up until the 1970s, with the golf course to the north and residential properties to the west, north, and south constructed in the early 1980s. By 2009, the surrounding area and LOD were observed to be developed in their current configuration. A former military radar site was located approximately 1,050 feet north (upgradient) of the LOD. According to available information, the site was decommissioned in the 1980s and was repurposed by the US Consumer Product Safety Commission. Currently, Montgomery County is proposing to redevelop the site into a public park.. Based on available information provided by MDE through a PIA request, as well as on the MDE LRP website, several USTs have been excavated and removed from the site over the years. No known environmental impacts are known to be present onsite. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-4615</b>	<p>The LOD is located along the north side of the Darnestown Road (MD 28), east of Haddonfield Lane, in Gaithersburg, Maryland. The surrounding area was primarily agricultural land up until the 1970s, when residential development to south and east began. Additional residential development occurred to the north and south up until 2005, when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>
<b>WAS-4622</b>	<p>The LOD located within the median at the intersection of Seneca Road (MD 112) and Esworthy Road, in Germantown, Maryland. The surrounding area is primarily suburban, with private residences on large tracts of land abutting the LOD on four sides. The surrounding area was developed with agricultural properties up until the late 1970s, when residential development began to occur. Residential development continued up until 2005, when the LOD and surrounding area were observed to be developed in their current configuration. A residential heating oil UST of unknown size was excavated and removed from a property approximately 470 feet to the southeast (downgradient) of the LOD in 2018. A release was reported, material was cleaned up, and the site received closure approximately 3 months later. Based on local topography, the site is believed to be downgradient of the LOD. A second OCP case was opened in January 1997 at property approximately 725 feet southwest (crossgradient) of the LOD, related to a ground seep investigation. The release was reportedly address and received closure from MDE in June 1997. A spill case opened for a release of approximately 12 ounces of heating oil at a property approximately 565 feet south of the LOD. Based on the distances of the sites relative to the LOD, impacts are unlikely.</p>
<b>WAS-4624</b>	<p>The LOD is located along the west side of Seneca Road (MD 112), south of River Road, in Darnestown, Maryland. Residential structures on large tracts of land abut the LOD to the north, east, and south. A golf course, constructed in the late 1960s, abuts the LOD to the west. The surrounding area was primarily agricultural land up until the late 1960s/ early 1970s, when residential development began to occur. By 2005, the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-4625</b>	<p>The LOD is located along the north side of River Road (MD 190), immediately east of Manor Stone Drive, in Potomac, Maryland. The surrounding area is primarily rural/suburban with private residence on large tracts of land. Based on historical imagery, the surrounding area has been primarily forested and agricultural land up until the 1950s, when several residential structures were observed to be present south of the LOD and River Road. By the late 1980s, additional residential structures were observed to the north of the LOD. The surrounding area was observed to be developed in its current configuration by 2009. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>
<b>WAS-4626</b>	<p>The LOD is located along the north side of River Road (MD 190), west of Signal Tree Road, in Potomac, Maryland. The surrounding area is primarily rural suburban with private residence on large tracts of land. Based on a review of historical imagery, the surrounding area was primarily developed as agricultural land up until the 1980s, when residential development to the north, east, and west began to occur. A farm has been located to the south of the LOD, beyond River Road since at least the 1950s. The surrounding area was observed to be developed in its current configuration by 2013. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>
<b>WAS-4627</b>	<p>The LOD is located on the south side of River Road (MD 190), east of Signal Tree Road, in Potomac, Maryland. The surrounding area is primarily suburban with private residence on large tracts of land. The area to the north is forested land. A residential property is located to the south, followed by a farm. Additional residential properties are located to the east and west. Based on a review of historical imagery, the surrounding area was primarily developed as agricultural land up until the 1980s, when residential development to the north, east, and west began to occur. A farm has been located to the south of the LOD, beyond River Road since at least the 1950s. The surrounding area was observed to be developed in its current configuration by 2013. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>
<b>WAS-4628</b>	<p>The LOD is located on the south side of River Road (MD 190), southeast of Signal Tree Road, in Potomac, Maryland. The surrounding area is primarily suburban with private residence on large tracts of land. The area to the north is forested land. A residential property is located to the south, followed by a farm. Additional residential properties are located to the east and west. Based on a review of historical imagery, the surrounding area was primarily developed as agricultural land up until the 1980s, when residential development to the north, east, and west began to occur. A farm has been located to the south of the LOD, beyond River Road since at least the 1950s. The surrounding area was observed to be developed in its current configuration by 2013. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-4629</b>	<p>The LOD is located along the north side of River Road (MD 190), east of Watkins View Lane, in Potomac, Maryland. Residential houses are located to the southeast. Residential development is observed to begin in the 1960s and continue through 2013, when the surrounding area was observed to be developed in its current configuration. Two database listings were identified in the surrounding area. In 1994, a 2000-gallon heating oil UST was closed in place at a residential property approximately 225 feet south of the LOD. Available records did not indicate whether a release occurred and/or clean-up/ remediation was required. An active 2,000-gallon heating oil UST is present at a residence approximately 655 feet to the southeast of the LOD. No records associated with releases or cleanup in connection with the UST were identified. Based on the local topography, both sites are believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-4630</b>	<p>The LOD is located in a semi-rural/suburban area along the south side of River Road (MD 190), north of Dalyn Drive, in Potomac, Maryland. Residential development is observed to begin in 1971 and continue through 2013, when the surrounding area was observed to be developed in its current configuration. Two database listings were identified in the surrounding area. In 1994, a 2000-gallon heating oil UST was closed in place at a residential property approximately 360 feet northwest of the LOD. Available records did not indicate whether a release occurred and/or clean-up/ remediation was required. An active 2,000-gallon heating oil UST is located at a residence approximately 200 feet to the southeast of the LOD. No records associated with releases or cleanup in connection with the UST were identified. Based on the local topography, the sites are believed to be crossgradient and downgradient of the LOD, respectively. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-4631</b>	<p>The LOD is located along the north side of River Road (MD 190), east of Dalyn Drive, in Potomac, Maryland. The surrounding area is observed to be semi-rural/suburban. Residential development of the area is observed to begin in 1959 and continued through 2012 when the surrounding area was observed to be developed in its current configuration. An active 2,000-gallon heating oil UST is present at a residence approximately 325 feet to the southeast of the LOD. No records associated with releases or cleanup in connection with the UST were identified. The UST is believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-4633</b>	<p>The LOD is located along the north side of River Road (MD 190), west of Beall Spring Road, in Potomac, Maryland. The surrounding area is observed to be primarily semi-rural/suburban. Residential development was observed to begin in 1981 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-4635</b>	<p>The LOD is located along the south side of River Road (MD 190), southwest of Travilah Road/Rivers Edge Drive, in Potomac, Maryland. The surrounding area is considered semi-rural/suburban. A housing complex is located to the southwest of the LOD. Several residential houses and open space surround the property to the north, south, and east. Residential development is observed to have begun around 1981 and continued through 1994, when the LOD and surrounding area were observed to be developed in their current configuration. An OCP case associated with a leaking 1,000-gallon heating oil UST at residential property is approximately 200 feet north of the LOD. Based on case documents provided by MDE, the UST was found to be leaking in 2014. Subsequently, the UST and approximately 40 tons of petroleum impacted soil were excavated and removed from the site in 2015. Additional investigations were conducted that included soil boring sampling and monitoring well installation. Free product up to 3.5 feet thick was identified in several of the monitoring wells as well as the residence's drinking water well. Thus, remediation was conducted that included several rounds of pumping out free product through, when the monitoring wells were abandoned with permission from MDE in 2016. Based on site investigation reports reviewed, the impacted area is isolated to the immediately southeast of the residence, northeast of the LOD, and is believed to not extend near or into the boundaries of the LOD. The case is still open, as MDE has requested that surrounding residence's drinking water wells be tested for the presence of petroleum constituents. Based on the information summarized above, impacts to the LOD unlikely.</p>
<b>WAS-4637</b>	<p>The LOD is located proximate to the northwest corner of the intersection of River Road (MD 190) and Smoky Quartz Lane, in Potomac, Maryland. The surrounding area is primarily residential. Residential development is observed to have begun prior to 1959 and continued through 2006 when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>
<b>WAS-4638</b>	<p>The LOD is located along the north side of River Road (MD 190), east of Swains Lock Road, in Potomac, Maryland. The surrounding area is primarily residential and forested land. Residential development was observed to begin around the 1950s and continued through 2006 when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>
<b>WAS-4639</b>	<p>The LOD is located along the north side River Road (MD 190), west of Swains Lock Road, and south of Swains Lock Terrace, in Potomac, Maryland. The surrounding area is primarily residential and forested land. Residential development was observed to begin around the 1950s and continued through 2006 when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>
<b>WAS-4640</b>	<p>The LOD is located on the south side of River Road (MD 190), east of Ardnave Place, in Rockville, Maryland. A small portion of the LOD extends to the north over River Road. The surrounding area is observed to be primarily residential. Residential development was observed to begin around 1988 and continue through 2006, when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>

<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-4641</b>	<p>The LOD is located along River Road (MD 190), between Ardnave Place and Marwood Hill Road, in Rockville, Maryland. The surrounding area was primarily developed as agricultural land up until 1988, when residential development began to occur. Residential development continued through 2006, when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>
<b>WAS-4642</b>	<p>The LOD is located along the north side of River Road (MD 190), between Tara Road and Daruish Lane, in Potomac, Maryland. The surrounding area was primarily developed as agricultural land up until the early 1980s, when residential development began to occur. Residential development continued up until approximately 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>
<b>WAS-4644</b>	<p>The LOD is located along the south side of River Road (MD 190), immediately east of Marwood Hill Road, in Rockville, Maryland. The surrounding area was primarily developed as agricultural land up until 1981, when residential development began to occur. Residential development continued through 2006, when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>
<b>WAS-4645</b>	<p>The LOD is located along River Road (MD 190), east of Daruish Lane in Potomac, Maryland. The surrounding area was primarily developed as agricultural land up until 1981, when residential development began to occur. Residential development continued through 2006, when the surrounding area was observed to be developed in its current configuration. Two sites with former or current UST were identified in the vicinity of the LOD. In 2007, an OCP case was opened during a residential heating oil tank closure at a property approximately 325 feet to the north of LOD. Impacted material was encountered during the removal of the UST, which was addressed and the case received closure from MDE approximately 3 months later. The second site of concern is associated with a residential property with a 3,000-gallon residential heating oil UST (installed in 1980) currently in use. The UST is located over 500 feet north of the LOD. Based on local topography both sites are believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-4646</b>	<p>The LOD is located along the north side of River Road (MD 190), west of Riverwood Drive, in Potomac, Maryland. The surrounding area was primarily developed as agricultural land up until 1981, when residential development began to occur. Residential development continued through 2005, when the surrounding area was observed to be developed in its current configuration. There are two sites were identified in the database report, in the vicinity of the LOD. In 2007, an OCP case was opened during a residential heating oil tank closure at a property approximately 220 feet to the north of LOD. Impacted material was encountered during the removal of the UST, which was addressed and the case received closure from MDE approximately 3 months later. The second site of concern is associated with a residential property with a 3,000-gallon residential heating oil UST (installed in 1980) currently in use. The UST is located over 535 feet north of the LOD. Based on local topography both sites are believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>

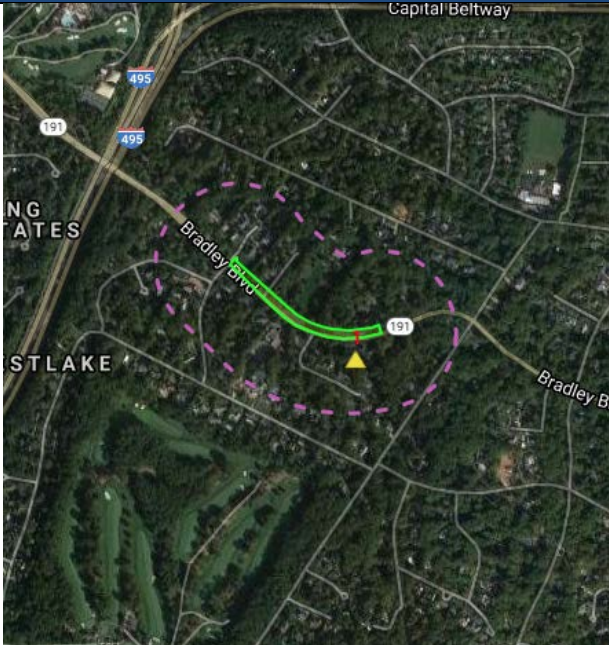
<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-4647</b>	<p>The LOD is located along the east side of River Road (MD 190), east of Sanding Landing Road, in Potomac, Maryland. The surrounding area was primarily developed as agricultural land up until 1981, when residential development began to occur. Residential development continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>
<b>WAS-4651</b>	<p>The LOD is located along the west side of River Road (MD 190), northwest of Potomac Manors Drive, in Rockville, Maryland. The surrounding area is primarily residential, with a school to the northeast and commercial development further to the southeast. Residential development is observed to begin prior to 1964 and continued through 2005, when the surrounding area is observed to be developed in its current configuration. A school located 185 feet from the LOD had a 10,000-gallon heating oil UST excavated and removed from the site in July 1995. Based on available records provided by MDE, after the UST had been removed from the ground, the soil interval below the grade of the bottom of the UST was checked for volatile organic compounds using a PID by an inspector from MDE. Readings ranged from 1 ppm to 28 ppm. Based on the PID readings, the inspector instructed the UST removal contractor to backfill the excavation and the case was officially closed approximately 2 months later. The school is also listed as having a RCRA permit; however, records state that the school has no current or previous violations associated with the handling and disposals of hazardous waste. All other sites with environmental concerns are believed to be located at least 480 feet crossgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-4653</b>	<p>The LOD is located along the east side of Falls Road (MD 189), north of Glenolden Drive, in Potomac, Maryland. The surrounding area is primarily residential with some commercial development to the south. Residential and commercial development is observed to begin by 1959 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>
<b>WAS-4655</b>	<p>The LOD is located along the north side of River Road (MD 190), immediately west of Newbridge Drive, in Rockville, Maryland. The surrounding area is primarily residential. Residential development is observed to begin prior to 1964 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>
<b>WAS-4656</b>	<p>The LOD is located along the north side of River Road (MD 190), immediately east of Newbridge Drive, in Rockville, Maryland. The surrounding area is primarily residential. Residential development is observed to begin prior to 1964 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>



<b>LOD ID</b>	<b><i>Low Risk LOD Table</i></b> <b><i>Ranking Rationales</i></b>
<b>WAS-4657</b>	<p>The LOD is located along the north side of River Road (MD 190), southeast of Newbridge Drive and northwest of Belle Terre Way, in Potomac, Maryland. The surrounding area is primarily residential. Residential development was observed to begin prior to 1964 and continued through 2005, when the surrounding area was observed to be developed similar to its current configuration. No records of concern in the vicinity of the LOD were identified during the environmental review.</p>
<b>WAS-4658</b>	<p>The LOD is located along the south side of River Road (MD 190), southeast of Newbridge Drive and northwest of Belle Terre Way, in Rockville, Maryland. The surrounding area is primarily residential. Residential development was observed to begin prior to 1964 and continued through 2005, when the surrounding area was observed to be developed similar to its current configuration. No records of concern in the vicinity of the LOD were identified during the environmental review.</p>
<b>WAS-4659</b>	<p>The LOD is located along the east side of Falls Road (MD 189), north of Winterset Drive, in Rockville, Maryland. The surrounding area is primarily residential developments. The surrounding area was primarily observed to be developed with agricultural properties up until the early 1970s, when residential development began to occur. Residential development continued in directions of the LOD up until approximately 2018, when the surrounding area was observed to be developed in its current configuration. A church located 485 feet of the LOD had one 4,000-gallon UST removed in 1997 and new 4,000-gallon UST was installed in its place. No impacted material was encountered during the closure of the former UST. A residential property located approximately 430 feet to the southeast had a residential heating oil UST excavated and removed from property in 1999. According to available records, impacted material was encountered and cleaned-up/ remediated. The case was closed 16 months later. Based on local topography, both sites are believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>
<b>WAS-4660</b>	<p>The LOD is located along the west side of Falls Road (MD 189), between Winterset Drive and Falls Chapel Way, in Rockville, Maryland. The surrounding area is primarily residential. Based on a review of historical imagery, the surrounding area was observed to be developed as agricultural land until the early 1970s, when residential development began to occur. Residential development continued in all directions of the LOD up until approximately 1988, when the surrounding area was observed to be developed in its current configuration. A residential property located approximately 615 feet to the southeast had a residential heating oil UST excavated and removed from property in 1999. According to available records, impacted material was encountered and cleaned-up/ remediated. The case was closed 16 months later. Based on local topography, the site is believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>

**ATTACHMENT D-4**  
**LOD-Specific Project Area Site Descriptions**

## Project Area Site Descriptions

LOD ID: WAS-1805	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of Bradley Boulevard (MD 191), southeast of Redwood Avenue	
City	Bethesda	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the north side of Bradley Boulevard (MD 191), southeast of Redwood Avenue, in Bethesda, Maryland. Residential properties surround the LOD in all directions. A golf course is located further to the south. I-495 is further to the west. Based on a review of historical imagery, the area surrounding area was primarily agricultural land and residential properties prior to 1937. Residential development continued in all directions of the LOD through 2005, when the surrounding area was observed similar to its current configuration. The Lay Women’s Association, approximately 95 feet to the south, was listed as having a minor air permit. Based on the type of environmental listing impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input checked="" type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

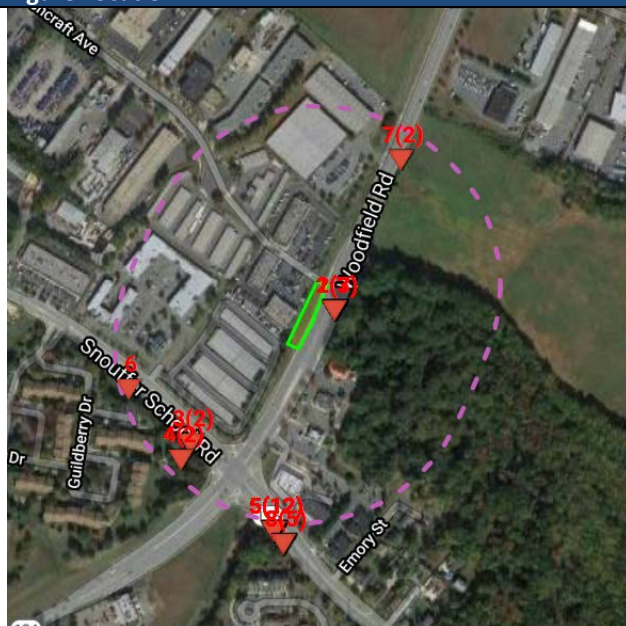
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	LAY WOMENS ASSOC. 7007 BRADLEY BOULEVARD	95	FINDS/FRS – The facility is listed with a minor air permit. No violations were identified during this review.	Low

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be primarily forested and agricultural land with some residential development intermixed throughout.	Aerial
1981	Residential development is observed in all directions. Commercial development is observed further to the north.	Aerial
2005	The surrounding area is observed to be developed similar to its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1981	Year: 2005
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-3305	<b>Site Rank:</b> Moderate	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	East side Woodfield Road (MD 124) between Snouffer School Road and Lindbergh Drive	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the west side of Woodfield Road (MD 124) between Snouffer School Road and Lindbergh Drive, in Gaithersburg, Maryland. The surrounding area is a mix of commercial and residential developments. Commercial and residential development is observed to begin prior to 1993. The surrounding area is in its current configuration by 2005. A shopping center adjacent to the LOD had a dry-cleaning facility approximately 150 feet southeast (potentially crossgradient) of the LOD, that historically utilized chlorinated solvents in their dry-cleaning operations. Based on a review of investigation summary reports and analytical soil and groundwater data provided by MDE through a PIA request, soil and groundwater in the immediate vicinity of the LOD is not believed to be impacted by the former dry-cleaner. The shopping center also had two former 550-gallon heating oil USTs that were excavated and removed from the site in 2005 and 2007. No impacts were identified with the UST removed in 2005; however, analytical data showed detected concentrations of TPH-DRO at 85 mg/kg, two feet below the grade of the UST (approximately 7 feet bgs) that was removed in 2007. Both USTs received closure from MDE. Based on this information, residual concentrations of petroleum constituents could be encountered within the limits of the LOD based on the proximity of the former USTs. Thus, further investigation may be warranted prior to any intrusive groundwork to determine whether or not impacted material is present within the boundaries of the LOD.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input checked="" type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input checked="" type="checkbox"/>	Gas Station	<input checked="" type="checkbox"/>
Dry-Cleaner	<input checked="" type="checkbox"/>	Auto Repair/Auto Pools	<input checked="" type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

SITE ID: WAS-3305-MODERATE



## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Air Park 124 LLC 18524 Woodfield Road Gaithersburg, Md	40	<p>OCP, UST – The site had two 550-gallon heating oil USTs excavated and removed from the site in 2005 and 2007. Based on available information, the two former USTs were located in the southeast corner of property, adjacent to Woodfield Road and directly adjacent to the LOD.</p> <p>In 2005, a 550-gallon heating oil UST was excavated and removed from the site. No perforations were observed on the UST and no impacted material was identified in the excavation. The MDE inspector onsite granted permission for the excavation to be backfilled and the case was closed in September 2005.</p> <p>In 2007, the second 550-gallon heating UST was excavated and removed from the site in March 2007. No elevated PID readings were recorded from screening of soil from the excavation, and the UST was free of perforations. Two soil samples were collected from two feet below the grade of the UST (approximately 7 feet bgs) and analyzed for TPH-DRO and VOCs. TPH-DRO was detected at 85 mg/kg in one sample and non-detect in the second sample. The excavation was backfilled and the case received closure four months later in July 2007. The site is believed to be crossgradient of the LOD.</p> <p>Based on the analytical results, residual concentrations of petroleum constituents could be encountered within the limits of the LOD based on the proximity of the former USTs. Thus, further investigation may be warranted prior to any intrusive groundwork to determine whether or not impacted material is present within the boundaries of the LOD.</p>	Moderate

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
2	Crystal Cleaners 18526 Woodfield Road Gaithersburg, Md	40	DRYCLEANERS, FED DRYCLEANERS, LUC, SHWS, DSHW – The site was formerly a dry cleaning plant approximately 40 feet northwest (potentially upgradient/crossgradient) of the LOD. In 2005, the site entered into the VCP program due to the possibility that the site has been impacted by drycleaning activities that have been conducted on the site since 1987. The site used PERC as its main solvent for dry cleaning. Four soil samples were collected from high priority areas, such as the solvent storage area, drains, washing machines, and entrances to the facility that solvents were brought in and out. The soil samples were analyzed for VOCs, all of which were non-detect and the site received a no further action determination from MDE in October 2005. Additionally, a Phase II site investigation was conducted in 2000 at a self-storage facility approximately 230 feet southwest of the LOD, due to its proximity to the drycleaners and several other OCP cases in the vicinity. Based on the analytical results, only low detections of toluene (5 ug/l) were detected in the groundwater samples. Based on the analytical data and information summarized above, it is not believed that the site has impacted soil and groundwater in the immediate vicinity of the dry cleaning facility or LOD. Currently, there are no land-use or groundwater restrictions imposed on the site.	Low
3	Self-Storage Zone 8001 Snouffer School Road Gaithersburg, Md	55	LUC, SHWS - Although the site is listed as 455 feet from the LOD, after further reviews, the site is approximately 55 feet from the LOD. A Phase II site investigation was conducted in 2000 at a self-storage facility southwest of the LOD, due to its proximity to the drycleaners and several other OCP cases in the vicinity. Based on the analytical results, only low detections of toluene (5 ug/l) were detected in the groundwater samples. Based on the analytical data and information summarized above, it is believed that the LOD and site have not been impacted by the former dry cleaning facility or OCP cases. The site received no further action from MDE in 2005 and no land-use or groundwater restrictions are currently imposed on the site.	Low
4	Qualex Inc 8010 Snouffer School Road Gaithersburg, Md	525	FINDS/FRS, RCRA CESQG – No violations noted during this review.	Low



## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
5	EXXON 7983 Muncaster Mill Road Gaithersburg, Md	445	<p>UST, OCP – Four USTs are currently in use at this location. All tanks are 10,000 gallons, three of which contain gasohol and one which contains diesel. There are four OCP cases associated with this facility. One case was for a compliance inspection while the other three cases all involve releases, two of which include cleanup actions.</p> <p>SPILLS – In 2015, an unknown amount of gasoline was spilled due to a leak in a secondary pipe. The product was released into a secondary containment. The line was shut down and serviced.</p> <p>Although the site is listed at 600 feet from the LOD, it is measured to be approximately 445 feet from the LOD. Based on local topography, the site is believed to be located crossgradient from the LOD.</p>	Low
6	COLORNET PRINTING & GRAPHICS INC 18630 WOODFIELD RD	600	FINDS/FRS, RCRA-CESQG – No violations were noted.	Low
7	Laytonia Auto Service 7979 Muncaster Mill Road Gaithersburg, Md	525	<p>RCRA SQG – There are no known violations associated with this facility.</p> <p>UST, OCP – Seven USTs previously operated at this site. All USTs are permanently out of use, five of which have been removed from the ground. Two OCP cases have been opened at this site. Both cases were opened during a tank closure. One case involved a release, but no cleanup actions are noted. Both cases have been closed.</p> <p>Although the site is listed at 645 feet from the LOD, it measures approximately 525 feet from the LOD. Based on local topography, the site is believed to be crossgradient from the LOD.</p>	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	Primarily rural agricultural land, some residential development to the southeast.	Aerial
1993	Commercial development to the west/northwest, additional residential development to the southwest.	Aerial
2005	Surrounding area observed in its current configuration.	Aerial



## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1993	Year: 2005
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-3601	<b>Site Rank:</b> Low
<b>Quadrant:</b>	NW
<b>Watershed:</b>	WAS
<b>Street Address/Nearest Cross Streets</b>	West side of Rockville Pike (MD 355), north of Edison Lane
<b>City</b>	Rockville
<b>County</b>	Montgomery
<b>Type of property</b>	ROW
<b>Ranking Rationale Site Summary</b>	
<p>The LOD is located along the west side of Rockville Pike (MD 355), north of Edison Lane, in Rockville, Maryland. The surrounding area is commercial, consisting mostly of office buildings and retail constructed in the 1970's and 1980's. The surrounding area was observed to be developed in its current configuration in the late 1980s. Three sites between 300 feet and 655 feet of the LOD, including a former mall and existing office buildings were identified as having former USTs with documented releases; however, after a review of available information provided by MDE through a PIA request any impacts are believed to be isolated to those properties or downgradient/crossgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>	

**Figure Location:**

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA - LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input checked="" type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input checked="" type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	11200 Rockville Pike LLC, CRI Building, 11200 Rockville Pike	300	Alt Fuels – This site is an electric fuel station.  OCP, UST – In 1998, a 500-gallon diesel UST was excavated and removed from the site based the findings of a Phase II ESA conducted at the site that identified detected concentrations of petroleum constituents in the surrounding soil; however, based on the investigation findings it was concluded that the impacts were isolated to the immediate area around the former UST. Based on observations from the removal of the UST, no odors or staining were observed in the excavation. The case received closure in 1999. The UST is believed to have been located on the western side (rear) of the facility, approximately 300 feet (crossgradient) of the LOD.	Low
2	Bertolinis Restaurant, Whitie Flint LP, White Fling 11301 Rockville Pike	665	FINDS/FRS, OCP, UST. This site has a single historic UST, a 275-gallon diesel tank that was installed in 1978 and removed in 1994. The 1994-1995 OCP case does not indicate a release or cleanup occurred. The site operates under a minor air permit. The facility appears to have been demolished around 2016/2017 and was at least 665 feet east (crossgradient) of the LOD.	Low
3	Bloomingtondales 11305 Rockville Pike	155	FINDS/FRS, RCRA CESQG. This site is a RCRA conditionally exempt small quantity generator of ignitable waste with no records of violation.	Low
4	Dynamac Corporation 11140 Rockville Pike	170	FINDS/FRS, FTTS Admin, FTTS Insp. This site has 1991-1993 Federal Insecticide, Fungicide, and Rodenticide Act and Toxic Substances Control Act Inspection and Administration violation records.	Low
5	Lincrest Furniture Co Inc, One Century Plaza 11300 Rockville Pike	300	OCP, UST. This site has one historic UST, a 300-gallon diesel tank installed in 1973 and removed in 1998. The 1998 OCP tank closure case indicated a release and cleanup occurred. It is believed that the former UST was at least 300 feet northwest (crossgradient) of the LOD.  HMIRS. Approximately 1-gallon heating oil was released during a delivery in 1998, the material was cleaned up and disposed of.  FINDS/FRS, RCRA NON GEN. The site is a RCRA non generator with no records of violation.	Low
6	Bowen & Kron @ White Flint Mall 11301 Rockville Pike	255	FINDS/FRS. This site is on the state master list due to performing wrecking and demolition work.	Low



## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
7	JBG – Security Lane – Rockville MD, Pacific Trade International, LLC, Security Lane, 5515, Whole Foods Market, Compass Realty, Rockwall 5515 Security Lane.	630	<p>Alt Fuels, FINDS/FRS, OCP. This site has two OCP tank closure cases; a 1996 case with release and cleanup and a 1997 case with a release but no cleanup.</p> <p>Pacific Trade International LLC is a Toxic Substances Control Act Submitter, Security Lane, 5515 operated under a minor air permit, and Whole Foods Market is on the state master list. The site is an electric fuel station.</p> <p>The site was listed as being 348 feet northwest (crossgradient) of the LOD; however, based on further review, the site and former UST are believed to be at least 630 feet northwest of the LOD.</p>	Low
8	Dryclean Expo, Dry Clean 11130 Rockville Pike	355	Drycleaners, Fed Drycleaners, FINDS/FRS, ICIS, RCRA SQG. This drycleaner is a RCRA small quantity generator of tetrachloroethylene and spent halogenated solvents with no records of violation. It operated under a minor air permit. The facility is believed to be at least 355 feet south (downgradient) of the UST.	Low
9	Rockville Pike, 11400 11400 Rockville Pike	400	FINDS/FRS. This site operated under a minor air permit, no violations concern were noted during this review.	Low
10	North Bethesda Medical Center, Ozer, Faruk T MD 11125 Rockville Pike #208	500	FINDS/FRS, RCRA SQG. This site is a RCRA small quantity generator of corrosive waste and silver with no records of violation. It operated under a minor air permit.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The LOD appears to be wooded. The surrounding area is rural, including scattered buildings, forest, and fields. Rockville Pike is visible and appears narrow than its current configuration, Edson Ln. can also be seen.	Aerial
1959 -1963	LOT appears unchanged. Rockville Pike appears to have been widened. Residential development visible to the south/southwest and southeast as well as a possible commercial building to the north.	Aerial
1971	LOD unchanged. Commercial development to the south and southwest.	Aerial
1981	LOD unchanged. New large-scale commercial development visible to the north and east (former mall), new commercial building visible to south.	Aerial

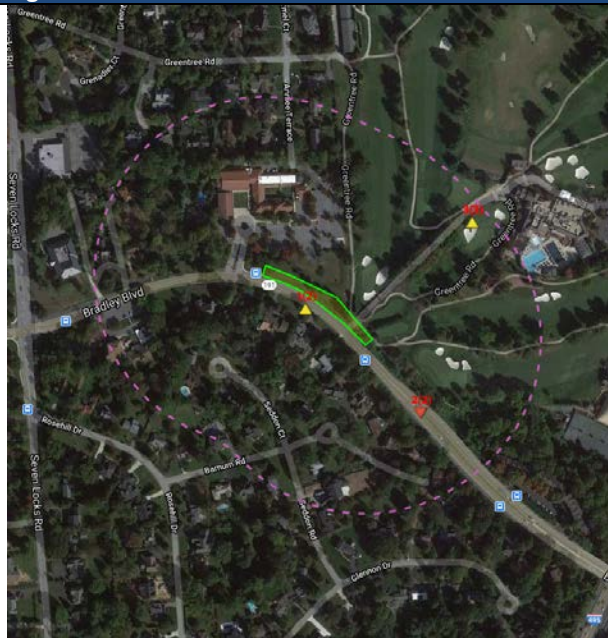
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1988	LOD appears to have been cleared in association with the office building located to the west, appears similar to existing conditions. Surrounding area generally unchanged.	Aerial
1998-2015	LOD unchanged. Surrounding area generally unchanged.	Aerial
2017-2018	LOD unchanged. Part of mall located to the east demolished and land cleared.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1935	Year: 1959	Year: 1981
		



## Project Area Site Descriptions

<b>LOD ID: WAS-3602</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	North side of Bradley Boulevard (MD 191), east of Seven Locks Road	
<b>City</b>	Bethesda	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW/Private	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along north side of Bradley Boulevard (MD 191), east of Seven Locks Road, in Bethesda, Maryland. The LOD is located south of the Bethesda Country Club and St George Orthodox Church, east of the intersection of the Bradley Boulevard and Seven Locks Road. The area is considered suburban. The LOD lies along the southern boundary of Bethesda Country Club that is listed as a delisted SHWS due to the potential that irritant gases were tested on a small area of the property around WWI. Regulators determined that no testing was required and no further action was warranted. Several USTs have been removed from the site, approximately 975 feet to the north. Thus, impacts to the LOD are unlikely.</p>		

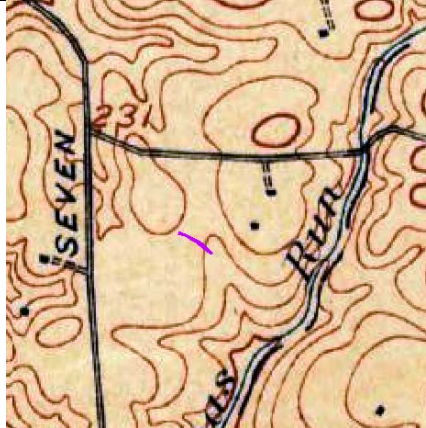
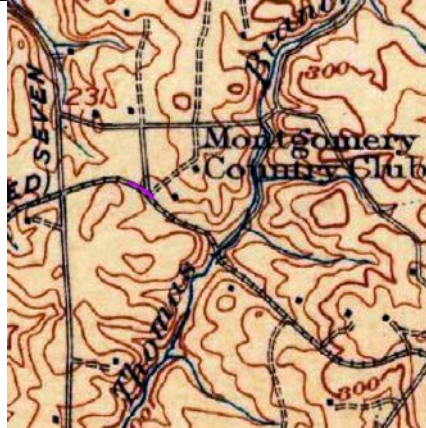

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input checked="" type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1, 2, 3	Bethesda Country Club 7601-7701 Bradley Boulevard	0	<p>SHWS, DSHW, ERNS – According to available information, there is a potential for a release of arsenic in soil due to testing adamsite candles during WWI. Adamsite is composed of diphenylaminochloroarsine, an arsenical and riot control agent. The site is a small parcel on the golf club property and since the test was not widespread over the entire property, regulators decided that sampling was not required and warranted no further action. The site is still documented by the MDE LRP program as BMI# MD1524.</p> <p>FINDS/FRS/ICIS – Minor air permit, NPDES permit non-major</p> <p>OCP, UST - In 1980, two 1,000-gallon gasoline/diesel USTs were removed in 2007. 2,000-gallon diesel ASTs installed in their place. A 2,000-gallon diesel and 550-gallon USTs excavated and removed in 1989 from the maintenance area (approximately 975 feet north of the LOD). No evidence of release was observed. PID readings were recorded at 0 ppm in the soil at the bottom of the excavation (approximately 9 ft bgs).</p>	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1908	The surrounding area is primarily undeveloped land.	Topo
1923	The adjoining property to the north is listed as Montgomery County Country Club. Additional roadways are observed to bisect the surrounding area.	Topo
1988	Residential development is observed to the south and west. Montgomery Country Club is observed to the north/east. I-495 is observed further to the east. The surrounding area is developed in its current configuration	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1908	Year: 1923	Year: 1988
		



## Project Area Site Descriptions

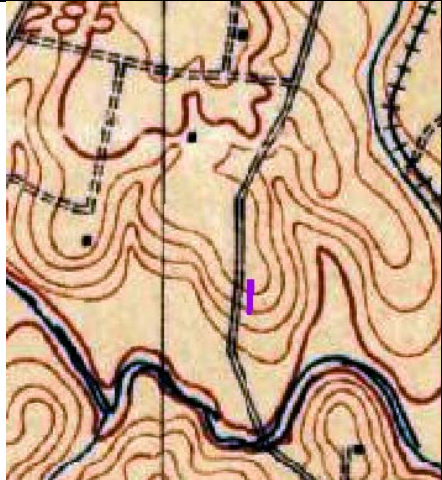


<b>LOD ID: WAS-3603</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b>
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	East side of Connecticut Avenue, north of Beach Drive	
<b>City</b>	Kensington	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the east side of Connecticut Avenue, north of Beach Drive, in Kensington, Maryland. Grace Episcopal Day School is located directly east of the LOD. Residential properties abut the LOD to the west and north. Forest land followed by I-495 is to the south. The school to the east, once had an 8,000-gallon heating oil (diesel #2) UST (installed in 1960), that was excavated and removed from the site in 1999. There was no release or clean-up associated with the excavated UST; therefore, the case received closure approximately 1 month later. Additionally, the site is believed to be crossgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

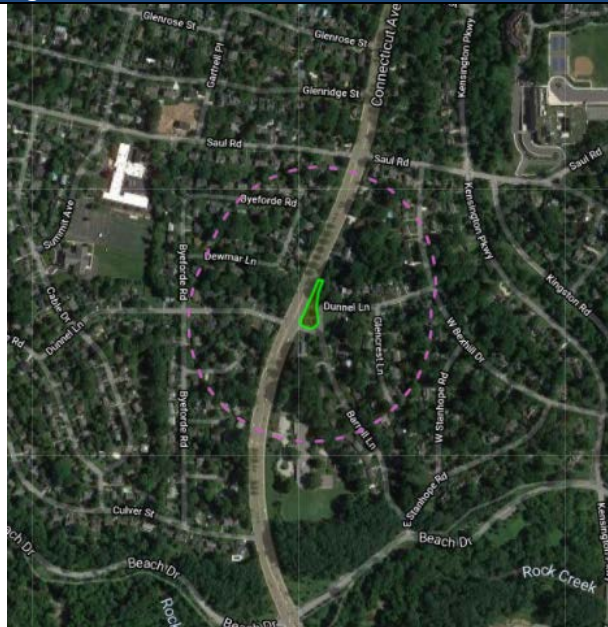
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Grace Episcopal Day School 9411 Connecticut Avenue	0	<p>UST, OCP – The site had an 8,000-gallon heating oil UST (installed in 1960) that was excavated and removed from the site in 1999. There was no release or clean-up associated with the excavated UST; therefore, the case received closure approximately 1 month later. Additionally, the site is crossgradient of the LOD.</p> <p>FINDS/FRS – The school also has an active air emissions permit, no violations of concern were noted during this review.</p>	Low

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1908	Vacant land, adjacent to Connecticut Avenue	Topo
1959	Vacant land, adjacent to recently constructed residential homes, as well as the school directly to the west	Aerial
1988	Surrounding area is developed in its current configuration	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1908	Year: 1959	Year: 1988
		

## Project Area Site Descriptions

LOD ID: WAS-3604	Site Rank: Low	<b>Figure Location:</b> 
Quadrant: NW	NW	
Watershed: WAS	WAS	
Street Address/Nearest Cross Streets	East side of Connecticut Avenue, west of Dunnel Lane	
City	Kensington	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located along the east side of Connecticut Avenue, west of Dunnel Lane, in Kensington, Maryland. Residential properties abut the LOD in all directions. Based on historical imagery, residential development began prior to 1959 and continue through approximately 1988, when the surrounding area was observed to be developed in its current configuration. No records of concern in the vicinity of the LOD were identified during the environmental review.		

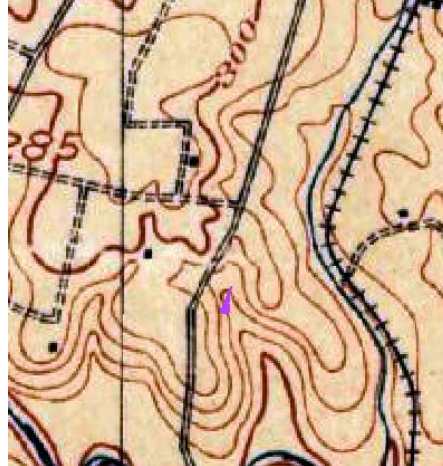


ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

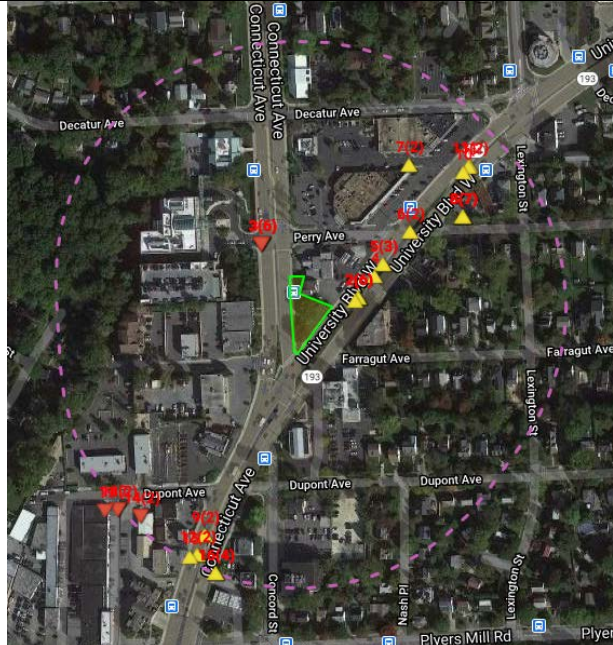
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1908	Vacant land, adjacent to Connecticut Avenue.	Topo
1959	Vacant land, adjacent to recently constructed residential homes	Aerial
1988	The surrounding area is observed to be developed in its current configuration.	Aerial



## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1908	Year: 1959	Year: 1988
		

## Project Area Site Descriptions

LOD ID: WAS-3612	Site Rank: Moderate	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	Intersection of Connecticut Avenue (MD 185) and University Boulevard (MD 193)	
City	Kensington	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located north of the intersection of Connecticut Avenue (MD 185) and University Boulevard (MD 193) in Kensington, Maryland. The LOD is surrounded by commercial development. Based on historical aerial and topographic maps, the LOD has never been developed. Development of the surrounding area began prior to 1959, with University Boulevard present and residential development in the surrounding areas. The LOD and surrounding area have been similar to their current configuration since 1988. Seventeen sites were identified within the vicinity of the LOD in the environmental database report. Six the of the sites were had listings related to active/ inactive USTs, OCP cases, and/or document spills, but were determined not be an environmental concern based on their proximity to the LOD or are believed to be either hydraulically crossgradient/ downgradient. The only site of concern identified in the database report is an active gas station, adjacent to the north of the with two gasoline USTs. On 2/10/15, a line test failure resulted in a release. According to records provided by MDE, the leak detector on the Premium STP was replaced on 11/16/15 after the old one failed a test. Testing of the system was successfully completed the same day. The site is registered with two active 12,000-gallon gasohol USTs installed on 7/1/1992; five former 4,000-gallon USTs installed in 1953 and removed on 8/3/1987; one 1,000-gallon used UST installed in 1953 and removed on 8/3/1987; and one 1,000-gallon UST of unknown contents installed in 1953 and removed on 8/3/1987. No information was available regarding the removal of the USTs in 1987. In June 2018, the two 12,000-gallon USTs were tightness tested and passed. Based on the proximity of the service station to the LOD and the lack of information regarding the UST closures in 1987, further investigation may be warranted prior to any intrusive groundwater to determine whether or not impacted material is present within the boundaries of the LOD.</p>		

## Project Area Site Descriptions

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input checked="" type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input checked="" type="checkbox"/>
Dry-Cleaner	<input checked="" type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1, 2	Econoway Service Station 3745 University Blvd W Kensington, MD 20895	55	FINDS/FRS, UST, SPILLS, ICIS – Adjacent to LOD. This site is a gasoline service station with two currently-in-use gasoline USTs. There was a line test failure that resulted in a spill on 2/10/15. According to records provided by MDE through a PIA request, the leak detector on the Premium STP was replaced on 11/16/15 after the old one failed a test. Testing of the system was successfully completed the same day. The site is registered with two active 12,000-gallon gasohol USTs installed on 7/1/1992. Former USTs include five 4,000-gallon USTs installed in 1953 and removed on 8/3/1987; one 1,000-gallon used UST installed in 1953 and removed on 8/3/1987; and one 1,000-gallon UST of unknown contents installed in 1953 and removed on 8/3/1987. No information was available regarding the removal of the USTs in 1987. In June 2018, the two 12,000-gallon USTs were tightness tested and passed.	Moderate
3	Kaiser Permanente 10810 Connecticut Ave Kensington, MD 20895	160	RCRA VSQG, OCP, UST, FINDS/FRS, HMIRS – Located crossgradient approximately 160 feet from the LOD, this listing is a VSQG for ignitable waste, corrosive waste, mercury, and phenol, with no violations found. A ground seep investigation and cleanup occurred from 3/23/1998 to 5/5/1999. There are two currently-in-use diesel USTs. On 7/2/1992, approximately 7 gallons of diesel spilled during tank filling. Based on local topography, this site is hydraulically downgradient of the LOD.	Low
4, 5	Kensington Cleaners 3731 University Blvd W Kensington, MD 20895	~350	FINDS/FRS, Dry Cleaners – Listed in the FINDS registry. Listed as an inactive dry cleaners. No violations found. Note: while the database mapped this facility at 220 feet from the LOD, actual distance is approximately 350 feet.	Low
6	Debonair Cleaners 3717 University Blvd W Kensington, MD 20895	340	RCRA VSQG, FINDS/FRS – Listed as a dry cleaner with no enforcement records. Note: while the database mapped this facility at 340 feet from the LOD, actual distance is approximately 550 feet.	Low
7	CVS Pharmacy 3715 University Blvd W Kensington, MD 20895	470	RCRA LQG, FINDS/FRS – Registered as a RCRA-LQG, no violations were noted during this review.	Low

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
8	Amoco Station 3700 University Blvd W Kensington, MD 20895	480	<p>RCRA SQG, OCP – A gasoline service station located cross-gradient from the LOD. The listing has 3 closed cases and two gasoline USTs currently-in-use. Based on a review of MDE files provided through a PIA request, a 550-gallon used oil UST and an 8,000-gallon gasoline UST were removed from the site in December 1991 and August 1993, respectively. Monitoring wells were installed in 1991 and free phase product was observed in MW-3 in 1992. Periodic groundwater and vapor recovery was conducted via enhanced fluid recovery. The associated case (92-1646 MO1) was closed by MDE on May 21, 1998.</p> <p>Three 10,000-gallon gasoline and one 1,000-gallon heating oil USTs were removed in December 2002. Although no staining was observed in the vicinity of the tanks, there were strong hydrocarbon odors detected, therefore, soil excavation was conducted to a depth of 17 feet. Similarly, contaminated soil was excavated to a depth of 6.5 feet at the northwest dispenser island and to 10 feet at the middle dispenser island. Petroleum-impacted soil had to be left in place at this location due to the proximity of the canopy foundation to the south and lack of clearance for overhead equipment. Post-excavation soil samples collected from beneath the USTs and product lines revealed the presence of BTEX, MTBE, naphthalene, TPH-DRO and TPH-GRO at the site, with maximum concentration detected beneath the middle product dispenser at approximately 10 feet deep. Approximately 196 tons of soil were removed from the site. Monitoring wells were installed and a small amount of free product was detected in the wells. Bailing and absorbent socks were initially used to remove the free product. Remediation consisting of surfactant injection and extraction was conducted and MDE subsequently granted closure of OCP case 2003-0596MO in December 2002 pertaining to the three 10,000-gallon gasoline USTs. MDE noted that groundwater sampling conducted at the site in March and April of 2003 exhibited concentrations of contaminants above cleanup standards; however, the concentrations are stable and the site and vicinity are served by public water. MDE also stated that residual petroleum contamination was still present at the site and could be exposed if future excavation in the former tank field occurs. Future construction should also evaluate the need to address potential vapor intrusion into indoor air. A hydrostatic test failure of dispenser sumps for dispensers 5/6, 7/8 and 9/10 was reported to MDE on 11/13/2018. However, there was no release of product. Based on local topography, this site is believed to be hydraulically crossgradient of the LOD.</p>	Low

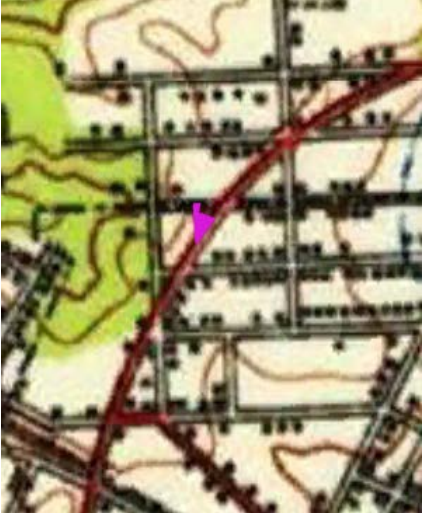


## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
9	Kelley's Auto Body 10644 Connecticut Ave Kensington, MD 20895	530	FINDS/FRS, ICIS – Listed as having an air permit, no violations were noted.	Low
10	Debonair Cleaners 3707 University Blvd W Kensington, MD 20895	570	FINDS/FRS – Listed as an inactive dry cleaner and laundry services site, no violations were noted.	Low
11	Debonair Cleaners 3705 University Blvd W Kensington, MD 20895	570	ICIS – The dry cleaner received two informal administrative violations.	Low
12	Photo Pro 10630 Connecticut Ave Kensington, MD 20895	590	FINDS/FRS – No violations were noted.	Low
13	Debonair Cleaners 3707 University Blvd W Kensington, MD 20895	570	FINDS/FRS, Dry Cleaners – Listed as an inactive dry cleaner and laundry services site, no violations were noted.	Low
14	Pembroke Service 3840 Dupont Ave Kensington, MD 20895	600	RCRA VSQG, FINDS/FRS – Listed as a RCRA-VSQG, no violations were noted.	Low
15	Tabb Property	600	OCP – Former code to indicate heating oil was spilled. The case opened on 1/23/1997 and as closed on 2/19/1997.	Low
16	Grease & Go	615	RCRA SQG, OCP, FINDS/FRS – Listing is a SQG for ignitable waste. A release was opened 4/28/1989 and closed on 4/23/1992 with another released recorded 8/15/1995 closed on 10/16/1995 for dumping.	Low
17	Mr. Wash-n-lube	630	OCP – The listing has a case opened on 3/25/1993 that was closed on 9/16/1993.	Low
18	Meineke Discount Mufflers	630	FINDS/FRS, RCRA VSQG – Is a VSQG for ignitable waste, no violations were noted	Low
19	Mr. Lube & Wash	660	FINDS/FRS – No violations were noted.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1944	University Boulevard is present with residential development in the surrounding areas.	Topo
1959 - 1981	LOD is vacant. University Boulevard and Connecticut Avenue are present with residential development in the surrounding areas.	Aerial
1988 - 2018	Increased commercial development in the surrounding areas relative to current configuration.	Aerial



## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1944	Year: 1959	Year: 1988
		

## Project Area Site Descriptions

<b>LOD ID: WAS-3613</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b>
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	South side of Democracy Boulevard, east of Taveshire Way	
<b>City</b>	Bethesda	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the south side of Democracy Boulevard, east of Taveshire Way, in Bethesda, Maryland. The surrounding area is a mix of residential and commercial developments. Residential and commercial development began prior to 1959 and continued through 1998, when the surrounding area was observed to be developed in its current configuration. The LOD is to the south across Democracy Boulevard from an indoor shopping center where there have been two closed OCP cases and several former USTs. All of these sites are located at least 500 feet from the LOD and are of low concern. There are also two sites within the shopping center that are RCRA CESQG and RCRA SQG, both with no records of violations. In addition to the shopping center, a gas station is located 515 feet from the LOD with several spills and closed OCP cases. Due to the distance of the gas station and its assumed downgradient location relative to the LOD, impacts to the LOD are unlikely from this sites, as well as the four sites listed in the environmental database report.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input checked="" type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

## Project Area Site Descriptions

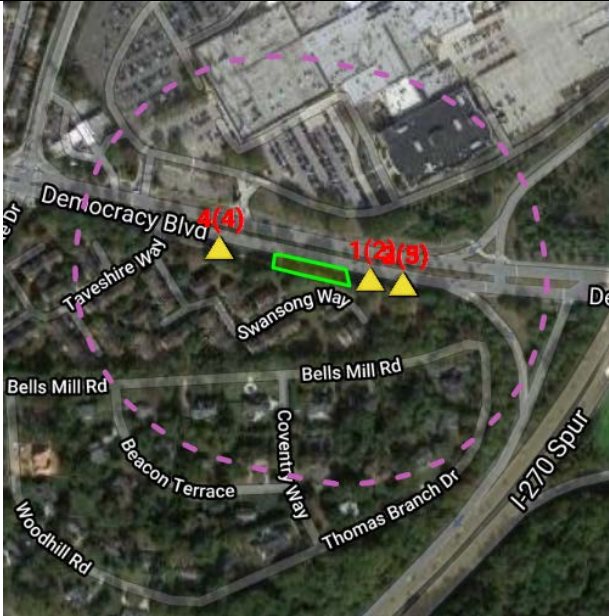
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Macy's East 7125 Democracy Boulevard Bethesda, MD	325	RCRA CESQG, SQG – No compliance violations associated with this facility were noted.  Although the site is listed as 70 feet from the LOD, it measures approximately 325 feet from the LOD.	Low
2	Nordstrom Inc. 7111 Democracy Boulevard Bethesda, MD	500	RCRA SQG – No compliance violations associated with this facility were noted.. Although the site is listed as 325 feet from the LOD, it measures approximately 500 feet from the LOD.	Low
3	Sears, Roebuck & Co. 7103 Democracy Boulevard Bethesda, MD	1,000	OCP – In 1998 an OCP case was opened for the removal of a heating oil tank. A release and cleanup action are documented. The case was closed within one year.  UST – There have previously been three USTs onsite. All tanks are permanently out of use and have been removed from the ground. The USTs included a 10,000-gallon heating oil tank, a 550-gallon used oil tank and a 5,000-gallon heating oil tank.  Although the site is listed as 430 feet from the LOD, it measures over 1,000 feet from the LOD.	Low
4	Sephora/ Slades Restaurant/ Garfinckels/ Montgomery Mall Shopping Center 7101 Democracy Boulevard Bethesda, Md	1,000	RCRA SQG – No compliance violations associated with this facility were noted.  OCP – In 1990, an OCP case was opened. It is unknown whether a release and cleanup actions occurred. The case was closed three years later.  UST – The site previously had a 110-gallon diesel UST which is now permanently out of use. The tank has since been removed from the ground.  Although the site is listed as 430 feet from the LOD, it measures over 1,000 feet from the LOD.	Low
5	EXXON/ Texaco/PEH/ Shell 10211 Westlake Drive Bethesda, Md	515	OCP – There have been five OCP cases opened at the site. Three cases involved releases and cleanup actions. In one case it is unknown whether a release and cleanup actions were taken. The last case did not involve a release. All five cases have been closed; the longest case was closed after eight years.  RCRA CESQG, NON GEN – No compliance violations associated with this facility were noted.  SPILLS – There have been three spills at the site, ranging from less than one cup to 15 gallons in size.  Based on local topography, the site is believed to be downgradient from the LOD.	Low

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be primarily developed as rural agricultural land.	Aerial
1959	Residential development is observed to the south of the LOD.	Aerial
1998	The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1959	Year: 1998
		

## Project Area Site Descriptions

LOD ID: WAS-3614	Site Rank: Low	Figure Location:
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	South side of Democracy Boulevard between I-270 and Westlake Drive	
City	Bethesda	
County	Montgomery	
Type of property	ROW	
Ranking Rationale Site Summary		
<p>The LOD is located along the south side of Democracy Boulevard, between I-270 and Westlake Drive, in Bethesda, Maryland. The surrounding area is a mix of commercial and residential buildings. Residential and commercial development is observed to begin prior to 1959 and continued through 1998, when the surrounding area was observed to be developed in its current configuration. The LOD is located to the south across Democracy Boulevard from an indoor shopping center where there has been two OCP closed cases and several former USTs on site. Although the addresses of the sites list the stores as 200 feet from the LOD, they both measure approximately 900 feet from the LOD and therefore are of low concern. Two additional sites are listed as RCRA SQG and RCRA CESQG with no known compliance violations. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Nordstrom Inc. 7111 Democracy Boulevard	110	RCRA SQG – No compliance violations associated with this facility were noted. Although the site is listed as 110 feet from the LOD, it measures 335 feet from the LOD.	Low



## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
2	Sears, Roebuck and Company 7103 Democracy Boulevard	900	<p>OCP – In 1998 an OCP case was opened for the removal of a heating oil tank. A release and cleanup action are documented. The case was closed within one year.</p> <p>UST – There have previously been three USTs onsite. All tanks are permanently out of use and have been removed from the ground. The USTs included a 10,000-gallon heating oil tank, a 550-gallon used oil tank and a 5,000-gallon heating oil tank.</p> <p>Although the site is listed as 200 feet from the LOD, it measures 900 feet from the LOD.</p>	Low
3	Sephora/ Slades Restaurant/ Garfinckels/ Montgomery County Shopping Center 7101 Democracy Boulevard	900	<p>RCRA SQG – No compliance violations associated with this facility were noted.</p> <p>OCP – In 1990, an OCP case was opened. It is unknown whether a release and cleanup actions occurred. The case was closed three years later.</p> <p>UST – The site previously had a 110-gallon diesel UST which is now permanently out of use. The tank has since been removed from the ground.</p> <p>Although the site is listed as 200 feet from the LOD, it is approximately 900 feet from the LOD.</p>	Low
4	Macy's East 7125 Democracy Boulevard	200	RCRA CESQG, SQG – No compliance violations associated with this facility were noted.	Low

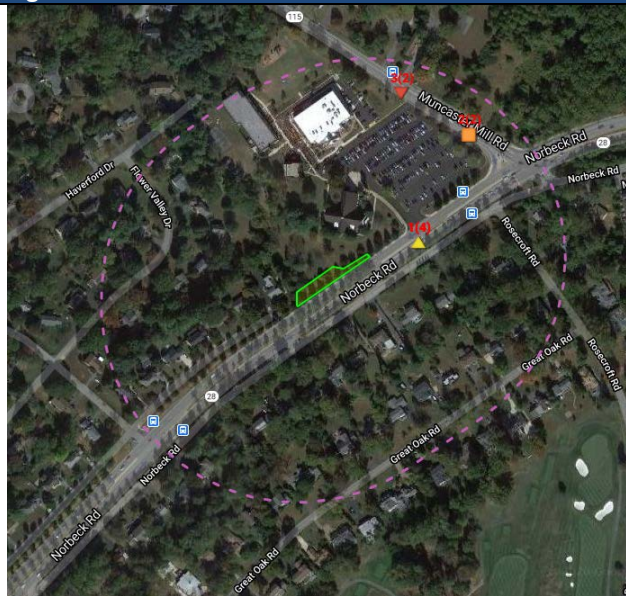
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be rural agricultural land.	Aerial
1959	Residential development is observed to the south of the LOD.	Aerial
1971	Commercial development is observed to the north of the LOD.	Aerial
1998	The surrounding area is observed to be developed in its current configuration.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1959	Year: 1971
		
Year: 1998		
		



## Project Area Site Descriptions

LOD ID: WAS-3615	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of Norbeck Road (MD 28), west of Muncaster Mill Road (MD 115)	
City	Rockville	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is a located along the north side of Norbeck Road (MD 28), west of Muncaster Mill Road (MD 115), in Rockville, Maryland. The LOD has remained vacant land since the 1950s; however, it is possible that a driveway associated with a rural residential dwelling formerly transected a portion of the LOD based on an aerial photograph from 1971. The LOD appeared to be in its current configuration by 1988. The surrounding area is primarily residential with St. Patrick’s Catholic Church to the north. The surrounding residential development is observed to begin in the 1950s. Development of the church to the north is observed to begin in 1971. The area is observed to be in its current configuration by 2013. Three sites within a 0.125-mile radius of the LOD were identified with closed OCP cases and removed heating oil USTs; however, all of these are located greater than 400 feet from the LOD and are believed to be hydraulically downgradient/ crossgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	St. Patrick's Catholic Church Rectory 4101 Norbeck Road, Rockville, MD, 20853	430	<p>OCP - An OCP case was opened on 8/9/2006 for a commercial heating oil tank closure. There was an associated release and cleanup and the site was granted closure on 10/12/2006.</p> <p>UST - The site is registered with one (1) 550-gallon heating oil UST, listed as permanently out of use, removed from the ground and closed on 8/9/2006. The installation date of the UST is not provided.</p> <p>ERIS notes this site to be located 175 feet east of the LOD, however, the building referenced appears to be located approximately 430 feet north of the LOD. This property is believed to be hydraulically down-gradient from the LOD.</p>	Low
2	MNCPPC 4011 Muncaster Mill Road, Rockville, MD 20853	570	<p>OCP - An OCP case was opened on 7/1/2015 for a commercial heating oil tank closure. There was an associated release and cleanup and the site was granted closure on 9/8/2015.</p> <p>UST – This site is registered with one (1) 1000-gallon heating oil UST, listed as permanently out of use, removed from the ground and closed on 7/1/2015. The installation date of the UST is not provided.</p> <p>This property is believed to be hydraulically cross-gradient from the LOD.</p>	Low
3	Norbeck Park 4101 Muncaster Mill Road, Rockville, MD 20853	605	<p>OCP - An OCP case was opened on 5/4/1998 for a heating oil tank removal. There was an associated release and cleanup and the site was granted closure on 11/17/1998.</p> <p>UST - The site is registered with one (1) 300-gallon heating oil UST, listed as permanently out of use, removed from the ground and closed on 5/4/1998. The installation date of the UST is not provided.</p> <p>This property is believed to be hydraulically cross-gradient from the LOD.</p>	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The LOD and surrounding area appear to be developed as agricultural land.	Aerial
1971	The LOD appears to be part of an agricultural and rural residential property with a portion of a driveway located on the LOD. The surrounding area appears to be developed as residential and agricultural properties.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1988	The LOD and surrounding area appear similar to 1971 aerial photograph with additional development of presumably the church and associated parking lot to the northeast of the LOD.	Aerial
2013	The LOD and surrounding area appear to be developed similar to their current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1971	Year: 1988
		
Year: 2013		
		

## Project Area Site Descriptions

LOD ID: WAS-3616	Site Rank: High
Quadrant:	NW
Watershed:	WAS
Street Address/Nearest Cross Streets	West side of Georgia Avenue (MD 97), north of Norbeck Road (MD 28)
City	Rockville
County	Montgomery
Type of property	ROW
Ranking Rationale Site Summary	
<p>The LOD is located on vacant/maintained ROW, west of Georgia Avenue (MD 97), north of Norbeck Road (MD 28), in Rockville, Maryland. The surrounding area is a mix of residential and commercial properties. Residential development is observed to begin prior to 1959. Commercial development is observed to begin in the 1960s. Development in the surrounding area continued through 2005, when the surrounding area is observed to be developed in its current configuration. The first site, a hardware/former service station approximately 75 feet south (downgradient) of the LOD, previously had 11 petroleum USTs ranging in size from 110-gallons to 550-gallon removed. In November 1989, six soil samples were collected in the vicinity of two 550-gallon gasoline USTs near the south end of the site in order to evaluate potential petroleum contamination. Noticeable petroleum odors were noted in the field during the investigation. Soil samples were analyzed for TPH and BTEX which confirmed the presence of soil contamination near the tanks as well as along the south edge of the property, which may be due to an off-site source. It was the owner's position that the contamination was primarily due to an Exxon station formerly located in the current location of Route 28. There were no additional MDE records indicating how the soil contamination was addressed. In November 1995, two 290-gallon motor oil tanks, two 110-gallon motor oil USTs, two 550-gallon gasoline USTs and one 280-gallon kerosene UST were excavated and removed were excavated and removed from the site. PID readings from the excavation ranged from 10 and 500 ppm. No free product was encountered and the on-site MDE inspector approved backfilling of the excavation. No free product was encountered and the on-site MDE inspector approved backfilling of the excavation. No further work was required. Based on the information summarized above and the absence of any post-excitation analytical data to indicate otherwise, it is possible that residual concentrations of petroleum constituents could be encountered within the limits of the LOD. The second site of significant concern, an automotive sales business and tire repair shop located directly north (crossgradient) of LOD, has</p>	

Figure Location:



## Project Area Site Descriptions

<p>one closed OCP case that was opened in February 1991 and closed April 1992. Based on the information provided by MDE, a 275-gallon kerosene UST was removed on 2/28/91. The tank was approximately 40 years old and had not been used for 20 years. Upon removal, one perforation was discovered at the top of the tank. Soil screening identified a very light odor in the soil; therefore, soil was excavated from several feet below the depth of the tank and PID readings at that depth were under 50 ppm. The onsite MDE inspector granted permission to backfill the excavation site. Based on the information summarized above and the absence of any post-excavation analytical data to indicate otherwise it is possible that residual concentrations of petroleum constituents could be encountered within the limits of the LOD. Thus, further investigation may be warranted prior to any intrusive groundwork to determine whether or not impacted material is present within the boundaries of the LOD.</p>	
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ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA - LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input checked="" type="checkbox"/>
Dry-Cleaner	<input checked="" type="checkbox"/>	Auto Repair/Auto Pools	<input checked="" type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	L.W. White & Son Inc. 15508 Georgia Avenue, Rockville, MD, 28053	75	<p>This hardware and former gasoline station is registered with the following eleven (11) permanently out of use USTs closed on 11/20/1995:</p> <ul style="list-style-type: none"> <li>- Six (6) 550-gallon gasoline USTs installed on 1/1/1966;</li> <li>- Two (2) 110-gallon used oil USTs installed on 1/1/1964;</li> <li>- A 280-gallon kerosene UST installed on 1/1/1966; and</li> <li>- Two (2) 290-gallon used oil USTs, installation dates are not provided.</li> </ul> <p>An OCP (90-0633MO) case was opened on 12/5/1989 and closed on 12/19/1995. Based on information provided by MDE via a PIA request, the case is associated with the UST closures.</p> <p>In November 1989, six soil samples were collected in the vicinity of two 550-gallon gasoline USTs near the south end</p>	Moderate

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	L.W. White & Son Inc. 15508 Georgia Avenue, Rockville, MD, 28053 (Cont.)	75	<p>of the site in order to evaluate potential petroleum contamination. The investigation was conducted in response to a warning notice issued by MDE in October 1989 since the tanks were not in use. Noticeable petroleum odors were noted in the field during the investigation. The soil samples were analyzed for TPH and BTEX. Analytical results confirmed the presence of soil contamination near the tanks as well as along the south edge of the property, which may be due to an off-site source. It was the owner's position that the contamination was primarily due to an Exxon station formerly located in the current location of Route 28. There were no additional MDE records indicating how the soil contamination was addressed.</p> <p>MDE subsequently advised the property owner that out of use tanks must be removed or abandoned in place and active tanks must be tested. MDE files indicate that in November 1995, two 290-gallon motor oil tanks were excavated, cut up on site and removed. Soil around the excavation was scanned with a Microtip meter and found to measure between 10 and 90 ppm. Soils beneath the tanks ranged from 28 to 30 ppm. In addition, two 110-gallon motor oil USTs, two 550-gallon gasoline USTs and one 280-gallon kerosene UST were excavated and removed. Microtip readings reached up to 500 ppm near fill pipes and 300 ppm under the tanks, and dropped to below 100 ppm further away. No free product was encountered. The on-site State inspector approved backfilling of the excavation and no further work was required. Based on the information summarized above and the absence of any post-excavation analytical data to indicate otherwise, it is possible that residual concentrations of petroleum constituents could be encountered within the limits of the LOD.</p> <p>Based on the local topography, the property appears to be hydraulically down-gradient from the LOD.</p>	Moderate
2	Norbeck Sales 15520 Georgia Ave, Rockville, MD 28053	15	<p>Based on aerial imagery, it appears this property is used as an automotive sales business and tire repair shop; however, no additional ERIS records were identified.</p> <p>An OCP case (91-1698MO) was opened on 2/28/1991 and closed on 4/20/1992. Based on the information provided by MDA through a PIA request, a 275-gallon kerosene UST was removed on 2/28/91. The tank was approximately 40 years old and had not been used for 20 years. Upon removal, one perforation was discovered at the top of the tank. The soil was scanned with an PID meter and levels were found to be acceptable to the on-site State inspector. However, a very light odor was detected in the soil, therefore, soil was excavated from several feet below the depth of the tank</p>	High

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
2	Norbeck Sales 15520 Georgia Avenue, Rockville, MD 28053 (Cont.)	15	<p>and PID readings at that depth were under 50 ppm. The State inspector granted permission to backfill the excavation site. Based on the information summarized above and the absence of any post-excavation analytical data to indicate otherwise, it is possible that residual concentrations of petroleum constituents could be encountered within the limits of the LOD.</p> <p>This property abuts the LOD to the north, however, the operations taking place are expected to be hydraulically crossgradient from the LOD.</p>	High
3	Sassy Dry Cleaners 4011 Norbeck Road, Rockville, MD 20853	200	DRYCLEANER, ICIS, RCRA-VSQQ – The site is registered as an inactive dry cleaner and RCRA very small quantity generator with no violations. The site is believed to be downgradient of the LOD.	Low
4	ICC Intersection Norbeck Road and Georgia Avenue, Rockville, MD	385	The intersection of Norbeck Road and Georgia Avenue is registered with a 1,000-gallon UST with unknown contents and unknown installation date. The UST is reported to be permanently out of use and removed from the ground with a closure date of 12/6/2010.	Low
5	Citgo Gas Station 15450 Georgia Avenue, Rockville MD, 20853	475	<p>The site is an active gas station with a 15,000-gallon diesel UST, two (2) 15,000-gallon gasohol USTs and an 8,000-gallon gasohol UST, all installed on 6/1/2014.</p> <p>The following additional tanks were formerly located on the site but are reported as permanently out of use and removed from the ground: Two (2) 3,000-gallon gasoline USTs installed on 5/1/1968, closed on 11/1/1989; Two (2) 4,000-gallon gasoline USTs installed on 5/1/1968, closed on 11/1/1989; A 1,000-gallon used oil UST installed on 5/1/1968, closed on 11/27/1989; A 1,000-gallon heating oil UST installed on 5/1/1968, closed on 11/27/1989; A 6,000-gallon gasoline UST installed on 5/1/1975, closed on 11/1/1989; A 10,000-gallon diesel UST installed on 11/1/1989, closed on 4/14/2014; and Two (2) 10,000-gallon gasohol USTs installed on 11/1/1989, closed on 4/14/2014.</p> <p>1987 - An OCP case was opened due one of the UST failing a tank tightness test. Records do not indicate any product was released.</p> <p>1989 – Two (2) 3,000-gallon gasoline USTs were excavated and removed from the site. The MDE inspector observed strong odors in soils down to 11 ft bgs and requested that an observation well be installed near the excavation. Impacted soils were disposed offsite. Records do not state whether the well was installed or sampled.</p> <p>1996 – An OCP case was opened due to a complaint that vegetation and trees around the gas station appeared to be</p>	Low



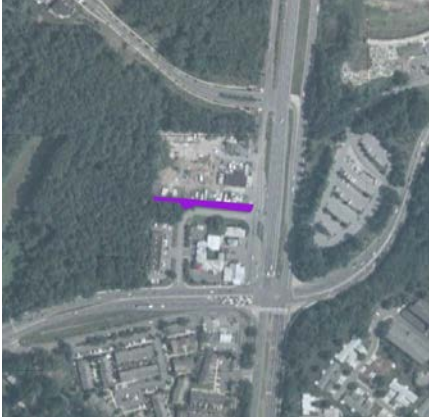


## Project Area Site Descriptions

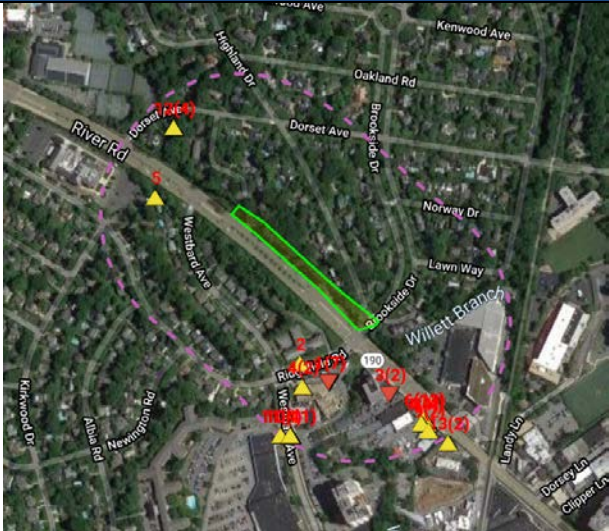
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
5	Citgo Gas Station 15450 Georgia Avenue, Rockville MD, 20853 (cont.)	475	<p>stressed. The MDE inspector found indications of a release and the case was closed.</p> <p>2014 – Three 10,000-gallon petroleum UST was excavated and removed from the site, along with approximately 1,000 tons of impacted soil. Confirmation samples collected from the excavation revealed elevated levels of several petroleum constituents above MDE's non-residential cleanup levels. Subsequently nine soil borings were advanced to 30 to 40 feet bgs, eight of which were then completed as temporary monitoring wells. Results of the soil and groundwater investigation identified detected concentrations of various VCOs, TPH-GRO/DRO above MDE non-residential cleanup standards. Subsequently, permanent monitoring wells and continue to be sampled quarterly. According to the analytical data from January 2019 quarterly sampling report for the monitoring well (MW1) closest to the LOD, 145 feet to the northwest (upgradient), detected concentrations of benzene (4,300 ug/l) , ethylbenzene (2,310 ug/l), MTBE (661 ug/l), naphthalene (570 ug/l), toluene (15,100 ug/l), Xylenes (5,410 ug/l), THP-GRO (24.0 mg/l) and TPH-DRO (5.35 mg/l) all greatly exceed their corresponding MDE regulatory action levels. The groundwater plume is not drawn beyond the boundaries of the site; however, based on the current plume boundaries and that the LOD is hydraulically upgradient of the site. Thus impacts to the LOD are unlikely.</p>	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The LOD and surrounding area appear to be used for agricultural and residential purposes. West side of Georgia Avenue appears to be undeveloped/forested land.	Aerial
1981	The LOD appears to be in its current configuration. The land abutting the LOD to the north appears to have disturbed ground. Commercial development observed to the south and west of the LOD.	Aerial
2005	The LOD and surrounding area appear to be similar to the present-day configuration.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		

## Project Area Site Descriptions

LOD ID: WAS-3617	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	East side of River Road, north of Brookside Drive	
City	Chevy Chase	
County	Montgomery	
Type of property	ROW	
Ranking Rationale Site Summary		
<p>The LOD is located along the east side of River Road (MD 190), immediately north of Brookside Drive, in Chevy Chase, Maryland. The surrounding area is a mix of commercial and residential developments. Commercial and residential development began prior to 1960, and is observed in its current configuration by 1963. Numerous sites listed on one or more environmental database were identified in the surrounding area. The most significant is a large redevelopment project occurring to the south/southwest, which encompasses multiple properties listed on either the DRYCLEANERS, UST, OCP, SHWS, VCP, LRP and/or RCRA Generator databases. Multiple Phase I and Phase II investigations associated with this large redevelopment project included an area covering a retirement center, located approximately 260 feet west of the southern portion of the LOD, along with a professional building to the southwest that includes a dry cleaner, two gas stations, and a large shopping center further to the southwest. The project entered into the MDE VCP program in 2014. Environmental investigations have detected petroleum and chlorinated constituents in soil and groundwater samples above MDE cleanup standards. The impacted areas are located to the south/southwest of the LOD, which is hydraulically crossgradient based on groundwater flow direction. Further, the investigations have determined the soil and groundwater in the vicinity of the Westwood Retirement Center, located directly west of the LOD, have not been impacted. Based on this, impacts to the LOD from these facility appears unlikely. The remaining facilities, which included four dry cleaners, two gas stations, and illicit spills/releases, are located between 260 feet and 615 feet from the LOD, and are believed to either be hydraulically downgradient of the LOD, or upgradient, but hydraulically disconnected from the LOD by a stream. Thus, impacts to the LOD from these remaining facilities is unlikely.</p>		

## Project Area Site Descriptions

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input checked="" type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input checked="" type="checkbox"/>	Gas Station	<input checked="" type="checkbox"/>
Dry-Cleaner	<input checked="" type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Westwood Cleaners 5110 Ridgfield Road Bethesda, Md	215	<p>DRYCLEANERS, RCRA CESQG, SHWS, VCP – The site entered into the MDE VCP program in 2014 due to historical dry cleaning activities conducted as the site. Based on available data, no impacted soil was identified at the site.</p> <p>UST, OCP – In 1999, a 300-gallon diesel UST was excavated and removed from the site. Available records state that no impacted material was encountered during the removal of the UST and no clean-up/remediation was required. The OCP case was closed approximately one month later.</p> <p>Based on anticipated groundwater flow direction, this site is crossgradient of the LOD.</p>	Low
1, 2, 4	<p>Westwood Cleaners 5110 Ridgfield Road Bethesda, Md;</p> <p>Westwood Retirement Home 5101 Ridgewood Road Bethesda, Md,</p> <p>Springhouse by Manor Care, Westbard Citgo I, Westbard Citgo II 5101 Ridgfield Road and 5335 Westbard Avenue Bethesda, Md</p>	200 to 650	<p>FINDS/FRS, DRYCLEANERS, RCRA CESQG, UST, OCP, SHSW, VCP, LRP – Based on information provided by MDE, this site is being assessed as a large development project southwest of the LOD. Multiple Phase I and Phase II investigations have been conducted for the retirement center, approximately 260 feet west of the southern portion of the LOD, along with the professional building to the southwest that includes Westwood Cleaners, two Citgo gas stations, and a large shopping center further to the southwest. The site entered into the MDE VCP program in 2014. Environmental investigations of the area have been ongoing since 2013, which have detected concentrations of petroleum and chlorinated constituents in soil and groundwater samples above MDE residential and non-residential cleanup standards. The areas of impacts are located to the south/southwest (crossgradient) of the LOD, based on groundwater flow direction. Additionally, the documents state that soil and groundwater in the vicinity of the Westwood Retirement center, located directly west of the LOD, have not been impacted.</p>	Low
3	5272 River Road Bethesda, Md	260	<p>OCP – In 2003, an OCP case was opened during a tank closure. There was no documented release or cleanup efforts. The LOD is downgradient and hydraulically separated from the site by a stream.</p>	Low

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
5	Fourth Presbyterian Church/ 5500 River Road Bethesda, Md	420	FINDS/FRS – Minor air permit, no violations were noted.	Low
6	Microbiological Associates 5221 River Road Bethesda, Md	575	<p>SHSW, VCP, LUC, RCRA, SQG – According to available information of MDE’s LRP website, the facility was a biological research laboratory from the from the 1960s through 1996. Site investigations in 1996, identified elevated levels of chlorinated solvents including PCE, TCE, 1,1,1-TCA, and DCE in soil and groundwater onsite. In 1998, the site was accepted into the MDE VCP program and was issued a no further action determination approximately 3 months later that stipulated that land-use controls would be imposed on the site. The land-use controls included restrictions on residential use of the site and that impacted material that had been identified onsite could be to be left in place, but soil and groundwater could not be used and/or disturbed without permission from MDE.</p> <p>OCP, UST – Historically, there have been two USTs at the site, a 1,000 gallon heating oil tank and a 6,000 gallon heating oil tank. The 1,000 gallon UST was removed from the ground while the 6,000 gallon UST was closed in place. Five OCP cases opened at the site with at least one involving a known release and cleanup efforts. All cases were closed within two years.</p> <p>Based on local topography the site is believed to be located downgradient from the LOD and is hydraulically disconnected from the LOD by a stream.</p>	Low
7	Valley Cleaners 5238 River Road Bethesda, Md	460	FED DRYCLEANERS, DRYCLEANERS, RCRA SQG – The drycleaners is currently listed as inactive. There are no known compliance violations associated with this facility. Based on local topography the site is believed to be located downgradient from the LOD and is hydraulically disconnected from the LOD by a stream.	Low
8	Kenwood Station Taylor 5233 River Road Bethesda, Md	475	FED DRYCLEANERS, DRY CLEANERS – The dry cleaner is currently listed as inactive. Based on local topography the site is located downgradient from the LOD and is believed to be hydraulically disconnected from the LOD by a stream.	Low
9	The Roof Center 5244 River Road Bethesda, Md	510	OCP – In 1991, an OCP case was opened and closed within six months. It is unknown whether a release and cleanup activities occurred. Based on local topography the site is believed to be located downgradient from the LOD and is hydraulically disconnected from the LOD by a stream.	Low


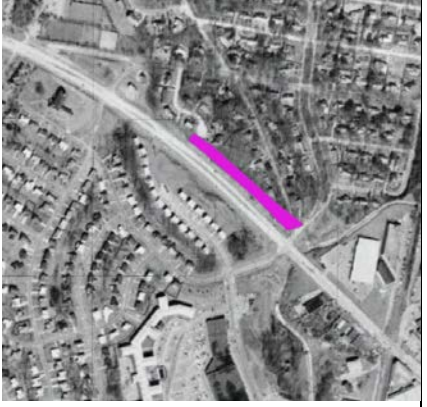

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
10	Citgo Gas Station 5471 Westbard Ave Bethesda, Md	550	<p>SPILLS – In 2017, an unknown amount of gasoline was released due to a truck striking a gas station pump and breaking several feet of fiberglass pipe. The UST was not leaking.</p> <p>UST, OCP– Historically, six USTs at this site. Currently, four 10,000 gallon gasohol USTs in use and two USTs permanently out of use. The two permanently out of use USTs have been removed from the ground. There have been five OCP cases opened at the site. At least two cases included a release and cleanup efforts. All cases were closed within three years and two months.</p> <p>RCRA SQG – No compliance violation associated with this facility were noted.</p> <p>Based on local topography the site is located downgradient from the LOD.</p>	Low
11	Fashion Craft Cleaners 5448 Westbard Avenue Bethesda, Md	580	FED DRYCLEANERS, DRYCLEANERS, RCRA SQG – Inactive dry cleaner. No known compliance violations were noted. Based on local topography the site is located downgradient from the LOD.	Low
12	5500 Dorset Avenue Bethesda, Md	585	SPILLS – In 2013, an unknown amount of chemical was spilled into the stream. Based on local topography the site is believed to be located upgradient from the LOD, however the site is hydraulically disconnected from the LOD by a stream.	Low
13	Minkoff Co Inc 5223 River Road Bethesda, Md	615	UST, OCP – Historically the site has had two USTs that are now permanently out of use. One tank was an 8,000 gallon tank containing gasoline while the other was a 10,000 gallon tank containing diesel. Both tanks have been removed from the ground. In 1995, an OCP case was opened involving well/groundwater contamination with motor oil. The case was closed over 15 years later. Based on local topography the site believed to be downgradient from the LOD and is hydraulically disconnected from the LOD by a stream.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1960	Residential properties are observed in all directions of the LOD. Commercial properties are observed to the southeast and northwest of the LOD.	Aerial
1963	Additional residential development is observed to the south of the LOD.	Aerial
1971	The surrounding area is observed to be developed in its current configurations.	Aerial

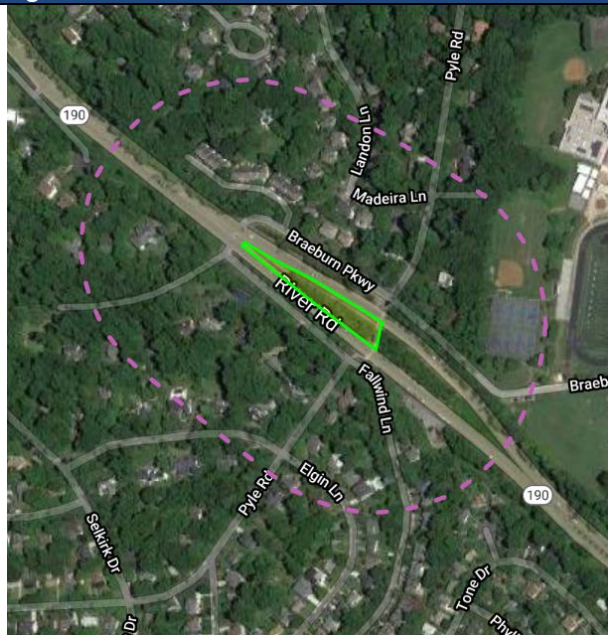


## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1960	Year: 1963	Year: 1971
		



## Project Area Site Descriptions




LOD ID: WAS-3618	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	Median between River Road (MD 190), south of Braeburn Parkway	
City	Bethesda	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located along the central of River Road (MD 190), south of Braeburn Parkway, in Bethesda, Maryland. The surrounding area is primarily residential. Residential development is observed to begin prior to 1960 and continued through 1981, when the surrounding area is observed to be developed in its current configuration. No records of concern in the vicinity of the LOD were identified during the environmental review.		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1960	Residential development is observed to the south of the LOD.	Aerial
1971	Additional residential development is observed to the east of the LOD.	Aerial
1981	The surrounding area is observed to developed in its current configuration.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1960	Year: 1971	Year: 1981
		

## Project Area Site Descriptions

<b>LOD ID: WAS-3622</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b>
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	East of the intersection of Goldsboro Road (MD 614) and Massachusetts Avenue (MD 396)	
<b>City</b>	Bethesda	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW/private	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located east of the intersection of Goldsboro Road (MD 614) and Massachusetts Avenue (MD 396), in Bethesda, Maryland. The surrounding area is primarily residential developments. Development of the surrounding area is observed to begin by 1960. The surrounding area is observed to be in its current configuration by 1994. Two OCP cases have been opened in the vicinity of the LOD. However, both cases have been closed and are located over 300 feet crossgradient from the LOD. Thus, impacts to the LOD are unlikely.</p>		




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Argyle Middle School 8511 Massachusetts Ave Bethesda, MD	0	FINDS/FRS, ICIS – Enforcement/compliance activity, most likely asbestos abatement. No releases to the environment were noted during this review.	Low
2	Stewart Seides Residence 4 Buttonwood Lane Bethesda, MD	310	OCP – In 2003, an OCP case was opened for a tank closure. A release and cleanup actions occurred. The case was closed three years later. Based on local topography, the site is located crossgradient from the LOD. Therefore, impacts to the LOD are unlikely	Low

## Project Area Site Descriptions

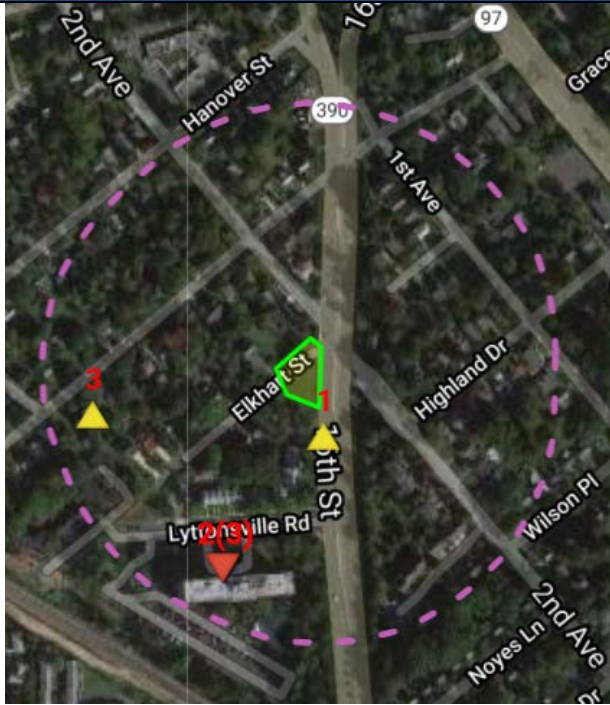
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
3	Pepco 6311 Avalon Drive Bethesda, MD	465	OCP – In 1997, an OCP case was opened due to soil contamination from residential heating oil. A release occurred and the case was closed the next day. Based on local topography, the site is located crossgradient from the LOD. Therefore, impacts to the LOD are unlikely	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1960	Forested land is observed to the north, while residential development is observed to the south of the LOD.	Aerial
1971	A large commercial structure is present east of the LOD.	Aerial
1994	Additional residential development is observed to the north of the LOD. The surrounding area is observed to be in developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1960	Year: 1971	Year: 1994
		



## Project Area Site Descriptions

<b>LOD ID:</b> WAS-3625	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Intersection of Elkhart Street and 16 <sup>th</sup> Street (MD 390)	
<b>City</b>	Silver Spring	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located on the west side of the intersection of 16<sup>th</sup> Street, and Elkhart Street (MD 390), in Silver Spring, MD. Elkhart Street traverses the northwestern portion of the LOD. The remainder of the LOD consists mostly of grass and is surrounded by residential development. The surrounding area has been developed since at least the 1930s. Additional commercial development was observed to the south in the 1960s. By the 1980s, the surrounding area was observed to be developed similar to its current configuration. There were three sites identified within the environmental database search. Based on a review of available information the sites are not believed to have impacted the LOD based on their proximity to the LOD and/ or type of environmental database listing associated with them.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>



DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	8900 16 <sup>th</sup> Street Silver Spring, MD	15	FINDS/FRS. Apartment building operating under a minor air permit, no violations were noted.	Low
2	Park Sutton Condominium 1900 Lyttons Rd Silver Spring, MD	425	FINDS/FRS. Apartment building operating under a minor air permit, no violations were noted.  OCP, UST. One 15,000-gallon heating oil UST installed in 1972 and removed in 1992. An OCP case was opened in 1991 and closed in 1992, release and cleanup activities were not reported. Property operates under a minor air permit.	Low

SITE ID: WAS-3625-LOW

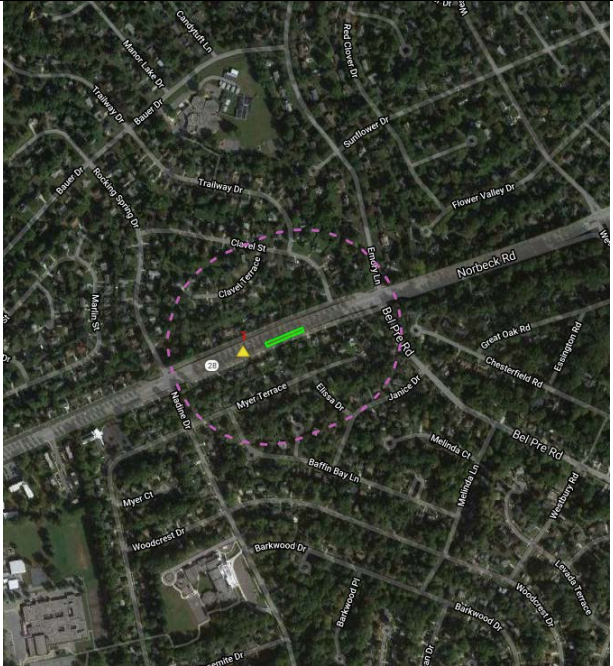
## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
3	P L Fitz Residence 1922 Grace Church Rd Silver Spring, MD	515	OCP. Case opened in 2018 due to residential heating oil tank closure. There was a release and cleanup and the site was granted closures in 2019.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	LOD appears wooded rather than grassy. Residential development to the west; Elkhart Street and 2 <sup>nd</sup> Avenue visible. 16 <sup>th</sup> Street south of 2 <sup>nd</sup> Avenue not visible; visible north of 2 <sup>nd</sup> Avenue but narrower than existing conditions.	Aerial
1960-1964	LOD appears wooded, Elkhart Street not visible. 16 <sup>th</sup> Street appears in existing four-lane configuration. Additional residential development to the north and east appears, and Park Sutton condo to the south.	Aerial
1971	Elkhart Street visible within ROW. Surrounding area is mostly unchanged.	Aerial
1982-2018	LOD and surrounding area generally unchanged and similar to existing conditions.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1964	Year: 1971
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-3634	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Norbeck Road (MD 28) between Nadine Drive and Bel Pre Road	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located in on the south side of Norbeck Road (MD 28), between Nadine Drive and Bel Pre Road, in Rockville, Maryland. The area consists primarily of single-family residential development, mostly built in the late 1960's. One spill occurred approximately 150 feet to the west (cross-gradient) of the LOD as a result of a motor vehicle accident in 2018. Some of the material entered a storm drain and the remainder was cleaned up with an absorbent. Based on the quantity of the spill (&lt;5 gallons), impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	5115 Norbeck Rd Rockville, MD	150	SPILLS - A small (less than five gallons) spill from a leaking saddle fuel tank resulting from a motor vehicle collision in 2018. Absorbent was used to clean up part of the spill; some went into a nearby storm drain. Impact to the LOD is unlikely.	Low

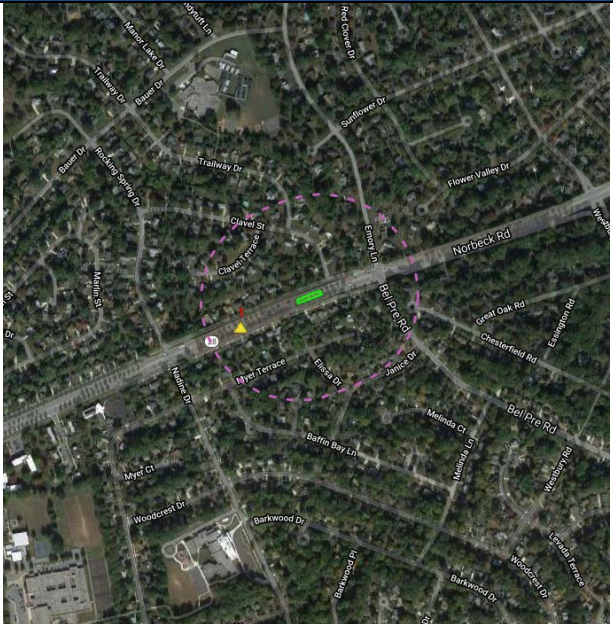


## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1963	LOD and surrounding area undeveloped, consisting of agricultural land and forest. Norbeck Road is visible, but appears to be narrower than existing conditions. Another road can be seen perpendicular to the northwest corner of the LOD.	Aerial
1971	LOD appears to be within a portion of Norbeck Rd undergoing road widening. Surrounding area developed with single-family residential development.	Aerial
1988	LOD/Norbeck Rd and surrounding area appear generally similar to present conditions.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1963	Year: 1971	Year: 1988
		

## Project Area Site Descriptions

<b>LOD ID: WAS-3635</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Central median of Norbeck Road (MD 28) between Nadine Drive and Bel Pre Road	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located within the central median of Norbeck Road (MD 28) between Nadine Drive and Bel Pre Road, in Rockville, Maryland. The area consists primarily of single-family residential development, mostly built in the late 1960's. One spill occurred approximately 340 feet to the southwest (cross-gradient) of the LOD as a result of a motor vehicle accident in 2018. Some of the material entered a storm drain and the remainder was cleaned up with an absorbent. Based on the quantity of the spill (&lt;5 gallons), impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	5115 Norbeck Rd	390	SPILLS - A small (less than five gallons) spill from a leaking fuel tank resulting from a motor vehicle collision in 2018. Absorbent was used to clean up part of the spill; some went into a nearby storm drain.	Low

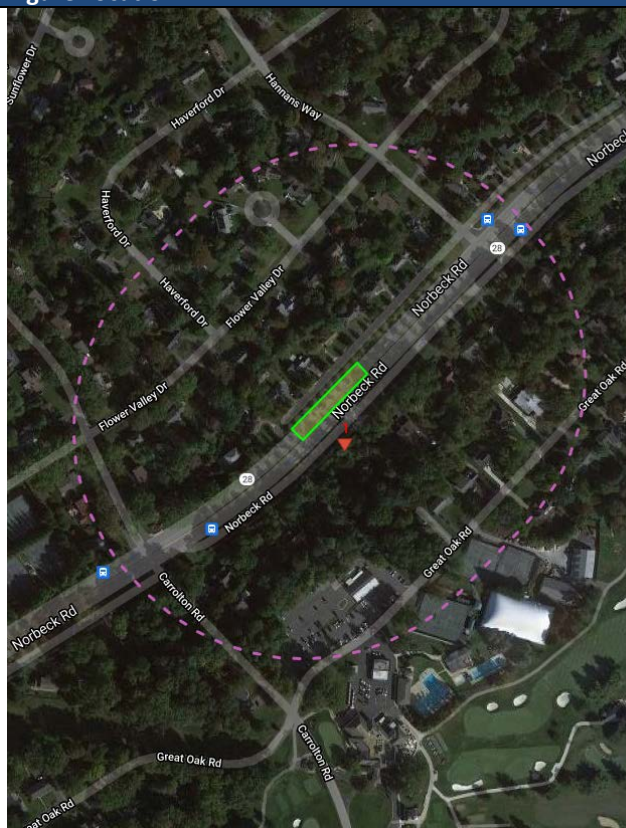
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1963	LOD and surrounding area are observed to be primarily forested and agricultural land. Norbeck Road is visible, but appears to be narrower than existing conditions.	Aerial
1971	LOD appears to be within a portion of Norbeck Road undergoing road widening. Surrounding area developed with single family residential development.	Aerial
1988	LOD/Norbeck Road and surrounding area appear generally similar to present conditions.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1963	Year: 1971	Year: 1988
		



## Project Area Site Descriptions

<b>LOD ID: WAS-3637</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Norbeck Road (MD 28), northeast of Carrollton Road	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along Norbeck Road (MD 28), northeast of Carrollton Road, in Rockville, Maryland. The surrounding area consists primarily of single-family residential development; the Manor Country Club is located to the south. The residential area was developed in the 1970's. A single environmental database record was found for a property located approximately 70 feet southeast (crossgradient) of the LOD, adjacent to the roadway. The ERNS 1987-1989 listing with no information provided. A PIA request was submitted for the site; however, no files were available. The release was most likely surficial in nature based on the environmental database the site is listed in. Additionally, it is believe that the site is crossgradient of the LOD. Thus, impacts are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

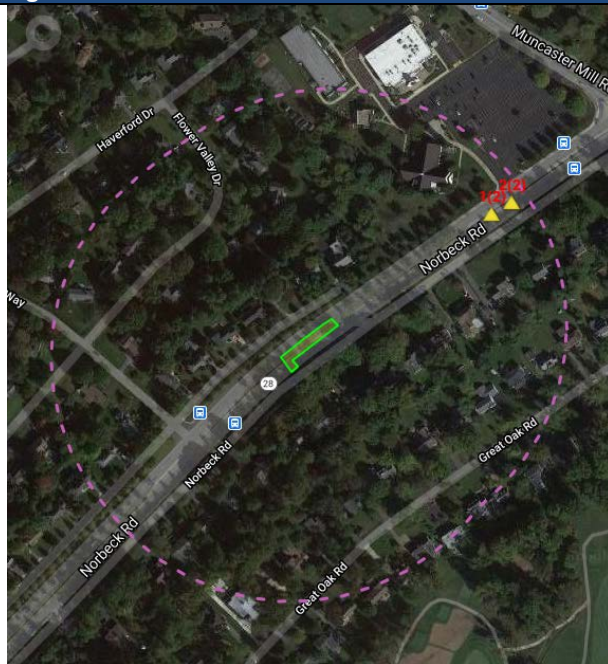
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	4240 Norbeck Rd	70	ERNS. The ERNS 1987-1989 listing with no information provided. A PIA request was submitted for the site; however, no files were available. The release was most likely surficial in nature based on the environmental database the site is listed in. The site is believed to be crossgradient of the LOD.	Low

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1963	LOD appears undeveloped, with agricultural fields to the north and east, and forest to the south and west. Golf course (Manor Country Club) visible further south. Norbeck Rd is visible, but appears to be narrower than existing conditions.	Aerial
1971-1982	LOD remains unchanged. Residential development occurs to the north, Norbeck Rd appear unchanged.	Aerial
1988-2018	LOD and Norbeck Rd appear in their present condition, surrounding area appears generally unchanged and similar to present conditions.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1963	Year: 1982	Year: 1988
		

## Project Area Site Descriptions

LOD ID: WAS-3638	Site Rank: Moderate	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	Central median of Norbeck Road (MD 28), southwest of Muncaster Mill Road	
City	Rockville	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the central median of Norbeck Road (MD 28), southwest of Muncaster Mill Road, in Rockville, Maryland. The LOD appears to have historically been part of an orchard based on aerial imagery from 1959 and redeveloped as part of Norbeck Road in the 1980s. The surrounding area is primarily residential with an institutional development to the northeast. The surrounding area was historically agricultural and rural residential in the 1950s with further residential development observed to begin in the 1980s. Commercial development to the north is observed to begin around 1971. The surrounding area is observed to be developed in its current configuration by 2005. A catholic school approximately 455 feet north (crossgradient) of the LOD had a 550-gallon heating oil excavated and removed from the site in August 2006. Impacted subsurface media was encountered during the UST closure, which was cleaned up/remediated and the case received closure approximately 2 months later. Based on site’s inferred hydraulic gradient in relation to the LOD, impacts are unlikely. However, since the area and LOD have been utilized as an orchard in the 1950s, there is a possibility that residual concentrations of organochlorine pesticides, such as dieldrin, DDT, chlordane, and lindane may be present in soils and sediments within the boundary of the LOD. Further investigation may be warranted prior to intrusive groundwork to determine if environmental media within the LOD have been impacted.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

SITE ID: WAS-3638-MODERATE

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1, 2	St. Patrick's Elementary School 4101 Norbeck Road, Rockville, MD, 20853-1870	455	<p>ICIS – Formal Enforcement Action for asbestos management</p> <p>OCP, UST – One 550-gallon heating oil UST was excavated and removed from the site in August 2006. Impacted subsurface media was encountered during the UST closure, which was cleaned up/remediated and the case received closure approximately 2 months later.</p> <p>The site was listed between 445 and 575 feet to the northeast of the LOD; however, based on further review the site is believed to be approximately 455 feet to the north (crossgradient) of the LOD.</p>	Low

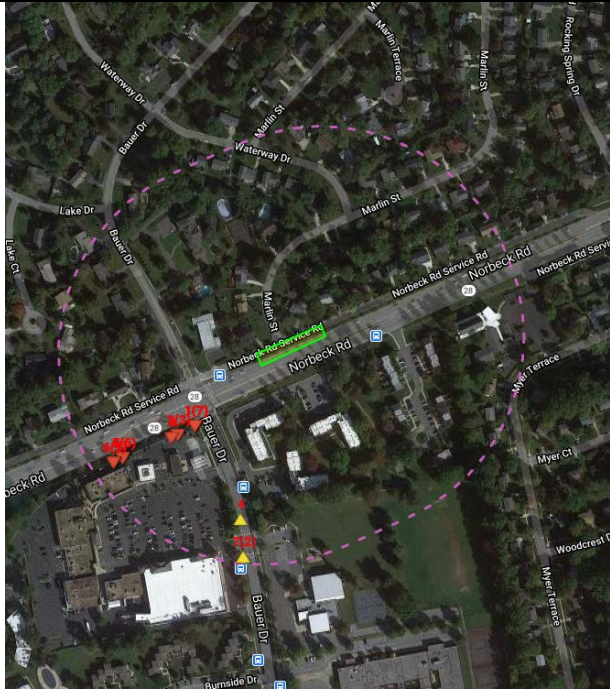
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	LOD is observed to within the north abutting property which appears to be an orchard. The surrounding area appear to be used for agricultural and rural residential purposes.	Aerial
1971	LOD appears to be part of a roadway. The surrounding area appears to be used for agricultural purposes with further residential development observed. An institutional building to the northeast of the LOD appears to be developed.	Aerial
1988	The roadway has been expanded from two lanes to four lanes, similar to the current configuration. The surrounding area appears similar to the 1971 aerial image with further development of an institutional building and associated parking lot to the northeast of the LOD.	Aerial
2005	The LOD and surrounding area are observed to be developed in their current configuration.	Aerial



Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Date Range	Property Use	Source
Year: 1959	Year: 1971	Year: 1988
		
Year: 2005		
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-3656	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	North side of Norbeck Road (MD 28), south of Marlin Street	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b> <p>The LOD is located on the north side of Norbeck Road (MD 28), south of Marlin Street, in Rockville, Maryland. The LOD consists of roadway a median with trees between Norbeck Rd and Norbeck Road Service Road and includes part of both these roads. The site is surrounded by residential development, other than the Rock Creek Village Shopping Center to the southwest. Development primarily occurred in the 1960's. Multiple database listings for the Rock Creek Village Shopping Center that includes the Village Exxon (approximately 320 feet southwest) and Rock Creek Village Cleaners (approximately 840 feet southwest) were identified in the environmental database report. The shopping center entered into the MDE VCP in 2011 after, and is subject to land use controls (restricted commercial or industrial, use of groundwater prohibited), based on previous environmental investigations that took place at the site, between 1997 and 2011, found PCE in soil, groundwater, and soil gas near the dry cleaner and, near the gas station, MTBE in in soil and groundwater and diesel range organics, and petroleum range organics in groundwater. Based on available information, the sites are believed to be downgradient of the LOD. Several other database listings were identified to the west/southwest (downgradient) of the LOD, which are believed to not be a concern as well. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input checked="" type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input checked="" type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input checked="" type="checkbox"/>	Gas Station	<input checked="" type="checkbox"/>
Dry-Cleaner	<input checked="" type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>


## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1,2,5,7	Rock Creek Village Shopping Center, Exxon, Exxon #26338 5500-5576 Norbeck Rd.	320 to 840	<p>LUC, SHWS, VCP. This site is a state hazardous waste site, is under the voluntary cleanup program, and is subject to land use controls (restricted commercial or industrial, use of groundwater prohibited). This site includes the Village Exxon and Rock Creek Village Cleaners. Environmental investigations at the site, taking place between 1997 and 2011, found PCE in soil, groundwater, and soil gas near the dry cleaner and, near the gas station, MTBE in in soil and groundwater and diesel range organics, and petroleum range organics in groundwater. The drycleaner's location in the shopping center is believed to be approximately 840 feet southwest (downgradient) the LOD.</p> <p>OCP, UST. The Exxon gas station has currently has three USTS onsite, and five permanently out of use. The three tanks in use include a 15,000-gallon compartment tank that contains diesel and gasohol along with a 15,000-gallon gasohol tank. Out of service tanks were installed in 1980 and removed in 1996 (1,000-gallon used oil), 1999 (1,000-gallon heating oil), and 2015 (two 8,000-gallon and one 12,000-gallon gasohol). There were release/cleanups reported for a closure in 2007 and in 1996-2000, no release was reported for the 2015 closure.</p> <p>SPILLS. There are five Spills records for the facility, all for a single 30-gallon diesel spill that occurred during a pick-up truck refueling in 2017, the spill was stopped and cleaned up.</p> <p>FINDS/FRS, RCRA CESQG. The station is a CESQG of ignitable waste, lead, and benzene; no violations are reported.</p>	Low
3,6	Rock Creek Village Cleaners 5516 Norbeck Rd	350	Drycleaners, FED Drycleaners, FINDS/FRS, RCRA SQG. This drycleaner is a RCRA SQG and operates under a minor air permit. No violations are noted.	Low
4	Bauer Park Apts 14635 Bauer Lane	105	OCP. An OCP case was open from 2001-2002; it did not involve a release/cleanup.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1963	LOD and surrounding area are vacant fields/agricultural. Norbeck Rd and the southern part of Bauer Drive are visible.	Aerial

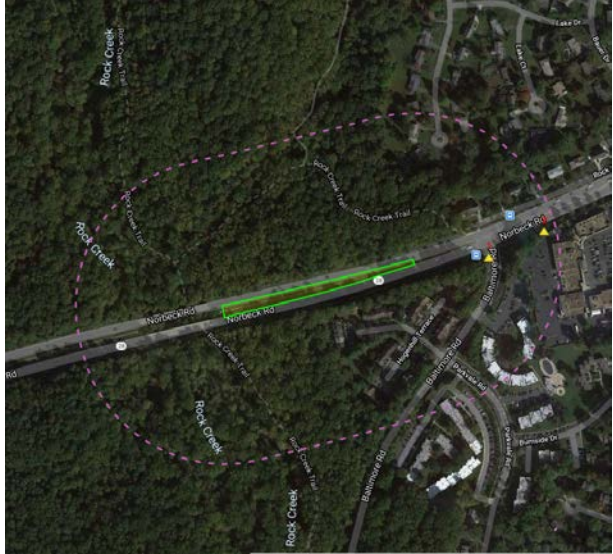
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1971	Significant development has taken place. It appears Norbeck Rd is in the process of being widened. Residential development is visible to the north and east/southeast, commercial development to the southwest, and the current Lucy V. Barnsley Elementary School to the south.	Aerial
1982	LOD appears similar to current conditions. Additional commercial development visible to the southwest, and residential to the south.	Aerial
1988 -2018	No change to LOD, surrounding area generally unchanged.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1963	Year: 1971	Year: 1982
		



## Project Area Site Descriptions



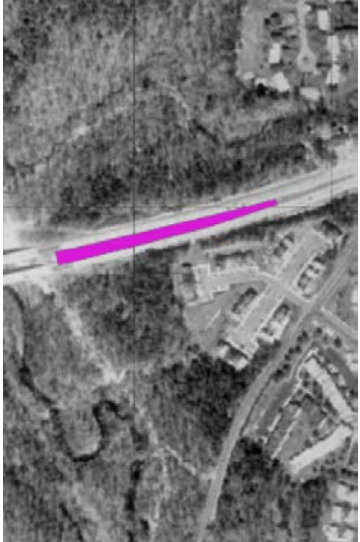
<b>LOD ID:</b> WAS-3658	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Central median of Norbeck Road (MD 28), west of Baltimore Road	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b> <p>The LOD is located along the central median of Norbeck Road (MD 28), west of Baltimore Road, in Rockville, Maryland. The area surrounding the LOD is mostly forested land with residential properties to the east. Norbeck Road was first observed in the early 1970s, prior to that the area was entirely forested land. Residential development began to the east in the early 1970s and continued until the early 1980s when the area was observed in its current configuration. A spill of approximately 5 gallons of gasoline was identified 350 feet to the east of the LOD. Based on the size of the spill and distance from the LOD, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input checked="" type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

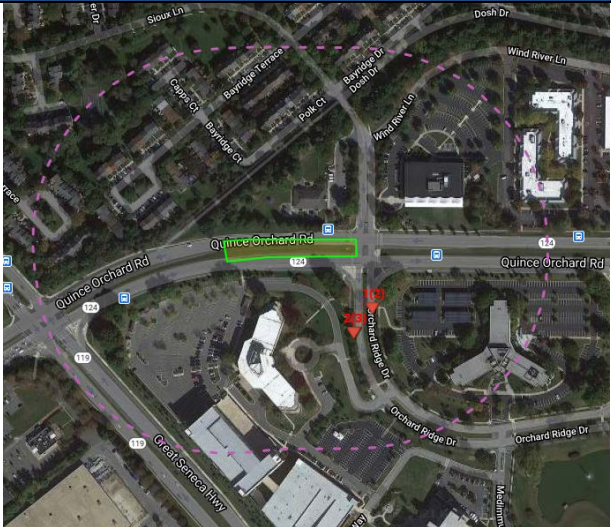
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	2600 Baltimore Rd Rockville MD	348	SPILLS – A small commuter van leaked approximately 5 gallons of gasoline. The spill was cleaned up using absorbent pads. No further information was available.	Low
2	CVS Pharmacy #1502 5660 Norbeck Rd Rockville MD 20853	620	RCRA LQG – The facility is listed as a RCRA LQG. No violations were identified in the available records.	Low

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1963	The area surrounding the LOD is observed to be undeveloped forested land.	Aerial
1971	Norbeck Road is observed for the first time. Forested land is observed to the north and south of the LOD. Residential properties are observed to the northeast and southeast of the LOD.	Aerial
1988	Continued development of residential properties to the east of the LOD is observed. The area surrounding the LOD is observed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1963	Year: 1971	Year: 1988
		

## Project Area Site Descriptions

<b>LOD ID: WAS-4058</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Quince Orchard Road (MD 124), east of Great Seneca Highway (MD 119)	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the central median of Quince Orchard Road (MD 124), east of Great Seneca Highway (MD 119), in Gaithersburg, Maryland. The LOD is surrounded by residential development to the north and west, and by commercial development to the south and east. Based on review of historical aerial and topographic maps, the Quince Orchard Road was present in 1937 and the LOD and surrounding area are similar to current configuration by 2005. Two environmental database listings were identified in the immediate area of the LOD. A pharmaceutical facility is a SQG approximately 490 feet from the LOD, where no violations were found. A 0.25-gallon spill from a ruptured vehicular hydraulic hose occurred approximately 135 feet from the LOD and was cleaned up. Based on distance or quantity of spill, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>


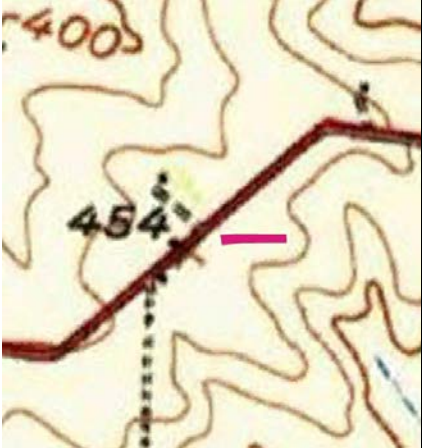

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Glycommetic 101 Orchard Ridge Dr Ste 1E Gaithersburg, MD	490	RCRA SQG, FINDS/FRS – Believed to be downgradient to the LOD. The pharmaceutical preparation manufacturing facility is a SQG for ignitable waste, corrosive waste, volatile organic compounds and solvents, among others. No violations were found. Although the distance to this facility is reported as 140 feet, the building on the property is located approximately 490 feet away from the LOD.	Low



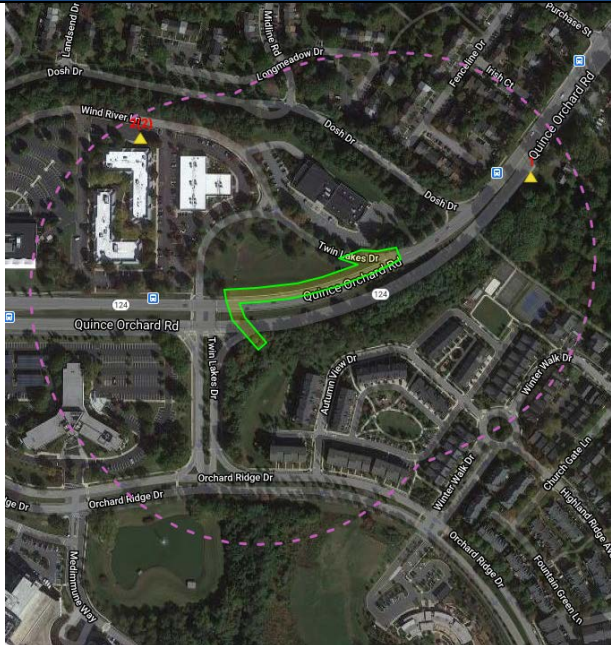
## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
2	Amuchina International 200 Orchard Ridge Dr Gaithersburg, MD	135	FINDS/FRS, SPILLS – Believed to be downgradient to the LOD. The spill reported was for a release of 0.25 gallons of hydraulic oil from a burst hose on a vehicle on 10/4/2016. A spill kit was used to clean up the spill and disposed of. Although the distance to this facility is reported as 215 feet, the building on the property is located approximately 135 feet away from the LOD. Based on the nature of the spill, impacts to the LOD are unlikely.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	LOD and surrounding area are agricultural and residential in use.	Aerial
1944	LOD and surrounding area are unimproved and undeveloped.	Topo
1993 -2018	Quince Orchard Road is present. Residential and commercial development are observed. LOD and surrounding areas similar to their current configuration by 2005.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1944	Year: 1993
		

## Project Area Site Descriptions




LOD ID: WAS-4059	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	Quince Orchard Road (MD 124), east of Twin Lakes Drive	
City	Gaithersburg	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along Quince Orchard Road (MD 124), east of Twin Lakes Drive, in Gaithersburg, Maryland. The LOD is surrounded by residential development to the south and east, and by commercial development to the north and west. Based on a review of historical aerial and topographic maps, Quince Orchard Road was present by 1993 and the LOD and surrounding area are similar to current configuration by 2005. Two listings were identified in the environmental database report, including a RCRA Non Generator and spill case between 540 feet and 600 feet of the LOD. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	899 Quince Orchard Rd Gaithersburg, MD	540	ERNS – Believe to be crossgradient to the LOD. A home heating tank overfilled due to clogged vent on 11/14/1990. Approximately 0.5 gallons were released to the ground. The soil was excavated.	Low
2	Poietics Facility 902 Wind River Lane Suite 202 Gaithersburg, MD	630	RCRA NonGen, FINDS/FRS – Believed to be upgradient to the LOD. The facility is a former VSQG of ignitable, corrosive and reactive wastes, among others; however, it is no longer is a generator. No violations were found.	Low


## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The LOD and surrounding area are agricultural and residential in use.	Aerial
1944	The LOD and surrounding area are unimproved and mostly undeveloped.	Topo
1993 -2018	Quince Orchard Road is present. Residential and commercial development are observed. LOD and surrounding areas similar to their current configuration by 2005.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1944	Year: 1993
		



## Project Area Site Descriptions

<b>LOD ID: WAS-4067</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Great Seneca Highway (MD 199), south of Quince Orchard Road (MD 124)	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the east side of Great Seneca Highway (MD 199), south of Quince Orchard Road (MD 124), in Gaithersburg, Maryland. The LOD is surrounded by commercial development. Based on review of historical aerial and topographic maps the Great Seneca Highway and commercial development was observed in the 1993 aerial photograph with the LOD and surrounding area similar to their current configuration by 2005. Four environmental database listings were identified in the immediate area of the LOD. The Lowe's is crossgradient 555 feet to the west, a RCRA LQG is located abutting the LOD to the west, and a gas station is located approximately 660 feet downgradient. A biotechnology facility is located approximately 70 feet northeast of the LOD that currently has fourteen ASTs ranging in size between 50 to 20,000-gallons that hold #2 heating oil, used oil, and lubricating oil. Based on available information provided by MDE through a PIA request, there have been no substantial releases reported with the ASTs onsite. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input checked="" type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input checked="" type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>


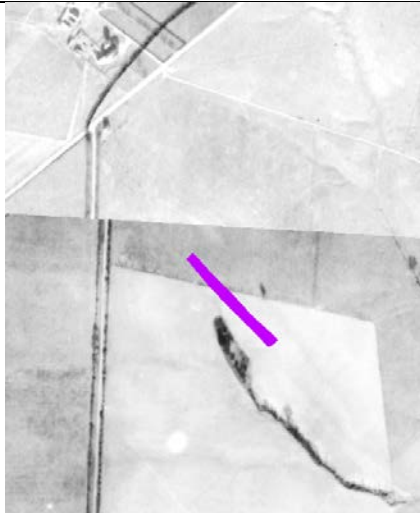
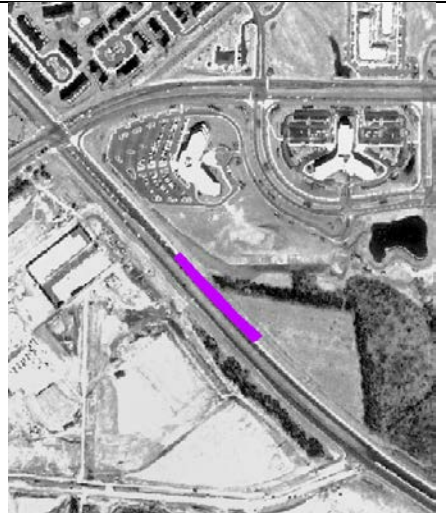
## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1,2	Lowes Home Center 205 Kentlands Blvd Gaithersburg, MD	555	FINDS/FRS –store is in the registry. No violations were identified during this review.	Low
3,5,6	Medimmune 1 Medimmune Way Gaithersburg, MD	70	<p>FINDS/FRS, RCRA LQG, ICIS, RCRA VSQG - This facility is a LQG for numerous waste codes. The facility is an air source and has a stormwater permit.</p> <p>AST - The site has approximately fourteen ASTs ranging in capacity from 50 to 20,000-gallons with contents including diesel #2 heating oil, used oil, and lubricating oil.</p> <p>SPILLS - There was a release of approximately 1-gallon from an above ground service line feeding an emergency generator of 6,000 gallons of diesel to the ground on in 2013, which was cleaned up. Approximately 5-gallon was released from fuel polisher for the generator, which was cleaned up.</p> <p>The site was listed as being 570 to 600 feet northeast of the LOD; however, after further review, the site is approximately 70 feet to the northeast (crossgradient)</p>	Low
4,8	KMART #4860 209 Kentlands Blvd	600	RCRA-VSQG/CESQG – The site has been listed as a RCRA-VSQG and CESQG. No violations were identified during this review.	Low
7	Mobil/Sunoco 121 Kentlands Blvd Gaithersburg, MD	660	<p>OCP, UST, FINDS/FRS, ICIS – The gas station has three currently-in-use diesel and gasoline USTs with a capacity of 8,000, 10,000 and 20,000 gallons. The following OCP cases were identified:</p> <p>Case open on 12/9/1997 for new installation. A release and cleanup was reported. Closure was granted on 6/22/1998.</p> <p>Case open on 3/13/2001 due to a compliance inspection. No release was reported. Closure was granted on 4/25/2001.</p> <p>Case open on 4/19/2004 for well/groundwater contamination. A release and cleanup was reported. Closure was granted on 11/21/2006. Based on the local topography, the site is believed to be downgradient of the LOD.</p>	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1944	The LOD and surrounding area are observed to be mainly unimproved and undeveloped.	Topo
1937 - 1981	The LOD and surrounding area are observed to be primarily developed with agricultural and residential properties.	Aerial

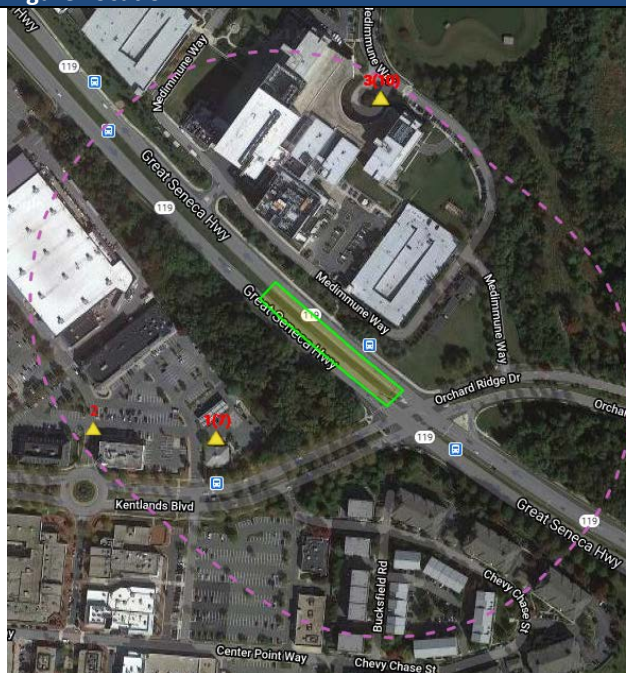
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1993 -2018	Great Seneca Highway is present along the LOD. Residential and commercial developments are observed. LOD and surrounding areas similar to their current configuration by 2005.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1944	Year: 1937	Year: 1993
		



## Project Area Site Descriptions

<b>LOD ID: WAS-4068</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Central median of Great Seneca Highway (MD 119) north of Orchard Ridge Drive (MD 124)	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the central median of Great Seneca Highway (MD 119) north of Orchard Ridge Drive (MD 124), in Gaithersburg, Maryland. The LOD is surrounded by commercial development. Based on review of historical aerial and topographic maps the Great Seneca Highway and commercial development was observed in the 1993 aerial photograph with the LOD and surrounding area similar to their current configuration by 2005. Three environmental database listings were identified in the immediate area of the LOD. The Lowe's is crossgradient 575 feet to the west, a RCRA LQG is located to the west, and a gas station is located 340 feet crossgradient. A biotechnology facility is located approximately 115 feet northeast of the LOD that currently has fourteen ASTs ranging in size between 50 to 20,000-gallons that hold #2 heating oil, used oil, and lubricating oil. Based on available information provided by MDE through a PIA request, there have been no substantial releases reported with the ASTs onsite. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input checked="" type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input checked="" type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

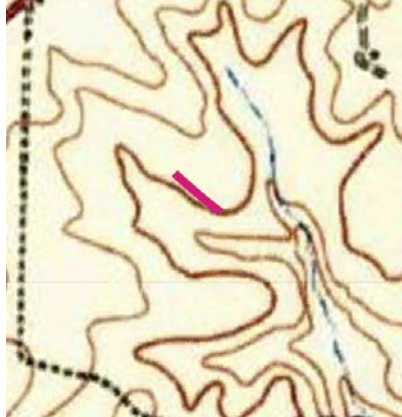
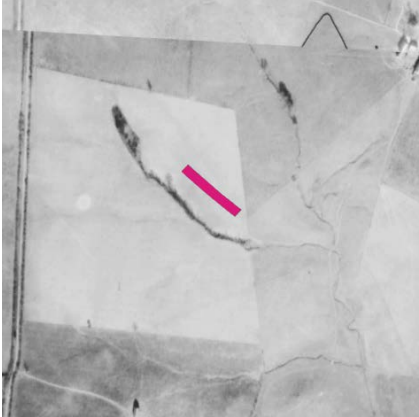

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Mobil/121 Kentlands Blvd Gaithersburg, MD	340	<p>OCP, UST, FINDS/FRS, ICIS –The gas station has three currently-in-use diesel and gasoline USTs with a capacity of 8,000, 10,000 and 20,000 gallons. The following OCP cases were identified:</p> <p>Case open on 12/9/1997 for new installation. A release and cleanup was reported. Closure was granted on 6/22/1998.</p> <p>Case open on 3/13/2001 due to a compliance inspection. No release was reported. Closure was granted on 4/25/2001.</p> <p>Case open on 4/19/2004 for well/groundwater contamination. A release and cleanup was reported. Closure was granted on 11/21/2006.</p> <p>Based on the local topography, the site is believed to be crossgradient of the LOD.</p>	Low
2	Lowes Home Center 205 Kentlands Blvd Gaithersburg, MD	575	FINDS/FRS –The store is in the registry; no violations or releases were identified during this review.	Low
3	Medimmune 1 Medimmune Way Gaithersburg, MD	650	<p>FINDS/FRS, RCRA LQG, ICIS, RCRA VSQG - This facility is a LQG for numerous waste codes. The facility is an air source and has a stormwater permit.</p> <p>AST - The site has approximately fourteen ASTs ranging in capacity from 50 to 20,000-gallons with contents including diesel #2 heating oil, used oil, and lubricating oil.</p> <p>SPILLS - There was a release of approximately 1-gallon from an above ground service line feeding an emergency generator of 6,000 gallons of diesel to the ground on in 2013, which was cleaned up. Approximately 5-gallon was released from fuel polisher for the generator, which was cleaned up.</p> <p>The site was listed as being approximately 650 feet northeast of the LOD; however, after further review, the site is approximately 115 feet to the northeast. Based on the local topography, the site is believed to be crossgradient of the LOD.</p>	Low

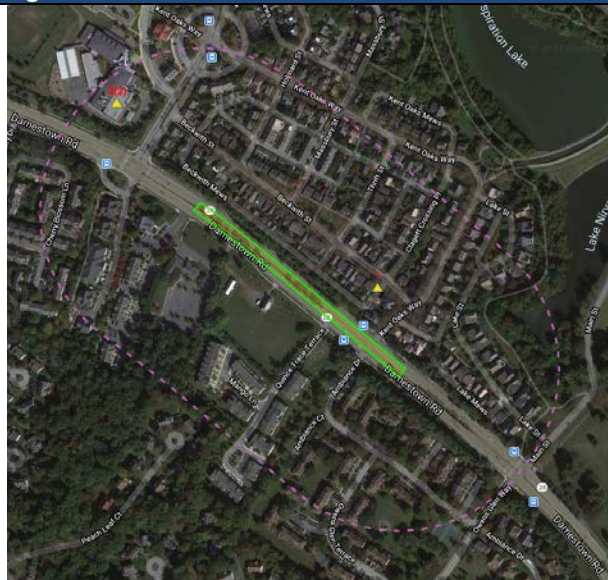
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1944	The LOD and surrounding area are observed to be mainly unimproved and undeveloped.	Topo
1937 - 1981	The LOD and surrounding area are observed to be primarily developed with agricultural and residential properties.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1993 -2018	Great Seneca Highway is present along the LOD. Residential and commercial developments are observed. LOD and surrounding areas similar to their current configuration by 2005.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1944	Year: 1937	Year: 1993
		

## Project Area Site Descriptions

<b>LOD ID: WAS-4072</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Darnestown Road (MD 28), south of Tschiffely Square Road	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the central median of Darnestown Road (MD 28), south of Tschiffely Square Road, in Gaithersburg, Maryland. The LOD is surrounded by residential development to the north, east, and south, and a church to the southwest. Inspiration Lake, Lake Nirvana and Lake Placid are located to the east. Based on review of historical aerial and topographic maps, Darnestown Road has been present since 1937. Residential development occurred by 1993. The LOD and surrounding area are similar to current configuration by 2005. Two environmental database listings were identified in the immediate area of the LOD, which includes a natural gas pipeline incident 230 feet away and an elementary school (590 feet away) which is a RCRA VSQG with no reported violations. Based on the nature of the incident and distance to the LOD, respectively, impacts to the LOD are unlikely.</p>		


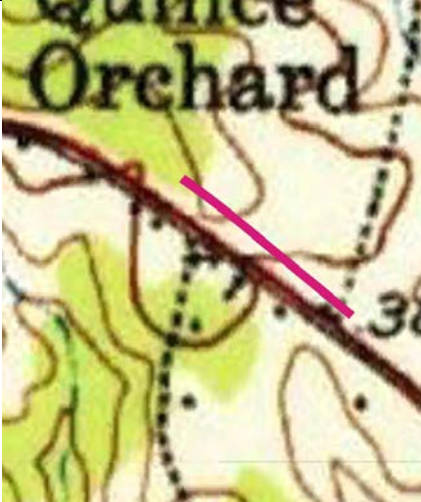
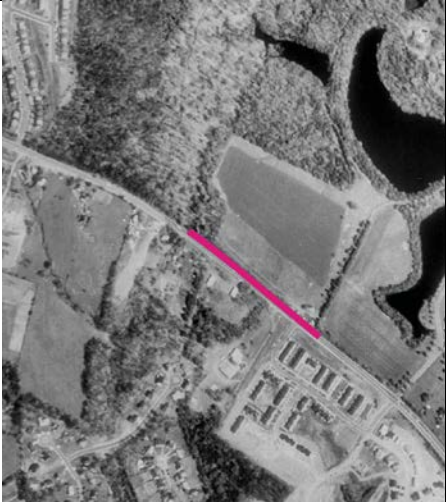
ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Pipeline Incident 110 Beckwith Street Gaithersburg, MD	230	Pipeline Incident – Excavation damage of a gas line caused an explosion and fire that resulted in a total destruction of a dwelling on 2/1/1994.	Low
2	Rachel Carson ES 100 Tschiffely Square Gaithersburg, MD	590	RCRA VSQG, FINDS/FRS – Believed to be crossgradient to the LOD. The elementary school is a VSQG of mercury. No violations were identified during this review.	Low



## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be developed as agricultural and residential properties.	Aerial
1944	Darnestown Road is present with residential buildings situated along it.	Topo
1993 -2018	Residential development is observed to begin in 1993 in the surrounding area. The surrounding area is observed to be developed similar to its current configuration by 2005.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1944	Year: 1993
		

## Project Area Site Descriptions

<b>LOD ID: WAS-4091</b>	<b>Site Rank: Moderate</b>	<b>Figure Location:</b>
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Along I-370, west of Frederick Road (MD 355) underpass	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located in the central median of I-370, west of the Frederick Road (MD 355) underpass, in Gaithersburg, Maryland. The surrounding area is a mix of commercial and residential developments to the south and residential developments among forested land to the north. Commercial and residential development began prior to 1971, and is observed in its current configuration by 2005. Three OCP cases are located between 270 feet and 455 feet from the LOD. The most concerning of which, the All State Leasing Co. located 270 feet in an apparent hydraulically upgradient direction, has documented groundwater impacts present. In March 1994, a 15,000-gallon gasoline UST was excavated and removed. PID readings up to 2,100 ppm were identified directly beneath the former UST. A monitoring well installed adjacent to the former UST exhibited a total BTEX concentration of 17,600 ug/L, well above the MDE Groundwater Standards. MDE closed the OCP case in 1999 based on the justification that the surrounding area is connected to public water. As this facility appears hydraulically upgradient of the LOD, further investigation is warranted to determine whether or not impacts from this site has impacted environmental media within the LOD. The remaining records of concern are not anticipated to have an impact on the LOD due to either their distance, hydraulic direction, or case status.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

SITE ID: **WAS-4091-MODERATE**



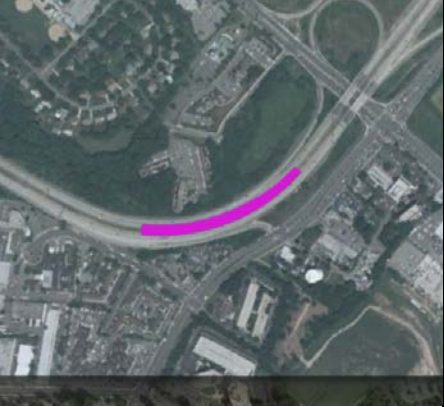


## Project Area Site Descriptions

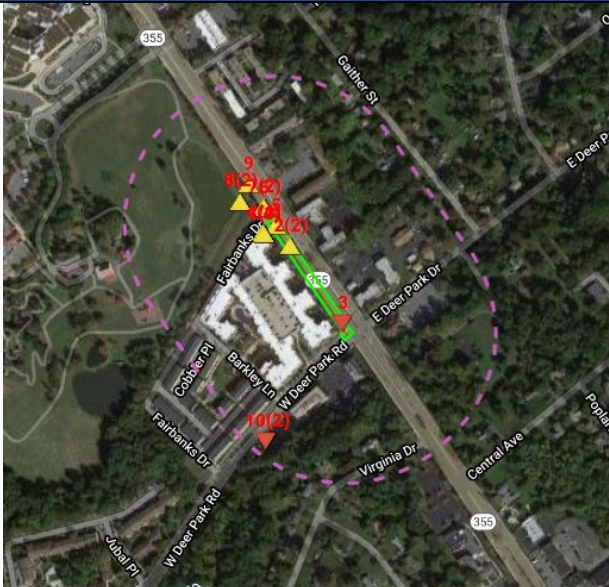
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	D.J. Gross, Co. 9025A Comprint Ct Gaithersburg, MD	175	FINDS/FRS – OSHA establishment, no violations identified during this review.	Low
2	Specified Woodworking Corp 9025 Comprint Ct	175	FINDS/FS, RCRA SQG – Generator of ignitable waste, no violations were noted during this review.	Low
3	Shady Grove Econolodge 16200 Shady Grove Road Gaithersburg, MD	210	FINDS/FRS – Minor air permit, no violations were noted during this review.	Low
4	All State Leasing Co 16405 Shady Grove Road Gaithersburg, MD	270	<p>OCP, UST – In March 1994, OCP Case No. 94-2108MD was opened for the removal of a 15,000-gallon steel gasoline UST. PID soil screening results ranged between 153 and 2100ppm, with the highest readings occurring under the former UST. MDE required analysis of soils beneath the UST (results not available) as well as monitoring well installed. A monitoring well was installed and sampled on 7/20/94, which identified benzene, toluene, ethylbenzene and xylenes (BTEX) concentrations at 2,200 ug/L, 7,200 ug/L, 1,200 ug/L and 7,000 ug/L, respectively, and TPH at 5 mg/L. The BTEX groundwater results are well above the MDE Groundwater Standards. MDE closed the OCP case in 1999 based on the justification that the surrounding area is connected to public water.</p> <p>Based on local topography the site appears upgradient from the LOD.</p>	Moderate
5	Touchless Car Wash 16185 Shady Grove Road Gaithersburg, MD	290	OCP – In 2002, an OCP case was opened due to dumping. A release and cleanup actions occurred. The case was closed within four months. Based on local topography the site appears crossgradient from the LOD.	Low
6	Shady Grove Standpipe 8620 Pleasant Road Gaithersburg, MD	455	<p>OCP, UST – In 2000, an OCP case was opened for the removal of a 300-gallon diesel UST. No release occurred and the case was closed within eight months.</p> <p>FINDS/FRS, RCRA CESQG – Generator of mercury and selenium wastes, no violations noted during this review.</p> <p>Based on local topography the site appears upgradient from the LOD.</p>	Low
7	Powerstar, Inc 9073 Shady Grove Ct Gaithersburg, MD	600	FINDS/FRS – OSHA establishment, no violations noted during this review.	Low

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1938	The LOD and surrounding area are primarily agricultural land. Shady Grove Road to the south is visible, but as a 2-lane road.	Aerial
1971	Residential developments are visible to the north, and commercial developments to the southwest and south.	Aerial
2005	Interstation I-270 has been constructed to the north, and additional commercial development has occurred to the north and south of the LOD. The surrounding area appears in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1938	Year: 1971	Year: 2005
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4098	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	West side of S Frederick Avenue (MD 355), northwest of West Deer Park Road	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the west side of S Frederick Avenue (MD 355), northwest of W Deer Park Road, in Gaithersburg, Maryland. The surrounding area is a mix of commercial and residential developments. The surrounding area was primarily forested and agricultural land up until 1963, when residential and commercial development began to occur. Residential and commercial development continue up until 2018 when the surrounding area was observed to be developed in its current configuration. Although there are several records of concern in area surrounding the LOD, most do not involve releases or contamination or are located over 500 feet from the LOD and are of low concern. One site was listed approximately 50 feet north (upgradient) of the LOD, that had four petroleum USTs ranging in size from 550-gallons to 5,000-gallons excavated and removed from the property in 1991 and 2000 was determined to be more than 700 feet west of the LOD. No releases or impacted soil was reported during the removals. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>




## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	SHFP Activities Center 506 S Frederick Ave Gaithersburg, MD	600	ALT FUELS – open electric charging station  FINDS/FRS, RCRA SQG – There are no violation records associated with this facility.  Although the site is listed as 40 feet from the LOD, the actual site measures over 700 feet west from the LOD.	Low
2	Landmark Reality Inc 521 S Frederick Ave Gaithersburg, MD	45	FINDS/FRS, ICIS – Enforcement activity, no records of that incident resulted in a release to the environment.	Low
3	531 S Frederick Ave Gaithersburg, MD	45	FINDS/FRS – Minor air permit, no violations were identified during this review.	Low
4	Hospice/Summit Farm Park/ City of Gaithersburg/ Recreation Dept 502 S Frederick Ave Gaithersburg, MD	50	UST,OCP – There are four USTs permanently out of use at the site. The tanks ranged in size from 550 to 5,000 gallons in size and held heating oil, diesel, and unknown substances. All tanks have been removed from the ground.  1991 – A 1,000-gallon diesel, 2,000-gallon heating oil, and 5,000-gallon heating oil UST were excavated and removed from the site. The USTs were found to be in good condition and no odors or impacted soil was observed in the excavation. The MDE inspector onsite instructed the contractor to backfill the excavation and the case was closed in 1993.  2000 – A 550-gallon heating oil UST was excavated and removed from the site. There are no records from the removal; however, MDE decided to close the site in 2006  Based on further review, this site is believed at least 700 feet west of the LOD.	Low
5	517 S Frederick Ave Gaithersburg, MD	65	FINDS/FRS – Minor air permit, no violations were identified during this review.	Low
6	Gaithersburg Apartments 501-B S Frederick Ave Gaithersburg, MD	150	FINDS/FRS – Apartment operators permit, no violations were identified during this review.	Low
7	Gaither House 501 B3 S Frederick Ave Gaithersburg, MD	155	FINDS/FRS, ICIS – NPDES Permit, no violations were identified during this review.	Low
8	SHFW Water Park 510 S Frederick Ave Gaithersburg, MD	1000+	RCRA SQG – There are no compliance violations associated with this facility.  FINDS/FRS – NPDES Permit, no violations were identified during this review.  Although the site is listed as 230 feet from the LOD, it measures over 1,000 feet from the LOD.	Low

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
9	511 S Frederick Ave Gaithersburg, MD	280	FINDS/FRS – Minor air permit, no violations were identified during this review.	Low
10	Stratford Place/ 12 West Deer Park Road Gaithersburg, MD	515	FINDS/FRS, ICIS – NPDES permit, no violations were identified during this review.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1938	The surrounding area is primarily forested and agricultural land. Structures are observed to the east and further to west of the LOD.	Aerial
1963	Commercial and residential properties were observed to the east and west of the LOD. A large pond is observed to the northwest of the LOD.	Aerial
2018	Additional residential developments are observed to the west. Additional commercial development is observed to the southwest. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1938	Year: 1963	Year: 2018
		



## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4099	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Along S Frederick Ave, south of the intersection with W Deer Park Road	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b> <p>The LOD is located in the ROW along S Frederick Avenue (MD 355), south of the intersection with W Deer Park Road, in Gaithersburg, Maryland. The surrounding area is a mix of commercial and residential development. Commercial and residential development is observed to begin by 1963. The surrounding area is observed to be in its current configuration by 2018. The three database listings in the vicinity of the LOD either do not involve releases or contamination or are too far away from the LOD to be of concern.</p>		



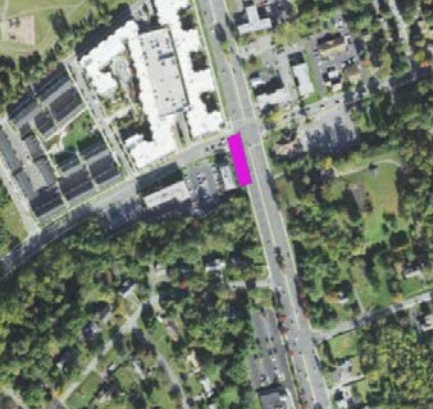
ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	S Frederick Ave Gaithersburg, MD	150	FINDS/FRS – Minor air permit in apartment building, no violations were identified during this review.	Low
2	Stratford Place 12 West Deer Park Road Gaithersburg, MD	505	FINDS/FRS, ICIS – NPDES General Permit Covered Facility, apartment building, no violations were identified during this review.	Low
3	Landmark Realty Inc 521 S Frederick Ave Gaithersburg, MD	580	FINDS/FRS, ICIS – Formal enforcement action, no records of that incident resulted in a release to the environment.	Low

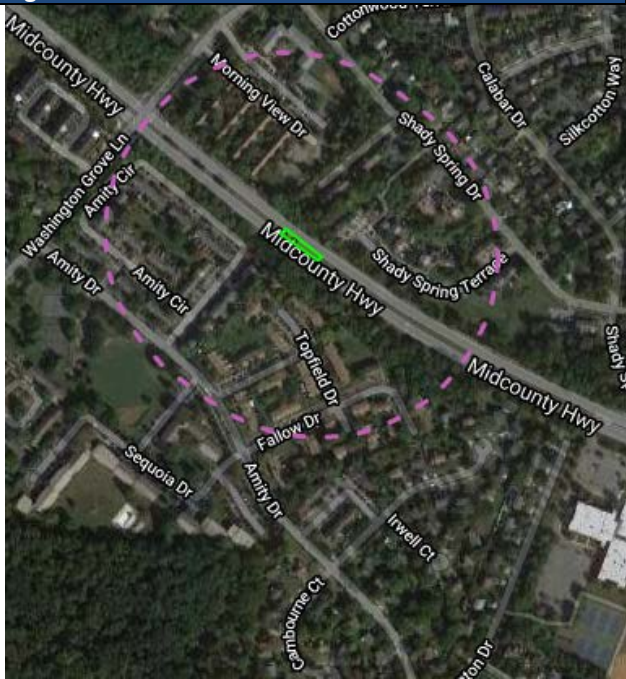


## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1963	The surrounding area is primarily forested and agricultural land. Structures are observed to the east and further to west of the LOD.	Aerial
1981	Commercial and residential properties were observed to the east and west of the LOD. A large pond is observed to the northwest of the LOD.	Aerial
2018	Additional residential developments are observed to the west. Additional commercial development is observed to the southwest. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1963	Year: 1981	Year: 2018
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4517	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Central median of Midcounty Highway (MD 124), east of Washington Grove Lane	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located within the central median of Midcounty Highway (MD 124), east of the intersection with Washington Grove Lane, in Gaithersburg, Maryland. The surrounding area is primarily residential. Based on a review of historical imagery, the LOD and surrounding area were observed to be agricultural through the 1970s when residential development began. Residential development continued through 2005 when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified during this environmental review.		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

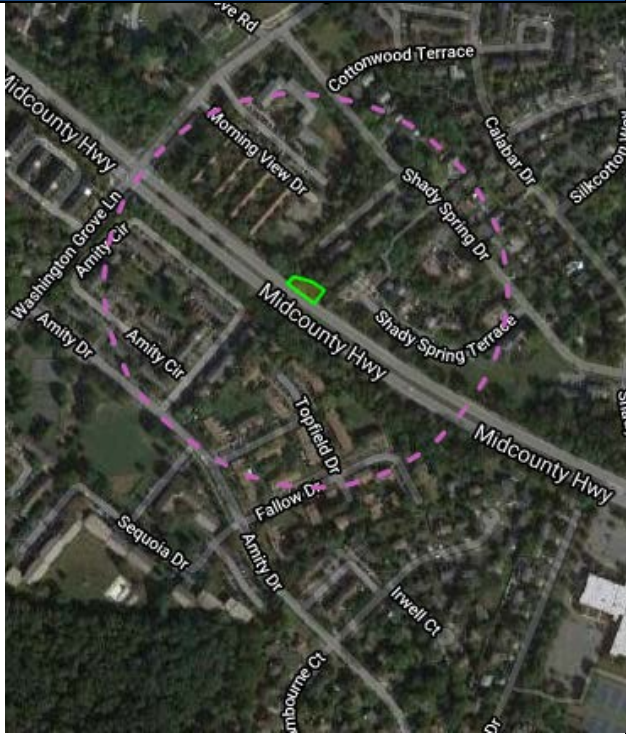
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The LOD and surrounding area are observed as agricultural land.	Aerial
1981	The LOD appears to be in transition back into woodlands. Residential development is visible to the north, east and south.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2005	Midcounty Highway is visible with the LOD as a center median. The LOD and surrounding area are observed to be developed in their current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4518	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Northern side of Midcounty Highway (MD 124), east of Washington Grove Lane	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the northern side of Midcounty Highway (MD 124), east of the intersection with Washington Grove Lane, in Gaithersburg, Maryland. The surrounding area is primarily residential. Based on a review of historical imagery, the LOD and surrounding area were observed to be agricultural through the 1970s when residential development began. Residential development continued through 2005 when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified during this environmental review.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>



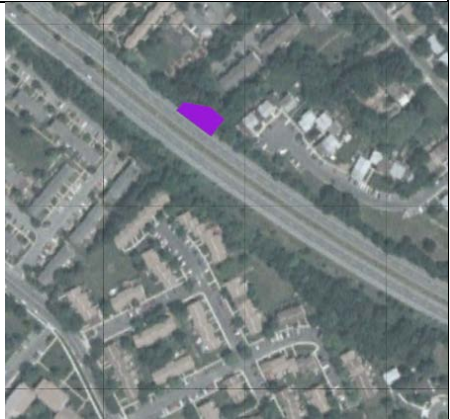
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The LOD and surrounding area are observed as agricultural land.	Aerial
1981	The LOD appears to be in transition back into woodlands. Residential development is visible to the north, east and south.	Aerial

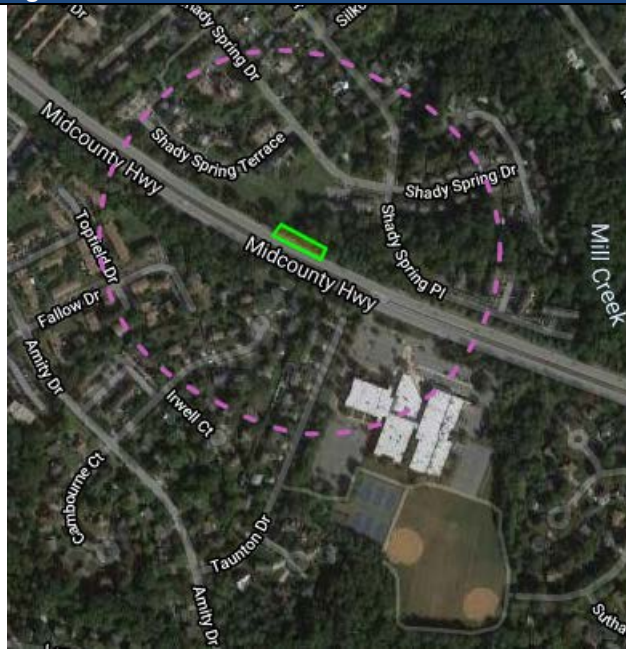


## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2005	Midcounty Highway is visible along with residential development to the west. The LOD and surrounding area are observed to be developed in their current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4519	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Northern side of Midcounty Highway (MD 124), west of Taunton Drive	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the northern side of Midcounty Highway (MD 124), west of Taunton Drive, in Gaithersburg, Maryland. The surrounding area is primarily residential. A middle school is located to the southeast. Based on a review of historical imagery, the LOD and surrounding area were observed as agricultural and forested land through the 1970s when residential development began. Residential development continued through 2005 when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified during this environmental review.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>



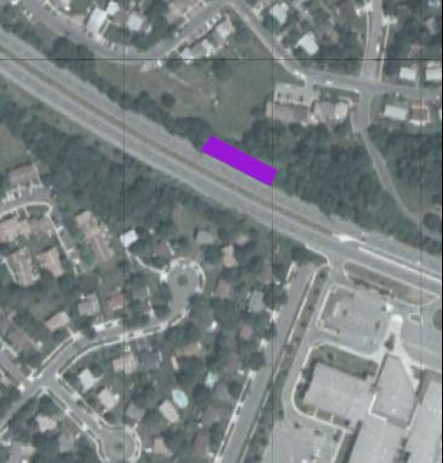
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The LOD and surrounding area are observed to be agricultural and forest land.	Aerial
1981	Residential development is observed to the north, west and south; forested areas remain to the east.	Aerial

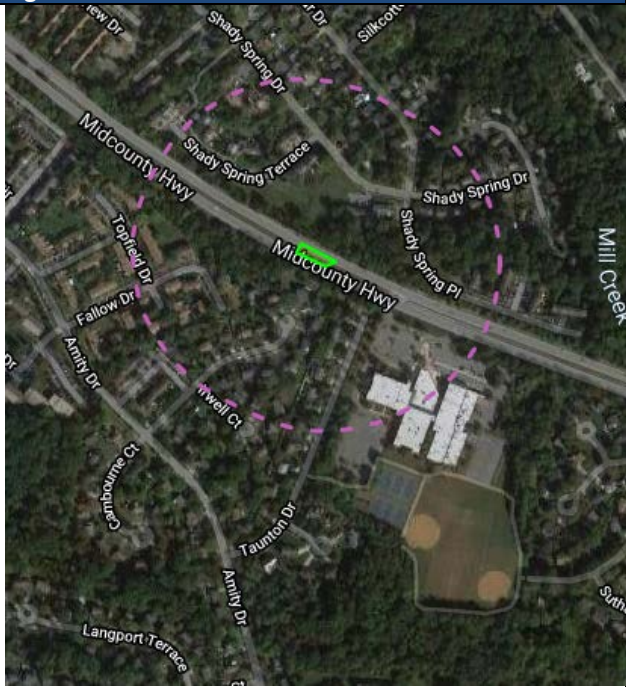


## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2005	Midcounty Highway is visible along with residential development to the north and west, and a school to the southeast. The LOD and surrounding area are observed to be developed in their current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		

## Project Area Site Descriptions

<b>LOD ID: WAS-4521</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b>
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Central median of Midcounty Highway (MD 124), west of Taunton Drive	
<b>City</b>	Gaithersburg	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located in the central median of Midcounty Highway, west of Taunton Drive, in Gaithersburg, Maryland. The surrounding area is primarily residential. A middle school is located to the southeast. Based on a review of historical imagery, the LOD and surrounding area were observed as agricultural and forested land through the 1970s when residential development began. Residential development continued through 2005 when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified during this environmental review.</p>		


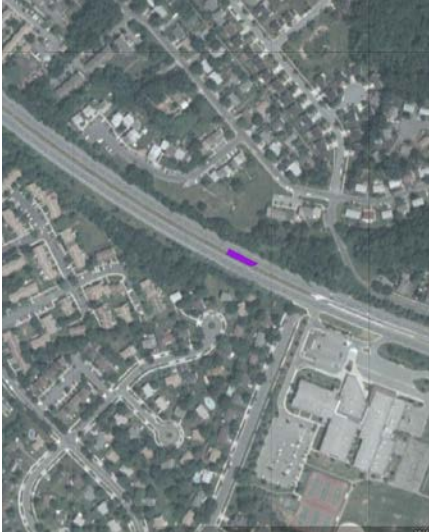
ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

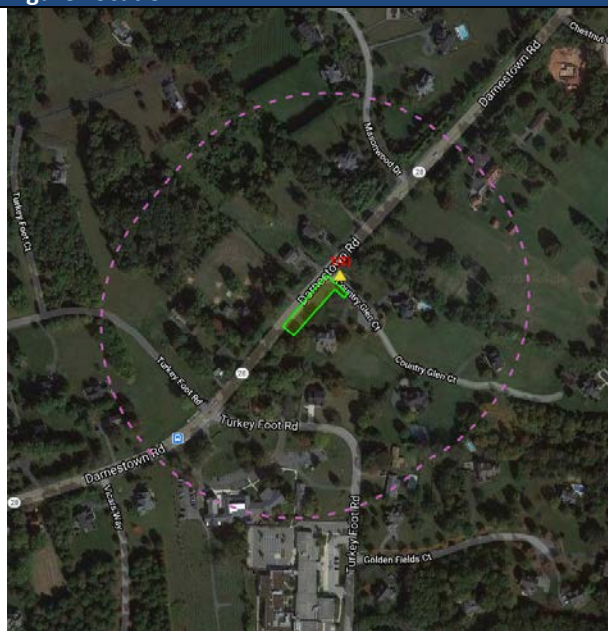
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The LOD and surrounding area are observed to be agricultural and forest land.	Aerial
1981	Residential development is observed to the north, west and south; forested areas remain to the east.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2005	Midcounty Highway is visible along with residential development to the north and west, and a school to the southeast. The LOD and surrounding area are observed to be developed in their current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		

## Project Area Site Descriptions

LOD ID: WAS-4607	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	Southwest of Darnestown Rd and Country Glen Ct	
City	Gaithersburg	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located off the south side of Darnestown Road (MD 28), southwest of Country Glen Court, in Darnestown, Maryland. Residential houses and open space abut the property in all directions. Development began in the early 1940s and continued up until 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.		


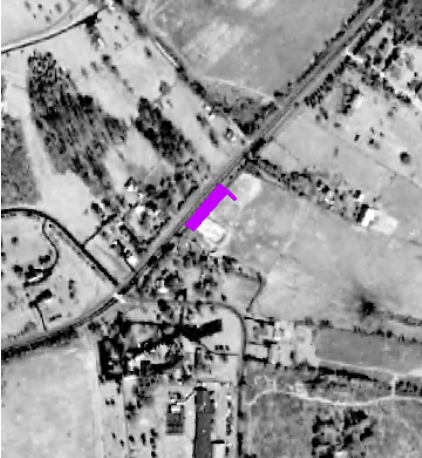

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	13700 DARNESTOWN RD.	70	A spill of 0.0625 gals of heating oil were released due to overfilling during a delivery. The material was cleaned up using sorbent materials and disposed of. The case was subsequently closed.	Low

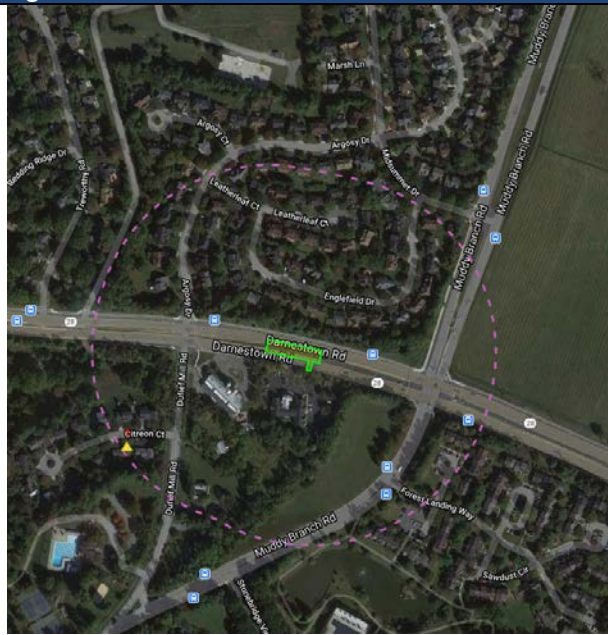


## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1908	The LOD is observed to be located on vacant land. Residential structures are observed to the north and east, as well as further to the southwest.	Topo
1994	Additional development is observed in all directions with respect to the LOD.	Aerial
2005	A residential structure and cul-de-sac have been constructed to the south and southeast of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1908	Year: 1994	Year: 2005
		

## Project Area Site Descriptions

LOD ID: WAS-4613	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	Central median of Darnestown Road (MD 28), between Argosy Drive/Dufief Mill Road and Muddy Branch Road	
City	Gaithersburg	
County	Montgomery	
Type of property	ROW	
Ranking Rationale Site Summary		
<p>The LOD is located along the central median of Darnestown Road (MD 28), between Argosy Drive/Dufief Mill Road and Muddy Branch Road, in Gaithersburg, Maryland. Residential properties surround the site to the north and east. A large farm is located to the west of the LOD. A medical center and old repurposed barn are located directly south of the LOD, followed by additional residential properties. Based on historical imagery, the surrounding area was primarily developed as agricultural properties up until the 1970s, with the golf course to the north and residential properties to the west, north, and south constructed in the early 1980s. By 2009, the surrounding area and LOD were observed to be developed in their current configuration. A former military radar site was located approximately 1,050 feet north (upgradient) of the LOD. According to available information, the site was decommissioned in the 1980s and was repurposed by the US Consumer Product Safety Commission. Currently, Montgomery County is proposing to redevelop the site into a public park.. Based on available information provided by MDE through a PIA request, as well as on the MDE LRP website, several USTs have been excavated and removed from the site over the years. No known environmental impacts are known to be present onsite. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input checked="" type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input checked="" type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input checked="" type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input checked="" type="checkbox"/>

SITE ID: WAS-4613-LOW



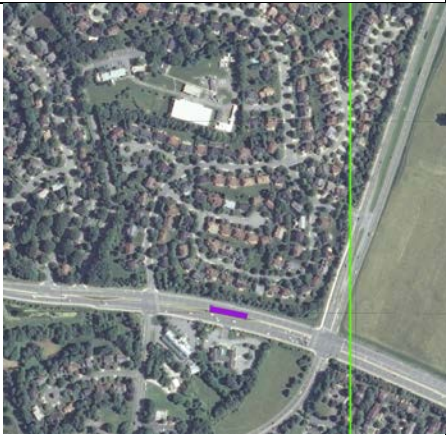
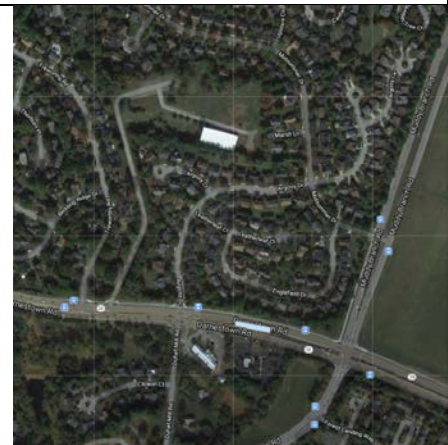


## Project Area Site Descriptions

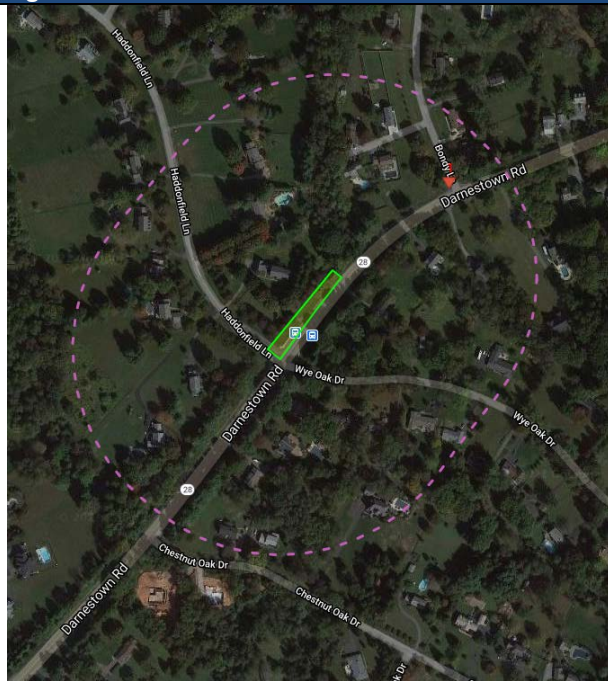
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Barbara 'Connell Residence 10905 Citreon Ct	625	OCP – An OCP case was opened for the property in December 2014 and closed three months later in February 2015. No information on the type of release or amount was provided. The site is believed to be upgradient of the LOD; however, it is separated by a stream running east to west.	Low
116	Rockville - Control 10901 Darnstown Rd; GSA Consumer Product Safety Comm 10901 Darnestown Rd Adm Bldg B	1050	CERCLIS-NFRAP, SEMS-ARCHIVE, FINDS, RCRA-CESQG, RCRA-SQG FINDS/FRS, LRP, UST, FUDS, OCP – a military radar site was located approximately 1,050 feet north of the LOD. The site was decommissioned in the 1980s and was repurposed by the US Consumer Product Safety Commission.. Based on available information provided by MDE, a 1,500-gallon heating oil UST was excavated and removed from the site in 1992, two 1,000-gallon heating oil USTs were excavated and removed from the site in 1993, and a 10,000-gallon heating oil UST was excavated from the site in 2015. PID readings and/or confirmation soil samples were collected from the soil interval below the grade of the former USTs that indicated no substantial petroleum impacts were present onsite. Additionally, available online records from MDE Land Restoration Program state that no known contaminants are known to be present in the soil and groundwater onsite. The site is most likely tracked by MDE LRP, since it is a Formerly Utilized Defense Site (FUDS). Montgomery County is currently looking to repurpose the site into a public park.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is primarily developed with agricultural land. A military radar facility is further to the north.	Aerial
1981	The area to the west is observed to have been developed with residential properties. A golf course is observed to the north. The area to the east is still developed as agricultural land.	Aerial
2009	The surrounding area is observed to be developed in its current configuration.	Aerial
2019	Several small structures at the military radar site to the north have been demolished.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2009
		
Year: 2019		
		

## Project Area Site Descriptions

LOD ID: WAS-4615	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of Darnestown Road (MD 28), east of Haddonfield Lane	
City	Gaithersburg	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the north side of the Darnestown Road (MD 28), east of Haddonfield Lane, in Gaithersburg, Maryland. The surrounding area was primarily agricultural land up until the 1970s, when residential development to south and east began. Additional residential development occurred to the north and south up until 2005, when the LOD and surrounding area were observed to be developed in their current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.</p>		


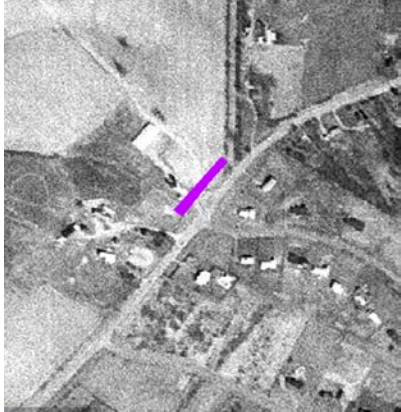

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Private Residence/ 15601 Bondy Ln Darnestown Md	520	ERNS – In 2008, a release of heating oil onto the basement floor (volume unknown) was reported to MDE. The material was contained within the basement and cleaned up.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1908	Darnestown Road visible, the surrounding area appears to be primarily vacant land. Several residential structures are noted to the north, east, and west.	Topo

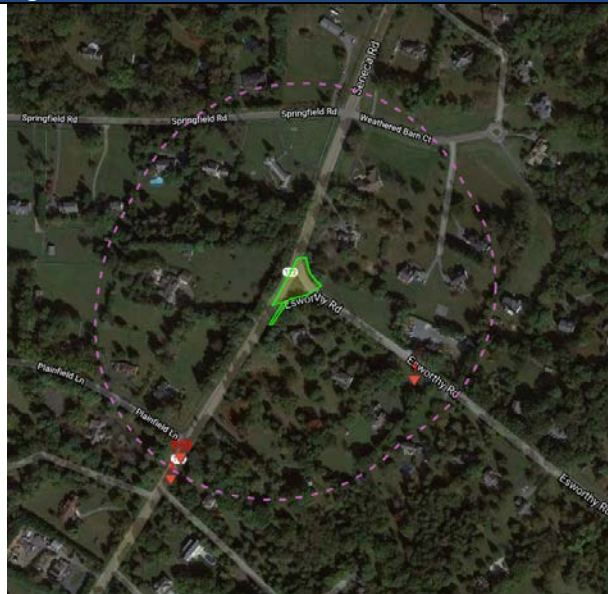
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1972	A barn or warehouse is observed to the north of the LOD. Additional residential development is observed in all directions.	Aerial
1995	A residential neighborhood is observed to the north. Additional residential development is observed to the south, east, and northeast. The surrounding area is generally observed close to its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1908	Year: 1972	Year: 1995
		



## Project Area Site Descriptions




LOD ID: WAS-4622	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	Intersection of the Seneca Road (MD 112) and Esworthy Road	
City	Germantown	
County	Montgomery	
Type of property	ROW	
Ranking Rationale Site Summary		
<p>The LOD located within the median at the intersection of Seneca Road (MD 112) and Esworthy Road, in Germantown, Maryland. The surrounding area is primarily suburban, with private residences on large tracts of land abutting the LOD on a four sides. The surrounding area was developed with agricultural properties up until the late 1970s, when residential development began to occur. Residential development continued up until 2005, when the LOD and surrounding area were observed to be developed in their current configuration. A residential heating oil UST of unknown size was excavated and removed from a property approximately 470 feet to the southeast (downgradient) of the LOD in 2018. A release was reported, material was cleaned up, and the site received closure approximately 3 months later. Based on local topography, the site is believed to be downgradient of the LOD. A second OCP case was opened in January 1997 at property approximately 725 feet southwest (crossgradient) of the LOD, related to a ground seep investigation. The release was reportedly address and received closure from MDE in June 1997. A spill case opened for a release of approximately 12 ounces of heating oil at a property approximately 565 feet south of the LOD. Based on the distances of the sites relative to the LOD, impacts are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

## Project Area Site Descriptions

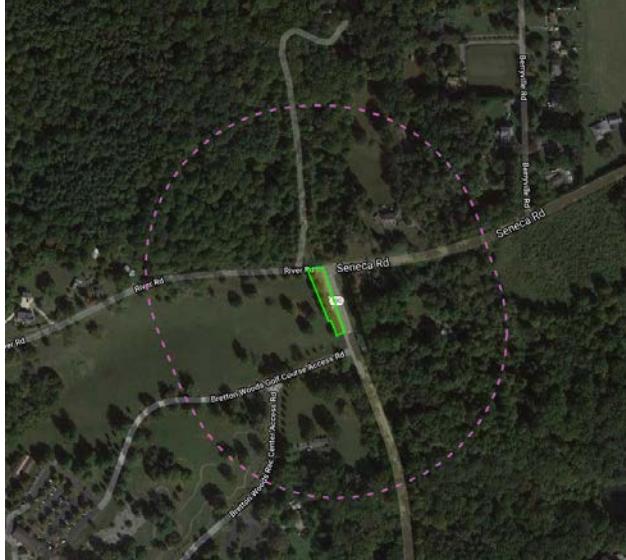
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Nancy Keshishian Residence /14110 Esworthy Rd	470	OCP – A residential heating oil UST of unknown size was excavated and removed from the property in 2018. A release was reported, material addressed, and the site received closure approximately 3 months later. Based on local topography, the site is believed to be downgradient of the LOD.	Low
2	14621 Seneca Road	565	SPILLS – Approximately 1 cup of oil was released on the basement floor near the furnace of the private residence in 2014. The material was cleaned-up and the case was closed.	Low
3	Susan Welsh Residence/ 14621 Seneca Rd	725	OCP – During the closure of heating oil UST in January 2015, an unknown amount of product was found to have been released that impacted subsurface media. The site was reportedly cleaned up and the case received closure less than a month later. ERIS reported the site to be approximately 652 feet south of the LOD; however, it is believed that the former UST was mostly likely 725 feet southwest (crossgradient) of the LOD.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1956	The surrounding area is observed to be developed as agricultural land. A structure is observed to the east, along with three others to the north.	Aerial
1981	Substantial residential development is observed in all directions from the LOD.	Aerial
1981	Additional residential development is observed in the immediate vicinity of the LOD. The LOD and surrounding area are observed to be developed in their current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1956	Year: 1981	Year: 2005
		



## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4624	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	West side of Seneca Road (MD 112), south of River Road	
<b>City</b>	Darnestown	
<b>County</b>	Montgomery	
<b>Type of property</b>	Vacant	
<b>Ranking Rationale Site Summary</b> <p>The LOD is located along the west side of Seneca Road (MD 112), south of River Road, in Darnestown, Maryland. Residential structures on large tracts of land about the LOD to the north, east, and south. A golf course, constructed in the late 1960s, abuts the LOD to the west. The surrounding area was primarily agricultural land up until the late 1960s/ early 1970s, when residential development began to occur. By 2005, the LOD and surrounding area were observed to be developed in their current configuration. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>		

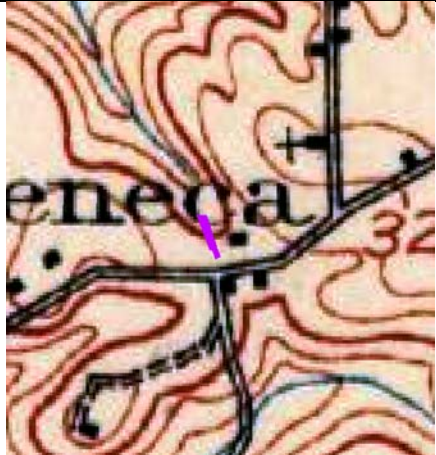

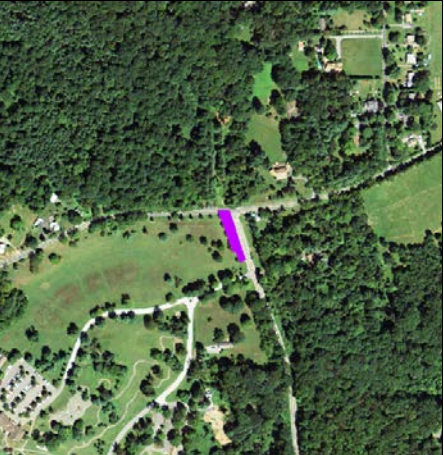
ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

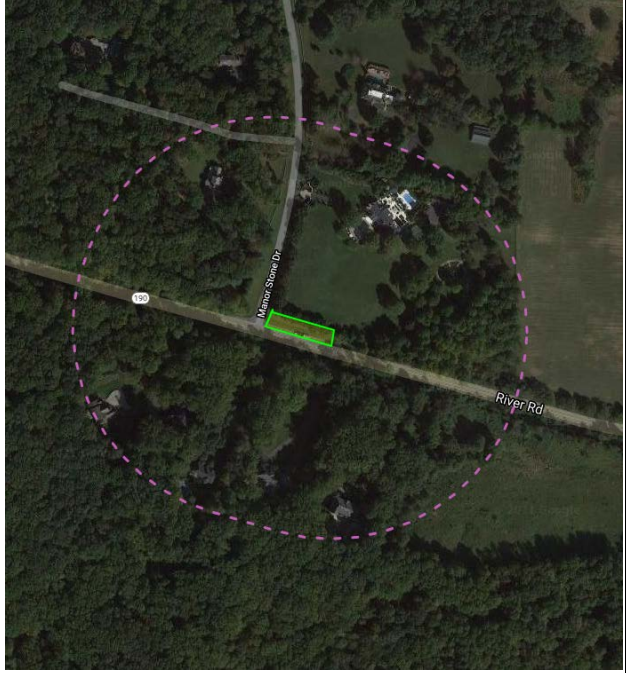
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1944	The surrounding area is primarily vacant with residential structures scattered intermittently throughout the general vicinity of the LOD.	Topo
1972	Additional residential development is observed to the north. A golf course is observed to the west/southwest.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2013	Additional residential development is observed to the north and east. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1944	Year: 1972	Year: 2013
		

## Project Area Site Descriptions




<b>LOD ID:</b> WAS-4625	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	The north side of River Road (MD 190), east of Manor Stone Drive	
<b>City</b>	Potomac	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the north side of River Road (MD 190), immediately east of Manor Stone Drive, in Potomac, Maryland. The surrounding area is primarily rural/suburban with private residence on large tracts of land. Based on historical imagery, the surrounding area has been primarily forested and agricultural land up until the 1950s, when several residential structures were observed to be present south of the LOD and River Road. By the late 1980s, additional residential structures were observed to the north of the LOD. The surrounding area was observed to be developed in its current configuration by 2009. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

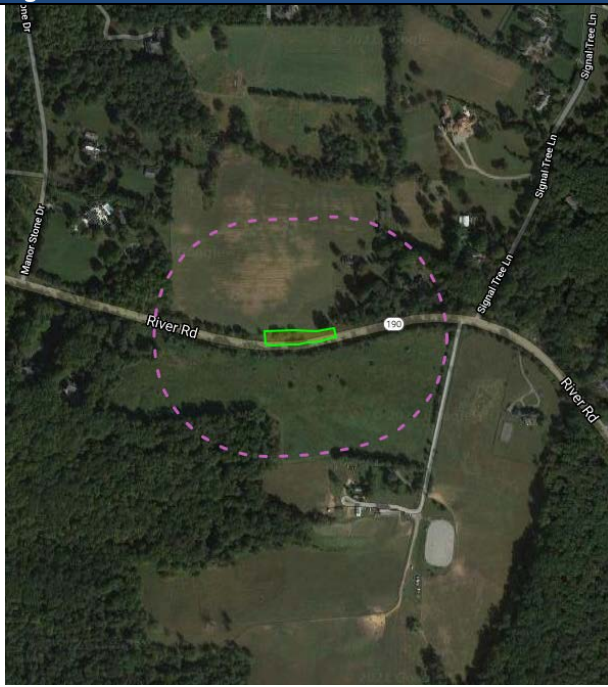
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is observed to be primarily forested and agricultural land. River Road is observed running east to west. Several residential structures are observed to the south, beyond River Road.	Aerial
1988	Additional residential structures are observed to the north of the LOD.	Aerial
2009	Additional residences observed in the vicinity of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2009
		



## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4626	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Along the north side of River Road (MD 190), west of Signal Tree Road	
<b>City</b>	Potomac	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the north side of River Road (MD 190), west of Signal Tree Road, in Potomac, Maryland. The surrounding area is primarily rural suburban with private residence on large tracts of land. Based on a review of historical imagery, the surrounding area was primarily developed as agricultural land up until the 1980s, when residential development to the north, east, and west began to occur. A farm has been located to the south of the LOD, beyond River Road since at least the 1950s. The surrounding area was observed to be developed in its current configuration by 2013. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>		



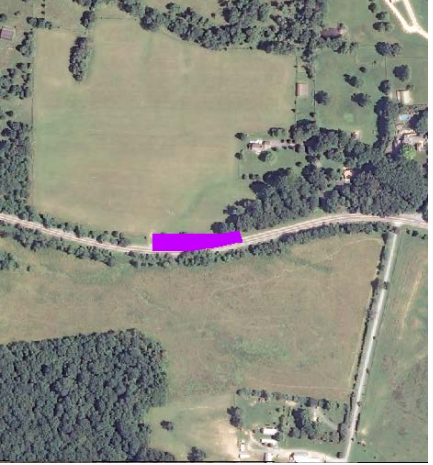
ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is observed to developed primarily as agricultural land. A farm is observed to the south of the LOD.	Aerial

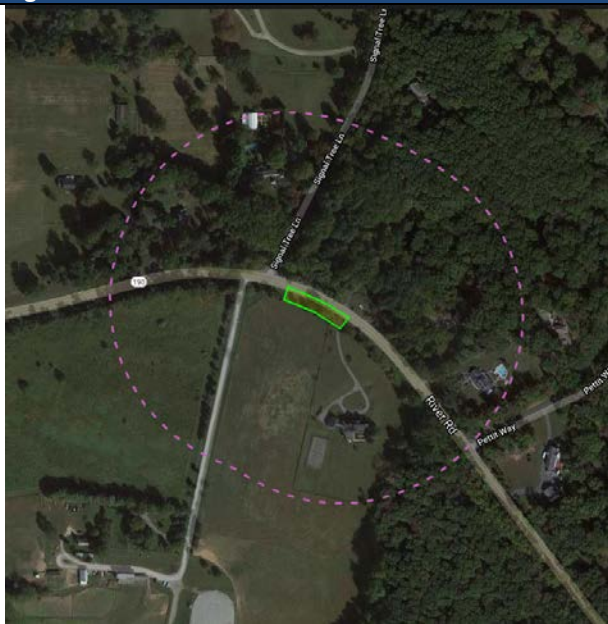
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1988	Residential properties are observed to northeast have been recently constructed or are under construction to the northwest and northeast.	Aerial
2013	Additional residential properties are observed in the vicinity of the LOD. The farm is observed to still be present to the south of River Road.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2013
		



## Project Area Site Descriptions




<b>LOD ID: WAS-4627</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b>
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	South side of River Road (MD 190), east of Signal Tree Road	
<b>City</b>	Potomac	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located on the south side of River Road (MD 190), east of Signal Tree Road, in Potomac, Maryland. The surrounding area is primarily suburban with private residence on large tracts of land. The area to the north is forested land. A residential property is located to the south, followed by a farm. Additional residential properties are located to the east and west. Based on a review of historical imagery, the surrounding area was primarily developed as agricultural land up until the 1980s, when residential development to the north, east, and west began to occur. A farm has been located to the south of the LOD, beyond River Road since at least the 1950s. The surrounding area was observed to be developed in its current configuration by 2013. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

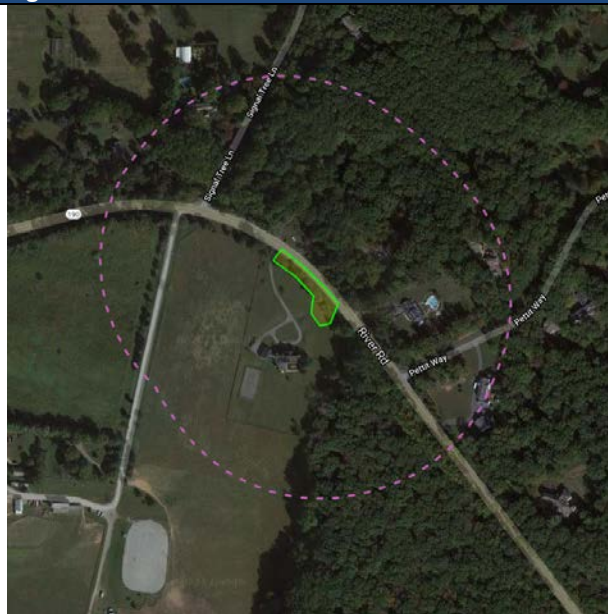
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is observed to be developed primarily as agricultural land. A farm is observed to the south of the LOD.	Aerial
1988	Residential properties are observed to have been recently constructed or are under construction to the northwest and northeast.	Aerial
2013	Additional residential properties are observed in the vicinity of the LOD. A large residence is observed directly south of the LOD. The farm is observed to still be present to the south of River Road.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2013
		

## Project Area Site Descriptions



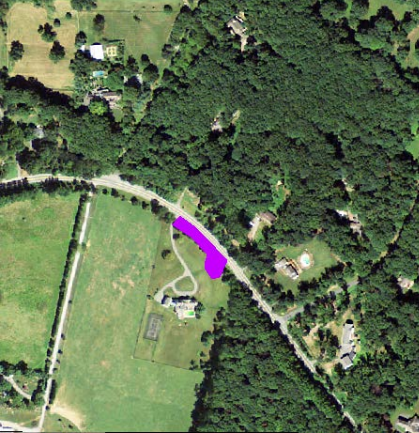
LOD ID: WAS-4628	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	South side of River Road (MD 190), southeast of Signal Tree Road	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located on the south side of River Road (MD 190), southeast of Signal Tree Road, in Potomac, Maryland. The surrounding area is primarily suburban with private residence on large tracts of land. The area to the north is forested land. A residential property is located to the south, followed by a farm. Additional residential properties are located to the east and west. Based on a review of historical imagery, the surrounding area was primarily developed as agricultural land up until the 1980s, when residential development to the north, east, and west began to occur. A farm has been located to the south of the LOD, beyond River Road since at least the 1950s. The surrounding area was observed to be developed in its current configuration by 2013. No records of concern were identified in the vicinity of the LOD during this environmental review.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

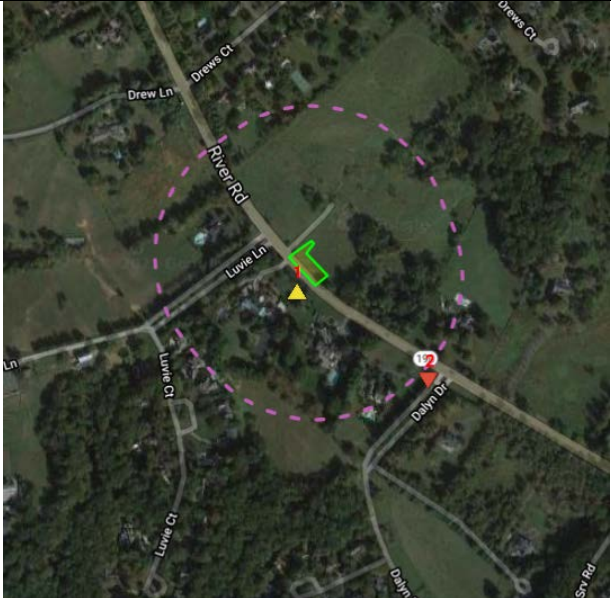
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is observed to be developed primarily as agricultural land. A farm is observed to the south of the LOD.	Aerial
1988	Residential properties are observed to have been recently constructed or are under construction to the northwest and northeast.	Aerial
2013	Additional residential properties are observed in the vicinity of the LOD. A large residence is observed directly south of the LOD. The farm is observed to still be present to the south of River Road.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2013
		



## Project Area Site Descriptions




LOD ID: WAS-4629	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of River Road (MD 190), east of Watkins View Lane	
City	Potomac	
County	Montgomery	
Type of property	ROW/private	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the north side of River Road (MD 190), east of Watkins View Lane, in Potomac, Maryland. Residential houses are located to the southeast. Residential development is observed to begin in the 1960s and continue through 2013, when the surrounding area was observed to be developed in its current configuration. Two database listings were identified in the surrounding area. In 1994, a 2000-gallon heating oil UST was closed in place at a residential property approximately 225 feet south of the LOD. Available records did not indicate whether a release occurred and/or clean-up/remediation was required. An active 2,000-gallon heating oil UST is present at a residence approximately 655 feet to the southeast of the LOD. No records associated with releases or cleanup in connection with the UST were identified. Base on the local topography, both sites are believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

## Project Area Site Descriptions

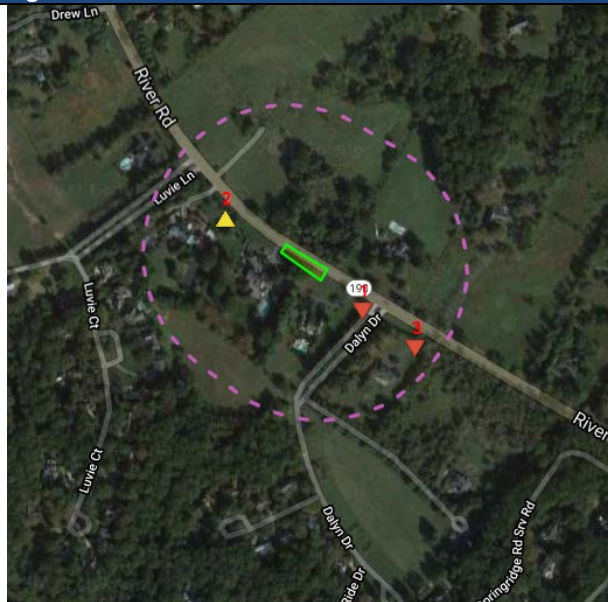
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	James/Evette Meni 13120 River Road Potomac Md	225	UST – In 1994, a 2000-gallon heating oil UST was closed in place. ERIS reported the site to be 20 feet south of the LOD; however, based on further review, the site is approximately 225 feet south of the LOD. Available records did not indicate whether a release occurred and/or clean-up/ remediation was required; however, the site is believed to be downgradient of the LOD.	Low
2	Mr. & Mrs. Albert E. Stecklein/ 13001 River Road	655	UST – According to available records, the site has an active 2,000-gallon heating oil UST that was installed in 1972. There are no records of releases associated with the UST. Additionally, the site is believed to downgradient of the LOD.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	Two structures are observed to the northeast and one to the east of the LOD.	Aerial
1981	Residential houses are observed to the south and west of the LOD, beyond River Road.	Aerial
2013	The structures previously observed to the northeast of the LOD have been demolished. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2013
		



## Project Area Site Descriptions

LOD ID: WAS-4630	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	South side of River Road (MD 190), north of Dalyn Drive	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located in a semi-rural/suburban area along the south side of River Road (MD 190), north of Dalyn Drive, in Potomac, Maryland. Residential development is observed to begin in 1971 and continue through 2013, when the surrounding area was observed to be developed in its current configuration. Two database listings were identified in the surrounding area. In 1994, a 2000-gallon heating oil UST was closed in place at a residential property approximately 360 feet northwest of the LOD. Available records did not indicate whether a release occurred and/or clean-up/ remediation was required. An active 2,000-gallon heating oil UST is located at a residence approximately 200 feet to the southeast of the LOD. No records associated with releases or cleanup in connection with the UST were identified. Base on the local topography, the sites are believed to be crossgradient and downgradient of the LOD, respectively. Thus, impacts to the LOD are unlikely.</p>		




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Mr. & Mrs. Albert E Stecklein/ 13001 River Road	200	UST – A 2000-gallon heating oil UST, installed in 1972, is currently in use. Based on local topography, the site appears to be downgradient of the LOD.	Low

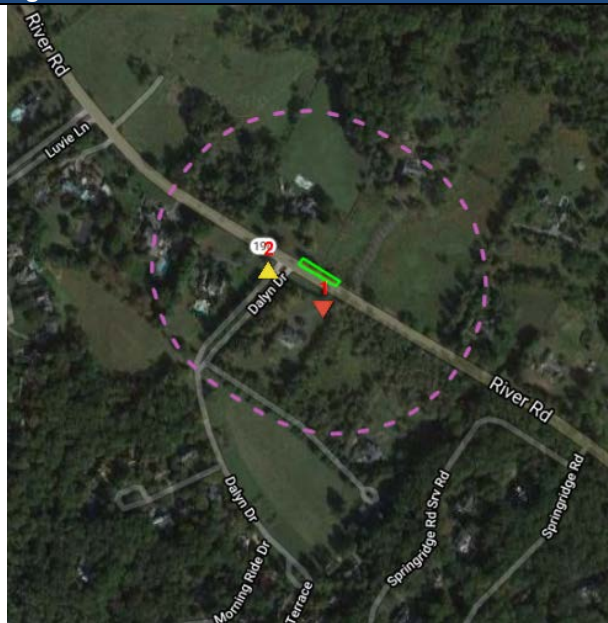
## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
2	James/Evette Meni 13120 River Road	360	UST – A 2000 gallon heating oil UST was closed in place in 1994. The UST is located approximately 360 feet from the LOD. Based on local topography, the site appears to be crossgradient of the LOD.	Low
3	WSSC Potomac Water Filtration/ 12920 River Road Potomac Md	4,280	SPILLS – In 2018, 2 million gallons of sewage water was spilled into the Potomac River from a water treatment plant. Although the address is listed as 12920 River Road, the WSSC Potomac Water Filtration is located at 12200 Rover Road, which is 4280 feet to the southeast.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1963	The surrounding area is primarily rural agricultural land. One structure located to the north is observed.	Aerial
1973	Additional residential properties are observed to the east of the LOD.	Aerial
2013	The structure to the north of LOD appears to have been demolished. The surrounding area is observed to be developed in its current configuration	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1963	Year: 1981	Year: 2013
		

## Project Area Site Descriptions




LOD ID: WAS-4631	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of River Road (MD 190), east of Dalyn Drive	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the north side of River Road (MD 190), east of Dalyn Drive, in Potomac, Maryland. The surrounding area is observed to be semi-rural/suburban. Residential development of the area is observed to begin in 1959 and continued through 2012 when the surrounding area was observed to be developed in its current configuration. An active 2,000-gallon heating oil UST is present at a residence approximately 325 feet to the southeast of the LOD. No records associated with releases or cleanup in connection with the UST were identified. The UST is believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	WSSC Potomac Water Filtration/ 12920 River Road Potomac Md	3,785	SPILLS – In 2018 2 million gallons of sewage water was spilled from the wastewater treatment plant into the Potomac River. Based on local topography, the site is crossgradient/downgradient from the LOD. Although the address is listed as 12920 River Road, the WSSC Potomac Water Filtration is located at 12200 Rover Road, which is 3785 feet to the SE.	Low
2	Mr. & Mrs. Albert E Stecklein/ 13001 River Road	325	UST – A 2000-gallon heating oil UST is currently in use at the residence. The UST is approximately 325 feet from the LOD. Based on local topography, the site is located downgradient from the LOD.	Low

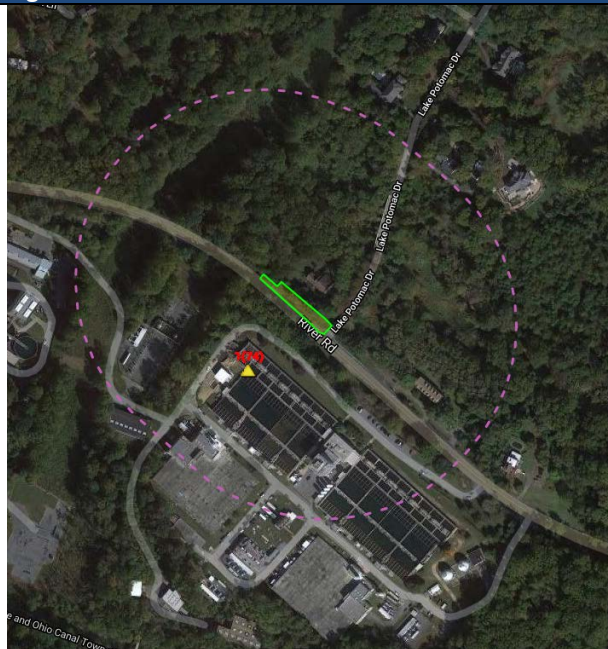
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is observed to be primarily agricultural land. Residences/farms are observed to the north of the LOD.	Aerial
1981	Additional residential properties are observed to the east and west of the LOD.	Aerial
2005	Additional residential development along River Road in both directions, as well as to the south of LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		



## Project Area Site Descriptions

LOD ID: WAS-4632	Site Rank: High	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of River Road (MD 190), west of Lake Potomac Drive	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the north side of River Road (MD 190), directly west of Lake Potomac Drive, in Potomac Maryland. The surrounding area is semi-rural/suburban area Residential properties built between 1981 and 1988 on moderate size lot are to the north, east, west. The WSSC Potomac Filtration Plant is located approximately 200 feet south of the LOD, built prior to 1959 and has been expanded multiple times. There have been 27 reported spills that range in size from 1 gallon to an unknown amount, ranging from wastewater to water treatment chemicals. There are 7 USTs registered at the property, 6 of which are permanently out of use and 1 currently in use. Based on local topography, the LOD is potentially downgradient from the site. Based on a review of MDE files provided through a PIA request, five 20,000-gallon ferric chloride USTs were excavated and removed for off-site disposal in 1994. No corrective action was required based on site observation and analytical data, and MDE closed case #94-2858 MO-2. Other records reviewed included a spill report for the release of 2 gallons of oil inside a container in 2017, as well as several third party UST inspections and associated MDE correspondence. Based on the lack of documentation related to the closure of the 1,000-gallon gasoline UST, as well the majority of the spills at the facility, the facility's proximity, and its potential upgradient proximity relative to the LOD, there is a potential for impacts to the LOD.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input checked="" type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input checked="" type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input checked="" type="checkbox"/>

SITE ID: **WAS-4632-HIGH**




## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	WSSC – Potomac WFP 12200 River Road	240	<p>ERNS – In 1996, an AST containing hydrofluosilicic acid was overfilled, spilling 400 gallons onto soil and asphalt. The leak was secured.</p> <p>HMIRS – In 2016, there were 2 incidents, in which 15 gallons and 0.25 gallons, respectively, of sulfuric acid leaked during unloading of trailers. In 2010, there were 3 separate incidents in which 0.5 gallons, 0.0625 gallons, and 1 gallon, respectively, of sulfuric acid leaked during unloading of trailers.</p> <p>OCP – There have been three OCP cases, which have all been closed. There were no indications as to whether releases and cleanups occurred.</p> <p>RCRA CESQG – Facility is a generator of D001 (ignitable waste), D039 (tetrachloroethylene), F003 (spent nonhalogenated solvents). Current VSQG, former LQG. In 2005, a compliance evaluation inspection was performed onsite. No violations were found</p> <p>SPILLS – There have been 27 reported spills that range in size from 1 gallon to an unknown amount. The spills ranged from wastewater to water treatment chemicals. Spills events resulted from emergency maintenance conditions, missed sampling events, chlorine exceedance, etc.</p> <p>UST – There are seven (7) USTs, six (6) are permanently out of service (one (1) 1,000-gallon gasoline and five (5) 20,000-gallon hazardous substance tanks), one (1) 4,000-gallon gasohol tank currently in use</p> <p>Based on the local topography, the site is potentially upgradient of the LOD.</p>	High

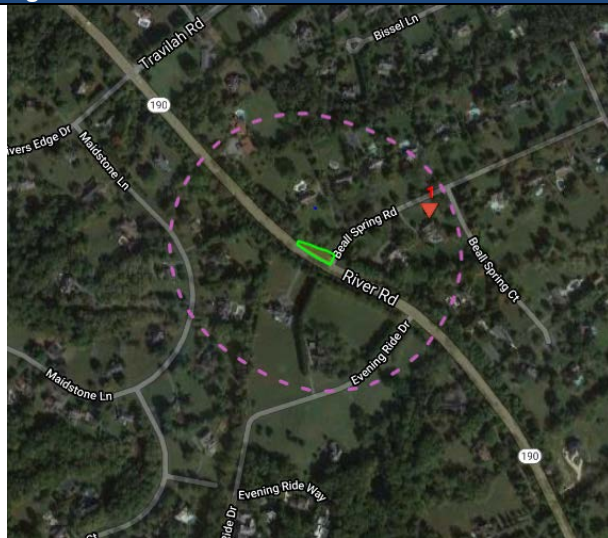
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	A wastewater facility is observed to the south of the LOD.	Aerial
1988	Several expansions to the south of the facility. Residential houses built to the north of the LOD.	Aerial
2005	Expansion of facility to the west. This is the current configuration of the site.	Aerial



## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2005
		

## Project Area Site Descriptions

LOD ID: WAS-4633	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of River Road (MD 190), west of Beall Spring Road	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located along the north side of River Road (MD 190), west of Beall Spring Road, in Potomac, Maryland. The surrounding area is observed to be primarily semi-rural/suburban. Residential development was observed to begin in 1981 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.		


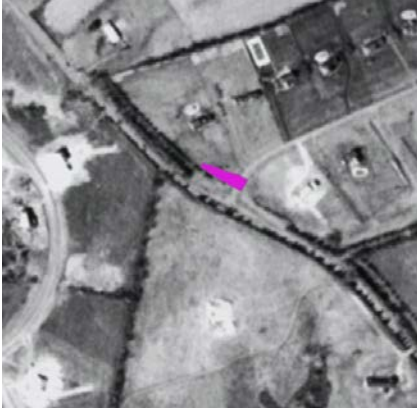
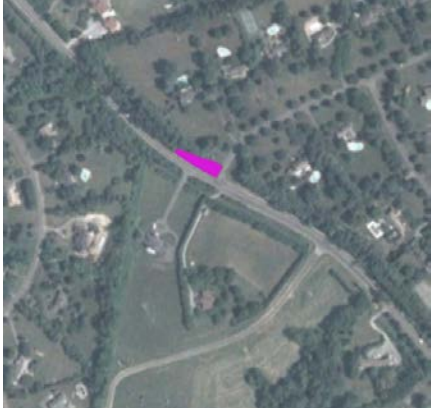
ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
OCP	MARK SIMS RESIDENCE/ 12312 BEALL SPRING RD POTOMAC MD	610	OCP – In 2019, an OCP case was opened during the closure of a residential heating oil tank. A release occurred and the case remains opened. Based on local topography, the site appears to be crossgradient to the LOD.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is observed to be primarily agricultural land. River road is observed, running northwest to southeast of the LOD.	Aerial

## Project Area Site Descriptions

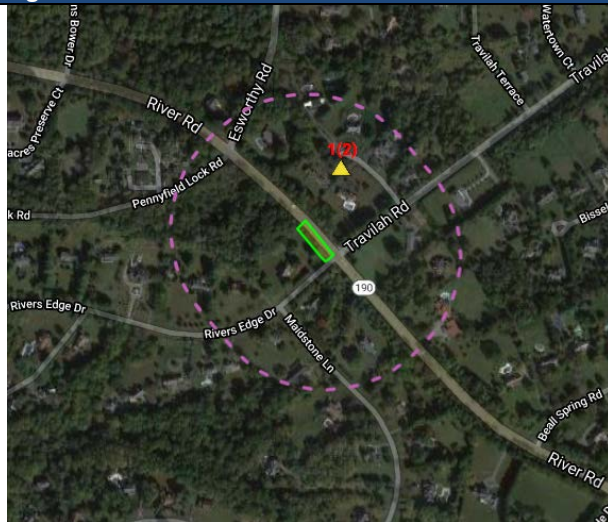
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1981	Residential houses are observed to the east, west, and north of the LOD.	Aerial
2005	Additional residential development is observed to north of the LOD. The surrounding area is observed in its observed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		

## Project Area Site Descriptions

LOD ID: WAS-4635	Site Rank: Low
Quadrant:	NW
Watershed:	WAS
Street Address/Nearest Cross Streets	South side of River Road (MD 190), southwest of Travilah Road/Rivers Edge Drive
City	Potomac
County	Montgomery
Type of property	ROW
Ranking Rationale Site Summary	
<p>The LOD is located along the south side of River Road (MD 190), southwest of Travilah Road/Rivers Edge Drive, in Potomac, Maryland. The surrounding area is considered semi-rural/suburban. A housing complex is located to the southwest of the LOD. Several residential houses and open space surround the property to the north, south, and east. Residential development is observed to have begun around 1981 and continued through 1994, when the LOD and surrounding area were observed to be developed in their current configuration. An OCP case associated with a leaking 1,000-gallon heating oil UST at residential property is approximately 200 feet north of the LOD. Based on case documents provided by MDE, the UST was found to be leaking in 2014. Subsequently, the UST and approximately 40 tons of petroleum impacted soil were excavated and removed from the site in 2015. Additional investigations were conducted that included soil boring sampling and monitoring well installation. Free product up to 3.5 feet thick was identified in several of the monitoring wells as well as the residence's drinking water well. Thus, remediation was conducted that included several rounds of pumping out free product through, when the monitoring wells were abandoned with permission from MDE in 2016. Based on site investigation reports reviewed, the impacted area is isolated to the immediately southeast of the residence, northeast of the LOD, and is believed to not extend near or into the boundaries of the LOD. The case is still open, as MDE has requested that surrounding residence's drinking water wells be tested for the presence of petroleum constituents. Based on the information summarized above, impacts to the LOD unlikely.</p>	

Figure Location:



## Project Area Site Descriptions




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	SHIRIN KAFFI RESIDENCE 6 TRAVILAH ROAD	200	OCP, SPILLS – In 2014, a 1,000-gallon heating oil UST was determined be leaking on the residential property approximately 545 feet east of the LOD (ERIS reported the site approximately 625 feet to the east). Based on case documents provided by MDE the UST was found to be leaking in 2014. Subsequently, the UST and approximately 40 tons of petroleum impacted soil were excavated and removed from the site in 2015. Additional investigations were conducted that included soil boring sampling and monitoring well installation. Free product up to 3.5 feet thick was identified in several of the monitoring wells as well as the residence's drinking water well. Thus, remediation was conducted that included several rounds of pumping out free product through, when the monitoring wells were abandoned with permission from MDE in 2016. Based on site investigation reports reviewed, the impacted area is isolated to the immediately southeast of the residence, northeast of the LOD, and is believed to not extend near or into the boundaries of the LOD. The case is still open, as MDE has requested that surrounding residence's drinking water wells be tested for the presence of petroleum constituents. Based on the information summarized above, impacts to the LOD unlikely.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1953	The surrounding area is observed to be primarily vacant land adjacent to River Road	Aerial
1981	A multi-family housing complex is observed to the northwest of LOD	Aerial
1994	Additional private residences are observed to the west, east, and north of the LOD. The LOD and surrounding area are observed to be developed in their current configuration.	Aerial

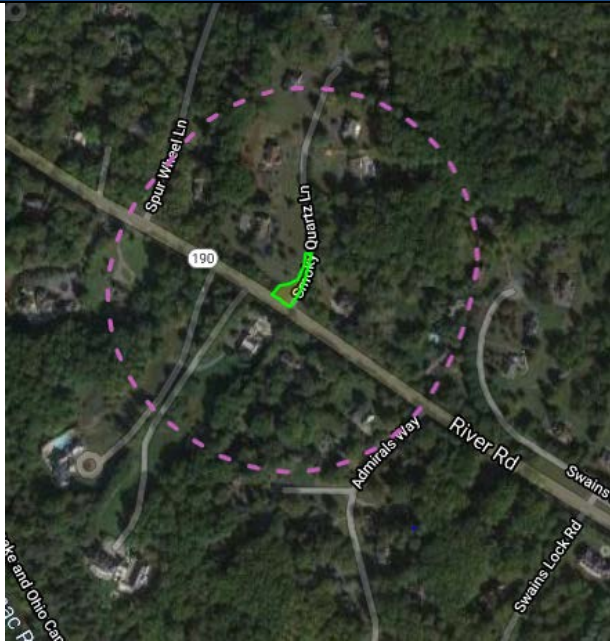


## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 1994
		



## Project Area Site Descriptions


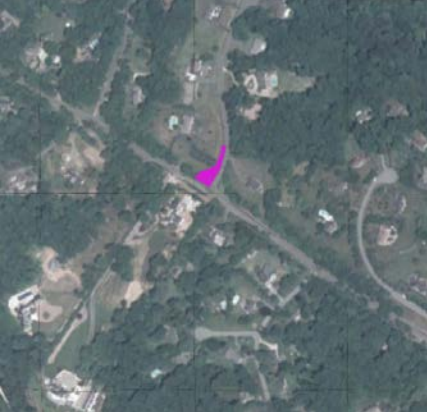
<b>LOD ID: WAS-4637</b>	<b>Site Rank: Low</b>	<b>Figure Location:</b>
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Northwest corner of the intersection of River Road (MD 190) and Smoky Quartz Lane	
<b>City</b>	Potomac	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located proximate to the northwest corner of the intersection of River Road (MD 190) and Smoky Quartz Lane, in Potomac, Maryland. The surrounding area is primarily residential. Residential development is observed to have begun prior to 1959 and continued through 2006 when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

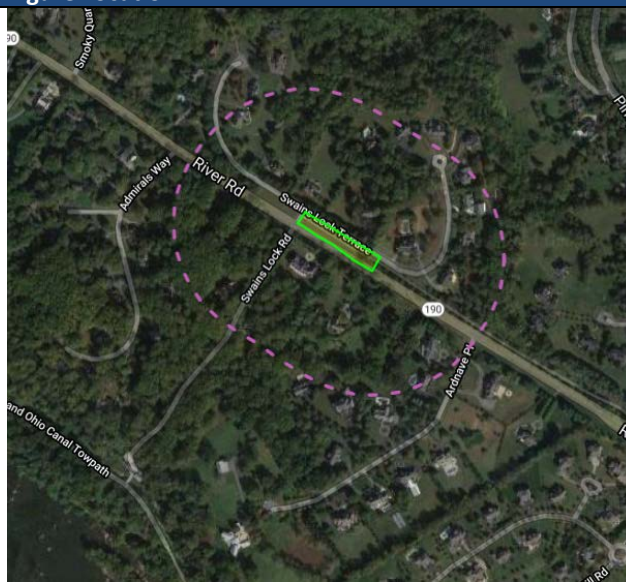
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	Residential development is observed to the south of the LOD. The remaining area surrounding the LOD is mixture of vacant land/forested land.	Aerial
1988	Additional residential development under construction is observed to the north and northeast of the LOD.	Aerial
2006	The surrounding area observed in its current configuration.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2006
		

## Project Area Site Descriptions

LOD ID: WAS-4638	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of River Road (MD 190), east of Swains Lock Road	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located along the north side of River Road (MD 190), east of Swains Lock Road, in Potomac, Maryland. The surrounding area is primarily residential and forested land. Residential development was observed to begin around the 1950s and continued through 2006 when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.		




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	Surrounding area is observed to be primarily rural agricultural land. Residential development is observed to the west of the LOD.	Aerial
1988	Additional residential properties are observed to the northwest of the LOD.	Aerial

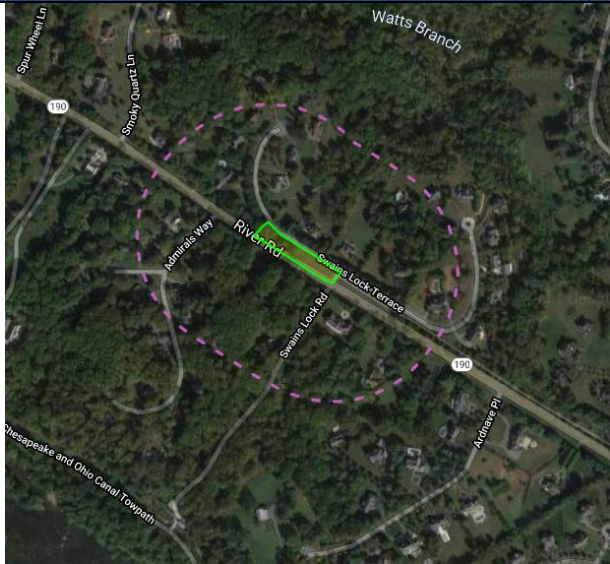
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2006	Additional residential development is observed in all directions of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2006
		



## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4639	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	North side of River Road (MD 190), west of Swains Lock Road, and south of Swains Lock Terrace.	
<b>City</b>	Potomac	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b> <p>The LOD is located along the north side River Road (MD 190), west of Swains Lock Road, and south of Swains Lock Terrace, in Potomac, Maryland. The surrounding area is primarily residential and forested land. Residential development was observed to begin around the 1950s and continued through 2006 when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>		




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	Rural agricultural land is observed to the north and southeast of LOD. Residential development is observed to the southwest.	Aerial
1988	Additional residential development is observed to the north of the LOD.	Aerial

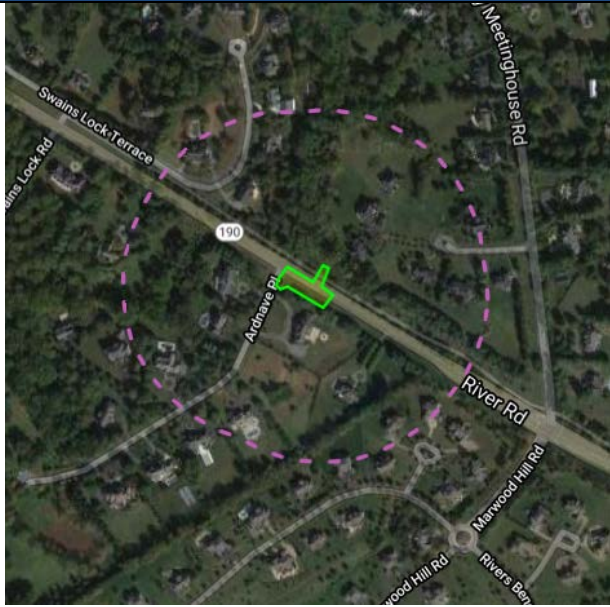
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2006	Additional residential development is observed to the northeast, southwest, and south of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2006
		



## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4640	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	South side of River Road (MD 190), east of Ardnave Place.	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b> <p>The LOD is located on the south side of River Road (MD 190), east of Ardnave Place, in Rockville, Maryland. A small portion of the LOD extends to the north over River Road. The surrounding area is observed to be primarily residential. Residential development was observed to begin around 1988 and continue through 2006, when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>		




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

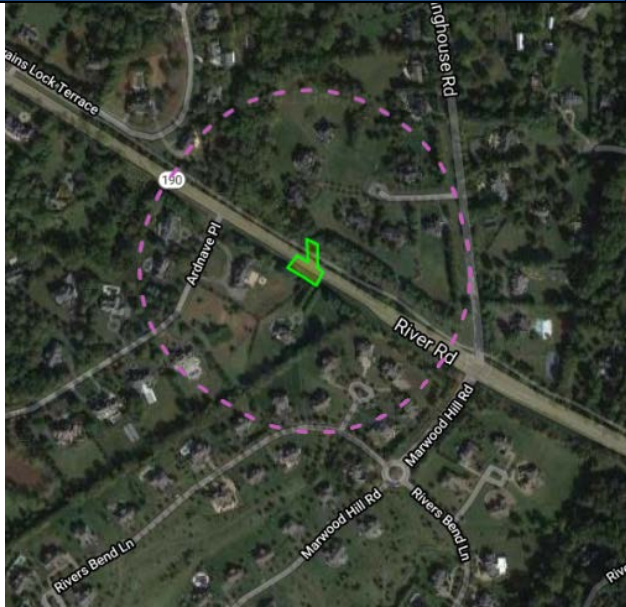
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is observed to be developed primarily with rural agricultural land. Several structures are observed to the southeast and northeast of the LOD.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1988	A structure to the southeast of LOD previously observed in older historical images has been demolished. The surrounding area is still primarily rural land.	Aerial
2006	Additional residential development is observed to the south and east of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2006
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4641	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	Along River Road (MD 190), between Ardnave Place and Marwood Hill Road	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along River Road (MD 190), between Ardnave Place and Marwood Hill Road, in Rockville, Maryland. The surrounding area was primarily developed as agricultural land up until 1988, when residential development began to occur. Residential development continued through 2006, when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>		




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	Surrounding area is observed to be primarily rural agricultural land. Structures are observed to the northeast and southeast of LOD.	Aerial
1988	Land grading part of a residential developments is observed to the east, northeast and southeast.	Aerial

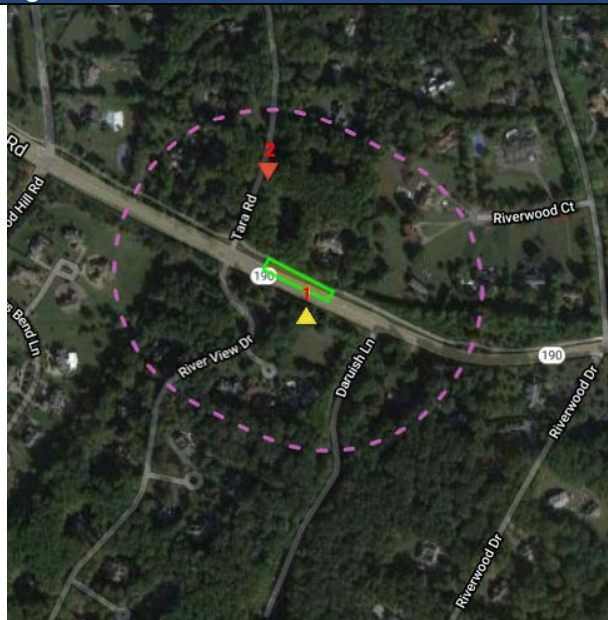
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2006	Residential properties on a large parcels of land are observed in all directions of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1988	Year: 2006
		



## Project Area Site Descriptions


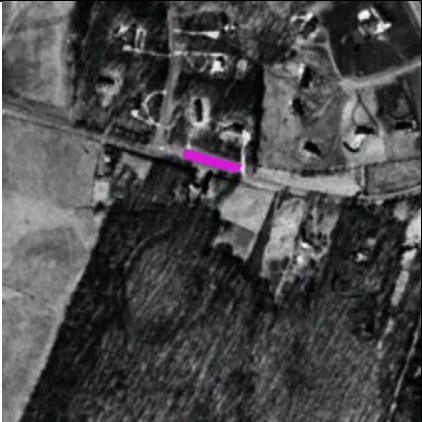
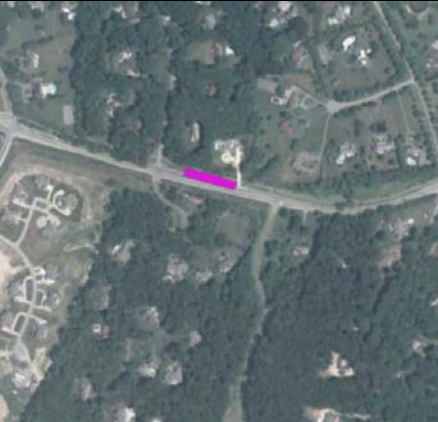
LOD ID: WAS-4642	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of River Road (MD 190), between Tara Road and Daruish Lane	
City	Potomac	
County	Montgomery	
Type of property	ROW	
Ranking Rationale Site Summary		
The LOD is located along the north side of River Road (MD 190), between Tara Road and Daruish Lane, in Potomac, Maryland. The surrounding area was primarily developed as agricultural land up until the early 1980s, when residential development began to occur. Residential development continued up until approximately 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	11330 River Road Potomac, Md	10	FINDS/FRS – Air permit related to stone crushing; no violations were identified during this review.	Low
2	TSZE TAI RESIDENCE 10705 TARA ROAD POTOMAC, MD	485	OCP – In 2015, an OCP case was opened during a residential heating oil tank closure. There is a documented release and cleanup efforts. The case was closed within two months. Based on local topography the site is located downgradient of the LOD.	Low

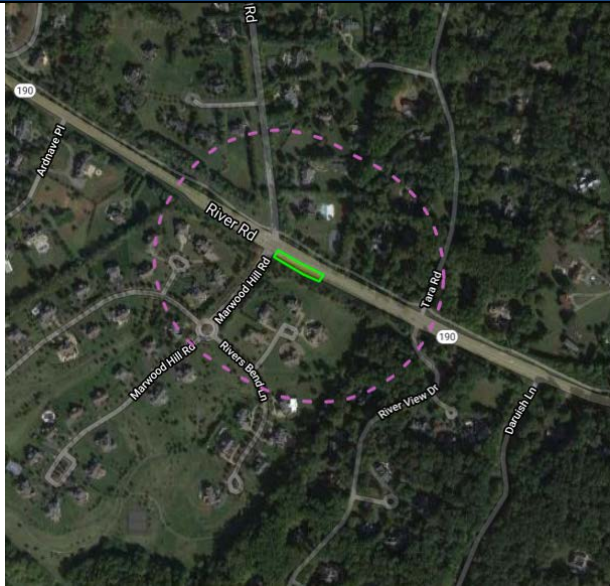
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is observed to be a mixture of rural agricultural land and forested land. A structure is observed to the south of the LOD.	Aerial
1981	Substantial residential development is observed to the north and southeast of LOD.	Aerial
2005	Additional residential development is observed in all directions of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		



## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4644	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	South side of River Road (MD 190), immediately east of Marwood Hill Road	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b> <p>The LOD is located along the south side of River Road (MD 190), immediately east of Marwood Hill Road, in Rockville, Maryland. The surrounding area was primarily developed as agricultural land up until 1981, when residential development began to occur. Residential development continued through 2006, when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.</p>		




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

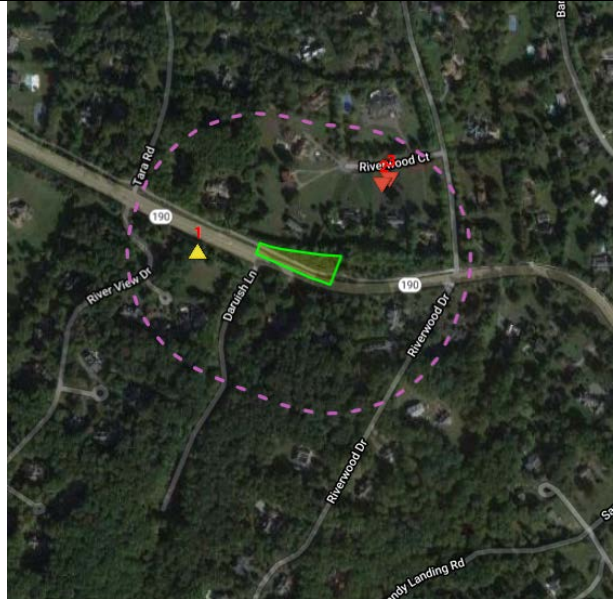
HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	Surrounding area is primarily rural agricultural land, residential properties/farms are observed to the southwest and northwest of LOD.	Aerial
1981	Residential development is observed to the east of the LOD.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2006	Additional residential developments are observed in all directions of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2006
		

## Project Area Site Descriptions

LOD ID: WAS-4645	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	Along River Road (MD 190), east of Daruish Lane	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along River Road (MD 190), east of Daruish Lane in Potomac, Maryland. The surrounding area was primarily developed as agricultural land up until 1981, when residential development began to occur. Residential development continued through 2006, when the surrounding area was observed to be developed in its current configuration. Two sites with former or current UST were identified in the vicinity of the LOD. In 2007, an OCP case was opened during a residential heating oil tank closure at a property approximately 325 feet to the north of LOD. Impacted material was encountered during the removal of the UST, which was addressed and the case received closure from MDE approximately 3 months later. The second site of concern is associated with a residential property with a 3,000-gallon residential heating oil UST (installed in 1980) currently in use. The UST is located over 500 feet north of the LOD. Based on local topography both sites are believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>		




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	11330 River Road	315	FINDS/FRS – Air permit associated with rock crushing activities; no violations were identified during this review.	Low

## Project Area Site Descriptions

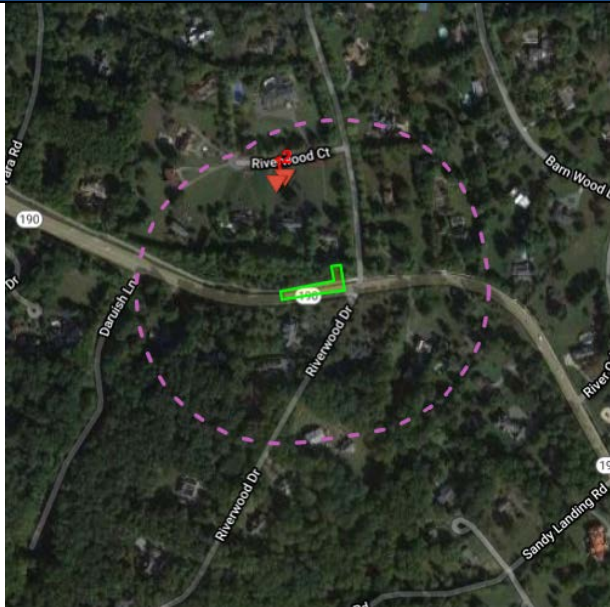
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
2	Issac Fogel Residence/ 6 Riverwood Court Potomac, MD	325	OCP – In 2007, an OCP case was opened during a residential heating oil tank closure at property approximately 325 feet to the north of LOD (ERIS listed the site 505 feet north of the LOD). Impacted material was encountered during the removal of the UST, which was addressed and the case received closure from MDE approximately 3 months later. Based on the local topography, the site is believed to be downgradient of the LOD.	Low
3	Farid Gharagozloo 1 Riverwood Court Potomac, MD	510	UST – There is a 3,000 gallon residential heating oil UST (installed in 1980) currently in use located onsite. There are no documented spills associated with this UST. Based on local topography the site is believed to be downgradient of the LOD.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is primarily rural agricultural land. Several residential properties are observed to the south of the LOD.	Aerial
1981	Residential development is observed to the north and southeast of the LOD.	Aerial
2006	Additional residential development southwest and northeast of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2006
		



## Project Area Site Descriptions



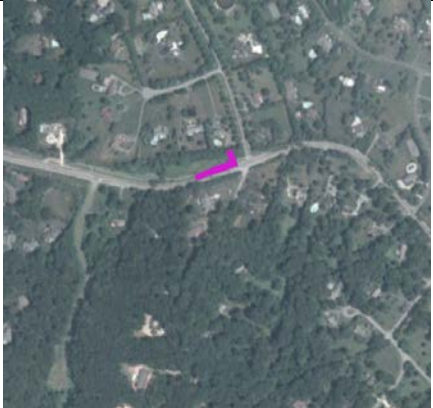
<b>LOD ID:</b> WAS-4646	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	North side of River Road (MD 190), west of Riverwood Drive	
<b>City</b>	Potomac	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the north side of River Road (MD 190), west of Riverwood Drive, in Potomac, Maryland. The surrounding area was primarily developed as agricultural land up until 1981, when residential development began to occur. Residential development continued through 2005, when the surrounding area was observed to be developed in its current configuration. There are two sites were identified in the database report, in the vicinity of the LOD. In 2007, an OCP case was opened during a residential heating oil tank closure at a property approximately 220 feet to the north of LOD. Impacted material was encountered during the removal of the UST, which was addressed and the case received closure from MDE approximately 3 months later. The second site of concern is associated with a residential property with a 3,000-gallon residential heating oil UST (installed in 1980) currently in use. The UST is located over 535 feet north of the LOD. Based on local topography both sites are believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

## Project Area Site Descriptions

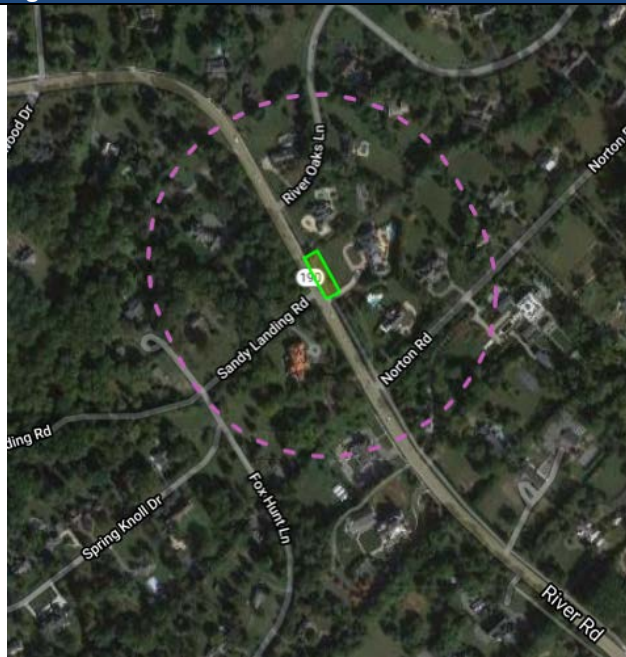
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Issac Fogel Residence/ 6 Riverwood Court Potomac, MD	220	OCP – In 2007, an OCP case was opened during a residential heating oil tank closure. A release and cleanup actions are documented. The case was closed within 2 months. Although the site is listed as 525 feet away, the site is actually 220 feet from the LOD. Based on local topography the site is believed to be located downgradient from the LOD.	Low
2	Farid Gharagozloo 1 Riverwood Court Potomac, MD	535	UST – The site has a 3,000 gallon underground heating oil storage tank currently in use, installed in 1980. There are no documented spills associated with this UST. Based on local topography the site is believed to be located downgradient from the LOD.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is primarily rural agricultural land. Several residential properties are observed to the south of the LOD.	Aerial
1981	Residential development is observed to the north and southeast of the LOD.	Aerial
2005	Additional residential development southwest and northeast of the LOD. The surrounding area is observed to be developed in its current configuration	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		



## Project Area Site Descriptions



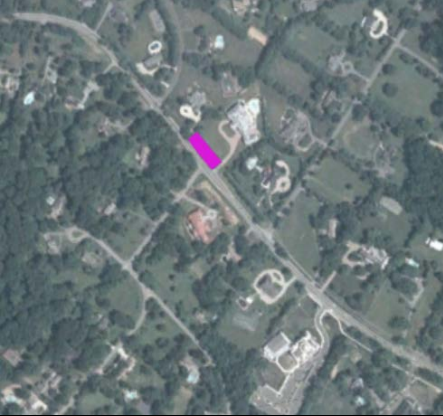
LOD ID: WAS-4647	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	East side of River Road (MD 190), east of Sanding Landing Road	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located along the east side of River Road (MD 190), east of Sanding Landing Road, in Potomac, Maryland. The surrounding area was primarily developed as agricultural land up until 1981, when residential development began to occur. Residential development continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern were identified in the vicinity of the LOD during the environmental review.		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERLCA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

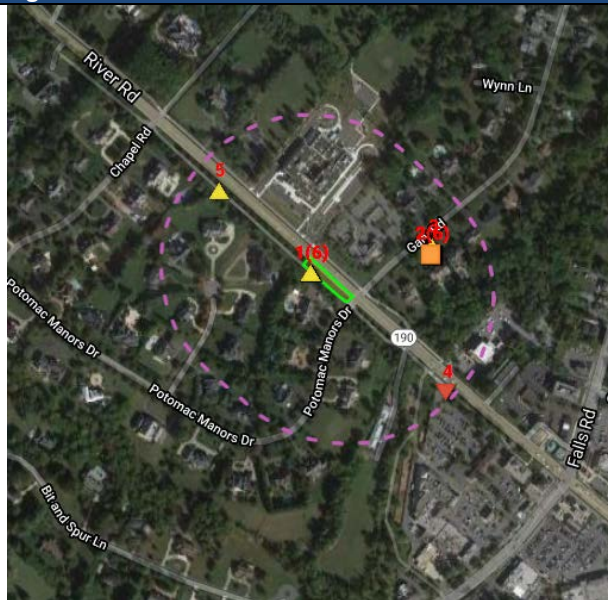
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	The surrounding area is observed to be primarily rural agricultural land. Residential properties are observed to the south/southwest of the LOD.	Aerial
1981	Additional residential development is observed in directions of the LOD.	Aerial
2005	The surrounding area is observed to be developed in its current configuration.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1959	Year: 1981	Year: 2005
		

## Project Area Site Descriptions

LOD ID: WAS-4651	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	West side of River Road (MD 190), northwest of Potomac Manors Drive	
City	Rockville	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the west side of River Road (MD 190), northwest of Potomac Manors Drive, in Rockville, Maryland. The surrounding area is primarily residential, with a school to the northeast and commercial development further to the southeast. Residential development is observed to begin prior to 1964 and continued through 2005, when the surrounding area is observed to be developed in its current configuration. A school located 185 feet from the LOD had a 10,000-gallon heating oil UST excavated and removed from the site in July 1995. Based on available records provided by MDE, after the UST had been removed from the ground, the soil interval below the grade of the bottom of the UST was checked for volatile organic compounds using a PID by an inspector from MDE. Readings ranged from 1 ppm to 28 ppm. Based on the PID readings, the inspector instructed the UST removal contractor to backfill the excavation and the case was officially closed approximately 2 months later. The school is also listed as having a RCRA permit; however, records state that the school has no current or previous violations associated with the handling and disposals of hazardous waste. All other sites with environmental concerns are believed to be located at least 480 feet crossgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input checked="" type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>




## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Potomac Elementary School/ 10311 River Road Potomac, Md	185	<p>OCP, UST – In July 1995, a 10,000-gallon heating oil UST was excavated and removed from the site. The soil interval below the grade of the bottom of the UST was checked for volatile organic compounds using a PID by an inspector from MDE. Readings ranged from 1 ppm to 28 ppm. Based on the PID readings, the inspector instructed the UST removal contractor to backfill the excavation and the case was officially closed approximately 2 months later.</p> <p>RCRA Non-Gen – There are no known compliance violations associated with this facility.</p> <p>The building is currently under construction. Although the site is listed as 25 feet from the LOD, it is measured to approximately 185 feet from the LOD. Based on local topography the site is believed to be crossgradient of the LOD.</p>	Low
2	Residence/10011 Gary Road	480	<p>SPILLS – In 2017, a sewage pipeline leaked at a rate of two gallons per minute due to an unknown cause. The release overflowed into a grassy area. No cleanup actions noted other than the property owners being responsible for the repairs. Based on local topography the site is believed to be crossgradient of the LOD.</p>	Low
3	Amir Mowagah/ 10010 Gary Road	500	<p>OCP – In 1995, an OCP case was opened during the closure of a residential heating oil UST. It is unknown whether a release and cleanup actions occurred. The case was closed within two months of being opened. Based on local topography the site is believed to be crossgradient of the LOD.</p>	Low
4	Rio Vista Plaza Mobile Home Park/MHP – WTP/ 10221 River Road	570	<p>FINDS/FRS – Drinking water well and water treatment facility; no violations were identified during this review.</p>	Low
5	Residence/ 10401 River Road	580	<p>OCP – In 2002, an OCP case was opened due to a surface spill from a residential heating oil UST. A release and cleanup actions are documented. The case was closed within one month. Based on local topography the site is believed to be crossgradient of the LOD.</p>	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is primarily rural agricultural land, structures are observed further to the southeast of the LOD.	Aerial
1964	Residential and commercial development is observed to the north of the LOD.	Aerial

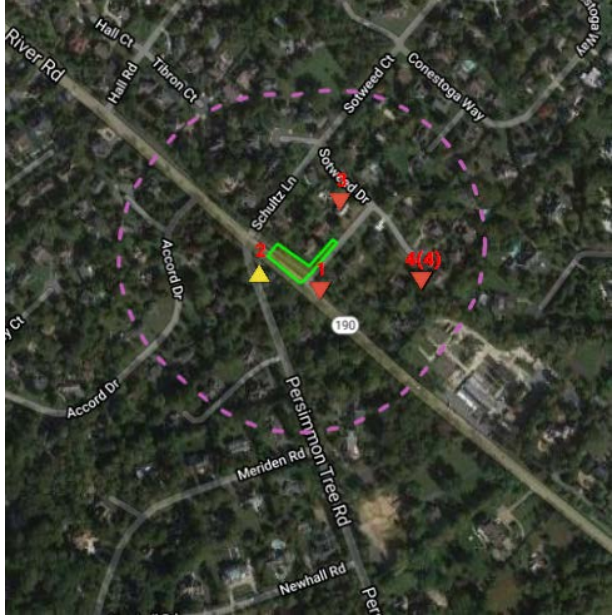
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2005	Additional residential development southwest, commercial development is observed to the southeast of LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1964	Year: 2005
		



## Project Area Site Descriptions

<b>LOD ID: WAS-4652</b>	<b>Site Rank: High</b>	<b>Figure Location:</b>
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	North of the intersection of River Road (MD 190) and Persimmon Tree Road	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located to the north of the intersection of River Road (MD 190) and Persimmons Tree Road, in Rockville, Maryland. The surrounding area is primarily residential with some commercial development in the surrounding area. Residential development is observed to begin by 1964 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. There have been three OCP cases and two SPILLS cases in the surrounding area. One OCP case, abutting the LOD, was opened during a residential heating oil tank closure approximately 85 feet south of the LOD. The UST along with approximately 24 tons of impacted soil were excavated from the site and disposed of at a regulated facility. Two confirmation samples were collected from the excavation and analyzed for TPH-DRO/GRO and VOCs. Detected concentrations of naphthalene (42.7mg/kg) and TPH-DRO (9,800 mg/kg) in the sample collected from the western end of the excavation, exceeded MDE's corresponding soil cleanup standards of 3.8 mg/kg (naphthalene) and 230 mg/kg (TPH-DRO), respectively. MDE allowed for the remaining impacted soil to be left in-place and the case was closed. The second case is associated with a residential property approximately 40 feet to 175 feet northwest of the LOD. The case is related to a leaking heating oil UST that was leaching oil into the basement of the residence in 1990. The UST was removed and over a 1,000 gallons of petroleum impacted groundwater were collected and disposed offsite from 1991 to 1992. The case was closed after air samples were collected from the basement indicated that risk was present. No analytical data or information pertaining to efforts to characterize subsurface soil and groundwater were provided in the files reviewed; therefore, residual concentrations of petroleum constituents could be present on the property, as well as within the boundaries LOD, as the site is believed to be upgradient. Based on in the information summarized above of these two sites in close proximity to the LOD, further investigation maybe warranted prior to any intrusive groundwork to determine whether or not impacted material is present within the boundaries of the LOD.</p>		

## Project Area Site Descriptions

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>



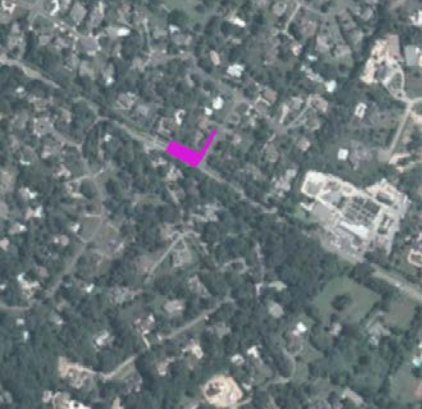
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Able Gerpe Residence 9601 Persimmons Tree Road Potomac, Md	25	OCP – In March 2012, a 550-gallon residential heating oil was excavated and removed from the site approximately 85 feet of the LOD. Perforations were observed in the walls of the UST after it had been removed from the excavation. Elevated PIDs were recorded in the soils below the UST at 203 ppm. Oil was observed to have infiltrated the concrete wall of the adjoining basement; however, no petroleum was observed in the residence's sump. The former location of the UST was over-excavated to the depth of 12 feet bgs (6 ft below the grade of the bottom of the UST) and approximately 24 tons of soil was disposed of offsite at a regulated facility. Two confirmation samples were collected from the excavation and analyzed for TPH-DRO/GRO and VOCs. Detected concentrations of naphthalene (42.7mg/kg) and TPH-DRO (9,800 mg/kg) in the sample collected from the western end of the excavation, exceeded MDE's corresponding soil cleanup standards of 3.8 mg/kg (naphthalene) and 230 mg/kg (TPH-DRO), respectively. The wall of the basement was sealed with plastic poly and tar, the excavation was then backfilled and the case received closure from MDE, approximately two months later since water to the residence was provided by the local municipality and it was believed that there were no current pathways of exposure. Based on the information summarized above, impacts may be present within the boundaries of the LOD.	High

## Project Area Site Descriptions

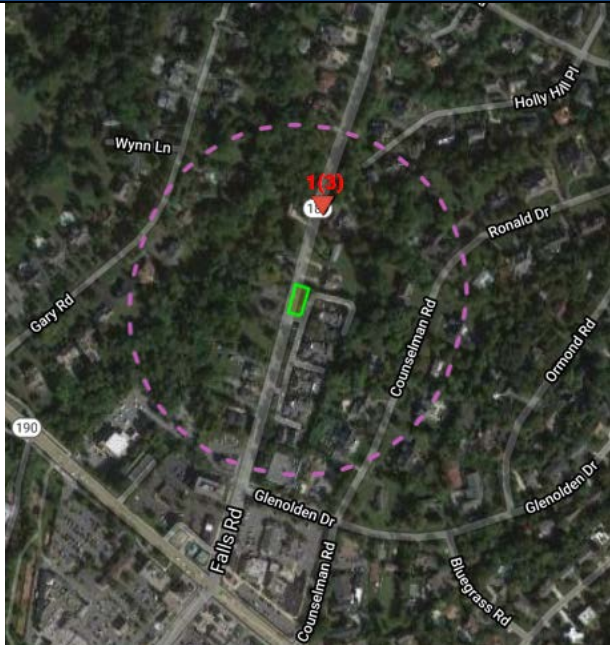
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
2	Embassy of Ecuador 9713 River Road Potomac, Md	40	OCP – In 1990, an OCP case was opened due to a report that oil was seeping through the walls and foundation of the residence's basement. In June 1991, the UST was excavated and removed, along with 1,050-gallons of oil water from the sump and drains of the basement between June 1991 and February 1992. The residence was tested using a 5-gas meter for concentrations of benzene, toluene, xylenes, petroleum distillates, as well as upper- and lower-range petroleum hydrocarbons, which were all reported as negative even though a slight odor was noted during the test. According to the closure letter, MDE granted closure to the site and recommended that basement walls be steamed cleaned. No analytical data or information pertaining to efforts to characterize subsurface soil and groundwater were provided in the files reviewed; therefore, residual concentrations of petroleum constituents could be present on the property, as well as within the boundaries LOD, as the site is believed to be upgradient. Based on the information summarized above, impacts may be present within the boundaries of the LOD.	High
3	Suzana Soza/ 9708 Sotweed Road Potomac, Md	265	OCP – In 1993, an OCP case was opened. The case was closed within a year. It is unknown whether any releases or cleanup actions occurred. Based on local topography the site is believed to be crossgradient of the LOD.	Low
4	Residence/ 9609 Sotweed Road Potomac, Md	390	SPILLS – There have been two spills at this residence. Both spills, one in 2014 and one in 2018, involved the release of one gallon of residential heating oil. Cleanup actions were taken following both releases. Based on local topography the site is believed to be downgradient of the LOD.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be primarily rural agricultural land.	Aerial
1964	Residential development is observed to the southwest, south, southeast and northeast of the LOD.	Aerial
2005	Additional residential development and commercial development is observed to the southeast of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1964	Year: 2005
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4653	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	East side of Falls Road (MD 189), north of Glenolden Drive	
<b>City</b>	Potomac	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located along the east side of Falls Road (MD 189), north of Glenolden Drive, in Potomac, Maryland. The surrounding area is primarily residential with some commercial development to the south. Residential and commercial development is observed to begin by 1959 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input checked="" type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>


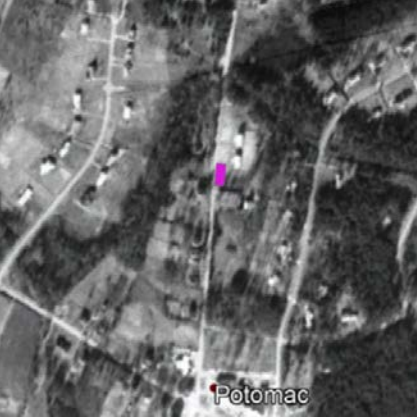
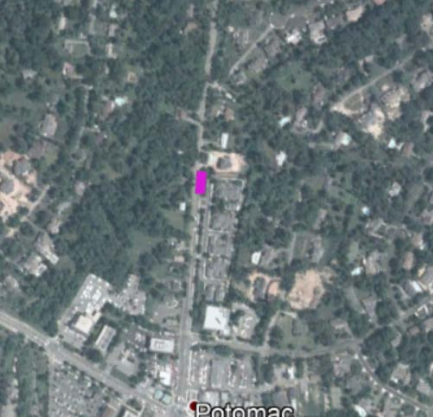
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Sprinkles Ice Cream Shop/ 10148 Falls Road	1,000+	SPILLS – In 2016, approximately 1.5 gallons of hydraulic oil was released from the lift gate of a box truck due to a blown hydraulic line. The spill was contained and cleaned up. Although the site is listed as 445 feet from the LOD, the site address appears to be mislabeled and is actually over 1,000 feet from the LOD.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be developed primarily as rural agricultural land. Several structures are observed to the southwest of LOD.	Aerial

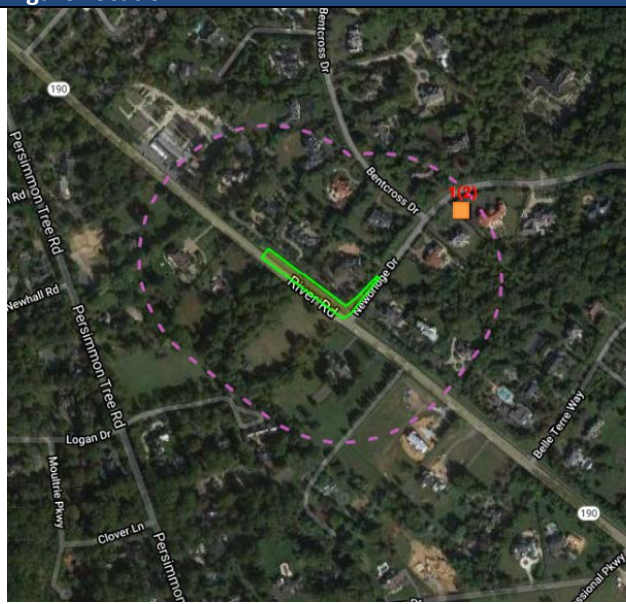


## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1959	Additional residential development is observed to the east and west of the LOD.	Aerial
2005	Additional residential and commercial development are observed to the south of LOD The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1959	Year: 2005
		

## Project Area Site Descriptions




LOD ID: WAS-4655	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of River Road (MD 190), west of Newbridge Drive	
City	Rockville	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located along the north side of River Road (MD 190), immediately west of Newbridge Drive, in Rockville, Maryland. The surrounding area is primarily residential. Residential development is observed to begin prior to 1964 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

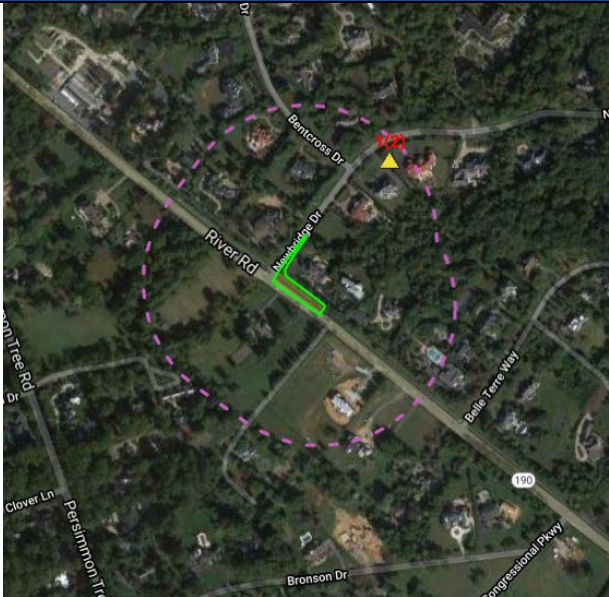
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	The German School 9441 Newbridge Drive/8617 Chateau Dr, Potomac, MD	4,890	<p>OCP – In 1992, an OCP case was opened. It is unknown whether a release occurred or remediation/clean-up was required. The case was closed approximately 2 years later.</p> <p>FINDS/FRS – Listed on the national compliance databased, no violations.</p> <p>The site was listed approximately 640 feet northeast of the LOD; however, based on further review, the site is actually 4,890 feet to the east.</p>	Low

## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be primarily rural agricultural land.	Aerial
1964	Residential development is observed to the south of the LOD.	Aerial
2005	Additional residential development surrounding the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1964	Year: 2005
		

## Project Area Site Descriptions

LOD ID: WAS-4656	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of River Road (MD 190), east of Newbridge Drive	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located along the north side of River Road (MD 190), immediately east of Newbridge Drive, in Rockville, Maryland. The surrounding area is primarily residential. Residential development is observed to begin prior to 1964 and continued through 2005, when the surrounding area was observed to be developed in its current configuration. No records of concern that would have an impact on the LOD were identified during this environmental review.		



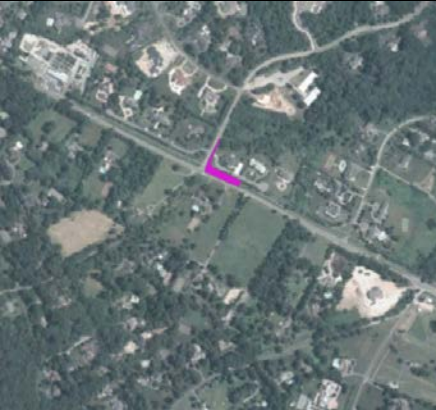
ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	The German School 9441 Newbridge Drive Potomac, MD	640	<p>OCP – In 1992, an OCP case was opened. It is unknown whether a release occurred or remediation/clean-up was required. The case was closed approximately 2 years later.</p> <p>FINDS/FRS – Listed on the national compliance databased, no violations.</p> <p>The site was listed approximately 640 feet northeast of the LOD; however, based on further review, the site is actually 4,820 feet to the east.</p>	Low



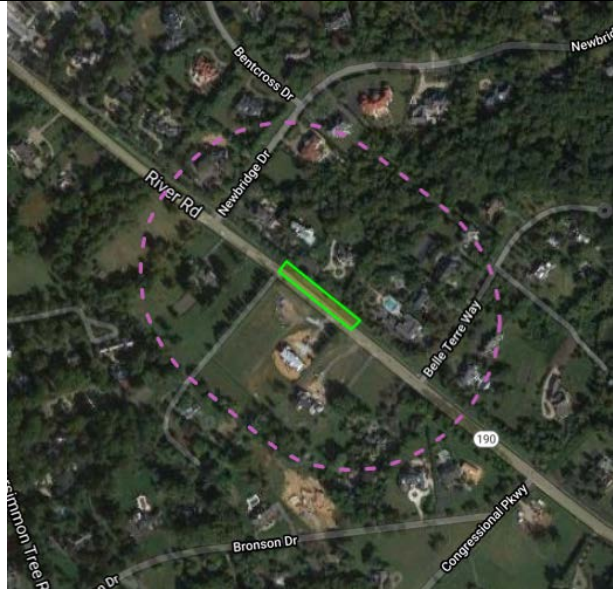
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be primarily rural agricultural land.	Aerial
1964	Residential development is observed to the south of the LOD.	Aerial
2005	Additional residential development surrounding the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1964	Year: 2005
		



## Project Area Site Descriptions



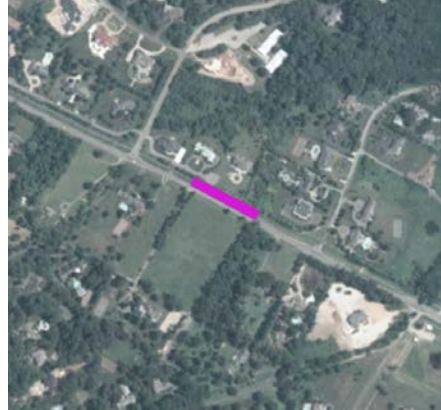
LOD ID: WAS-4657	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	North side of River Road (MD 190), between Newbridge Drive and Belle Terre Way	
City	Potomac	
County	Montgomery	
Type of property	ROW	
<b>Ranking Rationale Site Summary</b>		
The LOD is located along the north side of River Road (MD 190), southeast of Newbridge Drive and northwest of Belle Terre Way, in Potomac, Maryland. The surrounding area is primarily residential. Residential development was observed to begin prior to 1964 and continued through 2005, when the surrounding area was observed to be developed similar to its current configuration. No records of concern in the vicinity of the LOD were identified during the environmental review.		

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

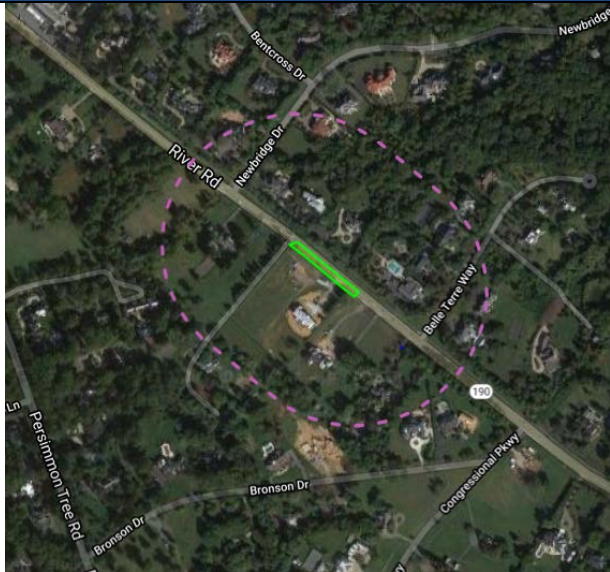
DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be developed primarily as rural agricultural land.	Aerial
1964	Residential development is observed to the south and west of the LOD.	Aerial
2005	Additional residential development is observed in all directions of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

## Project Area Site Descriptions

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1964	Year: 2005
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4658	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	South side of River Road (MD 190), southeast of Newbridge Drive and northwest of Belle Terre Way	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW	
<b>Ranking Rationale Site Summary</b>		
<p>The LOD is located along the south side of River Road (MD 190), southeast of Newbridge Drive and northwest of Belle Terre Way, in Rockville, Maryland. The surrounding area is primarily residential. Residential development was observed to begin prior to 1964 and continued through 2005, when the surrounding area was observed to be developed similar to its current configuration. No records of concern in the vicinity of the LOD were identified during the environmental review.</p>		


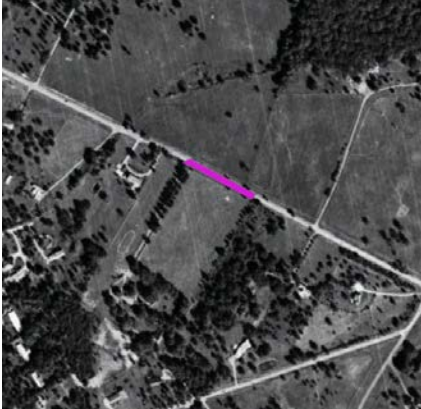

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
None				

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1937	The surrounding area is observed to be developed primarily as rural agricultural land.	Aerial
1964	Residential development is observed to the south and west of the LOD.	Aerial

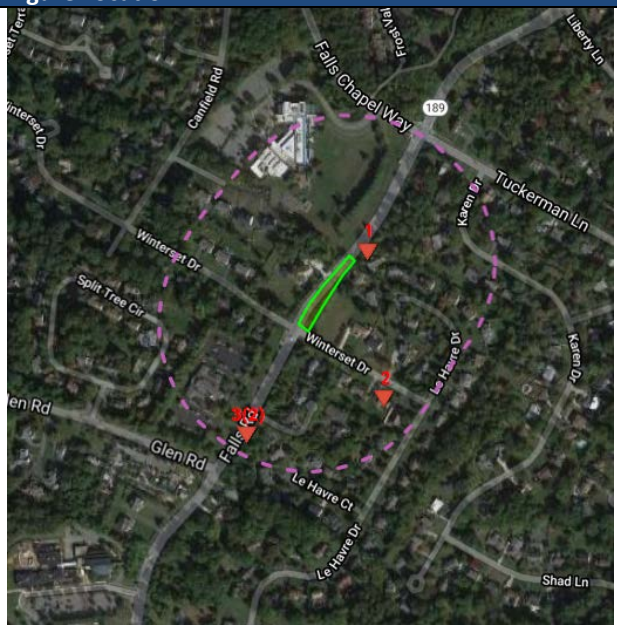
## Project Area Site Descriptions

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
2005	Additional residential development is observed in all directions of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1937	Year: 1964	Year: 2005
		



## Project Area Site Descriptions

LOD ID: WAS-4659	Site Rank: Low	<b>Figure Location:</b> 
Quadrant:	NW	
Watershed:	WAS	
Street Address/Nearest Cross Streets	East side of Falls Road (MD 189), north of Winterset Drive	
City	Rockville	
County	Montgomery	
Type of property	ROW	
Ranking Rationale Site Summary		
<p>The LOD is located along the east side of Falls Road (MD 189), north of Winterset Drive, in Rockville, Maryland. The surrounding area is primarily residential developments. The surrounding area was primarily observed to be developed with agricultural properties up until the early 1970s, when residential development began to occur. Residential development continued in directions of the LOD up until approximately 2018, when the surrounding area was observed to be developed in its current configuration. A church located 485 feet of the LOD had one 4,000-gallon UST removed in 1997 and new 4,000-gallon UST was installed in its place. No impacted material was encountered during the closure of the former UST. A residential property located approximately 430 feet to the southeast had a residential heating oil UST excavated and removed from property in 1999. According to available records, impacted material was encountered and cleaned-up/ remediated. The case was closed 16 months later. Based on local topography, both sites are believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>		




ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input checked="" type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>



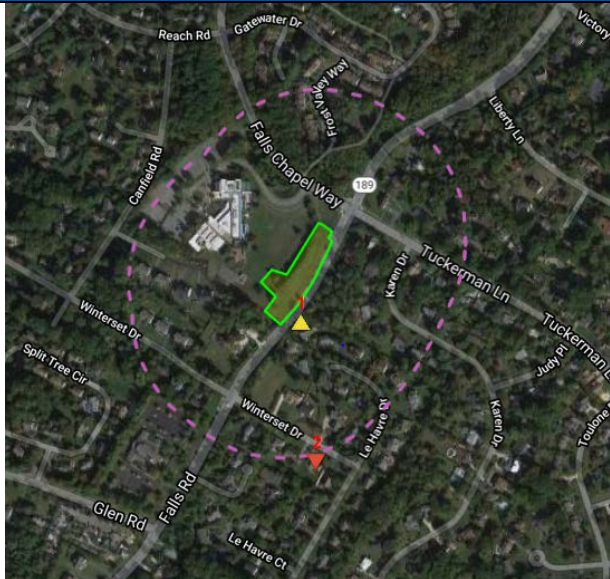
## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Washington Hebrew Cong Early Child Center 11810 Falls Road Potomac, MD	145	FINDS/FRS – National Compliance Database; no violations were identified during this review.	Low
2	Virginia Hani 9205 Winterset Dr Potomac, MD	430	OCP – In 1999, an OCP case was open for a residential heating oil UST closure. According to available records, impacted material was encountered and cleaned-up/ remediated. The case was closed 16 months later. Based on local topography the site is believed to be downgradient of the LOD.	Low
3	Jesus Christ of Latter Day Saints 11700 Falls Road Potomac, MD	485	OCP – In 1997, an OCP case was opened for a heating oil tank. According to available records no impacted material was encountered during the closure of the UST and the case was closed approximately 4 months later  UST –A 4,000 gallon heating oil UST is currently in-use onsite.  Based on local topography the site is believed to be downgradient of the LOD.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1938	The surrounding area is observed to be primarily rural agricultural land.	Aerial
1971	Residential development is observed to the east/northeast of the LOD.	Aerial
2018	Additional residential development is observed in all directions of the LOD. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1938	Year: 1971	Year: 2018
		

## Project Area Site Descriptions

<b>LOD ID:</b> WAS-4660	<b>Site Rank:</b> Low	<b>Figure Location:</b> 
<b>Quadrant:</b>	NW	
<b>Watershed:</b>	WAS	
<b>Street Address/Nearest Cross Streets</b>	West side of Falls Road (MD 189), between Winterset Drive and Falls Chapel Way	
<b>City</b>	Rockville	
<b>County</b>	Montgomery	
<b>Type of property</b>	ROW/private	
<b>Ranking Rationale Site Summary</b> <p>The LOD is located along the west side of Falls Road (MD 189), between Winterset Drive and Falls Chapel Way, in Rockville, Maryland. The surrounding area is primarily residential. Based on a review of historical imagery, the surrounding area was observed to be developed as agricultural land until the early 1970s, when residential development began to occur. Residential development continued in all directions of the LOD up until approximately 1988, when the surrounding area was observed to be developed in its current configuration. A residential property located approximately 615 feet to the southeast had a residential heating oil UST excavated and removed from property in 1999. According to available records, impacted material was encountered and cleaned-up/ remediated. The case was closed 16 months later. Based on local topography, the site is believed to be downgradient of the LOD. Thus, impacts to the LOD are unlikely.</p>		


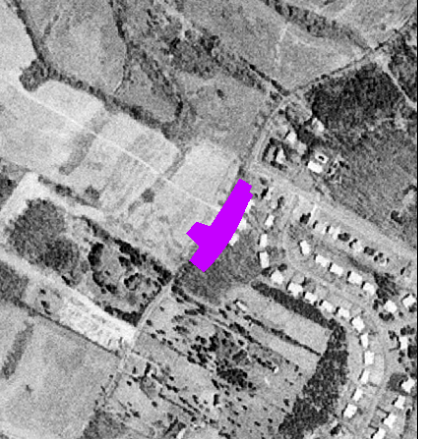

ENVIRONMENTAL REVIEW					
Issues of Concern	Yes	Issues of Concern	Yes	Issues of Concern	Yes
Demolished/ Removed Structures	<input type="checkbox"/>	Documented releases (HMIRS, ERNS, Spills)	<input type="checkbox"/>	RCRA – LQG	<input type="checkbox"/>
USTs/ASTs	<input type="checkbox"/>	OCP cases	<input checked="" type="checkbox"/>	RCRA – SQG/VSQG/NonGen/NRL	<input type="checkbox"/>
Use/Storage/Disposal of Petroleum Products or Hazardous Materials	<input type="checkbox"/>	Industrial/Warehousing/Manufacturing/ Outdoor Storage	<input type="checkbox"/>	Land use, engineering, administrative controls/ restrictions	<input type="checkbox"/>
Dumping or Landfilling	<input type="checkbox"/>	SHWS (LRP/VCP) and or RCRA/CERCLA	<input type="checkbox"/>	Gas Station	<input type="checkbox"/>
Dry-Cleaner	<input type="checkbox"/>	Auto Repair/Auto Pools	<input type="checkbox"/>	State/County/Gov't Facility	<input type="checkbox"/>

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
1	Washington Hebrew Cong Early Child Center 11810 Falls Road Potomac, MD	10	FINDS/FRS – National Compliance Database; no violations were identified during this review.	Low

## Project Area Site Descriptions

DATABASE SEARCH LISTINGS				
ERIS Site ID	Name/Address	Distance (Ft.)	Listing of concern (OCP Cases, USTs, ASTs, ERNS/HMIRS/Spills, LRP, VCP, NPL, SEMS, SEMS ARCHIVE)	Risk to LOD
2	Virginia Hani 9205 Winterset Dr Potomac, MD	615	OCP – In 1999, an OCP case was open for a residential heating oil UST closure. According to available records, impacted material was encountered and cleaned-up/ remediated. The case was closed 16 months later. Based on local topography the site is believed to be downgradient of the LOD.	Low

HISTORICAL IMAGES SUMMARY		
Date Range	Property Use	Source
1938	The surrounding area is observed to be primarily rural agricultural land.	Aerial
1971	Residential development is observed to the east of the LOD.	Aerial
1981	A school under construction is observed to the west, followed by additional residential development. A church is observed further to the southwest.	Aerial
1988	The school to the west is observed to have been completed. Additional residential development is observed in all directions. The surrounding area is observed to be developed in its current configuration.	Aerial

HISTORICAL IMAGES OF IMPORTANCE		
Year: 1938	Year: 1971	Year: 1981
		

## Project Area Site Descriptions

### HISTORICAL IMAGES OF IMPORTANCE

Year: 1988



## **APPENDIX E – MAINTENANCE OF TRAFFIC EVALUATION**



## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX E: Maintenance of Traffic Desktop Evaluations**

#### **1. Background**

The I-495 and I-270 Managed Lanes Study (MLS) Compensatory Stormwater Management (SWM) Sites review requires a conceptual level review from Maintenance of Traffic's (MOT) perspective. The purpose of this review is to verify that the recommended location and the Limit of Disturbance (LOD) for each site is feasible and reasonable to accommodate MOT, construction access, and staging requirements.

#### **2. Methodology and Assumptions**

Maryland Department of Transportation State Highway Administration (MDOT SHA) conducted preliminary MOT evaluations of constructability and LOD at each of the potential SWM sites for the MLS. MDOT SHA standards were applied when performing the conceptual level MOT evaluations. The evaluations were based on preliminary site LODs provided by the Water Resources Team. Because no design work has been done on the individual SWM sites at the time of review, this effort constitutes only a preliminary review to identify potential MOT and constructability issues with the LOD and type of potential SWM site provided. The goal of the review was to identify any potential issues or concerns and to identify sites that are not feasible from an MOT standpoint.

Because the MOT evaluations were based on preliminary information, additional review will be required for all sites as design information is developed.

In addition to the information provided by the Water Resources Team, MOT desktop evaluations are based on imagery available from Google Earth and Google Street View. At this time, no MOT team field visits have been made. Other disciplines provided field feedback, which was available for MOT review.

Transportation master plan of MDOT SHA and local public agencies were not consulted during the selection of the compensatory SWM sites. Therefore, in the next phase if a site is being selected for more serious deliberation, the potential SWM site improvements will need to involve cooperation with MDOT SHA and local public agencies to confirm that potential SWM improvements are coordinated with local transportation planning.

Maintenance of Traffic Review Considerations:

The elements taken into consideration at each site with respect to the degree of complexity from a MOT perspective of an identified site include:

*Posted Speed Limit of Roadway* – The preliminary information provided by the Water Resources Team included a potential location of the site. Majority of the identified sites are located adjacent to a roadway. The posted speed limit drives the MOT requirements because it determines the lateral distance from the edge of travelway that needs to be obstacle free. This influences the available area outside of the edge of travelway that is available for construction access and staging.

*Existing Roadway Geometry and Features* – While reviewing the identified compensatory SWM locations, the impacts to existing roadway features were identified and noted. Majority of the identified compensatory SWM sites are located adjacent to existing pavement which may impact existing pavement underdrain. Impact to the safety of traffic due to the construction of the potential SWM site was taken into consideration.

*Shoulder Width* – The existing paved shoulder width helps determine if there needs to be available space outside of the roadway for construction staging and access. This also determined if the construction could be done under flagging operations, roadway shifts, and/or shoulder closure.

*Roadside Condition* – The existing roadside condition helps determine if a long-term barrier is needed. It also factors in if the existing side slope is compatible with the potential SWM site. The existing fore slope and backslope helps determine if the LOD is feasible to accommodate the grading required for the construction of the potential SWM site. The existing grades were conceptually evaluated if a new retaining wall may be needed to install a potential SWM site within LOD. Many of the existing roadside barriers that do not meet MASH and NCHRP 350 standards will have to be replaced if it is within the LOD. Roadside safety for each site will have to be evaluated when more information regarding the potential SWM sites become available. Potential grading to construct new SWM site will comply with guidelines stated in AASHTO's Roadside Design Guide 2011 Edition. If clear zone requirements cannot be satisfied, then roadside barrier that meets MASH and NCHRP 350 guidelines will be designed and installed.

*Traffic Operation and Safety* – Existing traffic volume, operation and safety traveling on roadways impacted by the identified potential compensatory SWM sites will be taken into consideration when evaluating Maintenance of Traffic Alternative Analysis (MOTAA) in the future when more information becomes available. For example, further traffic analysis needs to be conducted to investigate if traffic operation continues to operate at an acceptable Level of Service (LOS) during construction hours, when a lane on a multilane expressway needs to be taken out of service due to the lack of available shoulder width.

*Area Size of LOD* – The size of the LOD was evaluated to determine if space is available within it to install the potential SWM site. During evaluation, the LOD area size was evaluated to determine if it is adequate to accommodate the potential SWM site and construction access and staging. For potential SWM median installations, the site was reviewed to confirm that the width of the median and inside shoulder width is sufficient for excavation and parking/maneuvering of construction equipment such as a crane or truck. In addition, the existing grade difference between opposing roadways was assessed to determine if it is appropriate for the potential SWM site. For potential SWM sites located adjacent to the outside edge of roadway, the site was reviewed to ensure that the LOD area can accommodate the potential grading required to construct the potential SWM and account for construction access and staging. For SWM sites that involve potential construction of pipes under existing major roadways, the size of LOD was evaluated to account for potential of jack and bore operations for the pipe construction.

*Location of Site* – The location of the potential SWM site determines if a standard, reasonable, and practical MOT plan can be applied during construction. The accessibility of the site was evaluated to be feasible.

Maintenance of Traffic Determination Definitions:

*No MOT Required* is assigned when the site is located away from public roadways and the construction does not interfere with traffic.

*Temporary/Daily Shoulder Closures Required* is assigned when the site has available space to store construction equipment and the existing shoulder will only be used to temporarily store equipment and for construction access. The shoulder will only be closed and used during contract documented work hours and cleared of obstacles during off work hours.

*Long Term Shoulder Closures with Barrier Required* is assigned when the existing roadway shoulder must be closed with temporary concrete traffic barriers erected to protect traffic from a potential roadside hazard. This situation happens when there is limited available space from edge of travelway to store equipment and the contractor may use the existing roadway shoulder to temporarily stage and park equipment.

*Complex MOT Required* is assigned when the construction of a site requires closure of a major roadway that will in consequence need to detour significant a volume of traffic. Another potential scenario would be that the LOD is widespread and consequently the MOT may necessitate numerous construction phases.

### **3. Conclusion**

On behalf of the MDOT SHA, the MOT Team conducted a review of 1,000+ potential compensatory SWM sites, SWM facility and stream restoration sites, identified to meet the SWM water quality (WQ) requirements of the MLS. Based on the selection of the Preferred Alternative (Alternative 9 – Phase 1 South), further analysis and development of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites, all of which are SWM facilities. The compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impact Statement (FEIS), and Record of Decision (ROD).

Majority of the compensatory SWM sites identified can be constructed with applying standard MDOT SHA MOT plans with some minor adjustment to adapt to the local traffic pattern and roadway geometry. This is a conceptual level MOT review of the compensatory SWM sites identified based on very limited information available. More detail and specifics will be needed to do a more in-depth MOT evaluation which should be provided by designers in the future.

The following is a summary of the findings of the 67 compensatory SWM sites with respect to the MOT desktop evaluation of the site.

**Table E-1. Summary of MOT Determinations**

<b>MOT Determinations</b>	<b>No. of SWM Sites</b>
Temporary/Daily Shoulder Closures Required	59
Long Term Shoulder Closures with Barrier Required	8

Refer to the main document for a breakdown of MOT determination by site name.

## **APPENDIX F – WETLANDS AND WATERWAYS EVALUATION**

## Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study

### APPENDIX F: Wetland and Waterway Delineation and Field Assessments

#### INTRODUCTION

The I-495 & I-270 Managed Lanes Study (MLS) is required to comply with Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344); the State of Maryland Environment Article Title 5, Subtitles 5 and 9 of the Maryland Annotated Code; and COMAR Title 26 to protect wetlands and waterways. All impacts to wetlands and waterways that would result from the construction of the MLS are required to be included in the Final Environmental Impact Statement (FEIS) and impacts for Phase I South of the MLS are required to be included in the revised Joint Permit Application (JPA). The MLS stormwater requirement cannot be met onsite and therefore stormwater facilities must be constructed offsite to meet the MLS stormwater requirement. These compensatory stormwater facilities have the potential to impact wetlands, their buffers, and waterways and therefore these resources were delineated within the potential compensatory stormwater limits of disturbance (LODs) to determine this impact.

On behalf of the Maryland Department of Transportation State Highway Administration (MDOT SHA), the MLS Natural Resources Team conducted a review of 1,000+ potential compensatory stormwater management (SWM) sites, SWM facility and stream restoration sites, identified to meet the SWM water quality (WQ) requirements of the MLS from October 2020 through October 2021, with ongoing delineation of properties pending access. Based on the selection of the Preferred Alternative (Alternative 9 – Phase 1 South), further analysis and development of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites, all of which are SWM facilities. The compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impact Statement (FEIS), and Record of Decision (ROD). Delineation results from the selected 67 off-site compensatory stormwater management sites are presented in this appendix.

*Compensatory SWM Mitigation Plan*, A total of 3 stream segments were delineated within the 67 compensatory SWM sites identified for the MDOT SHA Preferred Alternative, and are listed alphanumerically in **Attachment A**.

Supplemental information supporting the wetland and waterways delineation is included in **Attachments A through D**, as follows:

- Attachment A: Waterway Feature Table
- Attachment B: Agency Correspondence
- Attachment C: Field Datasheets
- Attachment D: Photo Documentation

#### BACKGROUND INFORMATION

The I-495 & I-270 MLS Natural Resources Team environmental scientists conducted a desktop investigation of mapped site topography; 100-year FEMA floodplain; vegetative cover; non-tidal and tidal wetlands and waterways; soil map unit boundaries; and hydric and highly erodible soils. Sources of these data included:



- The United States Geologic Survey (USGS) Geographic Information System (GIS) Quadrangle Mapping;
- The United States Department of Agriculture (USDA), NRCS *Web Soil Survey (WSS) for Montgomery, Anne Arundel, and Prince George's Counties, Maryland*;
- US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) GIS data;
- Maryland Department of Natural Resources (MDNR) Wetlands and Waters GIS data; and FEMA GIS floodplain mapping.

Desktop investigations served as the foundation for the wetland delineation. The potential SWM mitigation sites are located within the Piedmont Plateau and Atlantic Coastal Plain Physiographic Provinces. Note that no potential SWM mitigation sites are located within the FEMA 100-year floodplain or the Chesapeake Bay Critical Area and no potential compensatory SWM sites are within MDE Tier II catchments.

On December 13, 2021, a USFWS IPaC online database query indicated that the federally threatened Northern Long-Eared Bat (NLEB) (*Myotis septentrionalis*) and candidate species Monarch Butterfly (*Danaus plexippus*) may occur in the compensatory stormwater management LODs. The USFWS determination key for this species concluded that the construction of the compensatory stormwater facilities may affect the NLEB; “however, any take that may occur as a result of the Action is not prohibited under the EFA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).” The verification letter produced from the determination key states that the answers provided in the key conclude the coordination under ESA Section 7(a)(2) with respect to the NLEB. Section 7 coordination is not required for the Monarch Butterfly. Requests for information on the presence of fisheries resources and RTE species were sent to the Maryland Department of Natural Resources Environmental Review Program (MDNR-ERP) and Wildlife and Heritage Section (MDNR-WH) on December 14, 2021. MDNR-ERP allows applicants to pre-screen projects using their new online Aquatic Resources Pre-Screening Tool. The pre-screening tool did not indicate the presence of any sensitive species project review areas, Tier II watersheds, or trout populations within the compensatory SWM LODs. A response from MDNR-WH was received on February 1, 2022, stating that there are no specific concerns or recommendations regarding potential impacts to state or federal listed, candidate, proposed, or rare plant or animal species within the 67 off-site compensatory stormwater management LODs provided. Agency correspondence documents can be found in **Attachment B**.

## FIELD ASSESSMENTS – WETLAND DELINEATION

### METHODS

The study area was split into 11 field sub-segments, Sub-segments 30-40, for the purposes of the off-site compensatory stormwater site wetlands and waterways field investigation, and field sub-segment numbers were incorporated into the naming convention of features within each sub-segment. Wetlands and waterways were delineated if identified within the potential SWM mitigation site LODs and within a 25-foot buffer of each of the LODs to ensure that any wetland buffers were delineated within the LODs.

Wetland features were delineated in accordance with the following:

- U. S. Army Corps of Engineers. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0*. Ed. J.F. Berkowitz, J.S. Wakeley, R.W. Lichvar, C.V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: US Army Engineer Research and Development Center;
- U. S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0*. Ed. J.F. Berkowitz, J.S.

Wakeley, R.W. Lichvar, C.V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: US Army Engineer Research and Development Center; and,

- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss. Technical Report Y-87-1.

These manuals employ a three-parameter approach to wetland identification using (1) hydrology, (2) hydrophytic vegetation, and (3) hydric soils. All three parameters must be present for an area to be considered a jurisdictional wetland under Section 404 of the Clean Water Act (CWA). Routine wetland determination methods with onsite inspection were used to determine the presence of wetlands in the study area.

Wetland scientists completed a functions and values assessment for all delineated wetlands using the USACE New England Method as presented in The Highway Methodology Workbook Supplement – Wetland Functions and Values; A Descriptive Approach (USACE, 1999). Along with the best professional judgment of an experienced wetland scientist, this method uses the presence of certain physical characteristics broadly understood to indicate the presence of related functions. The functions and values assessed include:

- |   |                                     |
|---|-------------------------------------|
| • Groundwater recharge/discharge,       | • Sediment/shoreline stabilization, |
| • Floodflow alteration,                 | • Wildlife habitat,                 |
| • Fish and shellfish habitat,           | • Recreation,                       |
| • Sediment/toxicant/pathogen retention, | • Educational/scientific value,     |
| • Nutrient                              | • Uniqueness/heritage,              |
| removal/retention/transformation,       | • Visual quality/aesthetics, and    |
| • Production export,                    | • Endangered species habitat.       |

Waterways features were delineated using the limits defined in 33 Code of Federal Regulations (CFR) § 328. The boundaries of nontidal waterways features were set at the ordinary high water (OHW) mark and include, but are not limited to: palustrine open water (POW or ponds), stream systems (waterways), and some disturbed areas. The OHW mark was determined in the field using physical characteristics established by the fluctuations of water (e.g., change in plant community, changes in the soil character, shelving) in accordance with USACE Regulatory Guidance Letter No. 05-05. Federal jurisdiction of delineated features was determined in accordance with the pre-2015 regulatory definition of Waters of the US, which went into effect on August 31, 2021, and previously delineated feature data was supplemented to determine likely jurisdiction under the pre-2015 definition. Waterway functional assessment was completed in accordance with Beta version of the Maryland Stream Mitigation Framework which requires the use of EPA Rapid Habitat Assessment methods for stream segments less than 300 feet in length. The EPA Rapid Habitat Assessment datasheets for each feature are included in **Attachment C**.

Potential SWM mitigation sites that were almost entirely covered by wetlands and waterways features were not delineated, but instead the location, size, and basic information of features was noted and they were considered “walkthrough wetlands” or “walkthrough waterways.” Data forms were not completed for the walkthrough features because the potential SWM mitigation sites with a high concentration of wetlands and waterways were subsequently eliminated from the site search based on their significant impacts to wetlands and waterways.

As part of the avoidance and minimization process, each SWM LOD was rated based on its relative impact to wetlands and waterways to determine whether it could be considered for compensatory SWM mitigation.

SWM LODs that would result in zero functional loss to wetlands or waterways were given a rating of “no impact” and were considered viable SWM sites from a wetlands and waterways perspective. SWM LODs that would have minor impact to wetlands and/or waterways, where the functional loss would be partially compensated by the stormwater activity, were rated as “minor impact” sites and were included in the potential compensatory SWM site list. Sites rated as having a “moderate impact” had wetlands and/or waterways covering less than 50% of the site, and potential re-configuration of the site by the SWM Team could potentially reduce impacts to a level that would be acceptable to the regulatory agencies. These sites were either re-configured to remove much of the wetland and waterway impact or they were dropped from consideration. Sites were rated as having “significant impact” when greater than 50% of the site was covered by wetlands and/or waterways and construction of the site would result in functional loss to wetlands and/or waterways. These sites were either majorly re-configured or dropped from consideration as a compensatory SWM site.

Datasheets for waterways delineated within the 67 selected off-site compensatory stormwater LODs are included in **Attachment C** and photo documentation is included in **Attachment D**.

## RESULTS

The I-495 & I-270 MLS Natural Resources Team conducted a wetlands and waterways delineation within the study area from October 2020 through October 2021, with ongoing delineation of properties pending access. Detailed delineation results for the selected off-site compensatory SWM sites are summarized in **Attachment A**, organized by sub-segment and listed alphanumerically. Locations of these delineated features are included in the SWM mitigation site mapping in *Compensatory SWM Mitigation Plan*, Appendix L. Field datasheets and photographs for the delineated features can be found in **Attachments C and D**, respectively. Wetlands and waterways impact data is summarized in the *Compensatory SWM Mitigation Plan*, Appendix M.

## ATTACHMENT A: WATERWAY FEATURE TABLE

Table 1. Waterway Features  
Compensatory Stormwater Management Sites - Phase I South

FEATURE ID	CLASSIFICATION	ASSOCIATED SWM LOD	DOMINANT VEGETATION (WETLANDS)	CHANNEL - APPROXIMATE WIDTHS/DEPTHS	COVER TYPE ON LEFT AND RIGHT BANKS (WATERWAYS)
SUB-SEGMENT 31					
31000	Intermittent	WAS-4641	-	Silt, cobble, gravel Width: 3 ft Depth: 0.5-1 in	Right: forest/maintained lawn Left: forest/emergent vegetation
SUB-SEGMENT 32					
32L	Perennial	WAS-3622	-	Sand, cobble, gravel, bedrock Width: 15 ft Depth: 2 ft	Right: forest Left: rock/riprap
32M	Perennial	WAS-3622	-	Silt, muck Width: 3 ft Depth: 4 in	Right: Herbaceous vegetation Left: scrub-shrub



## **ATTACHMENT B: AGENCY CORRESPONDENCE**



Larry Hogan, Governor  
Boyd Rutherford, Lt. Governor  
Jeannie Haddaway-Riccio, Secretary  
Allan Fisher, Deputy Secretary

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February 1, 2022

Ms. Christina Simini  
Rummel, Klepper & Kahl, LLP  
700 East Pratt Street  
Suite 500  
Baltimore, MD 21202

**RE: Environmental Review for I-495 & I-270 Managed Lanes Study (MLS) - Offsite Compensatory Stormwater Facilities, OP3 SWM (67), Montgomery County, Maryland.**

Dear Ms. Simini:

For all of the proposed sites included in this submittal, the Wildlife and Heritage Service has no official records for State or Federal listed, candidate, proposed, or rare plant or animal species within the project area shown on the map provided. As a result, we have no specific concerns regarding potential impacts to such species or recommendations for protection measures at this time. If the project changes in the future such that the limits of proposed disturbance or overall site boundaries are modified, please provide us with revised project maps and we will provide you with an updated evaluation.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at [lori.byrne@maryland.gov](mailto:lori.byrne@maryland.gov) or at (410) 260-8573.

Sincerely,

Lori A. Byrne,  
Environmental Review Coordinator  
Wildlife and Heritage Service  
MD Dept. of Natural Resources

ER# 2021.1887.mo  
Cc: G. Gibson, DNR



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Chesapeake Bay Ecological Services Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401-7307  
Phone: (410) 573-4599 Fax: (410) 266-9127

<http://www.fws.gov/chesapeakebay/>  
<http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html>

In Reply Refer To:

December 13, 2021

Consultation Code: 05E2CB00-2022-SLI-0445

Event Code: 05E2CB00-2022-E-01201

Project Name: I-495 & I-270 MLS Offsite Compensatory SWM Sites

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

[www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html).

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Chesapeake Bay Ecological Services Field Office**

177 Admiral Cochrane Drive

Annapolis, MD 21401-7307

(410) 573-4599

## Project Summary

Consultation Code: 05E2CB00-2022-SLI-0445

Event Code: Some(05E2CB00-2022-E-01201)

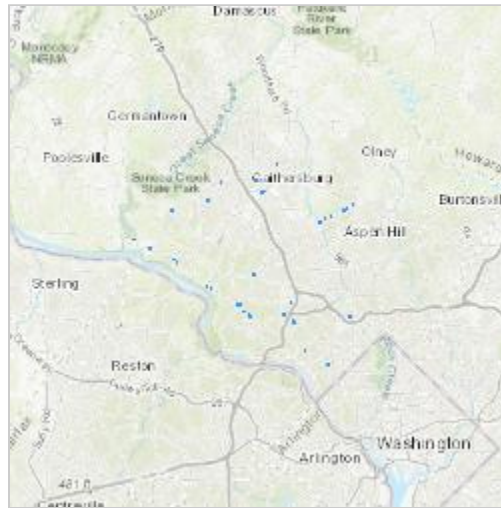
Project Name: I-495 & I-270 MLS Offsite Compensatory SWM Sites

Project Type: TRANSPORTATION

Project Description: The MLS stormwater requirement cannot be met onsite and therefore stormwater facilities must be constructed offsite to meet the MLS stormwater requirement. The offsite compensatory stormwater LODs are in various locations in Montgomery County, Maryland.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.12914980000005,-77.23456951672725,14z>



Counties: Montgomery County, Maryland



## Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> <li>Projects with a federal nexus that have tree clearing = to or &gt; 15 acres: 1. REQUEST A SPECIES LIST 2. NEXT STEP: EVALUATE DETERMINATION KEYS 3. SELECT EVALUATE under the Northern Long-Eared Bat (NLEB) Consultation and 4(d) Rule Consistency key</li> </ul> Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> <li>The monarch is a candidate species and not yet listed or proposed for listing. There are generally no section 7 requirements for candidate species (FAQ found here: <a href="https://www.fws.gov/savethemonarch/FAQ-Section7.html">https://www.fws.gov/savethemonarch/FAQ-Section7.html</a>).</li> </ul> Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

## USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

## Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED.  
PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Chesapeake Bay Ecological Services Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401-7307  
Phone: (410) 573-4599 Fax: (410) 266-9127

<http://www.fws.gov/chesapeakebay/>  
<http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html>

In Reply Refer To:

December 13, 2021

Consultation code: 05E2CB00-2022-TA-0445

Event Code: 05E2CB00-2022-E-01202

Project Name: I-495 & I-270 MLS Offsite Compensatory SWM Sites

Subject: Verification letter for the 'I-495 & I-270 MLS Offsite Compensatory SWM Sites' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Christina Simini:

The U.S. Fish and Wildlife Service (Service) received on December 13, 2021 your effects determination for the 'I-495 & I-270 MLS Offsite Compensatory SWM Sites' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"<sup>[1]</sup> prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

**Action Description**

You provided to IPaC the following name and description for the subject Action.

**1. Name**

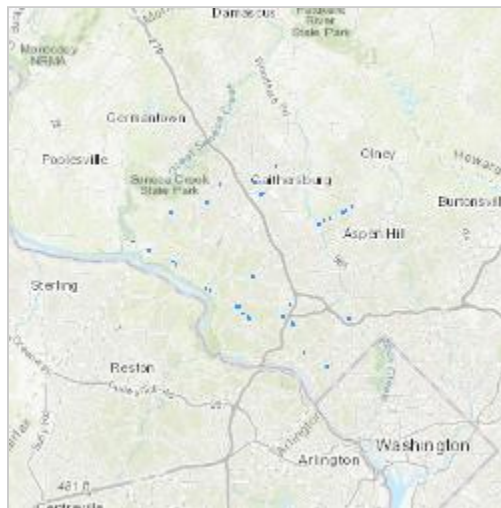
I-495 & I-270 MLS Offsite Compensatory SWM Sites

**2. Description**

The following description was provided for the project 'I-495 & I-270 MLS Offsite Compensatory SWM Sites':

The MLS stormwater requirement cannot be met onsite and therefore stormwater facilities must be constructed offsite to meet the MLS stormwater requirement. The offsite compensatory stormwater LODs are in various locations in Montgomery County, Maryland.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.12914980000005,-77.23456951672725,14z>

**Determination Key Result**

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

**Determination Key Description: Northern Long-eared Bat 4(d) Rule**

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.



Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

## Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

## Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?  
Yes
2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")  
No
3. Will your activity purposefully **Take** northern long-eared bats?  
No
4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?  
**Automatically answered**  
No
5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at [www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html](http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html).

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?  
No
7. Will the action involve Tree Removal?  
Yes

8. Will the action only remove hazardous trees for the protection of human life or property?

*No*

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

*No*

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

*No*

## Project Questionnaire

**If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.**

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

**If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.**

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

**If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.**

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

**If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.**

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

## ATTACHMENT C: FIELD DATASHEETS

Project: MLS Compensatory SWM		Feature ID: 31600	Stream Order:
Date: 2/17/21	State: MD	Photos: 3 US 4 DS	
Crew: BB JS	County: Montgomery	Last Flag Number: 4	

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral
<input type="radio"/> TNW (Subject to ebb and flow)	<input type="radio"/> TNW - Perennial (Flowing year round)	<input checked="" type="radio"/> RPW - Seasonal (must flow at least 3 months a year)	<input type="radio"/> Non-RPW draining uplands
	<input type="radio"/> RPW - Perennial (Flowing year round)		<input type="radio"/> Non-RPW erosional feature
			<input type="radio"/> Non-RPW with abutting wetland
			<input type="radio"/> Non-RPW with adjacent wetland
			<input type="radio"/> Non-RPW wetland adjacent or abutting upstream (outside of study area)

Describe rational hydrologic class: *hydraulic soils, bed banks, observed flow*

Hydrologic Connectivity -	Upstream: None	Downstream: Outside SA	Adjacent/Abutting: None
---------------------------	----------------	------------------------	-------------------------

Feature Description: (check all that apply)

Shape (with respect to OHW)		Substrate		Vegetation Cover Type (MBSS)	
<input checked="" type="checkbox"/> Natural Channel Shape	Width: 3'	<input checked="" type="checkbox"/> Silts	<input type="checkbox"/> Sands	<input type="checkbox"/> Muck	RB: Forest maintained lawn LB: Forest emergent
<input type="checkbox"/> Artificial (man-made)	Depth: 0.5 - 1'	<input type="checkbox"/> Cobbles	<input type="checkbox"/> Gravel	<input type="checkbox"/> Other:	
<input type="checkbox"/> Manipulated (man-altered)	Bank Erosion/stability: Moderate	<input type="checkbox"/> Bedrock	<input type="checkbox"/> Concrete		
<input type="checkbox"/> Other:		Side slope: <input checked="" type="checkbox"/> >1:1 <input type="checkbox"/> 2:1 <input type="checkbox"/> 3:1 <input type="checkbox"/> <4:1			

Notes: *incised, begins @ headcut, exposed banks but mostly healed over*

Weather/Precipitation Conditions:

Monthly Drought Condition		Monthly Drought Condition	
NCDC Regional PDSI		NCDC Regional PDSI	
<a href="http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php">http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php</a>		<a href="http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php">http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php</a>	
Drying Field Visit	Inches of Rain Within Last Week	Month: Jan Year: 2021	
<input checked="" type="radio"/> No rain	0-0.5	<input type="radio"/> -6	<input type="radio"/> -5
<input type="radio"/> Light rain	0.5-1	<input type="radio"/> -3	<input type="radio"/> -2
<input type="radio"/> Heavy Rain	>1	<input type="radio"/> -1	<input type="radio"/> 0
	Severe Drought	<input type="radio"/> 1	<input type="radio"/> 2
	Moderate Drought	<input type="radio"/> 3	<input type="radio"/> 4
	Normal	<input type="radio"/> 5	<input type="radio"/> 6
		Moderately Wet	
		Severely Wet	

Non-tidal tributary has: (check all that apply; include photos for each & list photo #)

Bed and Banks		Ordinary High Water Mark	
<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Clear, natural line impressed on the bank	<input type="checkbox"/> Sediment deposition	<input checked="" type="checkbox"/> Sediment sorting
<input type="checkbox"/> No	<input type="checkbox"/> Changes in the character of soil	<input type="checkbox"/> Water staining	<input checked="" type="checkbox"/> Scour
	<input type="checkbox"/> Shaving	<input checked="" type="checkbox"/> Presence of flood litter/debris	<input checked="" type="checkbox"/> Observed/predicted flow events
	<input checked="" type="checkbox"/> Vegetation matted down, bent, or absent	<input type="checkbox"/> Destruction of terrestrial veg.	<input type="checkbox"/> Abrupt change in plant community
	<input checked="" type="checkbox"/> Leaf litter disturbed	<input type="checkbox"/> Presence of wrack line	<input type="checkbox"/> Other:

Tidal tributary has: (check all that apply; include photos for each & list photo #)

High Tide Line		Mean High Water Mark indicated by:		Chemical Characteristics	
<input type="checkbox"/> Oil or scum line along shore objects	<input type="checkbox"/> Survey to available datum	<input type="checkbox"/> Water is clear			
<input type="checkbox"/> Fine shell or debris deposits (foreshore)	<input type="checkbox"/> Physical markings	<input type="checkbox"/> Water is discolored			
<input type="checkbox"/> Physical markings/characteristics	<input type="checkbox"/> Vegetation lines/changes in types	<input type="checkbox"/> Oily film			
<input type="checkbox"/> Tidal gauges		<input type="checkbox"/> Other:			

Notes:



# HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME 31000		LOCATION	
STATION # _____ RIVERMILE _____		STREAM CLASS Intermittent	
LAT _____ LONG _____		RIVER BASIN	
STORET #		AGENCY	
INVESTIGATORS EB, JS			
FORM COMPLETED BY CAS		DATE 2/17/2021 TIME 2:22 AM <input checked="" type="radio"/> PM	REASON FOR SURVEY

	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
Parameters to be evaluated in sampling reach	<b>1. Epifaunal Substrate/ Available Cover</b>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	<b>SCORE <sup>1</sup></b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 <b>1</b> 0
	<b>2. Embeddedness</b>	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
	<b>SCORE <sup>11</sup></b>	20 19 18 17 16	15 14 13 12 <b>11</b>	10 9 8 7 6	5 4 3 2 1 0
	<b>3. Velocity/Depth Regime</b>	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
	<b>SCORE <sup>1</sup></b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 <b>1</b> 0
	<b>4. Sediment Deposition</b>	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
	<b>SCORE <sup>6</sup></b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 <b>6</b>	5 4 3 2 1 0
	<b>5. Channel Flow Status</b>	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
	<b>SCORE <sup>2</sup></b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 <b>2</b> 1 0

# HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
<b>6. Channel Alteration</b>	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.					Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
SCORE 15	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
<b>7. Frequency of Riffles (or bends)</b>	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.					Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.					Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.					Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.					
SCORE 2	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
<b>8. Bank Stability (score each bank)</b>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.					Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.					Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.					
Note: determine left or right side by facing downstream.																					
SCORE 3 (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
SCORE 2 (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
<b>9. Vegetative Protection (score each bank)</b>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.					
SCORE 3 (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
SCORE 3 (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
<b>10. Riparian Vegetative Zone Width (score each bank riparian zone)</b>	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.					Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.					Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.					Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.					
SCORE 5 (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
SCORE 4 (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			

Total Score 58

WAS 3622

## RK&amp;K Waters of the U.S. Data Sheet

Version 2.1 - August 2019

Project: MLS compensation SWM	Feature ID: 32 L	Use Class: <i>Perennial</i>
Date: 12/29/2020	State: MD	Photos: WAS-3622-Photo 3-32L
Crew: ES, MM	County: Montgomery	Last Flag Number: 32L 1 A/B - 4 A/B

## Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral	Other
TNW	<input checked="" type="checkbox"/> TNW	<input type="checkbox"/> Tributary	<input type="checkbox"/> Tributary	<input type="checkbox"/> Impoundment
	<input type="checkbox"/> Tributary	<input type="checkbox"/> Ditch	<input type="checkbox"/> Ditch	<input type="checkbox"/> POW

Describe rationale for hydrologic class, including flow:

Hydrologic Connectivity -	Upstream: Out of LOS	Downstream: Out of LOS	Adjacent/Abutting: N/A
Ditch Information:	Direct Flow to TNW	Abutting a Wetland	Within a Wetland
	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Toe of slope	Symmetrical	Const. Uplands	Between Wetlands
Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Documentation:

## Feature Description: (check all that apply)

Shape (with respect to OHW)	Substrate	Vegetation Cover Type (MBSS)
Natural Channel Shape	Silts <input type="checkbox"/> Sands <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Concrete <input type="checkbox"/> Other: <input type="checkbox"/>	RB: Forested
Artificial (man-made)	Cobbles <input checked="" type="checkbox"/> Bedrock <input type="checkbox"/> Concrete <input type="checkbox"/> Other: <input type="checkbox"/>	LB: None (look Riprap)
Manipulated (man-altered)		Notes:
Other:		

General Notes: Both banks have been altered. Downstream Right = block wall. Downstream left = Riprap and Road embankment material.

## Weather/Precipitation Conditions:

Rain		Monthly Drought Condition NCDC Regional PDSI														
During visit	Last 48hrs	Last week	<a href="http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php">http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php</a> Month: Nov Year: 2020													
<input checked="" type="checkbox"/> No rain	<input checked="" type="checkbox"/> 0-0.1	<input checked="" type="checkbox"/> 0-0.5	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Light rain	<input type="checkbox"/> 0.1-0.5	<input checked="" type="checkbox"/> 0.5-1														
Heavy Rain	<input type="checkbox"/> > 0.5	<input type="checkbox"/> > 1														
			Severe Drought			Moderate Drought			Normal			Moderately Wet			Severely Wet	

## Non-tidal tributary has: (check all that apply)

Ordinary High Water Mark			
Clear, natural line impressed on the bank	Sediment deposition	Water staining	Abrupt change in plant community
Changes in the character of soil	Presence of wrack line	Shelving	Destruction of terrestrial veg.
Presence of flood litter/debris	Leaf litter disturbed	Sediment sorting	Observed/predicted flow events
Vegetation matted down, bent, or absent	Scour	Other: Edge of placed material	

## Tidal tributary has: (check all that apply)

High Tide Line		Mean High Water Mark indicated by:		Chemical Characteristics	
Oil or scum line along shore objects	Survey to available datum	Survey to available datum		Water is clear	
Fine shell or debris deposits (foreshore)	Physical markings	Physical markings		Water is discolored	
Physical markings/characteristics	Vegetation lines/changes in types	Vegetation lines/changes in types		Oily film	
Tidal gauges				Other:	

# HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (FRONT)

STREAM NAME <u>32L</u>		LOCATION	
STATION # _____ RIVERMILE _____		STREAM CLASS <u>Perennial (I-P)</u>	
LAT <u>38.9700</u> LONG <u>-77.1312</u>		RIVER BASIN <u>Potomac</u>	
STORET # _____		AGENCY _____	
INVESTIGATORS <u>ES, MM</u>			
FORM COMPLETED BY <u>ES, MM</u>		DATE <u>12/29/2020</u> TIME _____ AM PM	REASON FOR SURVEY _____

Parameters to be evaluated in sampling reach	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
	1. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and not transient).	30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	SCORE <u>16</u>	20 19 <u>(18)</u> 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
	SCORE <u>18</u>	20 19 <u>(18)</u> 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	3. Pool Variability	Even mix of large-shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
	SCORE <u>16</u>	20 19 18 17 <u>(16)</u>	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
	SCORE <u>13</u>	20 19 18 17 16	15 14 <u>(13)</u> 12 11	10 9 8 7 6	5 4 3 2 1 0
	5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
	SCORE <u>11</u>	20 19 18 17 16	15 14 13 12 <u>(11)</u>	10 9 8 7 6	5 4 3 2 1 0

# HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
<b>6. Channel Alteration</b>  Channelization or dredging absent or minimal; stream with normal pattern.	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.					Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
SCORE <u>6</u>	20	19	18	17	16	15	14	13	12	11	10	9	<u>8</u>	7	6	5	4	3	2	1	0
<b>7. Channel Sinuosity</b>  The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)					The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.					The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.					Channel straight; waterway has been channelized for a long distance.					
SCORE <u>7</u>	20	19	18	17	16	15	14	13	12	11	10	9	8	<u>7</u>	6	5	4	3	2	1	0
<b>8. Bank Stability (score each bank)</b>  Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.					Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.					Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.					
SCORE <u>5</u> (LB)	Left Bank 10 9					8 7 6					<u>5</u> 4 3					2 1 0					
SCORE <u>5</u> (RB)	Right Bank 10 9					8 7 6					<u>5</u> 4 3					2 1 0					
<b>9. Vegetative Protection (score each bank)</b>  More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.					
SCORE <u>2</u> (LB)	Left Bank 10 9					8 7 6					5 4 3					<u>2</u> 1 0					
SCORE <u>2</u> (RB)	Right Bank 10 9					8 7 6					5 4 3					<u>2</u> 1 0					
<b>10. Riparian Vegetative Zone Width (score each bank riparian zone)</b>  Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.					Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.					Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.					Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.					
SCORE <u>0</u> (LB)	Left Bank 10 9					8 7 6					5 4 3					2 1 <u>0</u>					
SCORE <u>1</u> (RB)	Right Bank 10 9					8 7 6					5 4 3					2 <u>1</u> 0					

Total Score 106

Project: WAS compensatory SWA	Feature ID: 32M	Use Class: PERENNIAL (E-P)
Date: 12/25/2020	State: MO	Photos: WAS-3622-Photo 7- 32M
Crew: ES MM	County: Montgomery	Last Flag Number: 32M 1A/B to 2 A/B

## Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent	Ephemeral	Other
TNW	<input type="checkbox"/> TNW	<input type="checkbox"/> Tributary	<input type="checkbox"/> Tributary	Impoundment
	<input checked="" type="checkbox"/> Tributary	<input type="checkbox"/> Ditch	<input type="checkbox"/> Ditch	POW

Describe rationale for hydrologic class, including flow:

Hydrologic Connectivity -	Upstream:	Pipe	Downstream:	Pipe	Adjacent/Abutting:	N/A
Ditch Information:	Roadside Ditch	Yes <input type="checkbox"/> No <input type="checkbox"/>	Abutting a Wetland	Yes <input type="checkbox"/> No <input type="checkbox"/>	Within a Wetland	Relocated Tributary
N/A <input checked="" type="checkbox"/>	Toe of slope	Symmetrical	Const. Uplands	Yes <input type="checkbox"/> No <input type="checkbox"/>	Between Wetlands	Documentation:
	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	

## Feature Description: (check all that apply)

Shape (with respect to OHW)		Substrate		Vegetation Cover Type (MBSS)	
<input checked="" type="checkbox"/> Natural Channel Shape	Width: 3 ft	<input checked="" type="checkbox"/> Silts	<input checked="" type="checkbox"/> Sands	<input checked="" type="checkbox"/> Muck	RB: Herbaceous
<input checked="" type="checkbox"/> Artificial (man-made)	Depth: 4 inches	<input type="checkbox"/> Cobbles	<input type="checkbox"/> Gravel	<input type="checkbox"/> Other:	LB: Sedge-shrub
<input type="checkbox"/> Manipulated (man-altered)	Bank Erosion/stability:	<input type="checkbox"/> Bedrock	<input type="checkbox"/> Concrete		Notes:
<input type="checkbox"/> Other:	Moderate				

General Notes: Short, open channel portion of a re-directed pipe at boundary.

## Weather/Precipitation Conditions:

Rain		Monthly Drought Condition NCDC Regional PDSI						Month:	Year:							
During visit	Last 48hrs	Last week	<a href="http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php">http://www.ncdc.noaa.gov/temp-and-precip/climatological-rankings/index.php</a>						Nov	2020						
<input checked="" type="checkbox"/> No rain	<input checked="" type="checkbox"/> 0-0.1	<input checked="" type="checkbox"/> 0-0.5	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
<input type="checkbox"/> Light rain	<input type="checkbox"/> 0.1-0.5	<input type="checkbox"/> 0.5-1	Severe Drought			Moderate Drought			Normal			Moderately Wet			Severely Wet	
<input type="checkbox"/> Heavy Rain	<input type="checkbox"/> > 0.5	<input type="checkbox"/> > 1														

## Non-tidal tributary has: (check all that apply)

Ordinary High Water Mark			
<input type="checkbox"/> Clear, natural line impressed on the bank	<input type="checkbox"/> Sediment deposition	<input checked="" type="checkbox"/> Water staining	<input type="checkbox"/> Abrupt change in plant community
<input checked="" type="checkbox"/> Changes in the character of soil	<input checked="" type="checkbox"/> Presence of wrack line	<input type="checkbox"/> Shelving	<input type="checkbox"/> Destruction of terrestrial veg.
<input checked="" type="checkbox"/> Presence of flood litter/debris	<input checked="" type="checkbox"/> Leaf litter disturbed	<input type="checkbox"/> Sediment sorting	<input type="checkbox"/> Observed/predicted flow events
<input checked="" type="checkbox"/> Vegetation matted down, bent, or absent	<input type="checkbox"/> Scour	<input type="checkbox"/> Other:	

## Tidal tributary has: (check all that apply)

High Tide Line		Mean High Water Mark indicated by:		Chemical Characteristics	
<input type="checkbox"/> Oil or scum line along shore objects	<input type="checkbox"/> Survey to available datum			Water is clear	
<input type="checkbox"/> Fine shell or debris deposits (foreshore)	<input type="checkbox"/> Physical markings			Water is discolored	
<input type="checkbox"/> Physical markings/characteristics	<input type="checkbox"/> Vegetation lines/changes in types			Oily film	
<input type="checkbox"/> Tidal gauges				Other:	



# HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (FRONT)

STREAM NAME <u>32 M</u>	LOCATION	
STATION # _____ RIVERMILE _____	STREAM CLASS <u>Perennial (S-P)</u>	
LAT <u>38.9698</u> LONG <u>-77.1309</u>	RIVER BASIN <u>Potomac</u>	
STORET # _____	AGENCY _____	
INVESTIGATORS <u>ES, MM</u>		
FORM COMPLETED BY <u>ES, MM</u>	DATE <u>12/29/2020</u> TIME _____ AM PM	REASON FOR SURVEY _____

	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
Parameters to be evaluated in sampling reach	1. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	SCORE <u>4</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 <u>4</u> 3 2 1 0
	2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
	SCORE <u>2</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 <u>2</u> 1 0
	3. Pool Variability	Even mix of large-shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
	SCORE <u>2</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 <u>2</u> 1 0
	4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
	SCORE <u>3</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 <u>3</u> 2 1 0
	5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
	SCORE <u>5</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	<u>5</u> 4 3 2 1 0

# HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.					Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
SCORE <u>4</u>	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	<u>4</u>	3	2	1	0
7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)					The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.					The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.					Channel straight; waterway has been channelized for a long distance.					
SCORE <u>2</u>	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	<u>2</u>	1	0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.					Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.					Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.					
SCORE <u>3</u> (LB)	Left Bank 10 9					8 7 6					5 4 <u>3</u>					2 1 0					
SCORE <u>3</u> (RB)	Right Bank 10 9					8 7 6					5 4 <u>3</u>					2 1 0					
9. Vegetative Protection (score each bank)  Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.					
SCORE <u>4</u> (LB)	Left Bank 10 9					8 7 6					5 <u>4</u> 3					2 1 0					
SCORE <u>1</u> (RB)	Right Bank 10 9					8 7 6					5 4 3					2 <u>1</u> 0					
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.					Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.					Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.					Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.					
SCORE <u>4</u> (LB)	Left Bank 10 9					8 7 6					5 <u>4</u> 3					2 1 0					
SCORE <u>1</u> (RB)	Right Bank 10 9					8 7 6					5 4 3					2 <u>1</u> 0					

Total Score 38

## ATTACHMENT D: PHOTO DOCUMENTATION

### Sub-Segment 31



Waterway 31000 – Intermittent



## Sub-Segment 32



Waterway 32L – Perennial



Waterway 32M – Perennial

## APPENDIX G – RIGHT-OF-WAY EVALUATION



## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX G: Right-of-Way Desktop Evaluations**

#### **1. Background**

The I-495 and I-270 Managed Lanes Study (MLS) Compensatory Stormwater Management (SWM) Sites review requires a conceptual level review from a MDOT SHA Right-of Way (ROW) perspective. The purpose of this review is to determine the difficulty to obtain potential easements, permanent and temporary, and ROW based on the Limit of Disturbance (LOD) for each site.

#### **2. Methodology and Assumptions**

Maryland Department of Transportation State Highway Administration (MDOT SHA) conducted preliminary ROW evaluations of property owner impacts. The report focused on identifying the property owner based on the limits of disturbance and then defining the type of property interest required to secure property rights for design, construction, and final project. The evaluation was based on preliminary site areas provided by the Water Resources Team. Because no design work has been done on the individual SWM sites at the time of this review, this effort constitutes only a preliminary review of potential sites to identify possible property rights based on private or public property ownership.

Because the potential SWM sites occur along major roadways, additional property rights may not be required although additional research is recommended as design work begins. While many locations are within MDOT SHA ROWs, many are shown adjacent to private property and temporary and/or permanent rights may be required in some situations. If that is the case, then plats are required with the Developer procuring appraisals and making offers to acquire.

At this time, no field visits have been made, but site visits to determine property impacts will be required for sites to define acquisition areas. MDOT SHA P3 ROW based its evaluations on data found within KMZ files and desktop GIS, including the following sources:

- Maryland Property View including tax parcel data;
- Maryland Department of Assessment & Taxation; and
- MERLIN – Maryland Environmental Resource & Land Information Network.

Right-of-Way Terminology:

*Acquisition Type* – Three categories are contained for Acquisition (temporary or permanent), Memorandum of Understanding (MOU) or Right of Entry (ROE). If the planned improvements were shown on private property, then Acquisition was selected. An acquisition can take between 9 months to one-year with additional time if the property interests need to be condemned. If the planned improvements are on MDOT SHA ROW, then ROE was selected because only a permit could be required. Additional research is required to define property rights.

Typically, MOUs are developed with public agencies to gain access with an easement or fee conveyance after completion of the improvements. MOUs can take between 6 to 18 months depending on the property owner and what type of funding was used during the original acquisition. If with federal funding, the applicable federal agency may need to concur with the transaction because the use is different from the original intent.

## Right-of-Way Determination Definitions:

*Difficulty* – Based on the Acquisition Type developed the level of Difficulty for the property rights. Site were marked as follows:

1. *Minor*. Without knowing the level of acquisition, for sites which were partially located outside the MDOT SHA ROW, but do not impact parkland or rail properties, were marked as Minor.
2. *Medium*. If the property right potentially required was from parkland, rail properties or significantly impact the adjacent property, those sites were marked as Medium.
3. *Hard*. If property is owned by parklands and/or National Park Service or if relocations of property owner access points are required, those sites were marked as Hard.

### 3. Conclusion

On behalf of the Maryland Department of Transportation State Highway Administration (MDOT SHA), the ROW conducted a review of 1,000+ potential compensatory stormwater management (SWM) sites, SWM facility and stream restoration sites, identified to meet the SWM water quality (WQ) requirements of the MLS. Based on the selection of the Preferred Alternative (Alternative 9 – Phase 1 South), further analysis and development of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites, all of which are SWM facilities. The compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impact Statement (FEIS), and Record of Decision (ROD).

The following is a summary of the findings of the 67 compensatory SWM sites with respect to the ROW desktop evaluation of the sites for the entire MLS.

**Table G-1. Summary of ROW Determinations**

ROW Determinations	No. of SWM Sites
Minor	49
Medium	15
Hard	3

Refer to the main document for a breakdown of ROW determination by site name.

The ROW determinations for the potential compensatory SWM locations were developed with aerial mapping and tax map information without the use of MDOT SHA plats. Additional research is needed along with discussions with MDOT SHA on future highway capital plans and inventory needs for the subject areas.

## APPENDIX H – SECTION 4(F)/PARKS EVALUATION

## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX H: Section 4(f) Desktop Evaluations**

#### **1. Background**

The I-495 and I-270 Managed Lanes Study (MLS), as a United States Department of Transportation (USDOT) action, is required to evaluate properties protected by Section 4(f) of the USDOT Act (23 CFR 774) which protects parks, recreation areas, wildlife and waterfowl refuges and historic sites. Although they qualify for protection under Section 4(f), historic sites were previously addressed in Appendix B of this report. Therefore, the assessment of historic site is not repeated in this Appendix. This Appendix identifies the remainder of the Section 4(f) resources and where present, makes an initial assessment of the severity of potential impacts.

#### **2. Methodology and Assumptions**

On behalf of the Maryland Department of Transportation State Highway Administration (MDOT SHA), the Section 4(f) Team conducted a review of 1,000+ potential compensatory stormwater management (SWM) sites, SWM facility and stream restoration sites, identified to meet the SWM water quality (WQ) requirements of the MLS. Based on the selection of the Preferred Alternative, further analysis and development of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites, all of which are SWM facilities. The compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impact Statement (FEIS), and Record of Decision (ROD).

The goal of the Section 4(f) parks review was twofold. First, to identify which of the proposed sites involved Section 4(f) park property and, second, to make an initial assessment of the severity of potential impacts. The nature and severity of the impact must ultimately be coordinated with the official with jurisdiction over the Section 4(f) property, but this review provided a preliminary assessment of the anticipated Section 4(f) outcome and the level of coordination that might be required.

Severity of potential impacts was assessed based on the following classifications:

None (N) – indicates no Section 4(f) property is involved

Low (L) – indicates a fringe impact on Section 4(f) property may be involved but would likely result in a *de minimis* Section 4(f) use

Moderate (M) – indicates an impact likely to be greater than *de minimis*, resulting in an Individual Section 4(f) Evaluation.

Severe (S) – indicates a potentially substantial impact relative to the size of the resource.

Some of the SWM sites that would result in “Severe” impacts to Section 4(f) properties, especially stream restoration sites, may qualify as exceptions under Section 4(f) as they could be viewed as solely for the purpose of preserving or enhancing an activity, feature, or attribute that qualifies the property for Section 4(f) protection. To qualify as an exception, the official with jurisdiction would be required to agree in writing that the SWM sites meet the criteria stated above. However, since that coordination has not been completed, it is not possible to determine at this time whether the Section 4(f) exception would apply. Therefore, these SWM sites are considered to result in “severe” impacts to Section 4(f) properties. It is

also important to note that SWM sites where the Section 4(f) impacts are not viewed as beneficial could be extremely difficult to mitigate.

### **3. Results**

The following summarizes the 67 selected SWM sites based on the severity of the anticipated impacts to Section 4(f) parks. (Note: There are no wildlife or waterfowl refuges present within the LOD and historic properties are addressed in Appendix B.) All SWM sites identified with anticipated Section 4(f) impacts, including those anticipated to be *de minimis* (low, moderate, or severe) were eliminated from consideration. Additionally, all sites with impacts to National Park Service (NPS) properties were removed, at the request of NPS.

For the SWM facility sites there were:

0 with severe 4(f) impacts

0 with moderate 4(f) impacts

0 with low 4(f) impacts

67 with no 4(f) impacts

A table detailing each site's impact is included at the end of this Appendix.

### **4. Conclusions**

The scope of this effort was to screen for Section 4(f) parks and wildlife and waterfowl refuges only, not historic properties, which are also protected by Section 4(f).

If the P3 Developer would choose to modify the SWM sites recommended in this report or utilize any new SWM sites not identified in this report such that Section 4(f) properties would be impacted, it should be noted that those sites should be considered for Compensatory SWM Plan only if no other option for meeting the minimum SWM water quality requirements are available. If it is determined that no other option is available, the "Low" impact sites may be considered first, as the Section 4(f) uses resulting from the "Low" sites may be considered *de minimis* and use of these sites would minimize the use of Section 4(f) properties in comparison to sites with "Moderate" or "Severe" impacts.

The "Moderate" and "Severe" impact sites should be evaluated by the NEPA team in coordination with the officials with jurisdiction over the Section 4(f) properties to determine if the impacts are viewed as beneficial or result in additional cost and mitigation. If the impact is viewed as greater than *de minimis*, then these sites should be avoided if it is feasible to do so.

**Table H-1 – Compensatory SWM Facility Sites**

<b>Site Name</b>	<b>Section 4(F) Severity</b>	<b>Comment</b>
WAS-3604	N	Not a 4(f) Park or Wildlife Refuge
WAS-3603	N	Not a 4(f) Park or Wildlife Refuge
WAS-3601	N	Not a 4(f) Park or Wildlife Refuge
WAS-3615	N	Not a 4(f) Park or Wildlife Refuge
WAS-3612	N	Not a 4(f) Park or Wildlife Refuge
WAS-3613	N	Not a 4(f) Park or Wildlife Refuge
WAS-3614	N	Not a 4(f) Park or Wildlife Refuge
WAS-3616	N	Not a 4(f) Park or Wildlife Refuge
WAS-3617	N	Not a 4(f) Park or Wildlife Refuge
WAS-3625	N	Not a 4(f) Park or Wildlife Refuge
WAS-3635	N	Not a 4(f) Park or Wildlife Refuge
WAS-4058	N	Not a 4(f) Park or Wildlife Refuge
WAS-4059	N	Not a 4(f) Park or Wildlife Refuge
WAS-4068	N	Not a 4(f) Park or Wildlife Refuge
WAS-4072	N	Not a 4(f) Park or Wildlife Refuge
WAS-4091	N	Not a 4(f) Park or Wildlife Refuge
WAS-4098	N	Not a 4(f) Park or Wildlife Refuge
WAS-4099	N	Not a 4(f) Park or Wildlife Refuge
WAS-3305	N	Not a 4(f) Park or Wildlife Refuge
WAS-3618	N	Not a 4(f) Park or Wildlife Refuge
WAS-4517	N	Not a 4(f) Park or Wildlife Refuge
WAS-4518	N	Not a 4(f) Park or Wildlife Refuge
WAS-4519	N	Not a 4(f) Park or Wildlife Refuge
WAS-4521	N	Not a 4(f) Park or Wildlife Refuge
WAS-4607	N	Not a 4(f) Park or Wildlife Refuge
WAS-4615	N	Not a 4(f) Park or Wildlife Refuge
WAS-4613	N	Not a 4(f) Park or Wildlife Refuge
WAS-4622	N	Not a 4(f) Park or Wildlife Refuge
WAS-4624	N	Not a 4(f) Park or Wildlife Refuge
WAS-4625	N	Not a 4(f) Park or Wildlife Refuge
WAS-4626	N	Not a 4(f) Park or Wildlife Refuge
WAS-4627	N	Not a 4(f) Park or Wildlife Refuge
WAS-4628	N	Not a 4(f) Park or Wildlife Refuge
WAS-4635	N	Not a 4(f) Park or Wildlife Refuge
WAS-4633	N	Not a 4(f) Park or Wildlife Refuge
WAS-4629	N	Not a 4(f) Park or Wildlife Refuge
WAS-4630	N	Not a 4(f) Park or Wildlife Refuge
WAS-4631	N	Not a 4(f) Park or Wildlife Refuge
WAS-4637	N	Not a 4(f) Park or Wildlife Refuge



<b>Site Name</b>	<b>Section 4(F) Severity</b>	<b>Comment</b>
WAS-4638	N	Not a 4(f) Park or Wildlife Refuge
WAS-4640	N	Not a 4(f) Park or Wildlife Refuge
WAS-4639	N	Not a 4(f) Park or Wildlife Refuge
WAS-4641	N	Not a 4(f) Park or Wildlife Refuge
WAS-4642	N	Not a 4(f) Park or Wildlife Refuge
WAS-4644	N	Not a 4(f) Park or Wildlife Refuge
WAS-4645	N	Not a 4(f) Park or Wildlife Refuge
WAS-4646	N	Not a 4(f) Park or Wildlife Refuge
WAS-4647	N	Not a 4(f) Park or Wildlife Refuge
WAS-4651	N	Not a 4(f) Park or Wildlife Refuge
WAS-4652	N	Not a 4(f) Park or Wildlife Refuge
WAS-4653	N	Not a 4(f) Park or Wildlife Refuge
WAS-4655	N	Not a 4(f) Park or Wildlife Refuge
WAS-4656	N	Not a 4(f) Park or Wildlife Refuge
WAS-4657	N	Not a 4(f) Park or Wildlife Refuge
WAS-4658	N	Not a 4(f) Park or Wildlife Refuge
WAS-4659	N	Not a 4(f) Park or Wildlife Refuge
WAS-4660	N	Not a 4(f) Park or Wildlife Refuge
WAS-3622	N	Not a 4(f) Park or Wildlife Refuge
WAS-3637	N	Not a 4(f) Park or Wildlife Refuge
WAS-3638	N	Not a 4(f) Park or Wildlife Refuge
WAS-3658	N	Not a 4(f) Park or Wildlife Refuge
WAS-4067	N	Not a 4(f) Park or Wildlife Refuge
WAS-3602	N	Not a 4(f) Park or Wildlife Refuge
WAS-3656	N	Not a 4(f) Park or Wildlife Refuge
WAS-3634	N	Not a 4(f) Park or Wildlife Refuge
WAS-4632	N	Not a 4(f) Park or Wildlife Refuge
WAS-1805	N	Not a 4(f) Park or Wildlife Refuge

## APPENDIX I – STRUCTURES EVALUATION

## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX I: Structural Desktop Evaluations**

#### **1. Background**

The I-495 and I-270 Managed Lanes Study (MLS) Compensatory Stormwater Management (SWM) Sites review includes numerous sites requiring structural elements, such as underground structures and retaining walls. These structural elements must comply with all Maryland Department of Transportation State Highway Administration (MDOT SHA) structural design requirements, as well as national design standards. In addition, construction of the structures must be feasible and reasonable within the specified Limit of Disturbance (LOD) for each site.

#### **2. Methodology and Assumptions**

MDOT SHA conducted preliminary structural evaluations of constructability and LOD at each of the potential SWM sites that contain a structural element for the MLS. The evaluation was based on preliminary site areas provided by the Water Resources Team. Because no design work has been done on the individual SWM sites at the time of this review, this effort constitutes only a preliminary review of potential sites to identify potential constructability issues with the recommended structure dimensions provided. The goal of the review was to identify any potential issues or concerns and to identify sites that are not feasible from a structural standpoint.

Because the structural evaluations were based on preliminary information, additional review will be required for all sites as design information is developed.

In addition to the information provided by the Water Resources Team, MDOT SHA based its structural site evaluations on imagery available from Google Earth and Google Street View. At this time, no structural team field visits have been made. Other disciplines provided field feedback, which was available for structural review.

#### **Structural Review Considerations:**

The elements taken into consideration at each site with respect to the constructability of an underground structure include:

*Structure Type and Size* – The preliminary information provided by the site identification team included a potential structure width and length, as well as the type of facility (underground detention, underground sand filter, retaining wall, etc.). The structure size influences the type of construction that may be used by the Developer, whether precast or cast-in-place (CIP) concrete. A series of precast units delivered to the site and connected together requires a location for a crane to be set up and space to stage the units as they are delivered. A structure to be cast-in-place on site requires staging room for forming materials to be stored, reinforcement bars to be assembled, and concrete trucks to deliver the concrete.

*Adequacy of LOD* – The size of the LOD was evaluated to determine if space is available within it to install the potential structure. The structure type and size were used to determine the approximate footprint of the potential structure. For potential median installations, the site was reviewed to confirm that the width of the median is sufficient for the structure and that space is provided within the LOD outside of the structure footprint to provide space for excavation and construction equipment, such as a crane or truck. For structures adjacent to the outside edge of roadway, the site was reviewed to ensure that the structure

footprint fits between the edge of roadway and the LOD with space for excavation on the backside and that there is space on the roadway side for excavation and construction equipment.

*Overhead Utilities* – The presence of overhead utilities at each site was determined using available imagery from Google Earth and Google Street View. In many locations, the overhead utilities parallel the roadway and therefore parallel the length of the potential structure. In some locations, the utilities also cross the roadway and the LOD transversely. There are several concerns when overhead utilities are present; the first of which is needing to maintain clearances to the wires in accordance with the utility company during installation of the potential structure. This may require that small cranes be used for precast structures, or it may preclude the use of a crane and require that CIP construction be used. In addition, the clearance requirements may make the installation of support of excavation difficult. If equipment cannot drive sheet piling into the ground to support the excavation, it may be feasible to vibrate the sheet piling into place, or the excavation may need to be laid back, requiring additional LOD. In some locations, it may be feasible to temporarily disconnect the utility to permit installation activities. The utility poles are another concern when planning to install underground structures. The utility owners set a limit as to how close excavation operations can be adjacent to the utility poles; depending on the available spacing within the LOD, achieving this offset may be challenging.

*Underground Utilities* – Underground utilities were assumed based on a review of the available imagery. If the imagery indicates that utilities are present in close vicinity of the LOD, such as visible access panels, manholes, utility boxes, lighting, fire hydrants, etc., then the site is assumed to have underground utilities within it. Utility owners have required clearances that must be maintained to their facilities and excavating or constructing within that clearance envelope is not permitted. Constructing new concrete structures over existing utilities is also not ideal, even if clearances are met.

*Slope Severity/Stability* – Sites that appear to have a slope either within the LOD or adjacent to the LOD were flagged as a potential slope concern due to the severity of the slope and/or the potential instability of the slope. These were individually reviewed to determine if the slope presented a concern for the construction of the potential structure. Many of these sites can be accessed from the roadway side of the LOD to install the structure, eliminating the need to locate equipment on the slope itself. In some locations, the slope appears that it may require more significant support of excavation due to the depth of the slope and the structure, but this was not considered a reason to exclude the site. There are no sites that present a major concern with respect to slope severity or slope stability. However, note that given the limited information available for review, all sites initially identified as having potential slope issues remain flagged, even if the concern was low.

*Existing Structures* – The presence of existing structures adjacent to the potential stormwater management underground structures was reviewed. Note that drainage inlet boxes and stormwater pipes were not included in this review as “existing structures”, as many of these facilities will be retrofitted as part of the potential site modifications. Retaining walls are present within the potential LOD at a few of the sites; excavation adjacent to the existing retaining wall is a concern due to wall stability and additional pressure that may be applied to the wall during construction and in the final condition. Although there may be minimal reason for concern, without existing plans to review and site-specific information to study, the presence of existing retaining walls remains a concern. Similarly, many of the sites recommend tying the potential structure into an existing culvert or storm drain. While this is likely a feasible proposal, without additional information regarding the existing structure’s condition and construction details, this remains a concern.

### 3. Results

Table I-1, presented at the end of this appendix, summarizes the assessment of each of the sites that were identified as potential locations for underground structures. The table summarizes (1) known presence of utilities, (2) concern for slope stability, (3) other potential structural concerns, and (4) level of concern associated with constructing a structure at the site. All site evaluations are preliminary and are subject to change as new information becomes available.

Level of Concern Definitions:

*Major Concern* defines a site where a structure is not recommended without further study and investigation. It may also include sites with existing structures that would be negatively impacted by the construction.

*Moderate Concern* covers the sites where concerns associated with utilities, slope severity/stability or potential modifications to existing underground structures may be feasible with engineering and/or innovative solutions. Note that utility relocation may be an option but the feasibility of doing so at each individual site was not considered as part of this review.

*Minimal Concern* is used when there are no structural issues. This category may include sites where the LOD is within the existing MDOT SHA right-of-way and is not anticipated to have significant impacts.

### 4. Conclusion

On behalf of MDOT SHA, the Structural Team conducted a review of 230 potential compensatory SWM sites out of over 1000+ total sites, SWM facility and stream restoration sites, that were identified to meet the SWM water quality (WQ) requirements of the MLS. Based on the selection of the Preferred Alternative (Alternative 9 – Phase 1 South), further analysis and developments of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of total compensatory SWM sites was reduced to 67, all of which are SWM facilities. The compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impacts Statement (FEIS), and the Record of Decision (ROD).

Of these remaining 67 sites, only one (1) site required structural review as a potential compensatory SWM facility location that required underground structures or retaining walls. The following is a summary of the level of concern findings with respect to the structural component of the site.

**Table I-1 – Summary of Structural Level of Concern**

Level of Concern	Number of Sites
Major	0
Moderate	1
Minimal	0

From this summary, which shows that the site is rated with a moderate level of concern, it is evident that additional information and coordination may result in a feasible designation from a structural standpoint for the site reviewed.

**Table I-2. Preliminary Structural Evaluations**

<b>Site Name</b>	<b>Level of Concern</b>	<b>Presence of Existing Utilities</b>	<b>Potential Slope Stability Issues</b>	<b>Other Structural Concerns</b>
WAS-4099	Moderate	Yes	No	Private business sign to be salvaged and replaced



## APPENDIX J – UTILITIES EVALUATION

## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX J: Utility Desktop Evaluations**

#### **1. Background**

The I-495 and I-270 Managed Lanes Study (MLS) Compensatory Stormwater Management Sites review requires a high-level review from the utilities' perspective. The purpose of this review is to identify the potential utility conflict and severity of the impact within the Limit of Disturbance (LOD) for each site.

#### **2. Methodology and Assumptions**

The compensatory stormwater management (SWM) sites were evaluated for potential utility impacts by visual inspection of existing above-ground utility features using online resources such as Google Earth. The evaluation was done without the benefit of utility records or archives or consulting with Utility Owners. Where there was a clear presence of utilities on or near the site, it was noted for each site. The extent to which a utility would prohibit or hinder the ability to utilize a site will depend on various factors including the location, type, size, existing easements, and utility owner restrictions to work in proximity to the utility.

Visual indicators of utilities include utility poles, overhead lines, manholes, vaults, utility markers or signs, as well as ground contours which may indicate the presence of a gravity utility (e.g., a sanitary sewer following a stream).

Indicators for Utilities and Evaluation:

##### Overhead Utilities

Overhead utilities include power transmission, distribution, and secondary electrical lines. Typically, poles associated with the overhead lines are owned by the local power company and attachments from other party's area made by agreements with the pole owner. Attachments are typically telecommunications companies such as Verizon, Comcast, Fiberlight, etc. as well as governmental organizations. In addition to the overhead lines themselves, there may be equipment, such as switches or transformers, affixed to poles.

If an overhead utility installation is located on or near a site, it may prohibit or hinder the ability to utilize the site. The complexity of the relocation would depend on the type, number, and height of overhead utility lines and equipment on the utility poles. The clearance to the overhead line may also impact the ability to operate equipment with height requirements that exceed the necessary clear distance (as indicated by MDOT SHA Utility Manual, MD High Voltage Act, National Electric Code, etc.) and further restrict feasibility of construction at the site. Additionally, utility poles are often braced by guying systems which may interfere with construction.

##### Underground Utilities

Evidence of underground utilities is based primarily on observation of surface features. This includes sanitary sewer manholes, electrical and telecommunications vaults and handholes, water meters and valve vaults, gas meters and valve vaults. Additionally, underground utilities may be identified with markers, posts, or signs indicating the presence of a utility. While this approach may identify the possible presence of a utility on the site being considered, there are several limitations: the size, orientation, depth, and actual location are not known to be able to determine the extent of impacts. In some cases, recent Miss Utility markings may provide information concerning the presence of underground utilities

### Traffic and Streetlight

The infrastructure for traffic signals, streetlighting, and ITS systems were also evaluated as part of the utility investigation. Typically, these systems will include power and signal conduit, handboxes, as well as the signal poles, streetlights, and CCTV cameras that they operate. If any of these systems were near a site, it was noted as a possible utility impact or obstruction. As with the other utilities, the precise location of the subsurface lines could not be determined.

### Utility Owners in Project Area:

As the compensatory SWM site investigation covers a wide area, there are several utilities that may exist at these sites. The typical utilities encountered include water, sanitary sewers, electrical, natural gas, telecommunications. There are also limited areas where petroleum pipelines and transmission level natural gas pipelines (such as Transcontinental Pipeline) are present in the study area.

Utility Owners that may be present in the study area include (but not limited to):

#### Water and Sewer

- Washington Suburban Sanitary Commission (WSSC)
- City of Rockville
- DC Water
- US Army Corps of Engineers (Washington Aqueduct)

#### Electric

- Potomac Electric Power Company (PEPCO)
- Baltimore Gas and Electric (BGE)

#### Gas

- Washington Gas
- Williams Companies (Transco pipeline)
- TC Energy (formerly Columbia Gas)
- Colonial Pipeline (petroleum)

#### Telecommunications

- AT&T (local and long distance)
- CenturyLink Communications
- Comcast
- Crown Castle
- FiberLight
- Montgomery County Fiber
- Qwest Government Services
- RCN Telecom Services
- Verizon
- Verizon Business
- Zayo Group

### **3. Conclusions**

On behalf of the Maryland Department of Transportation State Highway Administration (MDOT SHA), the Utilities Team conducted a review of 1,000+ potential compensatory SWM sites, SWM facility and stream restoration sites, identified to meet the SWM water quality (WQ) requirements of the MLS. Based on the selection of the Preferred Alternative (Alternative 9 – Phase 1 South), further analysis and

development of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites, all of which are SWM facilities. The compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impact Statement (FEIS), and Record of Decision (ROD).

The presence of utilities at or near any of the SWM sites may prohibit the use of the site. The limited preliminary investigation yielded some useful information; however, many of the utilities cannot be identified by only visual evaluation. To further the evaluation of the SWM sites with respect to utility disposition and potential impacts the following activities should be considered:

- Request utility records from Utility Owners
- Identify all surface features on site by field survey
- Quality Level 'B' utility designation of all utilities
- Select Quality Level 'A' utility location by test holes
- Determine extent of impact based on a selected design and minimize impacts, to the extent possible.
- Coordinate with Utility Owners

Additionally, as utility relocations and adjustments are identified, the design will need to conform to Utility Owner and MDOT SHA requirements. This may require agreements and permits with Utility Owners, Utility Permits from SHA and/or local municipalities, and other requirements identified for specific utilities.

The following is a summary of the findings of the 67 compensatory SWM sites with respect to the utilities desktop evaluation of the site.

**Table J-1. Summary of Preliminary Utility Findings**

<b>Preliminary Utility Findings</b>	<b>No. of SWM Facility Sites</b>
None Observed on Google Earth	21
Overhead (OH) Utilities	11
Overhead and Underground (UG) Utilities	28
UG Utilities	7

Refer to the main document for a breakdown of Utility determination by site name.

## APPENDIX K – CONSTRUCTABILITY EVALUATION

## **Compensatory Stormwater Management Sites for the I-495 and I-270 Managed Lanes Study**

### **APPENDIX K: Constructability Desktop Evaluations**

#### **1. Background**

The I-495 and I-270 Managed Lanes Study (MLS) compensatory Stormwater management (SWM) sites review required a conceptual level review from a constructability perspective. The purpose of this review was to verify that constructability of each SWM facility is feasible and reasonable in its proposed location and within the Limit of Disturbance (LOD) shown. Constructability issues include maintenance of traffic, construction access, and site conflicts.

#### **2. Methodology and Assumptions**

The Maryland Department of Transportation, State Highway Administration (MDOT SHA) conducted preliminary evaluations of constructability at each of the potential SWM facility sites for the MLS. Potential stream restoration sites were not included in the constructability desktop evaluation since generally there is adequate access and area available during construction. The evaluations were based on preliminary site areas provided by the Water Resources Team. All reviews were based on Geographic Information Systems (GIS) imagery and other material including plans and site photos as available. No constructability field visits have been made.

Because the constructability evaluations were based on preliminary information, additional review will be required for all sites as design information is developed.

Constructability Review Considerations:

- *Adequate staging and access*- Is there enough space for the required equipment, materials, and workers to complete their work? If space is more limited, this increased the difficulty of the work.
- *Obstruction and restricted property*- Is there evidence of overhead or underground utilities or other structures?
- *Impacts on neighboring area*- Will the worksite impact businesses or residences? What options are available to detour or otherwise mitigate impacts? Will alteration of the current site impact the community (i.e., removal of trees, etc.)?
- *Public and workforce safety*- While work may be possible in certain sites, can it be done safely? The more precautions needed to maintain safety increased the difficulty assigned to the review.

#### **3. Results**

Level of Concern Definitions:

Minor- Indicates construction should be able to proceed with normal caution. No immediate issues that would preclude construction appear.

Moderate- Indicates construction should be able to proceed, but with additional caution, safety equipment, alternate techniques. Expect construction durations to be longer and more costly than sites considered Minor.

Significant- Indicates construction is difficult. Sites may need advanced or extreme techniques and equipment, or considerable interact/remediation from third party property owners, utilities, etc.



Expect construction durations and costs to be significantly escalated above those in the moderate category.

#### 4. Conclusion

On behalf of the Maryland Department of Transportation State Highway Administration (MDOT SHA), the Constructability Team conducted a review of 1,000+ potential compensatory stormwater management (SWM) sites, SWM facility and stream restoration sites, identified to meet the SWM water quality (WQ) requirements of the MLS. Based on the selection of the Preferred Alternative, further analysis and development of the on-site SWM, and efforts to meet SWM WQ requirements closer to the Phase 1 South corridor while minimizing impacts to private properties and environmental resources, the number of compensatory SWM sites was reduced to 67 sites, all of which are SWM facilities. The compensatory SWM sites selected are to support and inform the Joint Permit Application (JPA), the Final Environmental Impact Statement (FEIS), and Record of Decision (ROD).

The table below summarizes the results of the Constructability Teams evaluation:

**Table K-1 – Summary of Level of Concern**

Level of Concern	Number of Sites
Minor	19
Moderate	44
Significant	4

From a constructability standpoint, this review shows many options available for use as compensatory SWM sites. However, the ratings were based on remote observations and other methods. Any analysis of actual construction feasibility will require a field inspection by qualified personnel.

**Table K-2 – Preliminary Constructability Evaluations**

Site Name	Rating	Comments
WAS-1805	Moderate	Worksite appears clear and removed from traffic. Portions of work appear to be below exist OH lines, requiring caution.
WAS-3305	Minor	Facility layout appears to avoid UGD and OH lines. Pedestrian protection needed. CTB needed to setup workzone access, unless access is from commercial driveway.
WAS-3601	Moderate	Temp. Barrier in grass or backfill daily.
WAS-3602	Moderate	Temp. Barrier on Shoulder or backfill daily.
WAS-3603	Moderate	Temp. Barrier on Curb/SW.
WAS-3604	Moderate	No barrier/safety slope/backfill daily or place barrier in grass.
WAS-3612	Moderate	Temp. Barrier in grass or backfill daily.
WAS-3613	Minor	Temp. Barrier on Curb or Backfill daily.
WAS-3614	Minor	Temp. Barrier on Curb or Backfill daily.
WAS-3615	Minor	CTB needed for workzone protection. Work may impact several trees.
WAS-3616	Minor	Minimal sideroad traffic.
WAS-3617	Moderate	Temp. Barrier on Shoulder or backfill daily.
WAS-3618	Minor	Temp. Barrier on Grass or backfill daily. Some is behind guardrail.
WAS-3622	Moderate	Use temp workzone for access to site. Need pedestrian fence. May need shoring near trees, or clearing.
WAS-3625	Minor	Temp. Barrier on Curb or Backfill daily.

Site Name	Rating	Comments
WAS-3634	Significant	CTB needed for workzone protection. Shoring needed to support road. Heavy traffic and limited staging will make site difficult. Removal of trees will cause concern of community.
WAS-3635	Significant	CTB needed for workzone protection. Shoring needed to support road. Heavy traffic and limited staging will make site difficult. Removal of trees will cause concern of community.
WAS-3637	Moderate	CTB needed for workzone protection. Shoring needed to support road.
WAS-3638	Significant	CTB needed for workzone protection. Shoring needed to support road. Heavy traffic and limited staging will make site difficult. Removal of trees will cause concern of community.
WAS-3656	Minor	CTB needed for workzone protection. Shoring needed to support road. Access from neighborhood road.
WAS-3658	Moderate	CTB needed for workzone protection. Shoring possibly needed to support road. Limited access due to being in median of heavily travelled road.
WAS-4058	Minor	CTB needed for workzone protection. Good access from either roadway. The median is only about 23' wide where the work takes place.
WAS-4059	Moderate	Grass/SW area -need shoring. Temp. Barrier/ squeeze traffic. Build temp SW. Some lane closures.
WAS-4067	Moderate	CTB needed for workzone protection. There are light poles along Great Seneca Hwy that conflict. There are utility markings (gas, fiber optics, waterline) under the sidewalk. Shoring to support the road may be needed.
WAS-4068	Minor	CTB need for workzone protection. Work area in the median is about 25' wide with short curbs on each side.
WAS-4072	Moderate	In median - Temp. Barrier x 2 directions. Daily lane closures. Tree removal. Grass area - shoring.
WAS-4091	Moderate	CTB needed for workzone protection. Guardrail exists all along the entire site that will have to be worked around or removed and replaced.
WAS-4098	Moderate	OH Utilities nearby. Between SW and road. Try to close SW. Grass area - need shoring. Daily lane closures. Underground utilities.
WAS-4099	Moderate	The site is between the sidewalk and an existing building. There is one sign to deal with and OH wires behind the sidewalk. No real storage area for materials.
WAS-4517	Minor	Temp. Barrier on shoulder or backfill daily.
WAS-4518	Moderate	Temp. Barrier on shoulder. Shoring.
WAS-4519	Moderate	Temp. Barrier on shoulder. Shoring.
WAS-4521	Minor	Temp. Barrier on shoulders. Shoring.
WAS-4607	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4613	Significant	Night Work? Temp. Barrier in left lane (lane shift EB) and close Lt. lane WB). Shoring.
WAS-4615	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4622	Moderate	Temp. Barrier in Grass.
WAS-4624	Moderate	Temp. Barrier on Shoulder or backfill daily.
WAS-4625	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4626	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4627	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4628	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4629	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4630	Moderate	Temp. Barrier in Grass or backfill daily.

Site Name	Rating	Comments
WAS-4631	Moderate	Temp. Barrier on Shoulder.
WAS-4632	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4633	Moderate	Temp. Barrier on Shoulder.
WAS-4635	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4637	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4638	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4639	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4640	Moderate	Temp. Barrier on shoulder. Shoring.
WAS-4641	Moderate	Temp. Barrier on shoulder. Shoring.
WAS-4642	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4644	Moderate	Temp. Barrier on shoulder. Shoring.
WAS-4645	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4646	Moderate	Temp. Barrier in Grass or backfill daily.
WAS-4647	Moderate	Temp. Barrier on shoulder. Shoring.
WAS-4651	Moderate	Temp. Barrier on shoulders. Shoring.
WAS-4652	Minor	Good access. The work is along neighborhood streets not main roads. May need CTB to separate the work from traffic.
WAS-4653	Moderate	Temp. Barrier on shoulder. Shoring.
WAS-4655	Minor	Good access. The work is along neighborhood streets not main roads. May need CTB to separate the work from traffic.
WAS-4656	Minor	Good access. The work is along neighborhood streets not main roads. May need CTB to separate the work from traffic.
WAS-4657	Minor	Good access. The work is along neighborhood streets not main roads. There are some OH wires to work around. May need CTB to separate the work from traffic.
WAS-4658	Minor	Good access. The work is along neighborhood streets not main roads. There are a few trees to work around. May need CTB to separate the work from traffic.
WAS-4659	Minor	CTB needed for workzone protection. There are OH wires but very good access. There are some trees that may have to be removed or trimmed.
WAS-4660	Minor	CTB needed for workzone protection. There are OH wires but very good access.

## **APPENDIX L – ENVIRONMENTAL IMPACT MAPPING**





Legend

- Compensatory SWM LOD
- Map Match Line
- FEMA Floodplain 100 Year
- Right-of-Way

- Delineated Forest Boundary
- Delineated Waterways
- Delineated Wetland
- Delineated Wetland Buffer

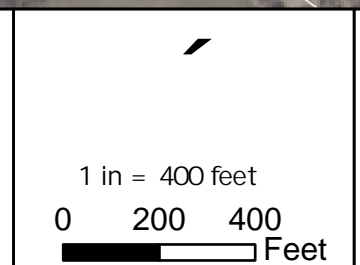
- Historic Property
- School
- Parcel Boundary

January 2022



Environmental Impact Mapping

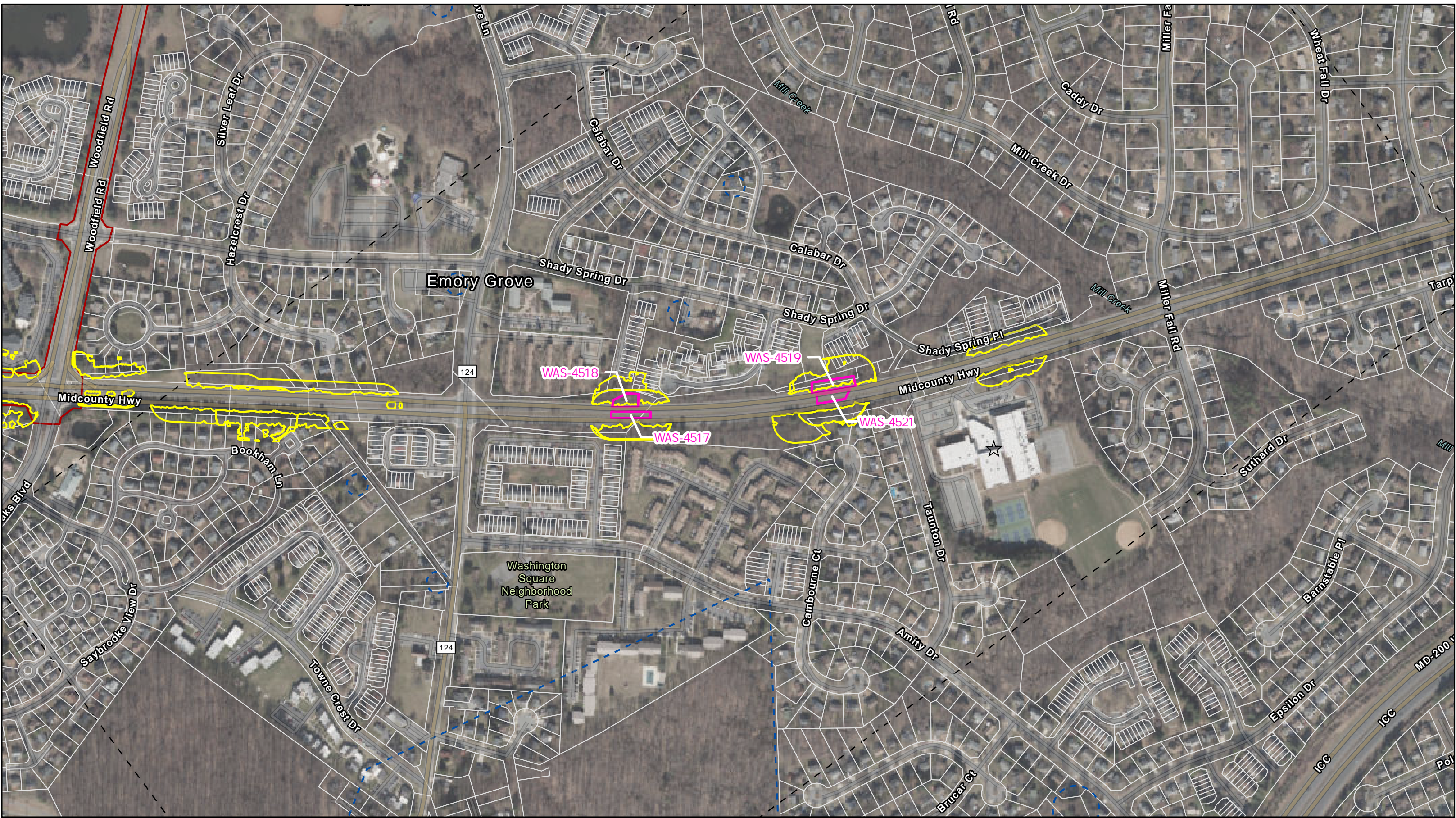
Compensatory Stormwater Mitigation



Map: 1 of 26

I-495 & I-270 Managed Lanes Study





Legend

- Compensatory SWM LOD
- Map Match Line
- FEMA Floodplain 100 Year
- Right-of-Way

- Delineated Forest Boundary
- Delineated Waterways
- Delineated Wetland
- Delineated Wetland Buffer

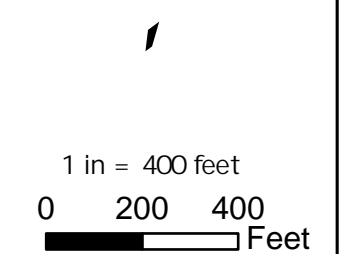
- Historic Property
- School
- Parcel Boundary

January 2022

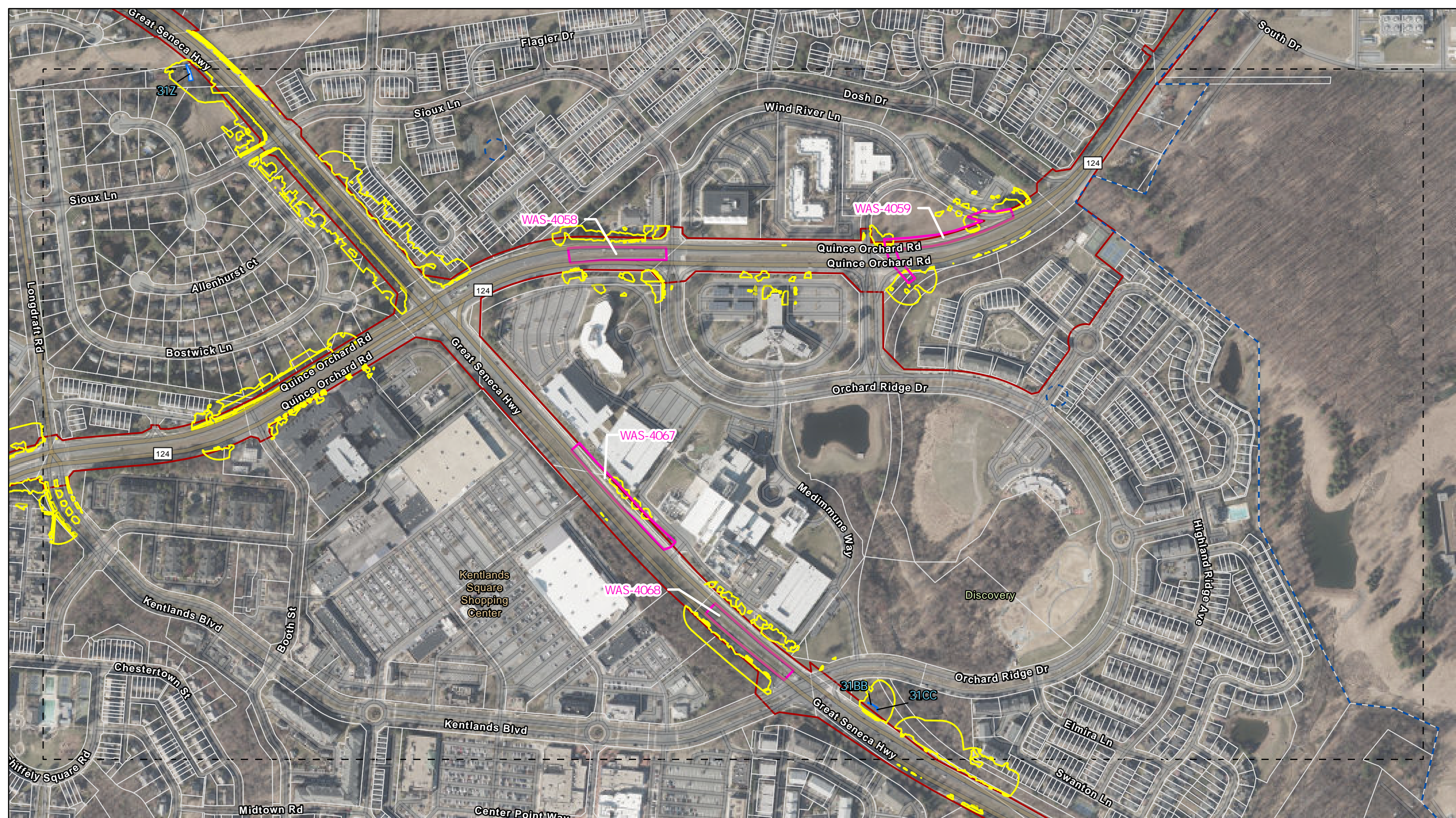


Environmental Impact Mapping

Compensatory Stormwater Mitigation







Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

☆

School

Parcel Boundary

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation

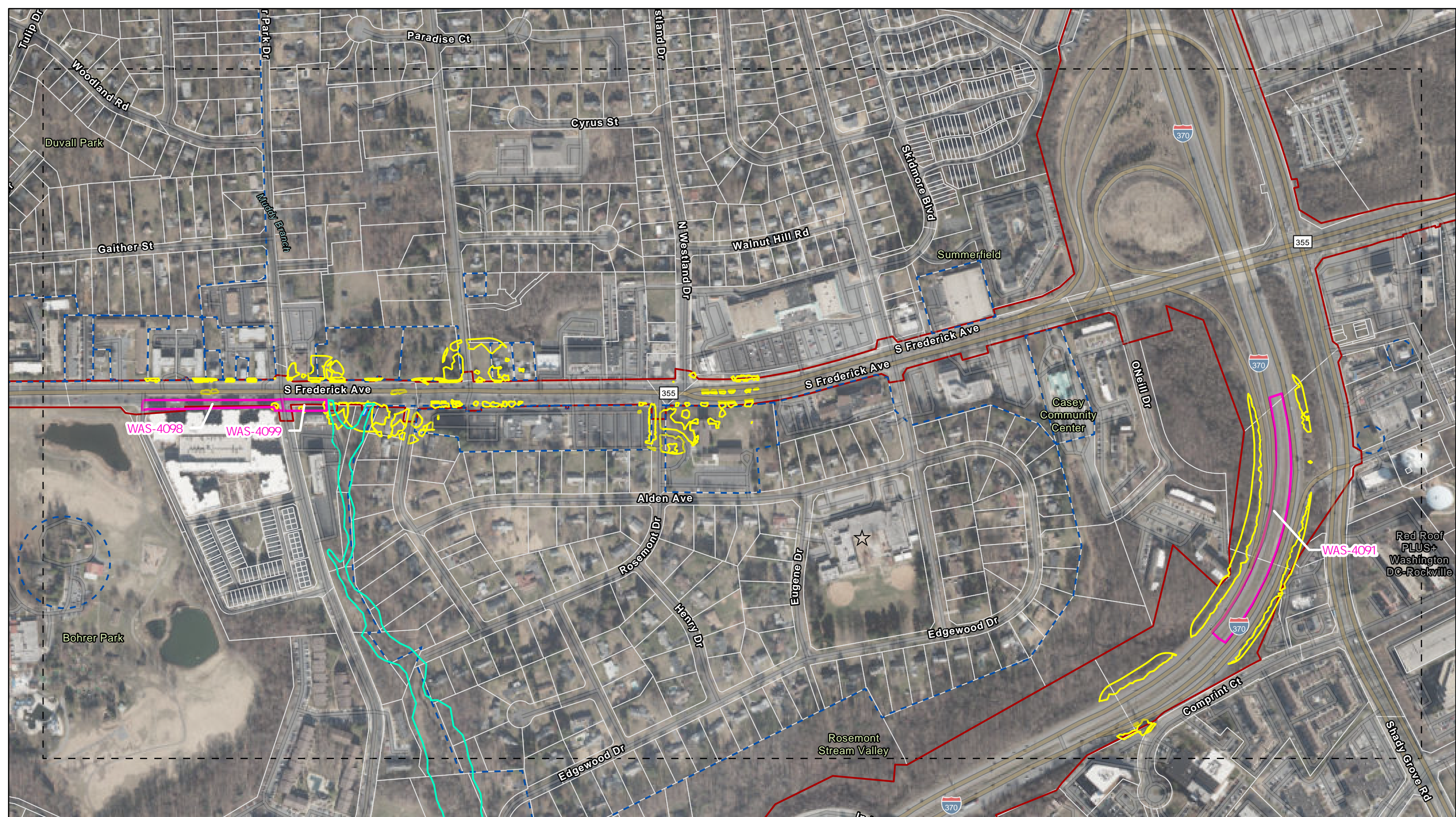
1 in = 400 feet

0 200 400 Feet

Map: 3 of 26

I-495 & I-270 Managed Lanes Study





Legend

- Compensatory SWM LOD
- Map Match Line
- FEMA Floodplain 100 Year
- Right-of-Way

- Delineated Forest Boundary
- Delineated Waterways
- Delineated Wetland
- Delineated Wetland Buffer

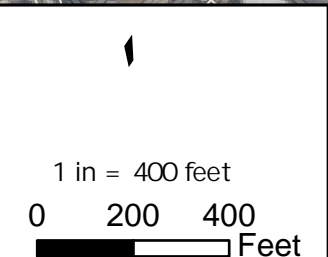
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- School
- Parcel Boundary

January 2022

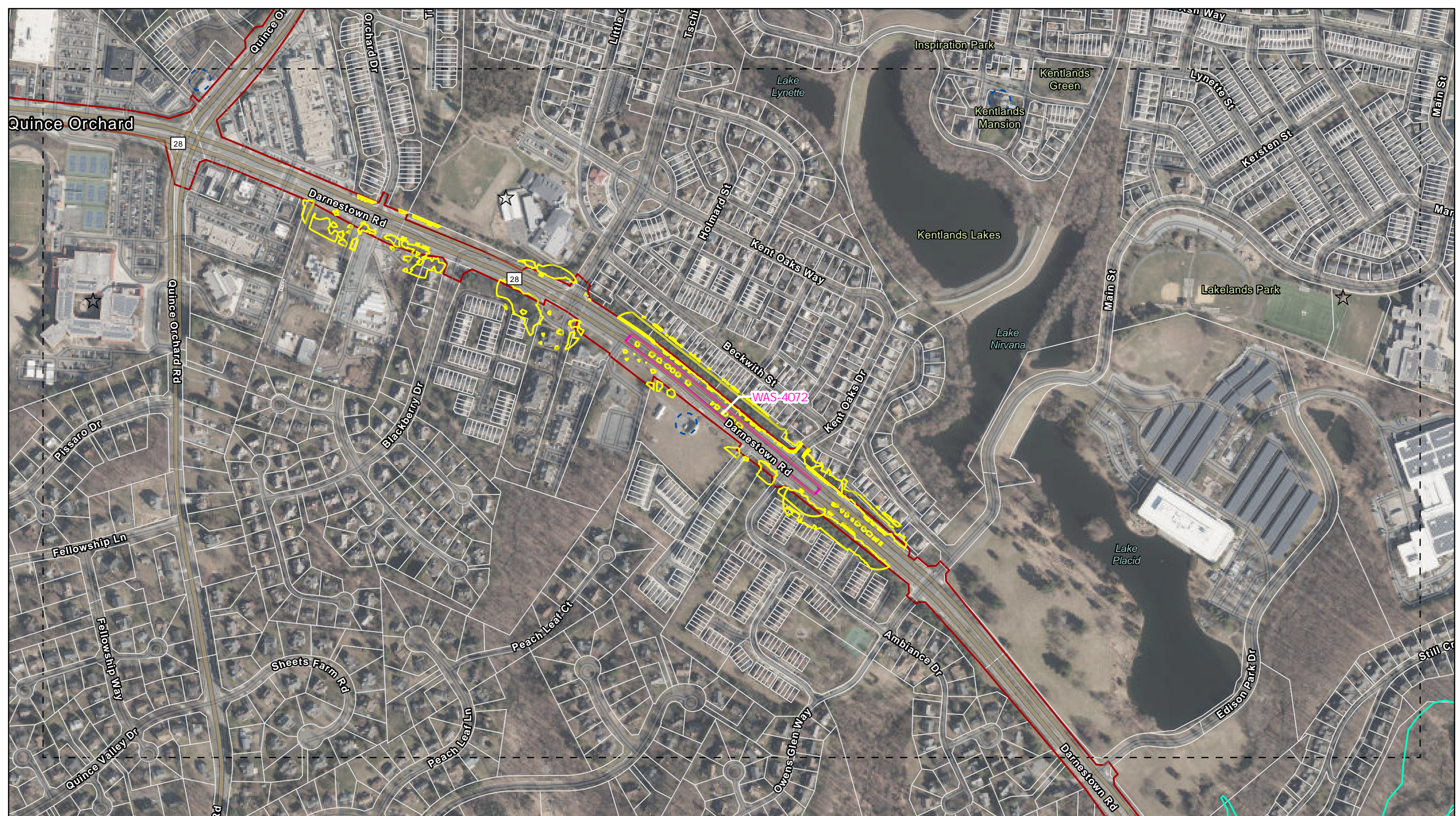


Environmental Impact Mapping

Compensatory Stormwater Mitigation







Legend

- Compensatory SWM LOD
- Map Match Line
- FEMA Floodplain 100 Year
- Right-of-Way

- Delineated Forest Boundary
- Delineated Waterways
- Delineated Wetland
- Delineated Wetland Buffer

- Historic Property
- School
- Parcel Boundary

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

0 200 400 Feet

Map: 5 of 26

I-495 & I-270 Managed Lanes Study





Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property


School

Parcel Boundary

Environmental Impact Mapping

Compensatory Stormwater Mitigation

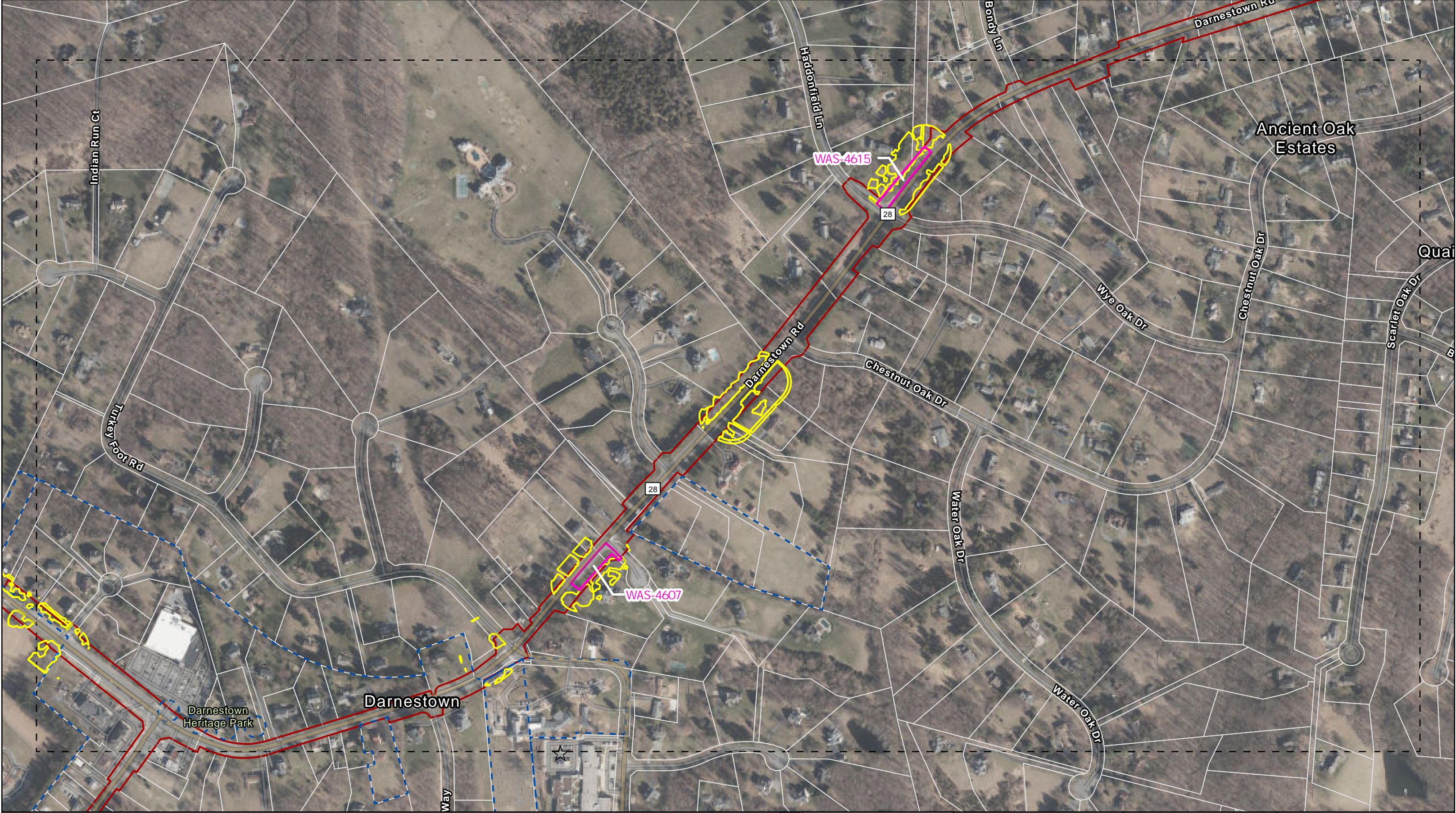
Map: 6 of 26

  
OP LANES  
MARYLAND

I-495 & I-270 Managed Lanes Study

January 2022





Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

☆

School

Parcel Boundary

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

0 200 400 Feet

Map: 7 of 26

I-495 & I-270 Managed Lanes Study





Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

School

Parcel Boundary

January 2022

Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

0

200

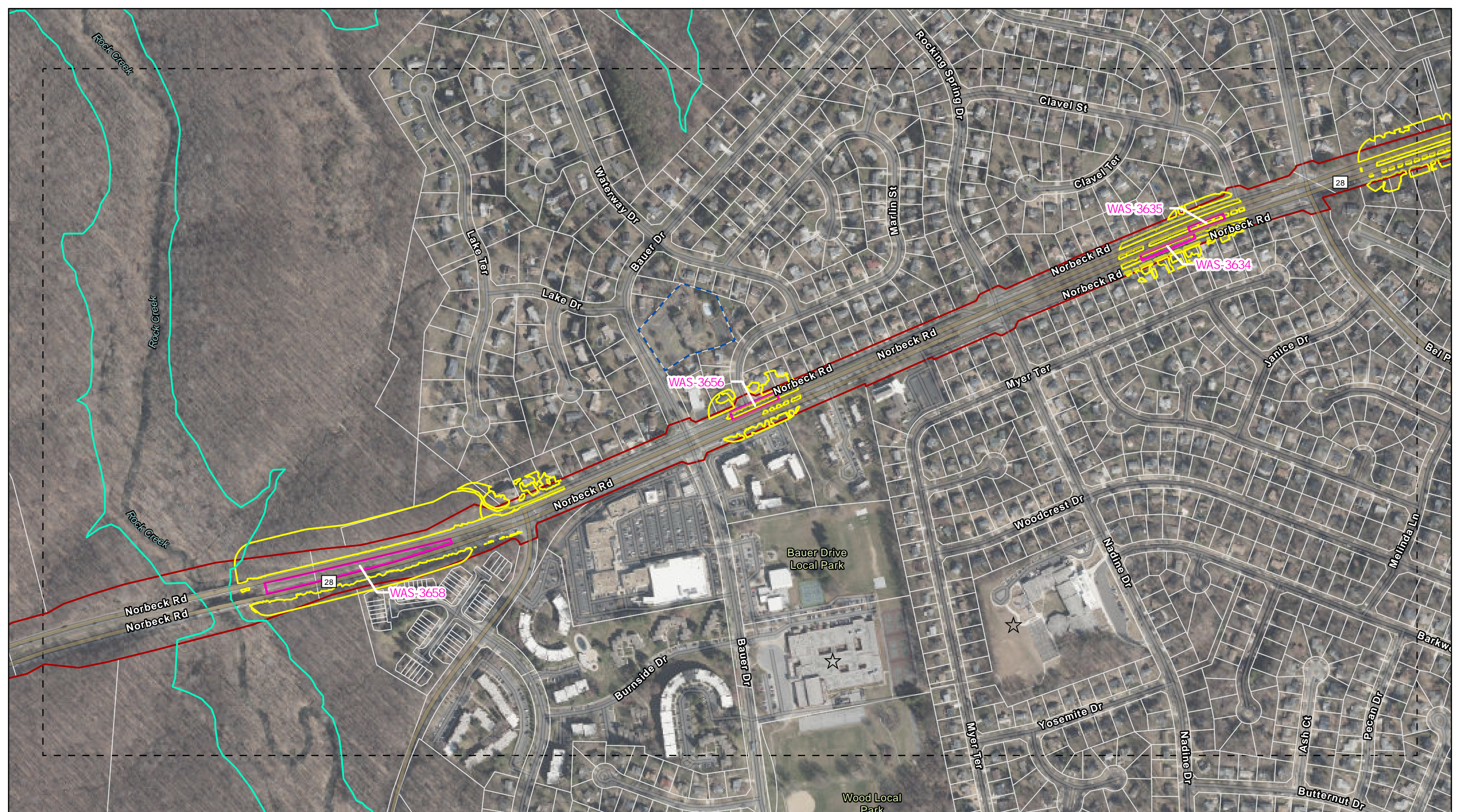
400

Feet

Map: 8 of 26

I-495 & I-270 Managed Lanes Study





Legend

- Compensatory SWM LOD
- Map Match Line
- FEMA Floodplain 100 Year
- Right-of-Way

- Delineated Forest Boundary
- Delineated Waterways
- Delineated Wetland
- Delineated Wetland Buffer

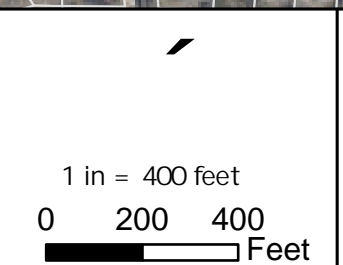
- Historic Property
- School
- Parcel Boundary

January 2022

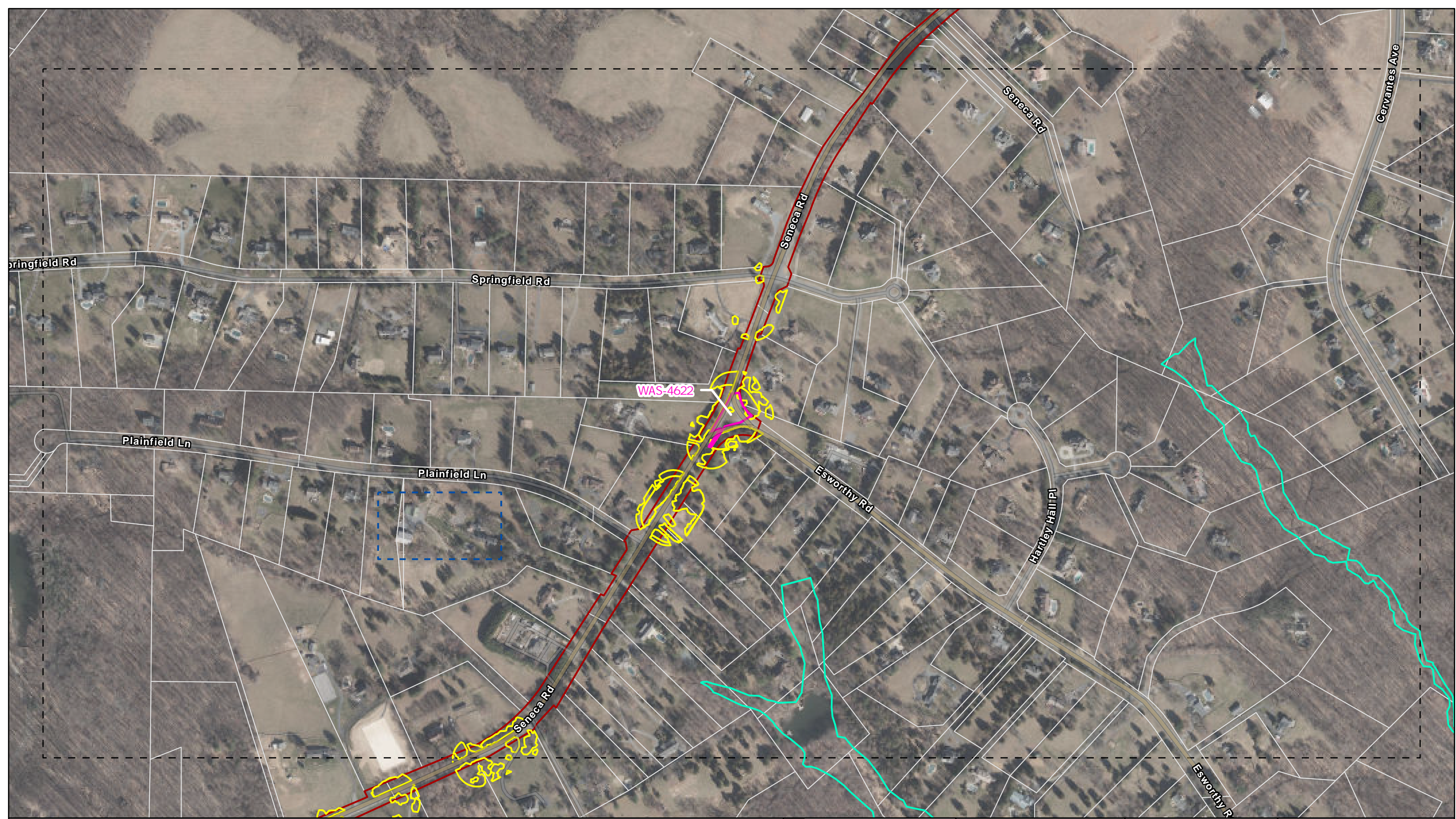


Environmental Impact Mapping

Compensatory Stormwater Mitigation







Legend

- Compensatory SWM LOD
- Map Match Line
- FEMA Floodplain 100 Year
- Right-of-Way

- Delineated Forest Boundary
- Delineated Waterways
- Delineated Wetland
- Delineated Wetland Buffer

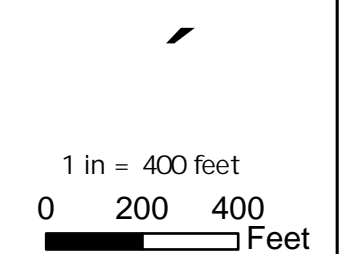
- Historic Property
- School
- Parcel Boundary

January 2022

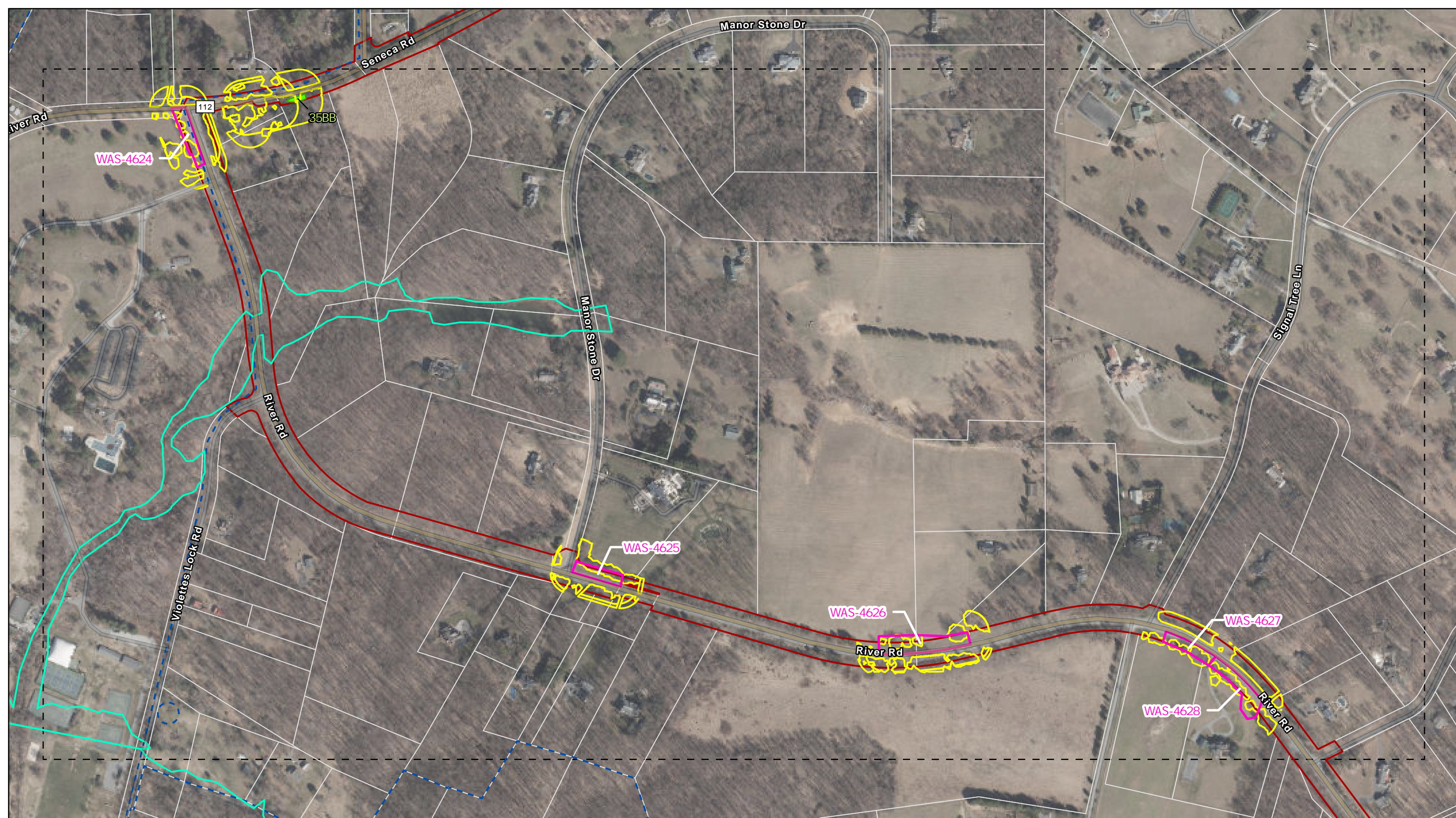


Environmental Impact Mapping

Compensatory Stormwater Mitigation







Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

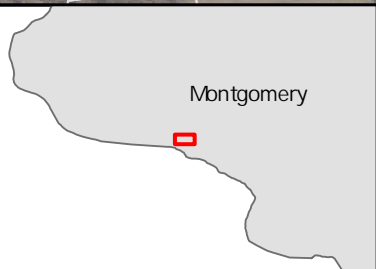
Delineated Wetland Buffer

Historic Property

School

Parcel Boundary

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

0 200 400 Feet

Map: 11 of 26

OP LANES MARYLAND

I-495 & I-270 Managed Lanes Study





Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

School

Parcel Boundary

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

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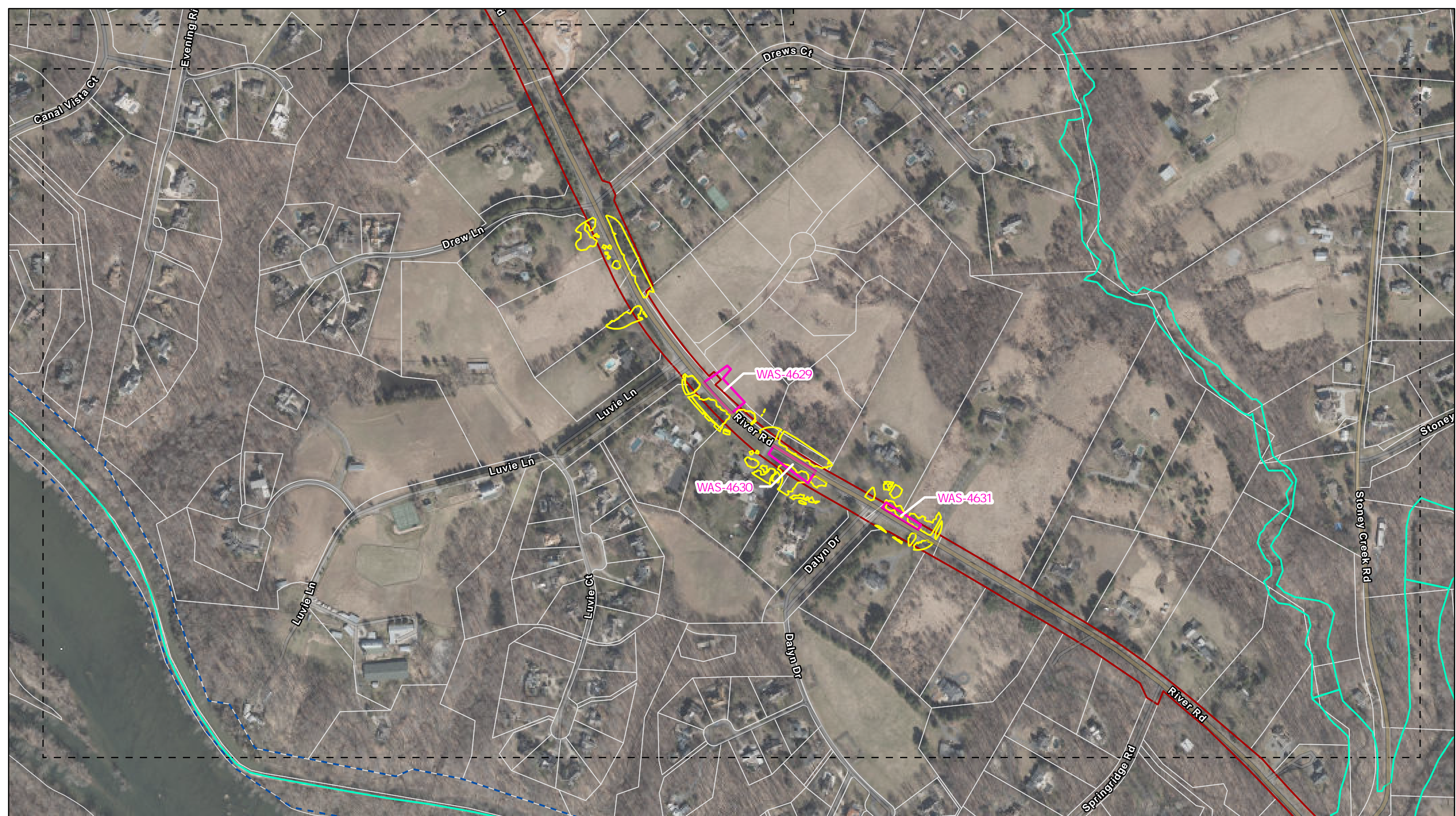
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Feet

Map: 12 of 26

I-495 & I-270 Managed Lanes Study





Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

School

Parcel Boundary

January 2022

Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

0

200

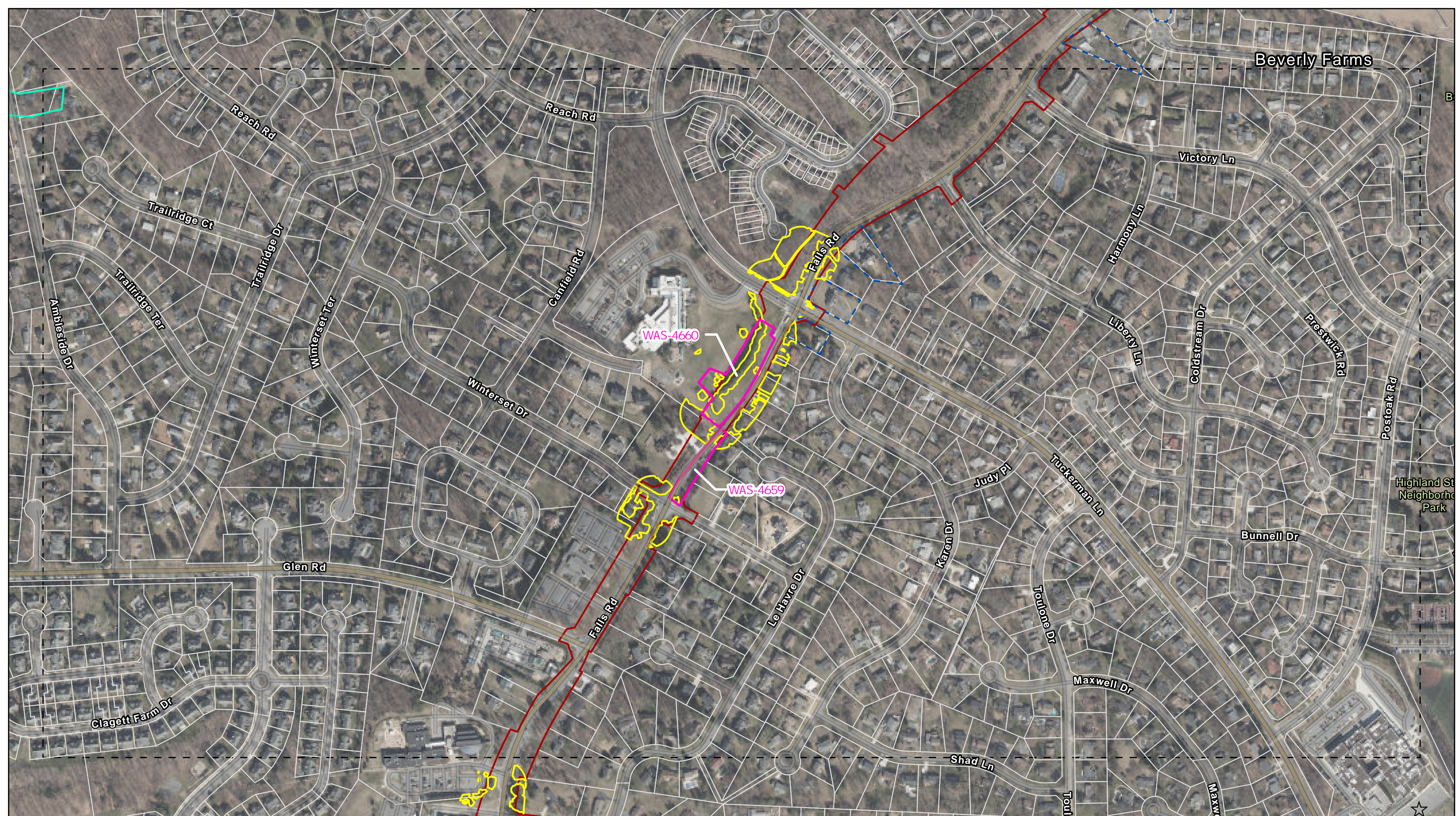
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Feet

Map: 13 of 26

I-495 & I-270 Managed Lanes Study





Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

☆

School

Parcel Boundary

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

0 200 400 Feet

Map: 14 of 26

I-495 & I-270 Managed Lanes Study





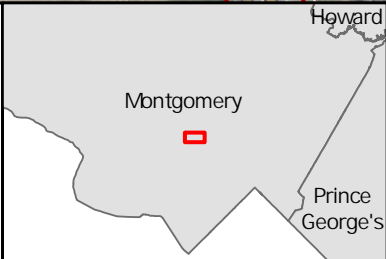
Legend

- Compensatory SWM LOD
- Map Match Line
- FEMA Floodplain 100 Year
- Right-of-Way

- Delineated Forest Boundary
- Delineated Waterways
- Delineated Wetland
- Delineated Wetland Buffer

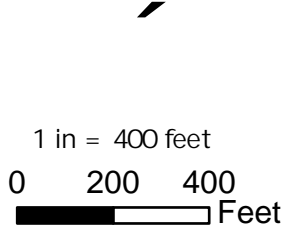
- Historic Property
- School
- Parcel Boundary

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation



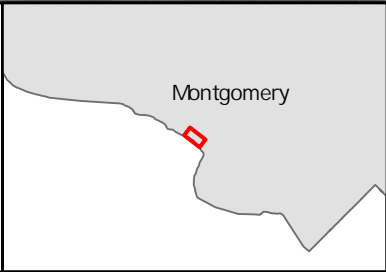




Legend

Compensatory SWM LOD	Delineated Forest Boundary	Historic Property
Map Match Line	Delineated Waterways	School
FEMA Floodplain 100 Year	Delineated Wetland	Parcel Boundary
Right-of-Way	Delineated Wetland Buffer	

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

0 200 400 Feet

Map: 16 of 26

I-495 & I-270 Managed Lanes Study





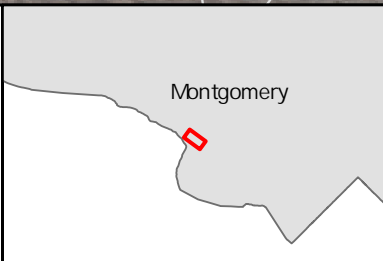
Legend

- Compensatory SWM LOD
- Map Match Line
- FEMA Floodplain 100 Year
- Right-of-Way

- Delineated Forest Boundary
- Delineated Waterways
- Delineated Wetland
- Delineated Wetland Buffer

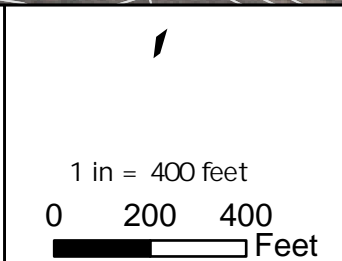
- Historic Property
- School
- Parcel Boundary

January 2022

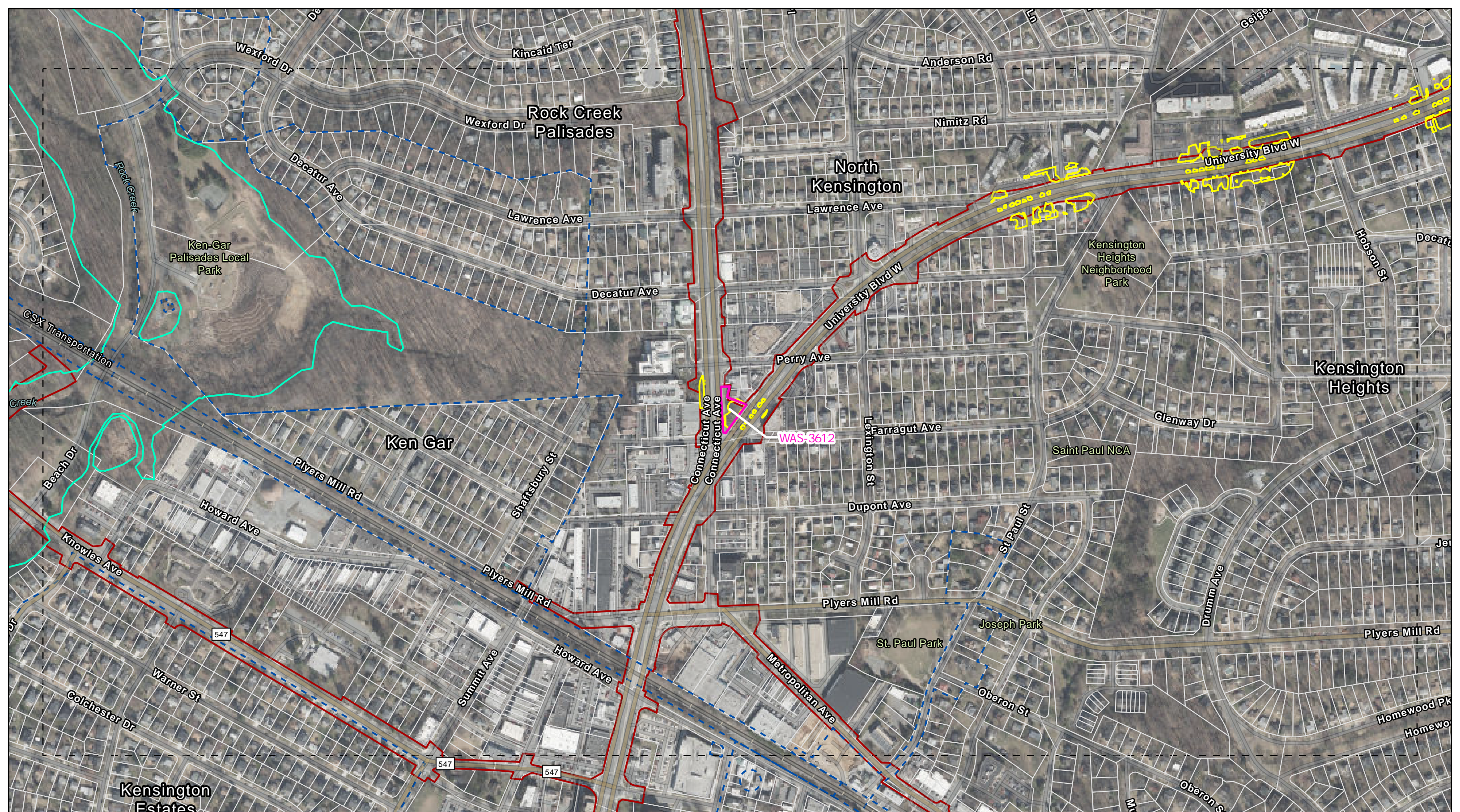


Environmental Impact Mapping

Compensatory Stormwater Mitigation







Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

☆

School

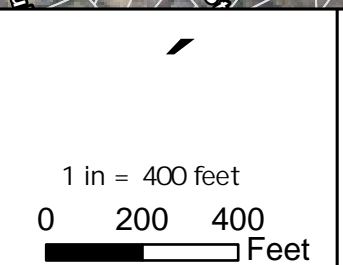
Parcel Boundary

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation







Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

School

Parcel Boundary

Environmental Impact Mapping

Compensatory Stormwater Mitigation

Map: 19 of 26

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MARYLAND

I-495 & I-270 Managed Lanes Study





Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

☆

School

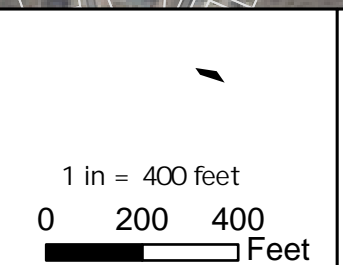
Parcel Boundary

January 2022

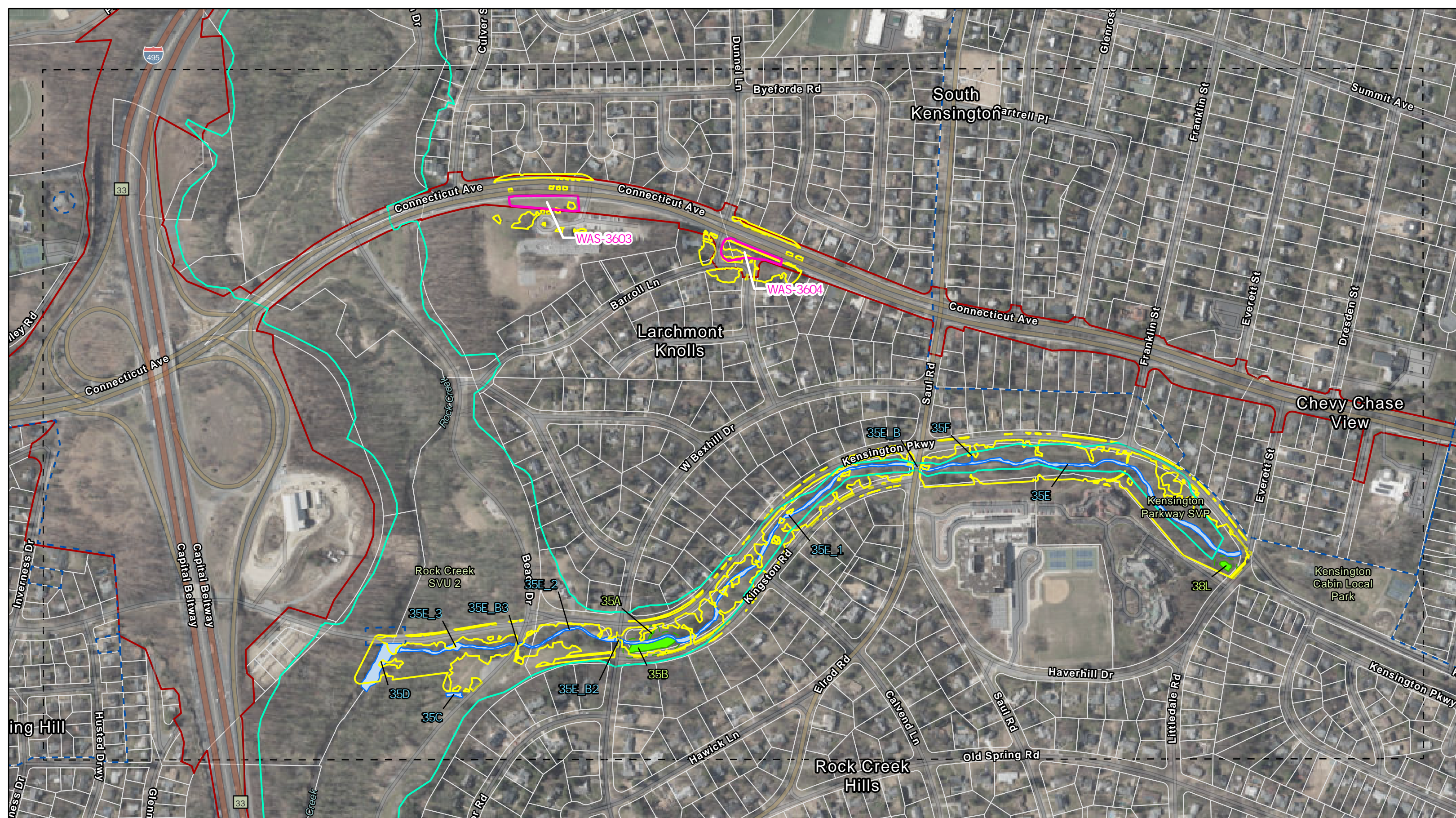


Environmental Impact Mapping

Compensatory Stormwater Mitigation



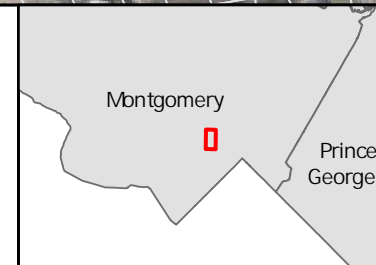




### Legend

-  Compensatory SWM LOD    
  Delineated Forest Boundary    
  Historic Property  
 Map Match Line    
  Delineated Waterways    
 ☆ School  
 FEMA Floodplain 100 Year    
 Delineated Wetland    
 Parcel Boundary  
 Right-of-Way    
 Delineated Wetland Buffer

January 2022



## Environmental Impact Mapping

## Compensatory Stormwater Mitigation

1 in = 400 feet

0 200 400 Feet

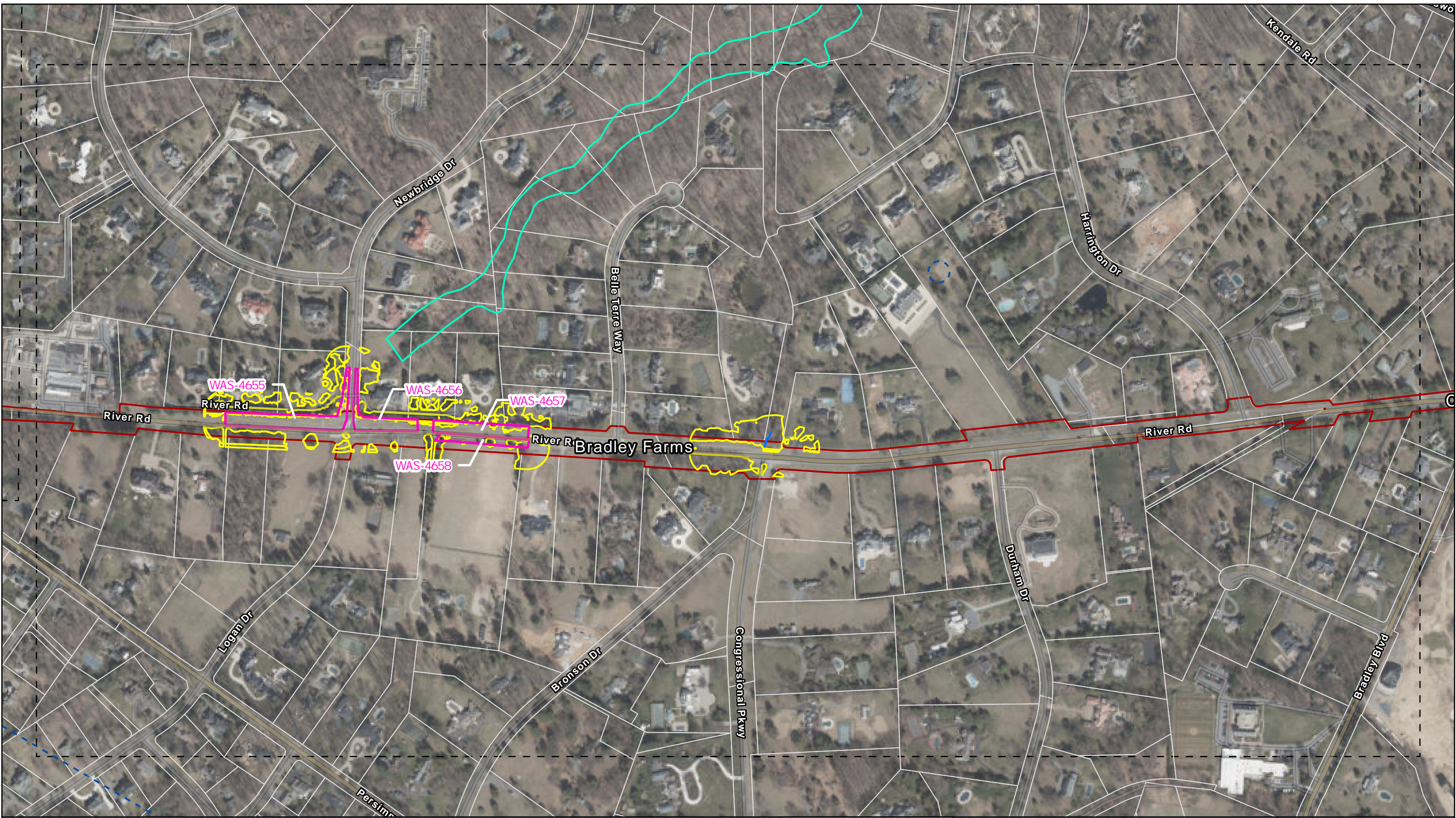
Map: 21 of 26



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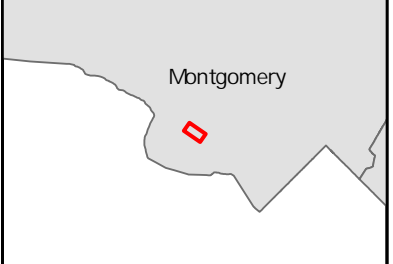




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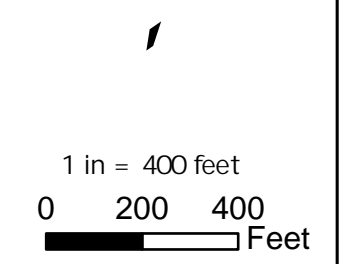
	Compensatory SWM LOD		Delineated Forest Boundary		Historic Property
	Map Match Line		Delineated Waterways		School
	FEMA Floodplain 100 Year		Delineated Wetland		Parcel Boundary
	Right-of-Way		Delineated Wetland Buffer		

January 2022

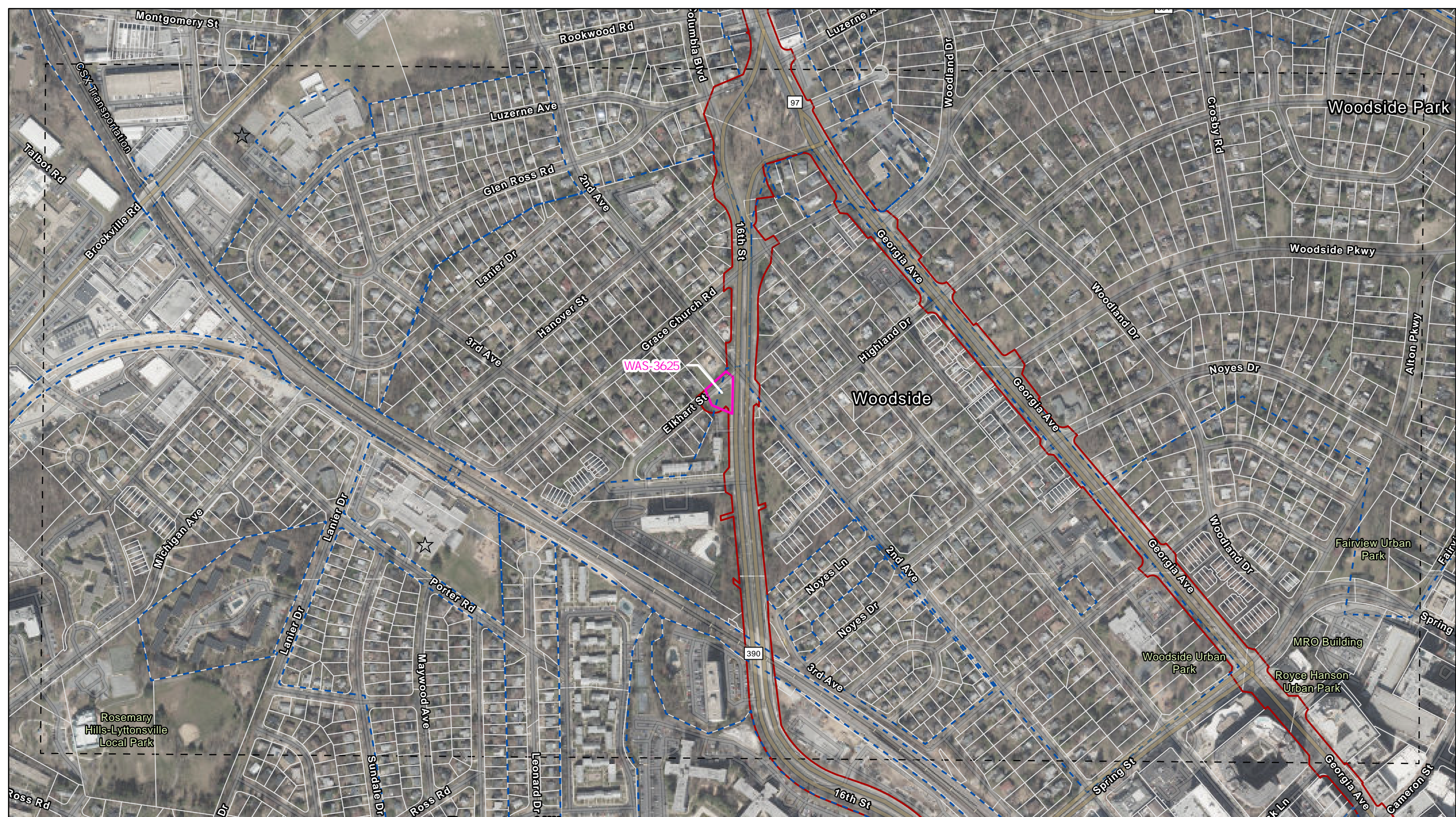


Environmental Impact Mapping

Compensatory Stormwater Mitigation







Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

School

Parcel Boundary

January 2022

Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

0 200 400 Feet

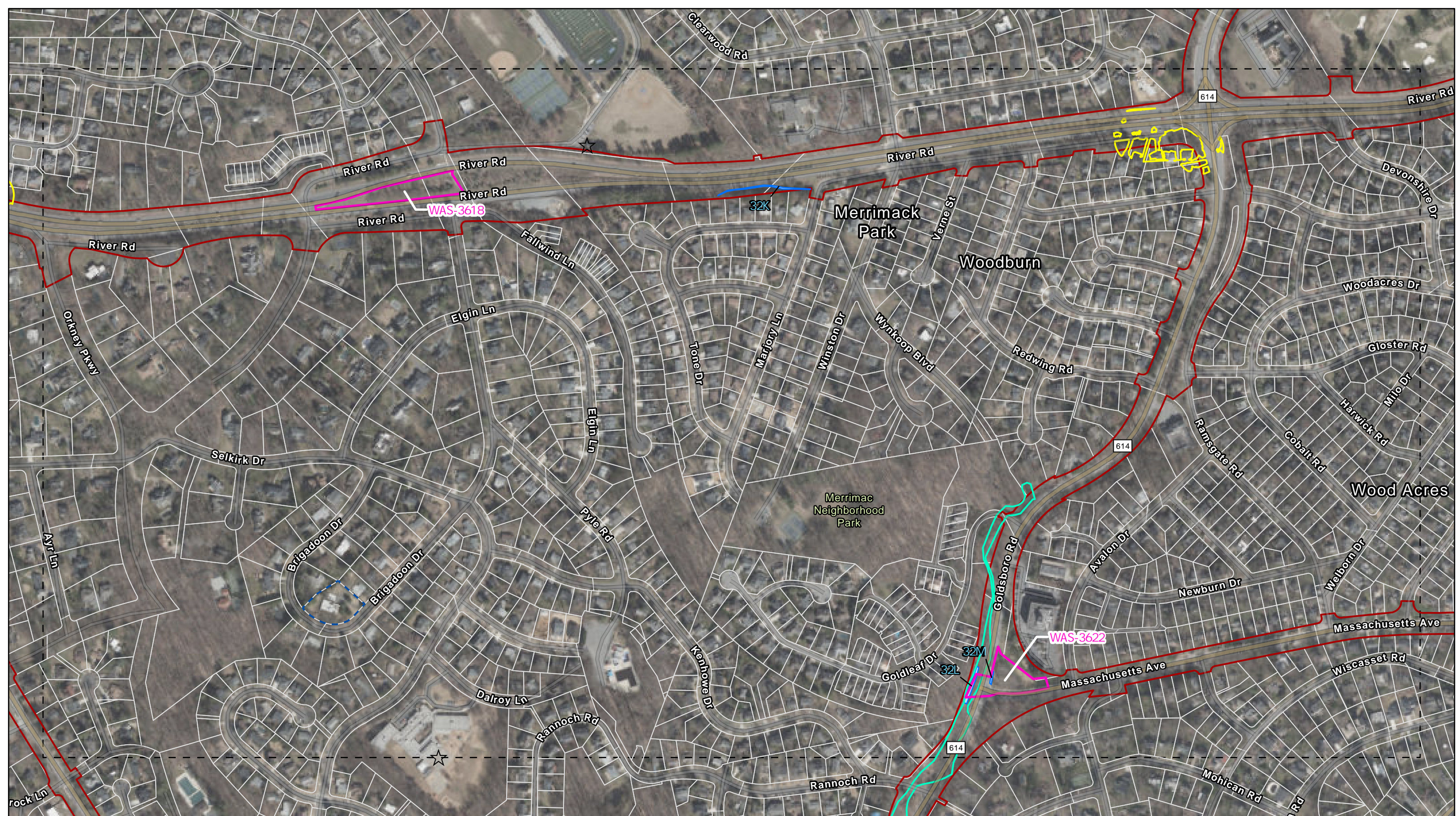
Map: 23 of 26



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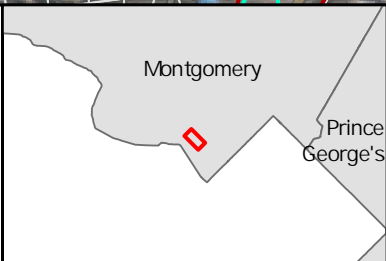
Legend

- Compensatory SWM LOD
- Map Match Line
- FEMA Floodplain 100 Year
- Right-of-Way

- Delineated Forest Boundary
- Delineated Waterways
- Delineated Wetland
- Delineated Wetland Buffer

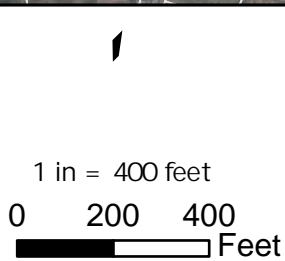
- Historic Property
- School
- Parcel Boundary

January 2022

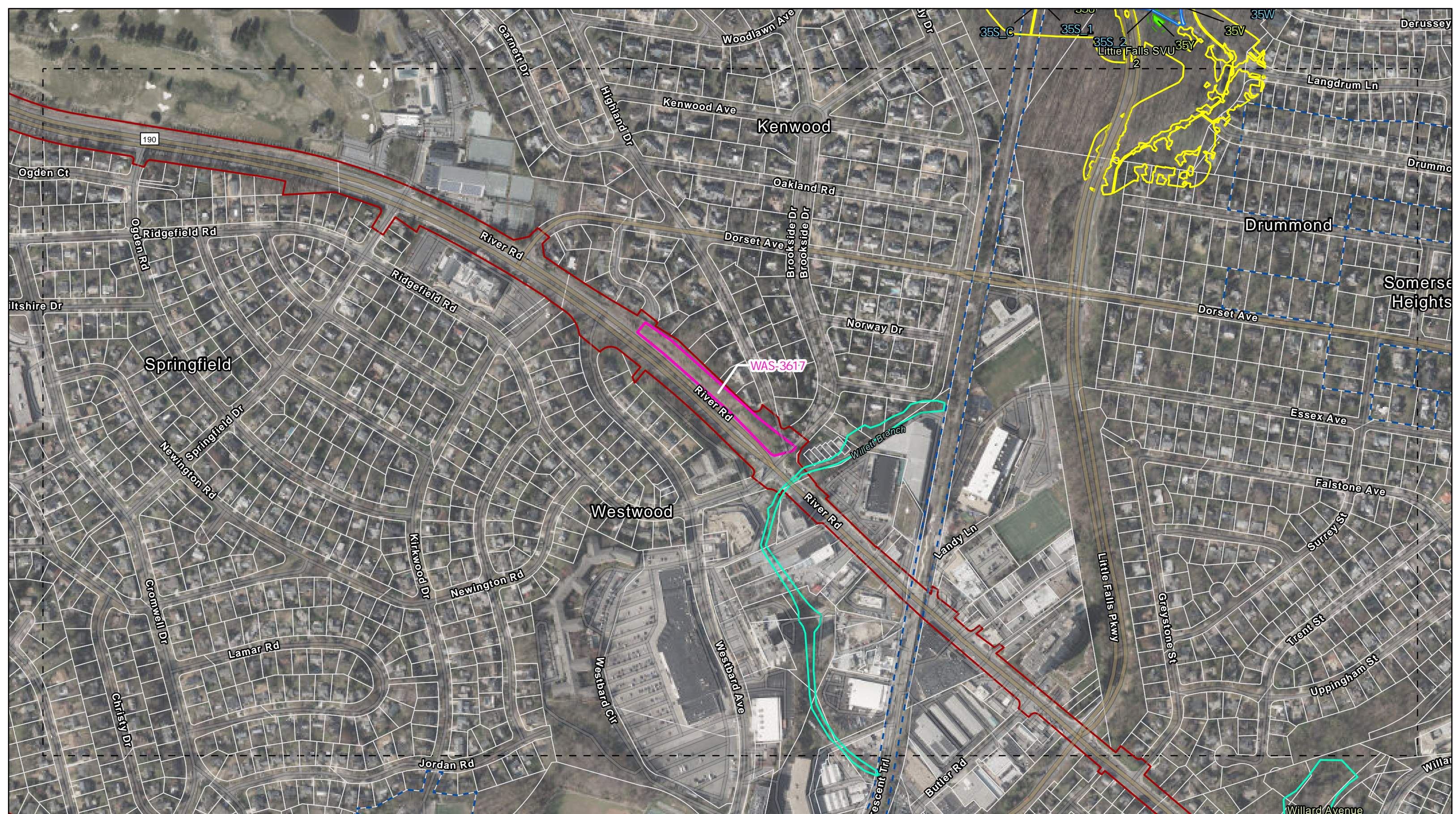


Environmental Impact Mapping

Compensatory Stormwater Mitigation



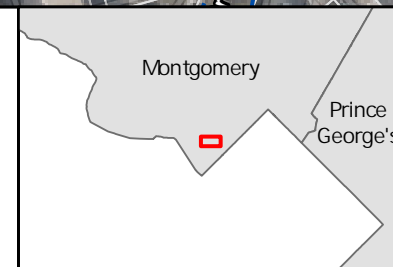




### Legend

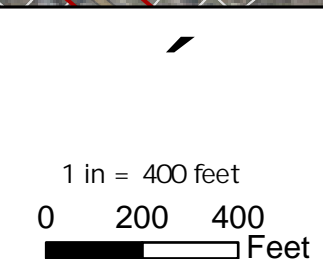
-  Compensatory SWM LOD    
  Delineated Forest Boundary    
  Historic Property  
 Map Match Line    
  Delineated Waterways    
 ☆ School  
 FEMA Floodplain 100 Year    
 Delineated Wetland    
 Parcel Boundary  
 Right-of-Way    
 Delineated Wetland Buffer

January 2022



## Environmental Impact Mapping

## Compensatory Stormwater Mitigation



Map: 25 of 26



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I-495 &amp; I-270 Managed Lanes Study





Legend

Compensatory SWM LOD

Map Match Line

FEMA Floodplain 100 Year

Right-of-Way

Delineated Forest Boundary

Delineated Waterways

Delineated Wetland

Delineated Wetland Buffer

Historic Property

School

Parcel Boundary

January 2022



Environmental Impact Mapping

Compensatory Stormwater Mitigation

1 in = 400 feet

0 200 400 Feet

Map: 26 of 26

I-495 & I-270 Managed Lanes Study

## **APPENDIX M – COMPENSATORY STORMWATER MITIGATION SITE SUMMARY TABLE**

## Appendix M: Compensatory Stormwater Mitigation Site Summary Tables

Site Name	Potential ROW Impact (acre)	Stream Use Class	Wetland Impact (AC/SF)			Wetland Buffer Impact (AC/SF)	Waterway Impact (LF/SF)				FEMA 100-Year Floodplain Impact	Forest Impact (AC/SF)	Specimen Tree Impact (Count/DBH)
			PFO	PSS	PEM		Perennial	Intermittent	Ephemeral	POW (SF)			
WAS-1805	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3305	0.00	III	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3601	0.00	I	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3602	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3603	0.00	I	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3604	0.00	I	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3612	0.00	I	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	1 / 31
WAS-3613	0.07	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3614	0.02	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3615	0.00	IV	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3616	0.00	III	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.1 / 4298.46	0 / 0
WAS-3617	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3618	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	1 / 30
WAS-3622	0.01	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	156.41 / 1676.83	0.00 / 0.00	0.00 / 0.00	0.00	0.08 / 3484.8	0.00 / 0.00	5 / 166
WAS-3625	0.00	I	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3634	0.00	I	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3635	0.00	I	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3637	0.00	IV	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3638	0.00	IV	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3656	0.00	I	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-3658	0.00	I	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4058	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4059	0.12	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.04 / 1686.09	0 / 0
WAS-4067	0.14	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4068	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4072	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4091	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4098	0.09	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4099	0.08	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4517	0.00	IV	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4518	0.00	IV	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.11 / 4989.62	0 / 0
WAS-4519	0.07	IV	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.15 / 6432.38	0 / 0
WAS-4521	0.00	IV	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4607	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4613	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4615	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4622	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4624	0.03	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4625	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4626	0.06	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4627	0.00	III-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4628	0.13	III-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4629	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4630	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4631	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4632	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.01 / 432.53	0 / 0
WAS-4633	0.02	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4635	0.01	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4637	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4638	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4639	0.01	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.38 / 16588.78	0 / 0
WAS-4640	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4641	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	29.28 / 78.7	0.00 / 0.00	0.00	0.00 / 0.00	0.05 / 2174.78	0 / 0



Appendix M: Compensatory Stormwater Mitigation Site Summary Tables

Site Name	Potential ROW Impact (acre)	Stream Use Class	Wetland Impact (AC/SF)			Wetland Buffer Impact (AC/SF)	Waterway Impact (LF/SF)				FEMA 100-Year Floodplain Impact	Forest Impact (AC/SF)	Specimen Tree Impact (Count/DBH)
			PFO	PSS	PEM		Perennial	Intermittent	Ephemeral	POW (SF)			
WAS-4642	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4644	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4645	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.05 / 2331.59	0 / 0
WAS-4646	0.01	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.07 / 3156.08	0 / 0
WAS-4647	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4651	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4652	0.01	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4653	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4655	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4656	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4657	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4658	0.00	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4659	0.01	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0
WAS-4660	0.19	I-P	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00	0.00 / 0.00	0.00 / 0.00	0 / 0

## **APPENDIX O – VETTED COMPENSATORY SWM SITES WITH DISCIPLINE RATINGS**

**Appendix O: Vetted Compensatory SWM Sites with Discipline Ratings**

**Note this information is for reference only. Use of any compensatory SWM site not included in Table 5-2 would require a re-evaluation of discipline evaluations, environmental documents, and modification of permits as needed.**

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1") (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
PAX-0014	021311	02060006	SWM Facility - Ch 5	0.33	Moderate	Clear	No Impact	Low	Long Term	Minor	Minor	None	N/A	OH
PAX-0016	021311	02060006	SWM Facility - Ch 3	1.47	Moderate	Clear	No Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	OH & UG
PAX-0017	021311	02060006	SWM Facility - Ch 5	0.57	Significant	Clear	No Impact	Low	Long Term	Moderate	Minor	None	N/A	OH & UG
PAX-0018	021311	02060006	SWM Facility - Ch 5	0.50	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
PAX-0019	021311	02060006	SWM Facility - Ch 5	0.56	Significant	Clear	No Impact	Low	Temp/Daily	Minor	Minor	None	N/A	OH & UG
PAX-0020	021311	02060006	SWM Facility - Ch 5	0.16	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
PAX-0022	021311	02060006	SWM Facility - Ch 5	0.15	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
PAX-0026	021311	02060006	SWM Facility - Ch 5	0.24	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-0029	021311	02060006	SWM Facility - Ch 5	0.41	Moderate	Clear	No Impact	Low	Complex	No Impacts	Minor	None	N/A	Not Feasible
PAX-0030	021311	02060006	SWM Facility - Ch 5	1.10	Moderate	Clear	Impact	High	Temp/Daily	No Impacts	Minor	None	N/A	Not Feasible
PAX-0034	021311	02060006	SWM Facility - Ch 5	0.34	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0039	021311	02060006	SWM Facility - Ch 5	0.19	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
PAX-0041	021311	02060006	SWM Facility - Ch 5	0.22	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
PAX-0042	021311	02060006	SWM Facility - Ch 5	0.62	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-0045	021311	02060006	Pavement Removal	0.01	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-0046	021311	02060006	SWM Facility - Ch 5	0.31	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0047	021311	02060006	SWM Facility - Ch 5	0.62	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0048	021311	02060006	SWM Facility - Ch 5	0.35	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
PAX-0049	021311	02060006	SWM Facility - Ch 5	0.20	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0051	021311	02060006	SWM Facility - Ch 5	0.18	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
PAX-0059	021311	02060006	SWM Facility - Ch 5	0.40	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0061	021311	02060006	SWM Facility - Ch 5	0.64	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
PAX-0062	021311	02060006	SWM Facility - Ch 5	0.51	Minor	Clear	No Impact	Low	Long Term	Minor	Minor	None	N/A	OH
PAX-0063	021311	02060006	SWM Facility - Ch 5	0.09	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-0064	021311	02060006	SWM Facility - Ch 5	0.37	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
PAX-0076	021311	02060006	SWM Facility - Ch 5	0.32	Moderate	Clear	Impact	Low	Long Term	Minor	Medium	None	N/A	UG
PAX-0080	021311	02060006	SWM Facility - Ch 5	0.26	Minor	Clear	No Impact	Low	Long Term	Minor	Minor	None	N/A	None
PAX-0301	021311	02060006	SWM Facility - Ch 5	0.52	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	N/A	OH & UG
PAX-0302	021311	02060006	SWM Facility - Ch 5	0.21	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	N/A	OH & UG
PAX-0304	021311	02060006	SWM Facility - Ch 5	0.98	Minor	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	N/A	OH & UG
PAX-0305	021311	02060006	SWM Facility - Ch 5	0.58	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	N/A	OH & UG
PAX-0308	021311	02060006	SWM Facility - Ch 5	0.47	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	None
PAX-0310	021311	02060006	SWM Facility - Ch 5	0.11	Moderate	Clear	No Impact	Low	Long Term	Moderate	Medium	None	N/A	OH & UG
PAX-0311	021311	02060006	SWM Facility - Ch 5	0.48	Minor	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	OH
PAX-0312	021311	02060006	SWM Facility - Ch 5	0.38	Moderate	Clear	Impact	Low	Long Term	No Impacts	Medium	None	N/A	OH
PAX-0313	021311	02060006	SWM Facility - Ch 5	0.16	Moderate	Clear	No Impact	Low	Long Term	Minor	Medium	None	N/A	UG
PAX-0315	021311	02060006	SWM Facility - Ch 3	0.77	Minor	Clear	Impact	Low	Long Term	Minor	Medium	None	N/A	OH
PAX-0601	021311	02060006	SWM Facility - Ch 5	0.33	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
PAX-0602	021311	02060006	SWM Facility - Ch 5	0.45	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
PAX-0608	021311	02060006	SWM Facility - Ch 5	0.18	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
PAX-0610	021311	02060006	SWM Facility - Ch 5	0.26	Minor	Minor	Impact	Low	Temp/Daily	Minor	Hard	None	N/A	OH & UG
PAX-0616	021311	02060006	SWM Facility - Ch 5	0.31	Minor	Clear	Impact	Low	Long Term	Minor	Minor	None	N/A	UG

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1") (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
PAX-0618	021311	02060006	SWM Facility - Ch 5	0.45	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-0620	021311	02060006	SWM Facility - Ch 5	0.36	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0621	021311	02060006	SWM Facility - Ch 5	0.76	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0622	021311	02060006	SWM Facility - Ch 5	0.32	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0624	021311	02060006	SWM Facility - Ch 3	0.76	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
PAX-0625	021311	02060006	SWM Facility - Ch 5	0.46	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
PAX-0626	021311	02060006	SWM Facility - Ch 5	0.38	Significant	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	OH & UG
PAX-0641	021311	02060006	SWM Facility - Ch 5	0.48	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0951	021311	02060006	SWM Facility - Ch 5	0.09	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
PAX-0961	021311	02060006	SWM Facility - Ch 5	0.56	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-0965	021311	02060006	SWM Facility - Ch 5	0.15	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
PAX-1204	021311	02060006	SWM Facility - Ch 5	0.27	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-1205	021311	02060006	SWM Facility - Ch 5	0.15	Minor	Clear	Impact	Low	Long Term	Minor	Medium	None	N/A	None
PAX-1206	021311	02060006	SWM Facility - Ch 5	0.43	Significant	Clear	Impact	Low	Long Term	No Impacts	Medium	None	N/A	OH
PAX-1209	021311	02060006	SWM Facility - Ch 5	0.16	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-1210	021311	02060006	SWM Facility - Ch 5	0.34	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	N/A	None
PAX-1211	021311	02060006	SWM Facility - Ch 5	0.26	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-1213	021311	02060006	SWM Facility - Ch 5	0.18	Minor	Clear	No Impact	Low	Complex	No Impacts	Minor	None	N/A	None
PAX-1502	021311	02060006	SWM Facility - Ch 5	0.82	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
PAX-1504	021311	02060006	SWM Facility - Ch 5	0.17	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-1509	021311	02060006	SWM Facility - Ch 5	0.58	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-1510	021311	02060006	SWM Facility - Ch 5	0.11	Significant	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	OH
PAX-2001	021311	02060006	SWM Facility - Ch 3	0.92	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
PAX-2005	021311	02060006	SWM Facility - Ch 5	0.54	Significant	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
PAX-2006	021311	02060006	SWM Facility - Ch 5	0.73	Moderate	Clear	No Impact	Low	Complex	No Impacts	Minor	None	N/A	None
PAX-2007	021311	02060006	SWM Facility - Ch 5	1.03	Moderate	Clear	No Impact	Low	Complex	No Impacts	Minor	None	N/A	None
PAX-2008	021311	02060006	SWM Facility - Ch 5	1.01	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-2009	021311	02060006	SWM Facility - Ch 5	0.34	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-2010	021311	02060006	SWM Facility - Ch 5	0.34	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
PAX-2012	021311	02060006	SWM Facility - Ch 5	0.60	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
PAX-2013	021311	02060006	SWM Facility - Ch 5	0.37	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2015	021311	02060006	SWM Facility - Ch 3	0.83	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
PAX-2016	021311	02060006	SWM Facility - Ch 5	0.47	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	OH & UG
PAX-2017	021311	02060006	SWM Facility - Ch 5	0.21	Moderate	Clear	No Impact	High	Complex	No Impacts	Minor	None	N/A	UG
PAX-2018	021311	02060006	SWM Facility - Ch 5	0.97	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	None
PAX-2019	021311	02060006	SWM Facility - Ch 5	1.07	Moderate	Clear	Impact	Low	Long Term	No Impacts	Medium	None	N/A	UG
PAX-2020	021311	02060006	SWM Facility - Ch 3	0.39	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2021	021311	02060006	SWM Facility - Ch 5	0.09	Moderate	Clear	No Impact	Low	Complex	No Impacts	Hard	None	N/A	OH
PAX-2501	021311	02060006	SWM Facility - Ch 5	0.57	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2502	021311	02060006	SWM Facility - Ch 5	0.57	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
PAX-2503	021311	02060006	SWM Facility - Ch 5	0.40	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
PAX-2504	021311	02060006	SWM Facility - Ch 5	0.13	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2505	021311	02060006	SWM Facility - Ch 5	0.24	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2506	021311	02060006	SWM Facility - Ch 5	0.69	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None



Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
PAX-2507	021311	02060006	SWM Facility - Ch 5	0.24	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2508	021311	02060006	SWM Facility - Ch 5	0.37	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2509	021311	02060006	SWM Facility - Ch 5	0.43	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2510	021311	02060006	SWM Facility - Ch 5	0.53	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
PAX-2511	021311	02060006	SWM Facility - Ch 5	0.45	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2514	021311	02060006	SWM Facility - Ch 5	0.54	Moderate	Clear	No Impact	Low	Long Term	Minor	Minor	None	N/A	None
PAX-2515	021311	02060006	SWM Facility - Ch 5	0.73	Moderate	Clear	No Impact	Low	Long Term	Minor	Minor	None	N/A	None
PAX-2516	021311	02060006	SWM Facility - Ch 5	1.23	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2518	021311	02060006	SWM Facility - Ch 5	0.30	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
PAX-2519	021311	02060006	SWM Facility - Ch 5	0.30	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2520	021311	02060006	SWM Facility - Ch 5	0.44	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
PAX-2521	021311	02060006	SWM Facility - Ch 5	0.30	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2522	021311	02060006	SWM Facility - Ch 5	0.33	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
PAX-2523	021311	02060006	SWM Facility - Ch 5	0.18	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
PAX-2524	021311	02060006	SWM Facility - Ch 5	0.34	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
PAX-2525	021311	02060006	SWM Facility - Ch 5	0.51	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
PAX-2529	021311	02060006	SWM Facility - Ch 5	0.44	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	UG
PAX-2530	021311	02060006	SWM Facility - Ch 5	0.19	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	UG
PAX-2531	021311	02060006	SWM Facility - Ch 5	0.24	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
PAX-2537	021311	02060006	SWM Facility - Ch 5	0.34	Minor	Clear	No Impact	High	Long Term	No Impacts	Minor	None	N/A	None
PAX-2538	021311	02060006	SWM Facility - Ch 5	0.15	Minor	Clear	No Impact	High	Long Term	No Impacts	Minor	None	N/A	None
PAX-2539	021311	02060006	SWM Facility - Ch 5	0.43	Minor	Clear	No Impact	High	Long Term	No Impacts	Minor	None	N/A	None
PAX-2540	021311	02060006	SWM Facility - Ch 5	0.31	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
PAX-2541	021311	02060006	SWM Facility - Ch 5	0.38	Minor	Clear	No Impact	Moderate	Long Term	No Impacts	Minor	None	N/A	None
PAX-2542	021311	02060006	SWM Facility - Ch 5	0.43	Minor	Clear	No Impact	Moderate	Long Term	Minor	Minor	None	N/A	None
PAX-2559	021311	02060006	SWM Facility - Ch 5	0.59	Moderate	Clear	No Impact	Low	Long Term	Moderate	Minor	None	N/A	UG
PAX-2560	021311	02060006	SWM Facility - Ch 5	0.24	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-2561	021311	02060006	SWM Facility - Ch 5	0.51	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-3002	021311	02060006	SWM Facility - Ch 5	0.12	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
PAX-3003	021311	02060006	SWM Facility - Ch 5	1.76	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-3004	021311	02060006	SWM Facility - Ch 5	0.12	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-3005	021311	02060006	SWM Facility - Ch 5	0.31	Moderate	Clear	No Impact	Moderate	Long Term	No Impacts	Minor	None	N/A	None
PAX-3006	021311	02060006	SWM Facility - Ch 5	0.23	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-3007	021311	02060006	SWM Facility - Ch 5	0.14	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-3008	021311	02060006	SWM Facility - Ch 5	0.24	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
PAX-3009	021311	02060006	SWM Facility - Ch 5	0.13	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-3011	021311	02060006	SWM Facility - Ch 5	0.13	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-3012	021311	02060006	SWM Facility - Ch 5	1.10	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
PAX-3014	021311	02060006	Pavement Removal	0.05	Minor	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	N/A	OH & UG
PAX-3016	021311	02060006	SWM Facility - Ch 5	0.20	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
PAX-3017	021311	02060006	SWM Facility - Ch 3	0.60	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
PAX-3018	021311	02060006	SWM Facility - Ch 5	0.41	Minor	Significant	No Impact	Low	Long Term	Moderate	Minor	None	N/A	OH & UG
PAX-3021	021311	02060006	SWM Facility - Ch 3	0.91	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	UG
PAX-3024	021311	02060006	SWM Facility - Ch 5	0.33	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
PAX-3025	021311	02060006	SWM Facility - Ch 5	0.25	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-3026	021311	02060006	SWM Facility - Ch 5	0.23	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
PAX-3801	021311	02060006	SWM Facility - Ch 5	0.36	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
PAX-3802	021311	02060006	SWM Facility - Ch 5	0.17	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
PAX-4001	021311	02060006	SWM Facility - Ch 5	0.36	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
PAX-4003	021311	02060006	SWM Facility - Ch 5	0.34	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
PAX-4004	021311	02060006	SWM Facility - Ch 5	0.88	Minor	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	OH
PAX-4006	021311	02060006	SWM Facility - Ch 3	0.23	Moderate	Clear	No Impact	Moderate	Long Term	No Impacts	Minor	None	N/A	OH & UG
PAX-4007	021311	02070010	SWM Facility - Ch 3	0.73	Minor	Clear	No Impact	Low	Temp/Daily	Moderate	Hard	None	Minimal	OH & UG
WAS-0010	021402	02070010	SWM Facility - Ch 5	0.22	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-0012	021402	02070010	SWM Facility - Ch 5	0.45	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-0013	021402	02070010	SWM Facility - Ch 5	0.48	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-0070	021402	02070010	SWM Facility - Ch 5	0.27	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-0072	021402	02070010	SWM Facility - Ch 3	0.58	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-0073	021402	02070010	SWM Facility - Ch 5	0.18	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-0074	021402	02070010	SWM Facility - Ch 3	1.72	Significant	Clear	No Impact	Low	Temp/Daily	Minor	Hard	None	Moderate	UG
WAS-0075	021402	02070010	SWM Facility - Ch 5	0.36	Significant	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
WAS-0076	021402	02070010	SWM Facility - Ch 3	1.46	Moderate	Clear	No Impact	Low	Long Term	Moderate	Minor	None	N/A	OH & UG
WAS-0077	021402	02070010	SWM Facility - Ch 3	1.01	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-0078	021402	02070010	SWM Facility - Ch 5	0.36	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-0081	021402	02070010	SWM Facility - Ch 3	0.46	Significant	Clear	Impact	Low	Long Term	No Impacts	Minor	None	Minimal	OH
WAS-0082	021402	02070010	SWM Facility - Ch 3	0.38	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Moderate	OH
WAS-0083	021402	02070010	SWM Facility - Ch 3	0.53	Significant	Clear	Impact	Low	Temp/Daily	Moderate	Hard	None	Moderate	OH & UG
WAS-0084	021402	02070010	SWM Facility - Ch 5	0.38	Moderate	Clear	Impact	Moderate	Temp/Daily	Minor	Minor	None	N/A	OH & UG
WAS-0085	021402	02070010	SWM Facility - Ch 3	0.84	Moderate	Clear	Impact	Low	Temp/Daily	Minor	Minor	None	N/A	OH & UG
WAS-0086	021402	02070010	SWM Facility - Ch 3	0.39	Significant	Clear	Impact	Low	Long Term	No Impacts	Minor	None	Minimal	None
WAS-0301	021402	02070010	SWM Facility - Ch 5	0.13	Moderate	Moderate	No Impact	Moderate	Temp/Daily	No Impacts	Hard	None	N/A	UG
WAS-0302	021402	02070010	SWM Facility - Ch 3	1.64	Moderate	Clear	Impact	Moderate	Temp/Daily	Minor	Minor	None	N/A	OH & UG
WAS-0303	021402	02070010	SWM Facility - Ch 5	0.22	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-0304	021402	02070010	SWM Facility - Ch 3	0.77	Moderate	Clear	Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH & UG
WAS-0307	021402	02070010	SWM Facility - Ch 5	0.31	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-0312	021402	02070010	SWM Facility - Ch 5	0.25	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0313	021402	02070010	SWM Facility - Ch 5	0.23	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-0315	021402	02070010	SWM Facility - Ch 5	0.07	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-0317	021402	02070010	SWM Facility - Ch 5	0.25	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-0319	021402	02070010	SWM Facility - Ch 5	0.24	Significant	Clear	No Impact	High	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-0320	021402	02070010	SWM Facility - Ch 5	0.57	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-0321	021402	02070010	SWM Facility - Ch 5	0.57	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0322	021402	02070010	SWM Facility - Ch 3	1.32	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-0326	021402	02070010	SWM Facility - Ch 5	0.21	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-0328	021402	02070010	SWM Facility - Ch 3	1.30	Significant	Clear	No Impact	High	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-0333	021402	02070010	SWM Facility - Ch 5	0.36	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-0334	021402	02070010	SWM Facility - Ch 5	0.34	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-0340	021402	02070010	SWM Facility - Ch 5	0.34	Minor	Clear	Impact	Low	Temp/Daily	Minor	Medium	None	N/A	UG

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-0342	021402	02070010	SWM Facility - Ch 5	0.83	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-0343	021402	02070010	SWM Facility - Ch 3	1.88	Moderate	Clear	No Impact	Low	Long Term	Minor	Minor	None	N/A	UG
WAS-0345	021402	02070010	SWM Facility - Ch 5	0.37	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-0346	021402	02070010	SWM Facility - Ch 3	1.07	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-0347	021402	02070010	SWM Facility - Ch 5	0.19	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-0348	021402	02070010	SWM Facility - Ch 5	0.15	Minor	Clear	Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	OH & UG
WAS-0606	021402	02070010	SWM Facility - Ch 5	0.28	Moderate	Clear	Impact	Low	Temp/Daily	Moderate	Hard	None	N/A	OH & UG
WAS-0610	021402	02070010	SWM Facility - Ch 5	0.15	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0614	021402	02070010	SWM Facility - Ch 5	0.24	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	None
WAS-0615	021402	02070010	SWM Facility - Ch 5	0.33	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-0616	021402	02070010	SWM Facility - Ch 5	0.19	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-0617	021402	02070010	SWM Facility - Ch 5	0.18	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-0623	021402	02070010	SWM Facility - Ch 3	0.51	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-0624	021402	02070010	Pavement Removal	0.15	Moderate	Clear	No Impact	Low	Complex	No Impacts	Minor	None	N/A	None
WAS-0625	021402	02070010	SWM Facility - Ch 5	0.38	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0626	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-0627	021402	02070010	SWM Facility - Ch 5	0.11	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-0628	021402	02070010	SWM Facility - Ch 5	0.39	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0634	021402	02070010	Pavement Removal	0.04	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-0638	021402	02070010	SWM Facility - Ch 3	0.86	Moderate	Clear	Impact	Low	Long Term	Minor	Minor	None	N/A	OH & UG
WAS-0641	021402	02070010	SWM Facility - Ch 5	0.25	Moderate	Clear	Impact	Low	Long Term	Minor	Minor	None	N/A	None
WAS-0644	021402	02070010	SWM Facility - Ch 5	0.24	Moderate	Clear	Impact	Moderate	Temp/Daily	Moderate	Hard	None	N/A	OH & UG
WAS-0647	021402	02070010	SWM Facility - Ch 3	0.83	Significant	Clear	Impact	Low	Long Term	Moderate	Medium	None	Moderate	None
WAS-0649	021402	02070010	SWM Facility - Ch 3	0.63	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Moderate	None
WAS-0650	021402	02070010	SWM Facility - Ch 3	1.29	Moderate	Clear	Impact	Low	Long Term	Minor	Minor	None	Moderate	OH & UG
WAS-0651	021402	02070010	SWM Facility - Ch 3	0.62	Significant	Clear	Impact	Low	Long Term	Moderate	Medium	None	Minimal	None
WAS-0652	021402	02070010	SWM Facility - Ch 3	0.71	Minor	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	N/A	UG
WAS-0901	021402	02070010	SWM Facility - Ch 5	0.65	Moderate	Clear	No Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	UG
WAS-0903	021402	02070010	SWM Facility - Ch 5	0.34	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0905	021402	02070010	SWM Facility - Ch 5	0.28	Minor	Clear	No Impact	Low	Temp/Daily	Minor	Minor	None	N/A	UG
WAS-0906	021402	02070010	SWM Facility - Ch 5	0.23	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0911	021402	02070010	SWM Facility - Ch 5	0.22	Moderate	Clear	Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	None
WAS-0913	021402	02070010	SWM Facility - Ch 5	0.21	Moderate	Clear	No Impact	Low	Long Term	Minor	Minor	None	N/A	None
WAS-0918	021402	02070010	SWM Facility - Ch 5	0.39	Minor	Clear	No Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	UG
WAS-0922	021402	02070010	SWM Facility - Ch 5	0.32	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-0923	021402	02070010	SWM Facility - Ch 3	0.51	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-0925	021402	02070010	SWM Facility - Ch 5	0.23	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-0929	021402	02070010	SWM Facility - Ch 5	0.08	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0932	021402	02070010	SWM Facility - Ch 5	1.42	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0933	021402	02070010	SWM Facility - Ch 5	0.34	Minor	Clear	No Impact	Low	Temp/Daily	Minor	Minor	None	N/A	None
WAS-0934	021402	02070010	SWM Facility - Ch 5	0.24	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-0937	021402	02070010	SWM Facility - Ch 5	0.43	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0938	021402	02070011	SWM Facility - Ch 5	0.09	Minor	Significant	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-0939	021402	02070010	SWM Facility - Ch 5	0.16	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-0946	021402	02070010	SWM Facility - Ch 3	0.47	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0957	021402	02070010	SWM Facility - Ch 5	0.34	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0968	021402	02070010	SWM Facility - Ch 5	1.07	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-0969	021402	02070010	SWM Facility - Ch 5	0.27	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0971	021402	02070010	SWM Facility - Ch 5	0.93	Moderate	Clear	No Impact	Low	Long Term	Minor	Minor	None	N/A	OH
WAS-0972	021402	02070010	SWM Facility - Ch 5	0.27	Moderate	Clear	Impact	Low	Temp/Daily	Minor	Minor	None	N/A	OH & UG
WAS-0975	021402	02070010	SWM Facility - Ch 5	0.23	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-0979	021402	02070010	SWM Facility - Ch 5	0.26	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-0980	021402	02070010	SWM Facility - Ch 5	0.11	Minor	Significant	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-0984	021402	02070010	SWM Facility - Ch 5	0.76	Minor	Clear	No Impact	Moderate	Long Term	No Impacts	Minor	None	N/A	UG
WAS-0985	021402	02070010	SWM Facility - Ch 5	0.53	Minor	Clear	No Impact	Moderate	Long Term	No Impacts	Minor	None	N/A	UG
WAS-0987	021402	02070010	SWM Facility - Ch 5	0.64	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-0988	021402	02070010	SWM Facility - Ch 5	0.33	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-0989	021402	02070010	SWM Facility - Ch 3	0.52	Moderate	Clear	No Impact	Low	Complex	No Impacts	Hard	None	Minimal	OH
WAS-0990	021402	02070010	SWM Facility - Ch 3	0.64	Moderate	Clear	No Impact	Low	Complex	No Impacts	Medium	None	Moderate	None
WAS-0992	021402	02070010	SWM Facility - Ch 5	0.36	Minor	Significant	No Impact	Low	Temp/Daily	Minor	Minor	None	N/A	OH & UG
WAS-0995	021402	02070010	SWM Facility - Ch 5	0.42	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-0996	021402	02070010	SWM Facility - Ch 5	0.14	Minor	Clear	Impact	Low	Long Term	Minor	Hard	None	N/A	OH
WAS-0999	021402	02070010	SWM Facility - Ch 5	0.11	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-1000	021402	02070010	SWM Facility - Ch 5	0.37	Minor	Clear	Impact	Moderate	No MOT	Minor	Minor	None	N/A	None
WAS-1001	021402	02070010	SWM Facility - Ch 3	2.54	Minor	Clear	Impact	Moderate	No MOT	Minor	Minor	None	N/A	UG
WAS-1002	021402	02070010	SWM Facility - Ch 3	1.59	Minor	Clear	No Impact	Moderate	No MOT	No Impacts	Minor	None	N/A	UG
WAS-1003	021402	02070010	SWM Facility - Ch 3	0.88	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-1004	021402	02070010	SWM Facility - Ch 3	0.59	Significant	Clear	Impact	Low	Long Term	Moderate	Medium	None	Moderate	None
WAS-1005	021402	02070010	SWM Facility - Ch 3	1.24	Significant	Clear	Impact	Low	Long Term	Moderate	Minor	None	Moderate	None
WAS-1006	021402	02070010	SWM Facility - Ch 3	0.48	Significant	Clear	Impact	Low	Long Term	No Impacts	Hard	None	Moderate	None
WAS-1007	021402	02070010	SWM Facility - Ch 3	0.60	Significant	Clear	Impact	Low	Long Term	No Impacts	Hard	None	Moderate	None
WAS-1009	021402	02070010	SWM Facility - Ch 3	0.91	Moderate	Clear	Impact	Low	Temp/Daily	Moderate	Hard	None	Moderate	None
WAS-1010	021402	02070010	SWM Facility - Ch 3	0.34	Significant	Clear	Impact	Low	Long Term	No Impacts	Hard	None	Moderate	None
WAS-1011	021402	02070010	SWM Facility - Ch 3	0.59	Significant	Clear	No Impact	Low	Long Term	Moderate	Hard	None	Moderate	None
WAS-1805	021402	02070008	SWM Facility - Ch 5	0.58	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-1808	021402	02070010	SWM Facility - Ch 3	0.27	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	OH & UG
WAS-1809	021402	02070010	SWM Facility - Ch 3	1.03	Significant	Minor	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-2003	021402	02070010	SWM Facility - Ch 5	0.46	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2004	021402	02070010	SWM Facility - Ch 5	0.29	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2010	021402	02070010	SWM Facility - Ch 3	1.48	Minor	Clear	Impact	Low	Temp/Daily	Minor	Minor	None	N/A	None
WAS-2012	021402	02070010	SWM Facility - Ch 3	0.70	Minor	Minor	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-2016	021402	02070010	SWM Facility - Ch 5	0.66	Moderate	Clear	No Impact	High	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-2018	021402	02070010	SWM Facility - Ch 5	0.49	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-2019	021402	02070010	SWM Facility - Ch 5	0.36	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-2022	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2023	021402	02070010	SWM Facility - Ch 5	0.28	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-2024	021402	02070010	SWM Facility - Ch 5	0.17	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2025	021402	02070010	SWM Facility - Ch 5	0.23	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None



Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-2026	021402	02070010	SWM Facility - Ch 5	0.29	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2027	021402	02070010	SWM Facility - Ch 5	0.28	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2028	021402	02070010	SWM Facility - Ch 5	0.35	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-2029	021402	02070010	SWM Facility - Ch 5	0.29	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	UG
WAS-2030	021402	02070010	SWM Facility - Ch 5	0.31	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	UG
WAS-2032	021402	02070010	SWM Facility - Ch 5	0.24	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2033	021402	02070010	SWM Facility - Ch 5	0.63	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2034	021402	02070010	SWM Facility - Ch 5	0.63	Moderate	Clear	Impact	High	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-2035	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-2036	021402	02070010	SWM Facility - Ch 5	0.17	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2037	021402	02070010	SWM Facility - Ch 5	0.26	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2038	021402	02070010	SWM Facility - Ch 5	0.61	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-2039	021402	02070010	SWM Facility - Ch 5	0.96	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-2040	021402	02070010	SWM Facility - Ch 5	0.34	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-2041	021402	02070010	SWM Facility - Ch 5	0.23	Minor	Minor	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-2042	021402	02070010	SWM Facility - Ch 5	0.35	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-2043	021402	02070010	SWM Facility - Ch 5	0.50	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-2044	021402	02070010	SWM Facility - Ch 5	0.28	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-2048	021402	02070010	SWM Facility - Ch 5	1.13	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-2050	021402	02070010	SWM Facility - Ch 3	1.15	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2051	021402	02070010	SWM Facility - Ch 5	0.93	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-2056	021402	02070010	SWM Facility - Ch 5	0.49	Significant	Minor	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2057	021402	02070010	SWM Facility - Ch 5	0.45	Minor	Clear	No Impact	Low	Complex	No Impacts	Medium	None	N/A	OH & UG
WAS-2059	021402	02070010	SWM Facility - Ch 3	0.55	Moderate	Clear	No Impact	High	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-2062	021402	02070010	SWM Facility - Ch 3	0.42	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-2063	021402	02070010	SWM Facility - Ch 3	0.45	Significant	Moderate	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Major	OH & UG
WAS-2064	021402	02070010	SWM Facility - Ch 3	0.88	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-2066	021402	02070010	SWM Facility - Ch 5	0.67	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2067	021402	02070010	SWM Facility - Ch 5	0.27	Significant	Moderate	No Impact	High	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-2068	021402	02070010	SWM Facility - Ch 5	0.18	Significant	Moderate	No Impact	High	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-2069	021402	02070010	SWM Facility - Ch 5	0.17	Significant	Moderate	No Impact	Moderate	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-2070	021402	02070010	SWM Facility - Ch 5	0.22	Significant	Moderate	No Impact	Moderate	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-2071	021402	02070010	SWM Facility - Ch 5	0.09	Significant	Moderate	No Impact	Moderate	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-2072	021402	02070010	SWM Facility - Ch 3	1.08	Significant	Minor	No Impact	High	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-2073	021402	02070010	SWM Facility - Ch 3	0.48	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-2074	021402	02070010	SWM Facility - Ch 3	0.80	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-2075	021402	02070010	SWM Facility - Ch 5	0.34	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2076	021402	02070010	SWM Facility - Ch 5	0.45	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-2078	021402	02070010	SWM Facility - Ch 3	1.51	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-2079	021402	02070010	SWM Facility - Ch 3	1.10	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-2501	021402	02070010	SWM Facility - Ch 5	0.48	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2502	021402	02070010	SWM Facility - Ch 3	0.96	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	Not Feasible
WAS-2503	021402	02070010	SWM Facility - Ch 5	0.17	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
WAS-2504	021402	02070010	SWM Facility - Ch 5	0.41	Minor	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	None

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-2505	021402	02070010	SWM Facility - Ch 5	0.30	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2506	021402	02070010	SWM Facility - Ch 5	0.29	Minor	Clear	No Impact	Low	Complex	No Impacts	Medium	None	N/A	OH
WAS-2507	021402	02070010	SWM Facility - Ch 5	0.26	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2508	021402	02070010	SWM Facility - Ch 5	0.19	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2509	021402	02070010	SWM Facility - Ch 5	0.17	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2510	021402	02070010	SWM Facility - Ch 5	0.39	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2511	021402	02070010	SWM Facility - Ch 5	0.20	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2512	021402	02070010	SWM Facility - Ch 5	0.35	Significant	Minor	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2513	021402	02070010	SWM Facility - Ch 3	0.29	Significant	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-2514	021402	02070010	SWM Facility - Ch 5	0.39	Minor	Clear	No Impact	Low	Temp/Daily	Minor	Hard	None	N/A	None
WAS-2515	021402	02070010	SWM Facility - Ch 5	0.52	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	None
WAS-2518	021402	02070010	SWM Facility - Ch 5	0.50	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-2519	021402	02070010	SWM Facility - Ch 5	0.39	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-2520	021402	02070010	SWM Facility - Ch 5	0.63	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-2522	021402	02070010	SWM Facility - Ch 5	0.77	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2525	021402	02070010	SWM Facility - Ch 5	0.49	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-2526	021402	02070010	SWM Facility - Ch 3	0.31	Significant	Clear	No Impact	Low	Temp/Daily	Minor	Minor	None	Moderate	OH
WAS-2527	021402	02070010	SWM Facility - Ch 5	0.36	Minor	Clear	No Impact	Low	Complex	No Impacts	Minor	None	N/A	OH
WAS-2528	021402	02070010	SWM Facility - Ch 5	0.21	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-2529	021402	02070010	SWM Facility - Ch 3	0.39	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2530	021402	02070010	SWM Facility - Ch 5	0.23	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2531	021402	02070010	SWM Facility - Ch 5	0.20	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2532	021402	02070010	SWM Facility - Ch 5	0.18	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2533	021402	02070010	SWM Facility - Ch 5	0.17	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-2534	021402	02070010	SWM Facility - Ch 5	0.13	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2535	021402	02070010	SWM Facility - Ch 5	0.10	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2536	021402	02070010	SWM Facility - Ch 5	0.26	Minor	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	OH & UG
WAS-2537	021402	02070010	SWM Facility - Ch 5	0.25	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2538	021402	02070010	SWM Facility - Ch 5	0.22	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-2539	021402	02070010	SWM Facility - Ch 5	0.30	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-2540	021402	02070010	SWM Facility - Ch 5	0.41	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2541	021402	02070010	SWM Facility - Ch 5	0.68	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2542	021402	02070010	SWM Facility - Ch 5	0.58	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2543	021402	02070010	SWM Facility - Ch 5	0.50	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-2548	021402	02070010	SWM Facility - Ch 5	0.57	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-2549	021402	02070010	SWM Facility - Ch 5	0.25	Minor	Clear	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	None
WAS-2551	021402	02070010	SWM Facility - Ch 5	0.11	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2553	021402	02070010	SWM Facility - Ch 5	0.19	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2554	021402	02070010	SWM Facility - Ch 3	0.92	Minor	Clear	Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	None
WAS-2555	021402	02070010	SWM Facility - Ch 5	0.13	Minor	Clear	Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-2556	021402	02070010	SWM Facility - Ch 5	0.27	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2557	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2558	021402	02070010	SWM Facility - Ch 5	0.18	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-2559	021402	02070010	SWM Facility - Ch 5	0.27	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-2560	021402	02070010	SWM Facility - Ch 5	0.16	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2562	021402	02070010	SWM Facility - Ch 5	0.37	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
WAS-2564	021402	02070010	SWM Facility - Ch 5	0.17	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2565	021402	02070010	SWM Facility - Ch 5	0.28	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-2567	021402	02070010	SWM Facility - Ch 5	0.33	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2568	021402	02070010	SWM Facility - Ch 5	0.20	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2569	021402	02070010	SWM Facility - Ch 5	0.32	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-2571	021402	02070010	SWM Facility - Ch 5	0.34	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-2572	021402	02070010	SWM Facility - Ch 5	0.22	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2573	021402	02070010	SWM Facility - Ch 5	0.20	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2574	021402	02070010	SWM Facility - Ch 5	0.22	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2575	021402	02070010	SWM Facility - Ch 5	0.24	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2576	021402	02070010	SWM Facility - Ch 5	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2577	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2578	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2579	021402	02070010	SWM Facility - Ch 5	0.17	Minor	Clear	No Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	OH & UG
WAS-2580	021402	02070010	SWM Facility - Ch 5	0.20	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2581	021402	02070010	SWM Facility - Ch 5	0.13	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2582	021402	02070010	SWM Facility - Ch 5	0.14	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2583	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2584	021402	02070010	SWM Facility - Ch 5	0.17	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2585	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2586	021402	02070010	SWM Facility - Ch 5	0.17	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2587	021402	02070010	SWM Facility - Ch 5	0.15	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2588	021402	02070010	SWM Facility - Ch 5	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2589	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2590	021402	02070010	SWM Facility - Ch 5	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2591	021402	02070010	SWM Facility - Ch 5	0.15	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2592	021402	02070010	SWM Facility - Ch 5	0.11	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2593	021402	02070010	SWM Facility - Ch 5	0.10	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2594	021402	02070010	SWM Facility - Ch 5	0.15	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2595	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2596	021402	02070010	SWM Facility - Ch 3	0.46	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-2599	021402	02070010	SWM Facility - Ch 5	0.71	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2600	021402	02070010	SWM Facility - Ch 5	0.24	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2601	021402	02070010	SWM Facility - Ch 5	0.24	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2602	021402	02070010	SWM Facility - Ch 5	0.52	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-2603	021402	02070010	SWM Facility - Ch 5	0.29	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	N/A	UG
WAS-2604	021402	02070010	SWM Facility - Ch 3	0.36	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-2605	021402	02070010	SWM Facility - Ch 5	0.24	Moderate	Clear	Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2606	021402	02070010	SWM Facility - Ch 5	0.21	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-2608	021402	02070010	SWM Facility - Ch 5	0.71	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2609	021402	02070010	SWM Facility - Ch 5	0.73	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2610	021402	02070010	SWM Facility - Ch 3	0.93	Significant	Clear	Impact	Low	Long Term	No Impacts	Minor	None	Moderate	None

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-2611	021402	02070010	SWM Facility - Ch 5	0.65	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-2612	021402	02070010	SWM Facility - Ch 5	0.24	Minor	Clear	Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	None
WAS-2613	021402	02070010	SWM Facility - Ch 3	0.36	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-2614	021402	02070010	SWM Facility - Ch 3	0.88	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	None
WAS-2615	021402	02070010	SWM Facility - Ch 5	0.27	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-3303	021402	02070008	SWM Facility - Ch 5	0.15	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-3305	021402	02070010	SWM Facility - Ch 5	0.47	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-3306	021402	02070010	SWM Facility - Ch 5	0.38	Significant	Clear	Impact	Low	Temp/Daily	Significant	Medium	None	N/A	OH
WAS-3307	021402	02070010	SWM Facility - Ch 5	0.35	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	UG
WAS-3308	021402	02070010	SWM Facility - Ch 5	0.21	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-3309	021402	02070010	Pavement Removal	0.06	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3601	021402	02070010	SWM Facility - Ch 5	0.39	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3602	021402	02070008	SWM Facility - Ch 5	0.40	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-3603	021402	02070010	SWM Facility - Ch 5	0.82	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-3604	021402	02070010	SWM Facility - Ch 5	0.46	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-3606	021402	02070010	SWM Facility - Ch 5	0.37	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-3607	021402	02070010	SWM Facility - Ch 5	0.32	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-3608	021402	02070008	SWM Facility - Ch 3	0.75	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-3609	021402	02070010	SWM Facility - Ch 5	0.14	Significant	Clear	No Impact	High	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-3611	021402	02070010	SWM Facility - Ch 5	0.32	Moderate	Clear	No Impact	High	Long Term	No Impacts	Minor	None	N/A	OH
WAS-3612	021402	02070010	SWM Facility - Ch 5	0.19	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3613	021402	02070008	SWM Facility - Ch 5	0.40	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-3614	021402	02070008	SWM Facility - Ch 5	0.65	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-3615	021402	02070010	SWM Facility - Ch 5	0.29	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-3616	021402	02070010	SWM Facility - Ch 5	0.70	Minor	Clear	Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	UG
WAS-3617	021402	02070008	SWM Facility - Ch 5	0.63	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3618	021402	02070008	SWM Facility - Ch 5	0.84	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3619	021402	02070010	SWM Facility - Ch 5	0.34	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3621	021402	02070010	SWM Facility - Ch 5	0.25	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-3622	021402	02070008	SWM Facility - Ch 5	1.06	Moderate	Clear	No Impact	Low	Long Term	Moderate	Minor	None	N/A	OH & UG
WAS-3623	021402	02070008	Pavement Removal	0.06	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	UG
WAS-3625	021402	02070010	SWM Facility - Ch 5	0.22	Minor	Moderate	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-3626	021402	02070010	SWM Facility - Ch 3	0.52	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	OH
WAS-3628	021402	02070010	SWM Facility - Ch 3	0.78	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	None
WAS-3629	021402	02070010	SWM Facility - Ch 3	0.56	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-3631	021402	02070010	SWM Facility - Ch 3	1.41	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	OH
WAS-3632	021402	02070010	SWM Facility - Ch 3	0.26	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	None
WAS-3633	021402	02070010	SWM Facility - Ch 3	0.16	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	None
WAS-3634	021402	02070010	SWM Facility - Ch 5	0.29	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3635	021402	02070010	SWM Facility - Ch 5	0.40	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3636	021402	02070010	SWM Facility - Ch 3	0.14	Significant	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	Moderate	None
WAS-3637	021402	02070010	SWM Facility - Ch 5	0.43	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3638	021402	02070010	SWM Facility - Ch 5	0.31	Significant	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3639	021402	02070010	SWM Facility - Ch 3	0.38	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG



Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-3640	021402	02070010	SWM Facility - Ch 3	0.22	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	UG
WAS-3641	021402	02070010	SWM Facility - Ch 3	0.22	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	OH
WAS-3644	021402	02070010	SWM Facility - Ch 3	0.36	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	OH
WAS-3645	021402	02070010	SWM Facility - Ch 3	0.37	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	OH & UG
WAS-3646	021402	02070010	SWM Facility - Ch 3	0.44	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-3647	021402	02070010	SWM Facility - Ch 3	0.68	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	None
WAS-3648	021402	02070010	SWM Facility - Ch 3	0.56	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	None
WAS-3649	021402	02070010	SWM Facility - Ch 3	0.30	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-3650	021402	02070010	SWM Facility - Ch 3	0.21	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	None
WAS-3652	021402	02070008	SWM Facility - Ch 3	0.28	Significant	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	Moderate	UG
WAS-3653	021402	02070008	SWM Facility - Ch 3	0.25	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	Minimal	None
WAS-3655	021402	02070010	SWM Facility - Ch 3	1.32	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-3656	021402	02070010	SWM Facility - Ch 5	0.73	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-3657	021402	02070010	SWM Facility - Ch 3	0.35	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	OH
WAS-3658	021402	02070010	SWM Facility - Ch 5	0.76	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-3660	021402	02070010	SWM Facility - Ch 5	0.47	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3665	021402	02070010	SWM Facility - Ch 5	0.10	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-3667	021402	02070010	SWM Facility - Ch 3	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-3668	021402	02070010	SWM Facility - Ch 3	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-3670	021402	02070010	SWM Facility - Ch 3	0.08	Moderate	Minor	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-3671	021402	02070010	SWM Facility - Ch 3	0.31	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Minimal	OH & UG
WAS-3700	021402	02070008	SWM Facility - Ch 3	0.64	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	None
WAS-3705	021402	02070008	SWM Facility - Ch 5	0.06	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3706	021402	02070008	SWM Facility - Ch 5	0.09	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-3707	021402	02070008	SWM Facility - Ch 5	0.07	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-3708	021402	02070008	SWM Facility - Ch 5	0.09	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-3709	021402	02070008	SWM Facility - Ch 3	0.57	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-3711	021402	02070008	SWM Facility - Ch 3	0.33	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-3713	021402	02070008	SWM Facility - Ch 3	0.59	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	None
WAS-3718	021402	02070008	SWM Facility - Ch 3	0.25	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-3719	021402	02070008	SWM Facility - Ch 3	0.36	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-3720	021402	02070008	SWM Facility - Ch 3	0.42	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-3721	021402	02070008	SWM Facility - Ch 3	0.42	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	UG
WAS-3722	021402	02070008	SWM Facility - Ch 3	0.52	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-3725	021402	02070008	SWM Facility - Ch 3	0.30	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-3727	021402	02070008	SWM Facility - Ch 3	0.36	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-3728	021402	02070008	SWM Facility - Ch 3	0.66	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	UG
WAS-3729	021402	02070008	SWM Facility - Ch 3	0.32	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-3994	021402	02070010	SWM Facility - Ch 5	0.44	Minor	Clear	Impact	Low	Temp/Daily	Minor	Hard	None	N/A	OH & UG
WAS-3995	021402	02070010	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-3996	021402	02070010	SWM Facility - Ch 5	0.21	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-3997	021402	02070010	SWM Facility - Ch 5	0.32	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-3999	021402	02070010	SWM Facility - Ch 5	0.35	Moderate	Clear	No Impact	Low	Temp/Daily	Minor	Hard	None	N/A	OH & UG
WAS-4000	021402	02070010	SWM Facility - Ch 5	0.18	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-4002	021402	02070008	SWM Facility - Ch 3	0.79	Moderate	Minor	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4006	021402	02070008	Pavement Removal	0.38	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	UG
WAS-4010	021402	02070008	SWM Facility - Ch 5	0.33	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-4011	021402	02070008	SWM Facility - Ch 3	0.64	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4013	021402	02070008	SWM Facility - Ch 3	0.18	Moderate	Minor	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-4014	021402	02070008	SWM Facility - Ch 5	0.18	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-4015	021402	02070008	SWM Facility - Ch 3	0.27	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Moderate	OH & UG
WAS-4016	021402	02070008	SWM Facility - Ch 3	0.19	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4017	021402	02070008	SWM Facility - Ch 3	0.29	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4018	021402	02070008	SWM Facility - Ch 5	0.59	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-4019	021402	02070008	SWM Facility - Ch 5	0.10	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4020	021402	02070008	SWM Facility - Ch 5	0.17	Minor	Moderate	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-4021	021402	02070008	SWM Facility - Ch 5	0.13	Minor	Moderate	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	None
WAS-4022	021402	02070008	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-4023	021402	02070008	SWM Facility - Ch 5	0.13	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	None
WAS-4024	021402	02070008	SWM Facility - Ch 5	0.10	Moderate	Moderate	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-4025	021402	02070008	SWM Facility - Ch 5	0.33	Moderate	Minor	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-4026	021402	02070008	SWM Facility - Ch 5	0.19	Moderate	Minor	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4027	021402	02070008	SWM Facility - Ch 3	0.18	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4029	021402	02070008	SWM Facility - Ch 3	0.17	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4030	021402	02070008	SWM Facility - Ch 3	0.25	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4031	021402	02070008	SWM Facility - Ch 3	0.44	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Minimal	UG
WAS-4032	021402	02070008	SWM Facility - Ch 3	0.23	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4037	021402	02070008	SWM Facility - Ch 3	0.36	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-4038	021402	02070008	SWM Facility - Ch 3	1.23	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4040	021402	02070008	SWM Facility - Ch 3	0.44	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4045	021402	02070008	SWM Facility - Ch 3	0.72	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	Major	OH & UG
WAS-4047	021402	02070008	SWM Facility - Ch 3	0.77	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-4048	021402	02070008	SWM Facility - Ch 5	1.04	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4050	021402	02070008	SWM Facility - Ch 3	0.23	Moderate	Clear	No Impact	Moderate	Temp/Daily	Minor	Hard	None	Moderate	OH & UG
WAS-4053	021402	02070008	SWM Facility - Ch 3	0.44	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-4058	021402	02070008	SWM Facility - Ch 5	0.70	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4059	021402	02070008	SWM Facility - Ch 5	0.76	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4060	021402	02070008	SWM Facility - Ch 5	0.64	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4061	021402	02070008	SWM Facility - Ch 3	0.44	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-4063	021402	02070008	SWM Facility - Ch 3	0.40	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4064	021402	02070008	SWM Facility - Ch 5	0.30	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4065	021402	02070008	SWM Facility - Ch 3	0.73	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4067	021402	02070008	SWM Facility - Ch 5	0.51	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	UG
WAS-4068	021402	02070008	SWM Facility - Ch 5	0.89	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4072	021402	02070008	SWM Facility - Ch 5	0.66	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4075	021402	02070008	SWM Facility - Ch 3	2.78	Minor	Clear	Impact	High	Temp/Daily	Minor	Medium	None	Moderate	OH & UG
WAS-4078	021402	02070008	SWM Facility - Ch 5	0.57	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4079	021402	02070008	SWM Facility - Ch 3	0.74	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	Major	OH & UG

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-4083	021402	02070008	SWM Facility - Ch 3	0.60	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4084	021402	02070008	SWM Facility - Ch 3	0.38	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4086	021402	02070008	SWM Facility - Ch 3	0.36	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	None
WAS-4087	021402	02070008	SWM Facility - Ch 5	0.46	Moderate	Minor	Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4091	021402	02070008	SWM Facility - Ch 5	1.19	Moderate	Clear	No Impact	Moderate	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-4093	021402	02070010	SWM Facility - Ch 3	0.54	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4096	021402	02070008	SWM Facility - Ch 3	0.48	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-4098	021402	02070008	SWM Facility - Ch 5	0.08	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-4099	021402	02070008	SWM Facility - Ch 3	0.82	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4100	021402	02070010	SWM Facility - Ch 5	0.41	Minor	Clear	No Impact	Low	Temp/Daily	Minor	Minor	None	N/A	OH & UG
WAS-4101	021402	02070010	SWM Facility - Ch 5	1.43	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4111	021402	02070010	SWM Facility - Ch 5	0.79	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4112	021402	02070010	SWM Facility - Ch 5	0.69	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4119	021402	02060006	SWM Facility - Ch 3	0.57	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4121	021402	02070010	SWM Facility - Ch 5	0.46	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4122	021402	02070010	SWM Facility - Ch 5	0.79	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4123	021402	02070010	SWM Facility - Ch 5	1.26	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-4124	021402	02070010	SWM Facility - Ch 5	1.17	Minor	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-4125	021402	02070010	SWM Facility - Ch 5	0.44	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-4127	021402	02070010	SWM Facility - Ch 5	0.65	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-4131	021402	02070010	SWM Facility - Ch 3	0.36	Significant	Significant	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4132	021402	02070010	SWM Facility - Ch 3	0.25	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-4134	021402	02070010	SWM Facility - Ch 5	0.76	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4135	021402	02070010	SWM Facility - Ch 5	0.31	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4137	021402	02070010	SWM Facility - Ch 5	0.35	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4138	021402	02070010	SWM Facility - Ch 5	0.57	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-4140	021402	02070010	SWM Facility - Ch 5	0.77	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4141	021402	02070010	SWM Facility - Ch 3	0.23	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-4150	021402	02070008	SWM Facility - Ch 5	0.34	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-4153	021402	02070008	SWM Facility - Ch 5	0.23	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4154	021402	02070008	SWM Facility - Ch 5	0.10	Minor	Clear	No Impact	Low	Temp/Daily	Moderate	Medium	None	N/A	OH
WAS-4155	021402	02070008	SWM Facility - Ch 5	0.10	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-4156	021402	02070008	SWM Facility - Ch 3	0.21	Significant	Moderate	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	Moderate	None
WAS-4157	021402	02070008	SWM Facility - Ch 3	0.19	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	UG
WAS-4158	021402	02070008	SWM Facility - Ch 3	0.27	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	UG
WAS-4159	021402	02070008	SWM Facility - Ch 3	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4160	021402	02070008	SWM Facility - Ch 3	0.40	Significant	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4161	021402	02070008	SWM Facility - Ch 3	0.26	Significant	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4162	021402	02070008	SWM Facility - Ch 3	0.34	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4163	021402	02070008	SWM Facility - Ch 3	0.11	Significant	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4164	021402	02070008	SWM Facility - Ch 3	0.43	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4165	021402	02070008	SWM Facility - Ch 3	0.53	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4200	021402	02070008	SWM Facility - Ch 5	0.11	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4201	021402	02070008	SWM Facility - Ch 3	0.10	Moderate	Moderate	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	Moderate	OH

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-4202	021402	02070008	SWM Facility - Ch 5	0.10	Minor	Moderate	No Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH
WAS-4203	021402	02070008	SWM Facility - Ch 3	0.14	Minor	Moderate	Impact	Low	Temp/Daily	Minor	Hard	None	Moderate	OH
WAS-4204	021402	02070008	SWM Facility - Ch 5	0.31	Minor	Moderate	Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-4205	021402	02070008	SWM Facility - Ch 5	0.17	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4206	021402	02070008	SWM Facility - Ch 5	0.26	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4208	021402	02070008	SWM Facility - Ch 5	0.14	Minor	Moderate	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4212	021402	02070008	SWM Facility - Ch 5	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4214	021402	02070008	SWM Facility - Ch 5	0.10	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4215	021402	02070008	SWM Facility - Ch 5	0.21	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4216	021402	02070008	SWM Facility - Ch 5	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4218	021402	02070008	SWM Facility - Ch 5	0.11	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4221	021402	02070008	SWM Facility - Ch 5	0.23	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4250	021402	02070008	SWM Facility - Ch 3	0.14	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4251	021402	02070008	SWM Facility - Ch 3	0.15	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4255	021402	02070008	SWM Facility - Ch 5	0.20	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-4260	021402	02070008	SWM Facility - Ch 5	0.16	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4261	021402	02070008	SWM Facility - Ch 5	0.22	Minor	Clear	No Impact	High	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-4262	021402	02070008	SWM Facility - Ch 3	0.24	Moderate	Clear	No Impact	High	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-4265	021402	02070008	SWM Facility - Ch 3	0.16	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Minimal	OH & UG
WAS-4267	021402	02070008	SWM Facility - Ch 3	0.45	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	Minimal	UG
WAS-4268	021402	02070008	SWM Facility - Ch 3	0.26	Moderate	Clear	Impact	Moderate	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-4270	021402	02070008	SWM Facility - Ch 3	0.23	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4272	021402	02070008	SWM Facility - Ch 3	2.69	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	UG
WAS-4274	021402	02070008	SWM Facility - Ch 5	0.26	Minor	Clear	No Impact	Moderate	Long Term	No Impacts	Hard	None	N/A	OH & UG
WAS-4275	021402	02070008	SWM Facility - Ch 5	0.20	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	N/A	UG
WAS-4276	021402	02070008	SWM Facility - Ch 3	0.44	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-4277	021402	02070008	SWM Facility - Ch 3	0.25	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4304	021402	02070008	SWM Facility - Ch 5	0.30	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-4310	021402	02070008	SWM Facility - Ch 3	0.16	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4321	021402	02070008	SWM Facility - Ch 5	0.28	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4322	021402	02070008	SWM Facility - Ch 3	0.10	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4323	021402	02070008	SWM Facility - Ch 3	0.17	Moderate	Clear	No Impact	Low	No MOT	No Impacts	Minor	None	Moderate	OH
WAS-4324	021402	02070008	SWM Facility - Ch 3	1.25	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4325	021402	02070008	SWM Facility - Ch 3	0.30	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4331	021402	02070008	SWM Facility - Ch 5	0.11	Minor	Clear	Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH
WAS-4333	021402	02070008	SWM Facility - Ch 5	0.13	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4334	021402	02070008	SWM Facility - Ch 3	0.14	Moderate	Clear	Impact	Low	Temp/Daily	Minor	Minor	None	Moderate	OH & UG
WAS-4335	021402	02070008	SWM Facility - Ch 5	0.15	Moderate	Clear	Impact	Low	Temp/Daily	Minor	Medium	None	N/A	None
WAS-4336	021402	02070008	SWM Facility - Ch 5	0.15	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4337	021402	02070008	SWM Facility - Ch 5	0.10	Minor	Clear	No Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH & UG
WAS-4338	021402	02070008	SWM Facility - Ch 5	0.10	Minor	Clear	No Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH & UG
WAS-4339	021402	02070008	SWM Facility - Ch 5	0.37	Significant	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4342	021402	02070008	SWM Facility - Ch 5	0.10	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4345	021402	02070008	SWM Facility - Ch 5	0.16	Moderate	Clear	Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	OH



Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1") (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-4347	021402	02070008	SWM Facility - Ch 5	0.19	Significant	Significant	No Impact	Low	Temp/Daily	Moderate	Medium	None	N/A	OH
WAS-4349	021402	02070008	SWM Facility - Ch 5	0.12	Moderate	Significant	No Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH
WAS-4352	021402	02070008	SWM Facility - Ch 5	0.13	Minor	Significant	Impact	Low	Temp/Daily	Moderate	Medium	None	N/A	OH
WAS-4353	021402	02070008	SWM Facility - Ch 5	0.38	Moderate	Significant	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-4354	021402	02070008	SWM Facility - Ch 5	0.37	Moderate	Significant	No Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH
WAS-4355	021402	02070008	SWM Facility - Ch 3	0.10	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Minimal	None
WAS-4356	021402	02070008	SWM Facility - Ch 5	0.44	Moderate	Significant	No Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH
WAS-4361	021402	02070008	SWM Facility - Ch 5	0.14	Moderate	Significant	No Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH
WAS-4362	021402	02070008	SWM Facility - Ch 3	0.13	Moderate	Significant	No Impact	Low	Long Term	Moderate	Minor	None	Moderate	None
WAS-4363	021402	02070008	SWM Facility - Ch 5	0.10	Moderate	Significant	No Impact	Low	Long Term	Minor	Minor	None	N/A	None
WAS-4364	021402	02070008	SWM Facility - Ch 5	0.21	Moderate	Significant	No Impact	Low	Temp/Daily	Moderate	Medium	None	N/A	OH
WAS-4366	021402	02070008	SWM Facility - Ch 5	0.29	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
WAS-4370	021402	02070008	SWM Facility - Ch 3	0.33	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	None
WAS-4371	021402	02070008	SWM Facility - Ch 3	0.30	Moderate	Clear	Impact	Low	Temp/Daily	Minor	Hard	None	Moderate	None
WAS-4373	021402	02070008	SWM Facility - Ch 3	0.11	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4375	021402	02070008	SWM Facility - Ch 5	0.11	Moderate	Clear	Impact	Low	Long Term	No Impacts	Medium	None	N/A	OH
WAS-4376	021402	02070008	SWM Facility - Ch 3	0.34	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4377	021402	02070008	SWM Facility - Ch 5	0.15	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4378	021402	02070008	SWM Facility - Ch 5	0.12	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4382	021402	02070008	SWM Facility - Ch 3	0.30	Moderate	Clear	Impact	Low	Long Term	Minor	Medium	None	Moderate	OH
WAS-4383	021402	02070008	SWM Facility - Ch 3	0.57	Moderate	Clear	Impact	Low	Long Term	Minor	Medium	None	Moderate	OH
WAS-4385	021402	02070008	SWM Facility - Ch 3	0.39	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-4386	021402	02070008	SWM Facility - Ch 3	0.13	Moderate	Clear	No Impact	Low	Temp/Daily	Minor	Medium	None	Moderate	OH
WAS-4391	021402	02070008	SWM Facility - Ch 5	0.16	Minor	Clear	No Impact	Low	Temp/Daily	Moderate	Medium	None	N/A	None
WAS-4392	021402	02070008	SWM Facility - Ch 5	0.21	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4393	021402	02070008	SWM Facility - Ch 3	0.40	Moderate	Minor	No Impact	Low	Long Term	No Impacts	Medium	None	Moderate	OH
WAS-4394	021402	02070008	SWM Facility - Ch 3	0.15	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4397	021402	02070008	SWM Facility - Ch 5	0.23	Minor	Minor	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4402	021402	02070008	SWM Facility - Ch 3	0.28	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4404	021402	02070008	SWM Facility - Ch 3	0.53	Moderate	Significant	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-4405	021402	02070008	SWM Facility - Ch 5	0.19	Minor	Significant	No Impact	Low	Long Term	No Impacts	Medium	None	N/A	None
WAS-4406	021402	02070008	SWM Facility - Ch 3	0.43	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4407	021402	02070008	SWM Facility - Ch 5	0.26	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4411	021402	02070008	SWM Facility - Ch 3	0.12	Moderate	Significant	Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH
WAS-4412	021402	02070008	SWM Facility - Ch 5	0.11	Moderate	Significant	No Impact	Low	Temp/Daily	Minor	Hard	None	N/A	None
WAS-4413	021402	02070008	SWM Facility - Ch 3	0.11	Moderate	Moderate	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH
WAS-4414	021402	02070008	SWM Facility - Ch 3	0.21	Moderate	Moderate	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	None
WAS-4415	021402	02070008	SWM Facility - Ch 5	0.40	Moderate	Clear	No Impact	Low	Temp/Daily	Minor	Medium	None	N/A	None
WAS-4423	021402	02070008	SWM Facility - Ch 3	0.11	Moderate	Clear	Impact	Low	Long Term	Moderate	Medium	None	Moderate	OH
WAS-4424	021402	02070008	SWM Facility - Ch 3	0.28	Moderate	Clear	Impact	Low	Temp/Daily	Minor	Medium	None	N/A	OH & UG
WAS-4425	021402	02070008	SWM Facility - Ch 3	0.34	Moderate	Clear	Impact	Low	Long Term	Minor	Medium	None	Moderate	OH
WAS-4426	021402	02070008	SWM Facility - Ch 3	0.17	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4427	021402	02070008	SWM Facility - Ch 3	0.24	Moderate	Clear	Impact	Low	Long Term	Moderate	Medium	None	Moderate	OH
WAS-4428	021402	02070008	SWM Facility - Ch 3	0.16	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-4429	021402	02070008	SWM Facility - Ch 3	0.49	Moderate	Minor	No Impact	Low	Long Term	Moderate	Hard	None	Moderate	OH
WAS-4431	021402	02070008	SWM Facility - Ch 5	0.41	Moderate	Clear	No Impact	Low	Temp/Daily	Moderate	Hard	None	N/A	OH
WAS-4432	021402	02070008	SWM Facility - Ch 5	0.32	Significant	Clear	No Impact	Low	Temp/Daily	Moderate	Medium	None	N/A	OH
WAS-4433	021402	02070008	SWM Facility - Ch 3	0.39	Moderate	Clear	No Impact	Low	Long Term	Minor	Hard	None	Moderate	OH
WAS-4441	021402	02070008	SWM Facility - Ch 5	0.11	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4442	021402	02070008	SWM Facility - Ch 5	0.25	Moderate	Clear	No Impact	Low	Temp/Daily	Moderate	Medium	None	N/A	OH
WAS-4443	021402	02070008	SWM Facility - Ch 3	0.26	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4444	021402	02070008	SWM Facility - Ch 5	0.23	Moderate	Clear	No Impact	Low	Temp/Daily	Moderate	Hard	None	N/A	OH & UG
WAS-4445	021402	02070008	SWM Facility - Ch 3	0.13	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4446	021402	02070008	SWM Facility - Ch 3	0.19	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4447	021402	02070008	SWM Facility - Ch 3	0.20	Moderate	Moderate	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4448	021402	02070008	SWM Facility - Ch 3	0.19	Moderate	Moderate	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	UG
WAS-4449	021402	02070008	SWM Facility - Ch 5	0.29	Moderate	Moderate	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-4450	021402	02070008	SWM Facility - Ch 3	0.10	Significant	Clear	No Impact	Low	Temp/Daily	Minor	Minor	None	Minimal	None
WAS-4451	021402	02070008	SWM Facility - Ch 3	0.15	Moderate	Moderate	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-4452	021402	02070008	SWM Facility - Ch 3	0.13	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4453	021402	02070008	SWM Facility - Ch 3	0.21	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4454	021402	02070008	SWM Facility - Ch 3	0.20	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-4455	021402	02070008	SWM Facility - Ch 3	0.13	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4456	021402	02070008	SWM Facility - Ch 3	0.29	Significant	Clear	No Impact	Low	Temp/Daily	Moderate	Hard	None	Minimal	UG
WAS-4457	021402	02070008	SWM Facility - Ch 3	0.28	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Moderate	UG
WAS-4459	021402	02070008	SWM Facility - Ch 3	0.19	Moderate	Significant	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4462	021402	02070008	SWM Facility - Ch 5	0.22	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-4463	021402	02070008	SWM Facility - Ch 5	0.22	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4464	021402	02070008	SWM Facility - Ch 3	0.11	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-4474	021402	02070008	SWM Facility - Ch 3	0.25	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4475	021402	02070008	SWM Facility - Ch 3	0.29	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Major	OH
WAS-4476	021402	02070008	SWM Facility - Ch 3	0.30	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4477	021402	02070008	SWM Facility - Ch 3	0.10	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-4478	021402	02070008	SWM Facility - Ch 3	0.41	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH
WAS-4479	021402	02070008	SWM Facility - Ch 3	0.11	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Major	OH
WAS-4481	021402	02070008	SWM Facility - Ch 3	0.42	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4482	021402	02070008	SWM Facility - Ch 3	0.35	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	OH
WAS-4483	021402	02070008	SWM Facility - Ch 3	0.13	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Minimal	None
WAS-4484	021402	02070008	SWM Facility - Ch 3	0.73	Moderate	Clear	No Impact	Low	Temp/Daily	Minor	Minor	None	Moderate	UG
WAS-4486	021402	02070008	SWM Facility - Ch 3	0.37	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	UG
WAS-4487	021402	02070008	SWM Facility - Ch 3	0.29	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	UG
WAS-4488	021402	02070008	SWM Facility - Ch 3	0.18	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	UG
WAS-4489	021402	02070008	SWM Facility - Ch 5	0.21	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4491	021402	02070008	SWM Facility - Ch 3	0.56	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	None
WAS-4493	021402	02070008	SWM Facility - Ch 3	0.45	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4494	021402	02070008	SWM Facility - Ch 3	0.38	Significant	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Minimal	None
WAS-4495	021402	02070008	SWM Facility - Ch 5	0.16	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4497	021402	02070008	SWM Facility - Ch 3	0.22	Significant	Clear	Impact	Low	Long Term	No Impacts	Minor	None	Moderate	UG

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1") (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-4498	021402	02070008	SWM Facility - Ch 3	0.23	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Moderate	UG
WAS-4499	021402	02070008	SWM Facility - Ch 3	0.19	Significant	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4502	021402	02070008	SWM Facility - Ch 3	0.45	Significant	Clear	Impact	Low	Long Term	No Impacts	Minor	None	Moderate	None
WAS-4506	021402	02070008	SWM Facility - Ch 3	0.21	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Minimal	None
WAS-4509	021402	02070008	SWM Facility - Ch 3	0.83	Moderate	Clear	Impact	Low	Long Term	Moderate	Hard	None	Moderate	None
WAS-4513	021402	02070008	SWM Facility - Ch 3	0.31	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4516	021402	02070008	SWM Facility - Ch 3	0.59	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Minimal	None
WAS-4517	021402	02070010	SWM Facility - Ch 5	0.44	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4518	021402	02070010	SWM Facility - Ch 5	0.39	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4519	021402	02070010	SWM Facility - Ch 5	0.43	Moderate	Clear	Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4521	021402	02070010	SWM Facility - Ch 5	0.69	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-4523	021402	02070010	SWM Facility - Ch 3	0.38	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Minimal	None
WAS-4532	021402	02070008	SWM Facility - Ch 3	0.31	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH
WAS-4533	021402	02070008	SWM Facility - Ch 3	0.78	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4534	021402	02070008	SWM Facility - Ch 3	0.25	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-4541	021402	02070008	SWM Facility - Ch 3	0.41	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	UG
WAS-4542	021402	02070008	SWM Facility - Ch 3	0.43	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	UG
WAS-4543	021402	02070008	SWM Facility - Ch 3	0.40	Moderate	Clear	Impact	moderate	Long Term	No Impacts	Hard	None	Moderate	UG
WAS-4544	021402	02070008	SWM Facility - Ch 3	0.30	Moderate	Clear	Impact	Moderate	Long Term	No Impacts	Hard	None	Moderate	UG
WAS-4545	021402	02070008	SWM Facility - Ch 3	0.22	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4547	021402	02070008	SWM Facility - Ch 3	0.32	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	Moderate	OH & UG
WAS-4551	021402	02070008	SWM Facility - Ch 3	0.29	Minor	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Minor	None	Moderate	None
WAS-4554	021402	02070008	SWM Facility - Ch 5	0.15	Moderate	Clear	Impact	Low	Temp/Daily	Moderate	Hard	None	N/A	OH & UG
WAS-4559	021402	02070008	SWM Facility - Ch 3	0.31	Minor	Clear	Impact	Low	Temp/Daily	No Impacts	Hard	None	Minimal	OH & UG
WAS-4562	021402	02070008	SWM Facility - Ch 3	0.15	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Major	OH
WAS-4563	021402	02070008	SWM Facility - Ch 3	0.13	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	OH & UG
WAS-4564	021402	02070008	SWM Facility - Ch 3	0.32	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	Moderate	UG
WAS-4568	021402	02070008	SWM Facility - Ch 3	0.10	Moderate	Clear	Impact	Low	Long Term	Minor	Minor	None	Moderate	OH & UG
WAS-4569	021402	02070008	SWM Facility - Ch 3	0.40	Moderate	Clear	Impact	Low	Long Term	Minor	Medium	None	Moderate	OH & UG
WAS-4601	021402	02070008	SWM Facility - Ch 5	0.19	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	N/A	None
WAS-4602	021402	02070008	SWM Facility - Ch 5	0.11	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-4603	021402	02070008	SWM Facility - Ch 5	0.53	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4604	021402	02070008	SWM Facility - Ch 5	0.20	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4606	021402	02070008	SWM Facility - Ch 3	0.35	Moderate	Clear	No Impact	Moderate	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4607	021402	02070008	SWM Facility - Ch 5	0.38	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4609	021402	02070008	SWM Facility - Ch 5	0.14	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4610	021402	02070008	SWM Facility - Ch 3	0.43	Moderate	Clear	No Impact	Low	Temp/Daily	Minor	Hard	None	N/A	OH
WAS-4613	021402	02070008	SWM Facility - Ch 5	0.38	Significant	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4614	021402	02070008	SWM Facility - Ch 5	0.12	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4615	021402	02070008	SWM Facility - Ch 5	0.26	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-4619	021402	02070008	SWM Facility - Ch 5	0.11	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-4622	021402	02070008	SWM Facility - Ch 5	0.12	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4623	021402	02070008	SWM Facility - Ch 5	0.11	Moderate	Minor	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH
WAS-4624	021402	02070008	SWM Facility - Ch 5	0.20	Moderate	Minor	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None

Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-4625	021402	02070008	SWM Facility - Ch 5	0.10	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4626	021402	02070008	SWM Facility - Ch 5	0.54	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4627	021402	02070008	SWM Facility - Ch 5	0.13	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4628	021402	02070008	SWM Facility - Ch 5	0.24	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	None
WAS-4629	021402	02070008	SWM Facility - Ch 5	0.13	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-4630	021402	02070008	SWM Facility - Ch 5	0.47	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4631	021402	02070008	SWM Facility - Ch 5	0.33	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4632	021402	02070008	SWM Facility - Ch 5	0.11	Moderate	Clear	Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4633	021402	02070008	SWM Facility - Ch 5	0.20	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4635	021402	02070008	SWM Facility - Ch 5	0.38	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	None
WAS-4636	021402	02070008	SWM Facility - Ch 5	0.27	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	OH
WAS-4637	021402	02070008	SWM Facility - Ch 5	0.01	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	UG
WAS-4638	021402	02070008	SWM Facility - Ch 5	0.59	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-4639	021402	02070008	SWM Facility - Ch 5	0.58	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Medium	None	N/A	None
WAS-4640	021402	02070008	SWM Facility - Ch 5	0.40	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4641	021402	02070008	SWM Facility - Ch 5	0.07	Moderate	Clear	Impact	Low	Temp/Daily	Moderate	Minor	None	N/A	OH & UG
WAS-4642	021402	02070008	SWM Facility - Ch 5	0.28	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4644	021402	02070008	SWM Facility - Ch 5	0.30	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4645	021402	02070008	SWM Facility - Ch 5	0.15	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4646	021402	02070008	SWM Facility - Ch 5	0.39	Moderate	Clear	Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4647	021402	02070008	SWM Facility - Ch 5	0.28	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4651	021402	02070008	SWM Facility - Ch 5	0.24	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4652	021402	02070008	SWM Facility - Ch 5	0.23	Minor	Clear	No Impact	High	Temp/Daily	No Impacts	Medium	None	N/A	OH & UG
WAS-4653	021402	02070008	SWM Facility - Ch 5	0.11	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4655	021402	02070008	SWM Facility - Ch 5	0.14	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-4656	021402	02070008	SWM Facility - Ch 5	0.21	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Hard	None	N/A	OH & UG
WAS-4657	021402	02070008	SWM Facility - Ch 5	0.34	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-4658	021402	02070008	SWM Facility - Ch 5	0.23	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
WAS-4659	021402	02070008	SWM Facility - Ch 5	0.10	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-4660	021402	02070008	SWM Facility - Ch 5	0.19	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH
WAS-5301	021402	02070008	SWM Facility - Ch 5	0.14	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	UG
WAS-5302	021402	02070008	SWM Facility - Ch 5	0.13	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-5304	021402	02070008	SWM Facility - Ch 5	0.30	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-5306	021402	02070008	SWM Facility - Ch 5	0.68	Minor	Clear	Impact	Low	Long Term	Moderate	Minor	None	N/A	OH
WAS-5307	021402	02070008	SWM Facility - Ch 3	1.12	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH
WAS-5308	021402	02070008	SWM Facility - Ch 5	0.57	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-5310	021402	02070008	SWM Facility - Ch 3	0.66	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Minimal	None
WAS-5311	021402	02070008	SWM Facility - Ch 5	0.26	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	OH & UG
WAS-5312	021402	02070008	SWM Facility - Ch 5	0.21	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Minor	None	N/A	OH & UG
WAS-5313	021402	02070008	SWM Facility - Ch 3	0.86	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	Moderate	OH & UG
WAS-5314	021402	02070008	SWM Facility - Ch 3	1.05	Moderate	Clear	No Impact	Low	Long Term	No Impacts	Hard	None	Moderate	OH & UG
WAS-5315	021402	02070008	SWM Facility - Ch 3	0.66	Minor	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-5316	021402	02070008	SWM Facility - Ch 5	0.29	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None
WAS-5317	021402	02070008	SWM Facility - Ch 5	0.62	Minor	Clear	No Impact	Low	Long Term	No Impacts	Minor	None	N/A	None



Site Name	MDE 6-Digit Watershed	Federal 8-Digit HUC	Potential SWM Facility Type	Potential IAT for WQ Credit (Pe = 1”) (AC)	Discipline Ratings (see main document for Discipline Rating information)									
					Constructability	Cultural Resources	Forestry	Hazardous Materials	Maintenance of Traffic	Wetlands & Waterways	Right-of-Way	Section 4(f)	Structures	Utilities
WAS-5601	021402	02070008	SWM Facility - Ch 3	0.96	Significant	Minor	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
WAS-5602	021402	02070008	SWM Facility - Ch 3	1.04	Moderate	Clear	No Impact	Low	Temp/Daily	No Impacts	Medium	None	Moderate	OH & UG
Grosvenor-Luxamor	021402	02070010	Stream Restoration	18.93	N/A	Clear	Impact	High	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH & UG
MLS4A2	021402	02070008	Stream Restoration	14.15	N/A	Clear	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	UG
MLS5A	021402	02070008	Stream Restoration	18.92	N/A	Clear	Impact	Moderate	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	UG
MO_00018	021402	02070008	Stream Restoration	43.40	N/A	Minor	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH
MO_00029	021402	02070010	Stream Restoration	6.50	N/A	Clear	Impact	Moderate	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH
MO_00047A	021402	02070008	Stream Restoration	38.40	N/A	Minor	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH
MO_00051	021402	02070008	Stream Restoration	17.40	N/A	Clear	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	None
MO_1540045	021402	02070008	Stream Restoration	30.80	N/A	Clear	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH & UG
MPAO_0014	021402	02070010	Stream Restoration	37.10	N/A	Minor	Impact	Moderate	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH
MPAO_0015	021402	02070010	Stream Restoration	2.80	N/A	Minor	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH
MPAO_0022-Backup	021402	02070010	Stream Restoration	31.60	N/A	Clear	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH
MPOC-0009	021402	02070008	Stream Restoration	36.30	N/A	Clear	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH
MPOC_0006_0010_0011	021402	02070008	Stream Restoration	11.50	N/A	Clear	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	None
MPOC_0008	021402	02070008	Stream Restoration	27.20	N/A	Clear	Impact	Moderate	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	None
PG_00079-Backup	021402	02070010	Stream Restoration	17.20	N/A	Clear	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	None
SSS_150023	021402	02070010	Stream Restoration	17.90	N/A	Clear	Impact	Low	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH
SSS_160023-Backup	021311	02060006	Stream Restoration	26.50	N/A	Clear	Impact	Low	Long Term	Self-Mitigating	Hard	Severe	N/A	OH & UG
SSS_160065_160066	021402	02070010	Stream Restoration	17.80	N/A	Moderate	Impact	Moderate	Temp/Daily	Self-Mitigating	Hard	Severe	N/A	OH