



Prince William County

Municipal Separate Storm Sewer System (MS-4) Permit Program Plan

Permit No.
VA0088595

Prince William County Department of Public Works
Watershed Management Branch
5 County Complex Court, Suite 170
Prince William, Virginia 22192

FY2019

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I. Introduction

The Prince William County MS-4 Program plan describes all programs and actions taken by the County to ensure compliance with Virginia Stormwater Management Program (VSMP) MS-4 Permit # VA0088595. Prince William County was issued its latest permit on December 17th, 2014 by the Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (DEQ). This plan is a single document outlining policies, ordinances, strategies, checklists, and other documents detailing the various programs the County establishes to meet permit requirements and is considered an enforceable document under the state permit. This program has been designed to reduce the discharge of pollutants to the “maximum extent practicable”.

II. Permittee Responsibilities

1. Roles and Responsibilities

Prince William County clearly defines the roles and responsibilities of each of the permittee’s departments, divisions or subdivisions in maintaining permit compliance in this Program Plan document. If the County relies on another party to implement portions of the MS4 Program Plan, an agreement in writing will be pursued. Roles and responsibilities shall be updated as necessary. Where the County relies on another party to implement a portion of this state permit, responsibility for compliance with this state permit shall remain with the permittee. Each annual report will include a current list of Roles and Responsibilities. Any written agreements with other parties responsible for permit compliance will be pursued and reported as gathered.

In the event the County is unable to meet conditions of this state permit due to circumstances beyond the permittee's control, a written explanation of the circumstances that prevented permit compliance shall be submitted to the Department in the Annual Report. Circumstances beyond the permittee’s control may include abnormal climatic conditions; weather conditions that make certain requirements unsafe or impracticable; or unavoidable equipment failures caused by weather conditions or other conditions beyond the reasonable control of the permittee (operator error and failure to properly maintain equipment are not conditions beyond the control of the permittee). All issues of noncompliance will be reported in the County’s Annual Report.

2. Legal Authority

Prince William County will maintain and utilize its legal authority authorized by the Commonwealth of Virginia to control discharges to and from the MS4 in the manner established by the specific requirements of this state permit. The legal authority shall enable the permittee to control the contribution of pollutants to its MS-4; prohibit illicit discharges; control the discharge of spills and the dumping or disposal of materials other than stormwater; require compliance with conditions in ordinances, permits, and contracts; and carry out all inspections necessary to determine compliance and noncompliance with permit conditions. Legal authorities to control discharges to and from the County’s MS-4 are outlined in each section of this Program Plan document.

3. MS-4 Program Resources

Prince William County will submit to the Department a copy of each fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit. The County will describe its method of funding for the stormwater program and include a copy of the fiscal year's budget with proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit, with each Annual Report.

4. Permit Maintenance Fees

Permit maintenance fees will be paid in accordance with Part XIII of the VSMP regulations (9VAC25-870- 700 et seq.). A statement regarding payment of the applicable MS4 permit maintenance fee, including check date and check number shall be included with each Annual Report.

5. MS-4 Program Plan

The Program Plan is considered a "working document" as updates and modifications will be incorporated throughout the life of the current MS-4 permit. Updates to this document will be conducted in the following manner:

- 1) Adding (but not eliminating or replacing) components, controls, or requirements to the MS4 Program Plan may be made by the permittee at any time. Additions shall be reported as part of the annual report.
- 2) Updates and modifications to specific standards and specifications, schedules, operating procedures, ordinances, manuals, checklists and other documents routinely evaluated and modified are authorized under this state permit provided that the updates and modifications are performed in a manner (i) that is consistent with the conditions of this state permit, (ii) that ensure public notice and participation requirements established in this state permit are followed, and (iii) that the updates and modifications are documented in the Annual Report.
- 3) Replacing, or eliminating without replacement, any ineffective or infeasible strategies, policies and Best Management Practices (BMPs) specifically identified in this state permit with alternate strategies, policies, and BMPs may be requested at any time. Such requests shall include the following:
 - (a) An analysis of how and/or why the BMPs, strategies, or policies are ineffective or infeasible including information on whether the BMPs, strategies, or policies are cost prohibitive;
 - (b) Expectations on the effectiveness of the replacement BMPs, strategies, or policies;

- (c) An analysis of how the replacement BMPs are expected to achieve the goals of the BMPs to be replaced;
- (d) A schedule for implementing the replacement BMPs, strategies, and policies; and
- (e) An analysis of how the replacement strategies and policies are expected to improve the permittee's ability to meet the goals of the strategies and policies being replaced.

Requests or notifications shall be made in writing to the Department (DEQ) and signed in accordance with 9VAC25-870-370 of the VSMP regulations. Modification to the MS4 Program Plan shall become effective and enforceable upon written approval from the Department. Major modifications to the MS4 Program Plan as defined in 9VAC25-870-10 may require that the permit be reopened and modified pursuant to 9VAC25-870-630.

III. Cost Benefit Analysis

Prince William County will submit to DEQ a cost benefit analysis of pollutant reduction priority projects. These projects will be selected from completed watershed studies and will be prioritized according to a number of metrics determined by County. The County's cost benefit analysis can be found in the Watershed Management Plan, linked below.

<http://www.pwcgov.org/government/dept/publicworks/environment/Pages/MS-4-Permit.aspx>

Prince William County has a program in place to develop Watershed Management Plans. This document will be placed on the County's website no later than 30 days after being submitted to the Department. Updates to this document will be placed on the County's website no later than 30 days after approval. Public Comment is obtained during the development of each watershed study that contributes to the overall Watershed Management plan.

IV. Program Implementation

a. Construction and Post Construction Site Runoff from Areas of New Development and Development on Prior Developed Lands

BMP a.1 – Continue to Implement an Erosion and Sediment Control Program

Permit requirement I.B.2.a)1)

“The permittee shall implement a local erosion and sediment control program consistent with the Virginia Erosion and Sediment Control Law §62.1-44.15:51 of the Code of Virginia and Virginia Erosion and Sediment Control Regulations 9VAC25-840 et seq. and a stormwater management program consistent with the Virginia Stormwater Management Act §62.1-44.15:24 of the Code of Virginia and Virginia Stormwater Management Program Regulations 9VAC25-870 et seq.”

Prince William County implements an erosion and sediment control program consistent with the Virginia Erosion and Sediment (E&S) Control Law §62.1-44.15:51 of the Code of Virginia and Virginia Erosion and Sediment Control Regulations 9VAC25-840 et seq. Since the entire County is designated as the Chesapeake Bay Preservation & Management Area, the minimum threshold for requiring E&S permit is 2,500 square feet.

Prince William County maintains a Stormwater Management (SWM) program that is consistent with the Virginia Stormwater Management Act §62.1-44.15:24 of the Code of Virginia and Virginia Stormwater Management Program Regulations 9VAC25-870 et seq. The SWM requirements for Development on Prior Developed Lands are consistent with the State regulations.

The land development plan review, inspection and enforcement of E&S and SWM regulations are performed by a single agency in Prince William County. The Environmental Services Division of the Department of Public Works is directly responsible for administering the program. The County continues to require the Responsible Land Disturbance (RLD) certifications prior to issuing the land disturbance permits.

Prince William County continues to implement a robust program to address the post-construction discharges from new developments and redevelopments by ensuring the long-term operation and maintenance of these SWM controls (see section IV.h).

The County has developed a mobile application that works alongside its EnerGov Enterprise software to increase the efficiency and consistency of the land development/re-development process. This application is designed to manage the land disturbance, Erosion and Sediment control, and Construction General Permit process, including the coordination of follow-up inspections and tracking of enforcement actions.

- **Objective and Expected Result**
 - Implement local Erosion and Sediment Control and Stormwater Management Programs.
- **Responsible Party**
 - Prince William County, Environmental Services
- **Implementation and Schedule**
 - Prince William County currently implements an erosion and sediment control program consistent with Virginia Erosion and Sediment Control Law, and a stormwater management program consistent with the Virginia Stormwater Management Act as outlined by the permit. Our plan reviewers and site inspectors will continue to be state-certified at appropriate levels.
- **Documentation and Reporting**
 - Each Annual Report will include the number of land disturbing activities approved County-wide, and the total number of acres disturbed during such activities.
 - Each Annual Report will include the number of land disturbing activity inspections conducted and the number and type of each enforcement action taken County-wide.
 - The County’s strategy to address maintenance of stormwater management controls that are designed to treat stormwater runoff solely from the individual residential lot on which they are located has been included in the County’s initial Annual Report, and in Appendix 2 of this document.
 - A list of all known land disturbing projects that qualify under the ‘Grandfathering’ provision of the VSMP regulations found at 9VAC25-870-48 can be found in Appendix 2 of this document.
 - Each Annual Report shall include a summary of actions taken by the permittee to implement Part I.B.2.a)1) and 2) of this state permit.
- **Governing Policy**
 - [Virginia Erosion and Sediment Control Law §62.1-44.15:51 of the Code of Virginia](#)
 - [Virginia Erosion and Sediment Control Regulations 9VAC25-840](#)
 - [Virginia Stormwater Management Act §62.1-44.15:24 of the Code of Virginia](#)
 - [Virginia Stormwater Management Program Regulations 9VAC25-870](#)
 - [Prince William County Design & Construction Standards Manual Section 700 \(DCSM\)](#)
 - [Chapter 23.2 – Storm Water Management in Prince William County Code](#)

BMP a.2 – Identify all Legal Authorities More Stringent than Legal Requirements Set Forth by Erosion and Sediment Control and Stormwater Management Law

Permit requirement I.B.2.a)2)

“The permittee shall identify in the MS4 Program Plan all legal authorities for erosion and sediment control and stormwater management that are more stringent than those required under 9VAC25- 840 et seq. and/or 9VAC25-870 et seq. that have been adopted in accordance with § 62.1-44.15:65 and/or § 62.1-44.15:33 of the Code of Virginia. “

The County’s SWM regulations are more stringent than the State regulations only in certain areas. VSMP regulations allowed the localities to adopt criteria more stringent than VSMP with proper justification based on specific watershed studies. Alternatively, more stringent regulations that pre-

existed prior to January 1, 2013 were exempt. Based on this exemption, Prince William County retained more stringent regulations on flood control in critical watersheds to control the 25-year storm to prevent localized flooding events. In addition, the County retained its authority to require the control of the 100-year flood for proposed developments located upstream of existing residential developments with required minimum lot sizes less than one acre and adjoining special flood hazard areas. These requirements are in addition to the required control of 2-year and 10-year frequency storms per state regulations.

- **Objective and Expected Result**
 - Identify all legal authorities for erosion and sediment control and stormwater management programs that are more stringent than those required under applicable Erosion and Sediment Control and Stormwater Management Law.
- **Responsible Party**
 - Prince William County, Environmental Services
- **Implementation and Schedule**
 - Any legal authorities more stringent than applicable E&S and SWM law are included in this document.
- **Documentation and Reporting**
 - There are no specific reporting requirements in the permit. Any changes to legal authorities to be more stringent than that of current E&S and SWM law will be reflected in the Program Plan.
- **Governing Policy**
 - [Prince William County Design & Construction Standards Manual Section 700 \(DCSM\)](#)
 - [Chapter 23.2 – Storm Water Management in Prince William County Code](#)

b. Retrofitting on Prior Developed Lands

BMP b.1 – Implementation of TMDL priority Projects

Permit Requirement I.B.2.b)

“From the prioritized list of conceptual projects required in Part I.B.1, the permittee shall select at least seven conceptual projects for completion no later than 54 months after the effective date of this state permit. Projects implemented to meet the requirements of Part I.D of this state permit (TMDL Action Plan and Implementation for the Chesapeake Bay Special Condition or TMDL Action Plans other than the Chesapeake Bay TMDL) may be used to meet the requirements of this special condition. For retrofit projects that do not serve to meet the requirements of Part I.D, the permittee shall submit a summary of projects implemented during the reporting period with each annual report including type of land use being retrofitted, retrofit performed, completion date or anticipated completion date, total acreage retrofitted, total impervious and pervious acreage, and location by latitude and longitude (decimal degrees).”

Prince William County successfully completed its priority projects for the current permit cycle to achieve the required Total Reductions. The Total Reductions achieved are much more than those needed for the first permit cycle. The County will carry over the excess credits into subsequent permit cycle(s), as needed and approved by DEQ in the letter attached in Appendix 3. In addition, Prince William County has entered into water quality credit exchange agreements with Prince William County Service Authority and the Upper Occoquan Sewage Authority (UOSA). The excess credits the County receives annually from these agencies for Nitrogen, Phosphorous and Sediments will be kept and tracked as a “Reserve”, should the County decide to use these in the future. At this time, the required projects are proposed without utilizing the excess credits that the County will receive from credit transfer.

For the second permit cycle, Prince William County will select projects in coordination with the cost-benefit analysis presented in the County’s Watershed Management plan (Section III). Retrofit requirements may be fulfilled by projects initiated in response to the Chesapeake Bay and local TMDL action plan conditions, or the Chesapeake Bay Special Condition as described in Part I.D of the County’s permit. This includes stream restoration projects, reforestation projects, and BMP retrofits. As required, a summary of projects that do not conform with section I.D of the County’s MS-4 permit will be provided as part of the Annual Report in the manner as described in section I.B.2.b) of the permit. This will include the type of land use retrofitted, the type of retrofit performed, the completion date, total acreage contributing to the drainage area of the retrofit, total pervious and impervious area within that drainage area, and the location of the project.

- **Objective and Expected Result**
 - Identify, develop, and implement seven priority retrofit projects.
- **Responsible Party**
 - Prince William County, Environmental services
- **Implementation and Schedule**
 - The County continues to identify, develop, and implement priority retrofit projects on prior developed lands.
- **Documentation and Reporting**
 - Prince William County will track and report the number of retrofit projects, type of land use being retrofitted, total acreage retrofitted and retrofit type by the watershed identified in the retrofit study and location for those projects not conforming with TMDL Action plans, Chesapeake Special Conditions, or TMDL Action Plans other than the Chesapeake Bay TMDL.
 - Each Annual Report will include a status update for those projects for which implementation began during the reporting period.
- **Governing Policy**
 - [Prince William County Design & Construction Standards Manual Section 700 \(DCSM\)](#)
 - [Article II, Ch. 23.2 – Storm Water Management in Prince William County Code](#)
 - Prince William County [Watershed Management Plan](#)
 - Prince William County TMDL Action Plan

c. Roadways

BMP c.1 – Maintain Accurate List of Prince William County Owned Roadways

Permit Requirement I.B.2.c)1)

“No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee-maintained roads, streets, and parking lots that includes the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs.”

Although the Virginia Department of Transportation (VDOT) maintains a majority of the roadways and right of way areas within Prince William County, the County is responsible for the maintenance of some roadways and parking lots. VDOT operates under its own phase II stormwater permit, and coordination regarding issues with MS-4 physical-interconnectivity is required as part of both permittee’s MS-4 requirements (see section IV.m). The County currently operates and maintains parking lots associated with County facilities.

- **Objective and Expected Result**
 - Identify all roadways for which Prince William County is responsible for maintenance activities.
- **Responsible Party**
 - Prince William County, Environmental Services
 - Prince William County, Buildings and Grounds
- **Implementation and Schedule**
 - Prince William County currently maintains a list of County maintained streets, roads, and parking lots. The miles of roadway treated and not treated by BMPs has also been identified. PWC will continue to update this list as necessary.
- **Documentation and Reporting**
 - There are no specific reporting requirements in the permit. Each Annual Report will summarize ongoing efforts to meet the permit requirements. A list of County Owned roadways, streets, and parking lots including street names and miles treated and not treated by BMPs, is included in Appendix 4 of this document.
- **Governing Policy**
 - [Prince William County Design & Construction Standards manual Section 600](#)

BMP c.2 – Good Housekeeping Practices on County Maintained Roadways

Permit Requirement I.B.2.c)2)

“No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained roads, streets and parking lot maintenance, equipment maintenance, and material storage designed to minimize pollutant discharge.”

The County maintains streets, roads, and parking lots in a manner to minimize the discharge of pollutants to the maximum extent practicable. Prince William County contracts out most maintenance activities for County maintained parking lots, streets, and roadways. These activities include sweeping, line painting, and asphaltting. Due to this, a minimal amount of materials are stored as part of Buildings and Grounds (B&G) roadway maintenance activities. These protocols

are applied across the County, and deal with issues such as equipment maintenance, material storage, and minimizing pollutant discharges.

- **Objective and Expected Result**
 - Minimize pollutant discharges to the maximum extent practicable on County maintained streets, roads, and parking lots.
- **Responsible Party**
 - Prince William County, Buildings and Grounds
- **Implementation and Schedule**
 - PWC currently implements roadway maintenance protocols consistent with permit requirements. These protocols are updated as needed.
- **Documentation and Reporting**
 - The County will include a copy of the written protocols associated with permittee maintained roads, streets and parking lot maintenance, equipment maintenance, and material storage designed to minimize pollutant discharge with the Annual Report.
- **Governing Policy**
 - [Buildings and Grounds Ground Maintenance Supervisor Manual – Section 13](#)
 - [Prince William County, SOP 2.007.1](#)

BMP c.3 – Good Housekeeping Practices for Winter Weather Maintenance

Permit Requirement I.B.2.c)3) & 4)

“3) Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.

4) The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks or other paved surfaces.”

Prince William County Buildings and Grounds is responsible for snow removal at all county facilities maintained by B&G. Snow removal activities are not performed on any other County maintained roads, streets, or parking lots. Salt, sand, and calcium chloride are the specified materials used in snow removal activities and no urea, or nitrogen/phosphorous based products are used.

- **Objective and Expected Result**
 - Minimize pollutant discharges from snow removal activities on County Maintained streets, roads, and parking lots.
- **Responsible Party**
 - Prince William County, Buildings and Grounds
- **Implementation and Schedule**
 - PWC currently implements roadway maintenance protocols consistent with permit requirements. These protocols are currently being updated to better reflect permit conditions.
- **Documentation and Reporting**
 - The County will include a copy of the written protocols associated with permittee maintained roads, streets and parking lot maintenance, equipment maintenance, and material storage designed to minimize pollutant discharge with the Annual Report.

- **Governing Policy**
 - [Buildings and Grounds Ground Maintenance Supervisor Manual – Section 15](#)
 - [Prince William County, SOP 2.007.3](#)

d. Pesticide, Herbicide, and Fertilizer Application

BMP d.1 – Identify Nutrient Applied County Lands

Permit Requirement I.B.2.d)1)(a)

“No later than 12-months after the effective date of this state permit the permittee shall identify all permittee lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude shall be provided for each such piece of permittee land.”

Prince William County is dedicated to minimizing the effects of pesticides, herbicides, and fertilizer use on the Chesapeake Bay. The County has identified all lands of which nutrients are applied to a contiguous area of more than one acre. The latitude and longitude of these lands will be reported to DEQ as requested. This data will be used to determine where Nutrient Management plans need to be developed.

- **Objective and Expected Result**
 - Determine County lands where nutrients are applied to a contiguous area greater than one acre.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Parks and Recreation
 - Prince William County, Buildings and Grounds
- **Implementation and Schedule**
 - The County has identified all lands where nutrients are applied to an area greater than one contiguous acre. This list will be maintained on an annual basis.
- **Documentation and Reporting**
 - The number of acres of County owned land where nutrients are applied to greater than one contiguous acre, including the latitude and longitude of each County land, is included in Appendix 5 of this document.
- **Governing Policy**
 - [Virginia Nutrient Management Standards and Criteria](#)

BMP d.2 – Develop and Implement Turf and Landscape Management Plans

Permit Requirement I.B.2.d)1)(b)

“The permittee shall develop and implement turf and landscape nutrient management plans on all permittee lands where nutrients are applied to a contiguous area of more than one acre. The following measurable goals are established for the development and implementation of turf and landscape nutrient management plans.

- (1) *No later than 24-months after the effective date of this state permit, not less than 15% of all identified acres will be covered by turf and landscape nutrient management plans.*

- (2) *No later than 36-months after the effective date of this state permit, not less than 40% of all identified acres will be covered by turf and landscape nutrient management plans.*
- (3) *No later than 48-months after the effective date of this state permit, not less than 75% of all identified acres will be covered by turf and landscape nutrient management plans.”*

The County has successfully implemented Turf and Landscape nutrient management plans for County lands where nutrients are applied to greater than one contiguous acre. As of January, 2019, all applicable County lands are covered by NMPs.

Nutrient Management Plans are prepared by certified nutrient management planners in accordance with § 10.1-104.2 of the Code of Virginia. The County will track the total acreage of lands upon which nutrients are applied, as well as the acreage of County lands where turf and landscape nutrient management plans are required and implemented as required by the permit.

- **Objective and Expected Result**
 - Develop and implement Turf and landscape nutrient management plans for County lands where nutrients are applied to greater than one contiguous acre.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Parks and Recreation
 - Prince William County, Buildings and Grounds
- **Implementation and Schedule**
 - Prince William County accomplished 100% coverage of its lands with NMPs as of January, 2019.
 - The County will continue to track the total acreage of lands upon which nutrients are applied, as well as the acreage of County lands where turf and landscape nutrient management plans are required and implemented as required by the permit.
- **Documentation and Reporting**
 - Each Annual Report will include an update on the County’s compliance with its turf and landscape NMP implementation schedule. This includes a list of properties of which NMP have been implemented and the total cumulative acres covered under NMPs.
- **Governing Policy**
 - [Virginia Nutrient Management Standards and Criteria](#)
 - [§ 10.1-104.2 of the Code of Virginia](#)

BMP d.3 – Develop and Employ Good Housekeeping Practices for storage transport and disposal of pesticides, herbicides, and fertilizers.

Permit Requirement I.B.2.d)2) and 3)

“The permittee shall continue to employ good housekeeping/pollution prevention measures in the application, storage, transport and disposal of pesticides, herbicides and fertilizers.”

In addition,

“The permittee may regulate the use, application, or storage of fertilizers pursuant to §3.2-3602 of the Code of Virginia.”

Prince William County currently works with its municipal facilities to ensure good housekeeping practices are followed. This includes the storage, transport, and disposal of pesticides, herbicides, and fertilizers. The County follows all guidelines set forth in the Pesticide Applicators and Fertilizer Applicators licensing for storage and use, as well as the manufactures storage, disposal and use recommendations. All pesticides, herbicide, and fertilizer applications are performed by commercial applicators or registered technicians. Applicators are required to receive training regularly.

No additional local fertilizer requirements, beyond state requirements, are in place at this time.

- **Objective and Expected Result**
 - Employ good housekeeping practices for the application, storage, transport, and disposal of herbicides, pesticides, and fertilizers.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Parks and Recreation
 - Prince William County, Risk Management
 - Prince William County, Buildings and Grounds
 - Prince William County, Mosquito and Forest Pest Management
- **Implementation and Schedule**
 - The County will continue to employ good housekeeping practices for municipal facilities pertaining to the storage, transport and disposal of pesticides, herbicides, and fertilizers. The County also works with citizens through various volunteer organizations to ensure the proper use of these materials.
- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Each Annual Report will summarize ongoing efforts to meet permit requirements.
- **Governing Policy**
 - [Virginia Nutrient Management Standards and Criteria](#)
 - [Prince William County, SOP 3.017.7](#)

BMP d.4 – Track the coverage of Integrated Pest Management Plans on County lands

Permit Requirement I.B.2.d)4)

“The permittee shall track the acreage of county lands managed under Integrated Pest Management Plans.”

All County owned and maintained lands are covered under an Integrated Pest Management Plan. Currently the County maintains lands under IPM plans with the mission of the program to survey, reduce, and control populations of mosquitoes and forest pests when possible. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. The data gathered in the process is analyzed and used to track population trends, determine appropriate control measures and evaluate effectiveness of the control efforts.

Reduction and response consists of implementing IPM pest control measures to suppress populations of mosquitoes, gypsy moths and fall cankerworms. Selective application of environmentally-compatible, EPA-registered products are utilized to control these pests. Several factors from our surveillance program and other environmental factors help in determining treatment options.

- **Objective and Expected Result**
 - Track the acreage of County lands covered by Pest Management Plans.
- **Responsible Party**
 - Prince William County, Mosquito and Forest Pest Management
- **Implementation and Schedule**
 - The County currently maintains a robust Pest Management Program that covers all County lands.
- **Documentation and Reporting**
 - Each Annual Report will track the acres of County lands covered by Integrated Pest Management Plans. Since all lands are covered under IPM, this will include the acreage of Pest Management applications.
- **Governing Policy**
 - [Prince William County, SOP 3.13.1](#)
 - [Prince William County, SOPs 3.17.1, 2, 7, and 8](#)

e. Illicit Discharge and Improper Disposal

BMP e.1 – Prohibit Illicit Discharges and Improper Disposal

Permit requirement I.B.2.e)1):

“Discharges to the MS4 not authorized by this state permit shall be effectively prohibited.

1) In accordance with Part I.A.1.b), certain non-stormwater discharges to the MS4 need not be addressed as illicit discharges or improper disposal. The MS4 Program Plan shall identify any non-stormwater discharges listed under Part I.A.1.b), where the permittee has imposed any

conditions on the discharges to the MS4. The permittee shall prohibit, on a case-by-case basis, any individual non-stormwater discharge (or class of non-stormwater discharges) otherwise allowed under this paragraph that is determined to be contributing significant amounts of pollutants to the MS4.”

Prince William County effectively prohibits non-authorized stormwater discharges through implementation of the County Fire Protection, Zoning, Building Development, and Stormwater Management ordinances. Unlawful discharges to the County’s MS4 are specifically addressed in Chapter 23.2, Article II, Stormwater Pollution, of the Prince William County Code of Ordinances.

Section 23.2-4.1(b) of the Prince William County Code of Ordinances defines authorized non-stormwater discharges. These discharges are the same as those listed in Part I.A.1.b) of the County’s MS4 permit. The County will prohibit, on a case-by-case basis, any individual non-stormwater discharge (or class of non-stormwater discharge) otherwise allowed in Part I.A.1.b) that the County determines to contributing significant amounts of pollutants to the MS4.

- **Objective and Expected Result**
 - Prohibit discharges not authorized by the MS4 permit to the County’s MS4.
- **Responsible Party**
 - Department of Public Works, Watershed Management
- **Implementation and Schedule**
 - Chapter 23.2, Article II, Stormwater Pollution, was ratified by the Prince William County Board of Supervisors in 2003. The ordinance will be updated on an as needed basis.
- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Any changes to Chapter 23.2, Article II, Stormwater Pollution, of the Prince William County Code of Ordinances will be reported in the appropriate annual report.
- **Governing Policy**
 - [Article II, Section 23.2-4.1 of Prince William County’s Stormwater Pollution Code of Ordinances](#)

BMP e.2 – Sanitary Sewer Exfiltration Abatement Program

Permit requirement I.B.2.e)2):

“The permittee shall minimize exfiltration from sanitary sewers into the MS4 by reporting to the Prince William County Service Authority (PWCSA) areas in the system where maintenance and/or repair may be needed when identified by County staff.

The permittee shall continue to follow-up with the PWCSA to identify the efforts taken to limit the exfiltration of sanitary sewage into the MS4 including maintenance and repair activities.”

Wastewater treatment in Prince William County is comprised primarily of two sanitary sewer systems and individual septic systems. The sanitary sewer systems are maintained and operated by the Prince William County Sanitary Sewer Service Authority (PWCSA) and Dale Services Corporation, both of which operate under their own VPDES permits. PWCSA is a public authority

while Dale Services Corporation is a private entity. Prince William County is not responsible for the inspection and maintenance of the sanitary sewer system; however, the County works closely with the PWCSA to identify and correct deficiencies within their sanitary sewer network. PWCSA has an ongoing infiltration and inflow check program for identifying and correcting defects in its sanitary sewer systems.

The identification and correction of deficiencies is aided by Prince William County through its Dry Weather Monitoring, Stormsewer Maintenance, General Stormwater Discharge, and Stream Restoration programs. Cross connections, leaks, and other maintenance issues are discovered as non-stormwater discharges within the stormsewer network through the County's Dry Weather Monitoring and Stormsewer Maintenance programs. Citizens can report leaks and cross connections discovered discharging through the stormsewer system through the County's Stormwater Webpage. Sanitary sewer infrastructure exposed to potential damage as a result of degrading streams and waterways are protected through projects associated with the County's Stream Restoration Program. Prince William County reports concerns to the PWCSA when sanitary sewer system maintenance and repairs are needed. Additionally, the County will meet with PWCSA periodically to identify unknown high-risk parcels through use of the PWCSA Industrial Waste Survey. The County maintains communication with PWCSA to document follow-up actions taken on maintenance issues. The PWCSA oversees all new construction on sanitary sewer system components and is responsible for the proper installation and operation of the system.

- **Objective and Expected Result**
 - Minimize sanitary sewer and other sanitary system discharges into the MS4 through coordination with PWCSA to identify and correct deficiencies.
- **Responsible Party**
 - Prince William County Service Authority
 - Prince William County, Department of Public Works
- **Implementation and Schedule**
 - Prince William County will continue to work with PWCSA personnel to identify and mitigate sanitary sewer issues. PWCSA provides applicable reporting measures to the County.
- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Each annual report will summarize ongoing efforts to meet the permit requirements.
- **Governing Policy**
 - [Article II, Chapter 23 of Prince William County Municipal Code – Sewers and Sewage Disposal](#)

BMP e.3 – Reduce the Discharge of Floatables

Permit requirement I.B.2.e)3):

“The permittee will continue to implement a program to reduce the discharge of floatables (e.g. litter and other human-generated solid refuse) in accordance with Part I.C.3.”

Prince William County promotes several programs to reduce and mitigate the discharge of floatables. The County partners with outside organizations and promotes their efforts and events focusing on the reduction of floatables. These include the Adopt-A-Spot and Adopt-A-Stream

programs. The Adopt-A-Spot program is a litter cleanup and recycling program that is administered by Keep Prince William Beautiful (KPWB). The Prince William County Soil and Water Conservation District (PWCSWCD) undertakes stream cleanups through their Adopt-A-Stream program.

Prince William County, in coordination with KPWB, developed a program dedicated to the labeling of storm drains throughout the County. These labels identify a storm drain as discharging to the Chesapeake Bay and remind citizens not to dump items, fluids, etc., down the storm drain. Public outreach initiatives that focus on eliminating illicit discharge and litter are included in this program. KPWB partners with local volunteers to complete program objectives, involve local citizens, and provide educational services.

Lastly, Prince William County has developed a Floatables Monitoring Program to periodically evaluate streams for trash and debris input as well as enlist volunteers to collect litter from 6 sites throughout the County. The Floatables Monitoring Program is developed by the County and run by the PWCSWCD. Greater detail on this program is included in Section V.3 of this Program Plan.

- **Objective and Expected Result**
 - Monitor and reduce the discharge of floatables in coordination with a Floatables Monitoring Program.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Neighborhood Services
- **Implementation and Schedule**
 - The County will continue its cleanup activities and partnerships with outside organizations on cleanup efforts. See Section V.3 for information on the County’s Floatables Monitoring Program.
- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Each annual report will summarize ongoing efforts to meet the permit requirements.
- **Governing Policy**
 - [SOP 7.033.1 – Partnership with Volunteer Prince William](#)
 - [Litter Crew Supervisors Manual – Section 7](#)
 - [MOU – Prince William Soil and Water Conservation district](#)

BMP e.4 – Proper Disposal of Wastes

Permit requirement I.B.2.e)4):

“The permittee shall prohibit the dumping or disposal of used motor vehicle fluids, household hazardous wastes, sanitary sewage, grass clippings, leaf litter, and animal wastes into the MS4. The permittee shall ensure the implementation of programs to collect used motor vehicle fluids (such as oil and antifreeze) for recycling, reuse, or proper disposal and to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycling, reuse, or proper disposal. Such programs shall be readily available to all private residents and shall be publicized and promoted on a regular basis but not less than twice per year.”

Chapter 23.2, Article II, Stormwater Pollution, of the Prince William County Code of Ordinances prohibits the dumping or disposal of used motor vehicle fluids, household hazardous wastes, sanitary sewage, grass clippings, leaf litter, and animal wastes into the MS4.

Prince William County residents may properly dispose of used motor vehicle fluids and household hazardous waste (HHW) at the Prince William County Landfill and Balls Ford Road Compost Facility. There is no charge to County residents for this service. The program is publicized and promoted continuously on the County's Household Hazardous Waste webpage:

<http://www.pwcgov.org/government/dept/publicworks/trash/Pages/Household-Hazardous-Waste.aspx>. In accordance with the MS4 permit, the program will be publicized and promoted to residents through another mechanism at least twice per year.

- **Objective and Expected Result**
 - o Implement a program to collect used motor fluids and household hazardous wastes that is publicized and promoted no less than twice per year.
- **Responsible Party**
 - o Prince William County, Solid Waste
- **Implementation and Schedule**
 - o The County will continue to implement a program for the recycling of used motor fluids and household hazardous wastes. These programs are promoted on a regular basis through the webpage and will be promoted through other means no less than twice per year.
- **Documentation and Reporting**
 - o There is no specific reporting requirement in the permit. Each annual report will summarize ongoing efforts to meet the permit requirements.
- **Governing Policy**
 - o [Article II, Section 23.2-4.1 of Prince William County's Stormwater Pollution Code of Ordinances](#)

BMP e.5 - Discharge Elimination Programs

Permit requirements I.B.2.e)5) & 6):

"5) The permittee shall continue to implement a program to locate and eliminate illicit discharges and improper disposal into the MS4. This program shall include dry weather screening activities to locate portions of the MS4 with suspected illicit discharges and improper disposal, as described in Part I.B.2.l)(1) of this state permit.

6) The permittee shall require the elimination of illicit discharges and improper disposal practices within 30-days of discovery. Where elimination of an illicit discharge within 30-days is not possible, the permittee shall require an expeditious schedule for removal of the discharge. In the interim, the permittee shall require the operator of the illicit discharge to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4."

This permit requirement is satisfied through the implementation of Prince William County's Illicit Discharge Detection and Elimination (IDDE) program. The program includes Dry Weather

Monitoring (Section IV.1, BMP 1.1), Wet Weather Monitoring (Section IV.1, BMP 1.2), and Industrial and High Risk Monitoring (Section IV.g).

In addition to the monitoring programs, Prince William County promotes discharge identification and elimination awareness through its public outreach programs (Section IV.j, Public Education and Participation) and the training of County staff (Section IV.k, Training). The County also conducts shopping center surveys to evaluate the pollution discharge potential on site. These surveys involve checking all dumpsters, grease tanks, inlets, outfalls, salt/sand stockpiles and more.

By issuance of a Notice of Violation, discharges are required per IDDE program procedure to be eliminated within 30 days of discovery, unless removal is not possible within that timeframe. In these instances, reasonable and prudent measures to minimize discharge will be taken and an action plan for mitigation/removal will be required.

- **Objective and Expected Result**
 - Locate and eliminate illicit discharges through periodic inspection programs, public outreach initiatives, and staff training.
- **Responsible Party**
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - Prince William County implements a program to locate and eliminate illicit discharges as documented in the IDDE Program Manual. The manual also documents the procedures for post-inspection trackdown and enforcement.
- **Documentation and Reporting**
 - Each annual report will include a list of illicit discharges identified, the source, a description of follow up activities, and whether the illicit discharge has been eliminated.
- **Governing Policy**
 - [Prince William County Illicit Discharge Detection and Elimination Manual \(Appendix 13\)](#)

f. Spill Prevention and Response

BMP f.1 – Coordination with FMO

Permit Requirements I.B.2.f)

“The permittee shall continue to implement a program that coordinates with the fire department and other County Departments resources to prevent, contain, and respond to spills that may discharge into the MS4. The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity), and legal requirements for private entities within the permittee’s jurisdiction.”

The County’s Department of Fire and Rescue is the lead County agency responsible for hazardous spill response. Prince William County participates in the Commonwealth Department of Emergency Management Services’ regional Hazardous Materials response programs and maintains a National Incident Management System Type 1 HAZMAT Team for emergency response.

The County's Department of Fire & Rescue (DFR) responds to all complaints of large spills and hazardous illicit discharge. If the complaints relate to sewage or potable water, the appropriate agency, such as, Prince William County Service Authority or Virginia American Water (formally Dale Services Corp.) will be contacted. The complaints on the malfunctioning septic systems and drain fields are referred to the County's Health Department. The County staff makes every effort to direct complaints to the appropriate agency as expeditiously as possible.

- **Objective and Expected Result**
 - Prevent and mitigate hazardous material spills within Prince William County. Smaller type illicit discharges will be handled by PWC Watershed Management Division through its Illicit Discharge Program (see BMP e.5 above), while larger spills that contain hazardous materials are handled and enforced by the PWC Fire Marshal's Office.
- **Responsible Party**
 - Prince William County Fire Marshal's Office
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - Prince William County currently maintains its spill prevention and response program through its Fire Marshall's office. Coordination between the County's Watershed Management division and Fire Marshalls office on spill prevention and response will continue.
- **Documentation and Reporting**
 - Each Annual Report will contain a list of spills, the source and a description of follow-up actions taken.
- **Governing Policy**
 - [Article IV, Ch. 9 of the Prince William County Municipal Code](#)

g. Industrial and High Risk Runoff

BMP g.1 – Identify all Industrial and High Risk Dischargers

Permit Requirements I.B.2.g)1)

“The permittee shall maintain, and update as necessary, a list of all known industrial and high-risk dischargers to the MS4. This list shall include VPDES industrial stormwater permits.”

The County maintains a list of all known VPDES Industrial Stormwater permitted and High Risk facilities. The identification and monitoring of Industrial and High risk dischargers of Prince William County is accomplished through Prince William County's Illicit Discharge Detection and Elimination Program. These facilities are identified as those who are monitored under the States VPDES Industrial Stormwater program, and those determined to be “High Risk”. A high risk discharger is described as any municipal landfills; other treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, disposal and recovery facilities; or facilities that are subject to EPCRA Title III, Section 313. Any industrial or commercial discharger

deemed to be contributing a significant pollutant load to the County's MS-4 is also classified as a High Risk facility.

High Risk and VPDES Industrial Stormwater permitted facilities are identified through coordination with DEQ. The County requests updated lists of VPDES, "no-exposure", and individually permitted facilities from DEQ NVRO on a periodic basis. This list is provided in each Annual Report.

- **Objective and Expected Result**
 - Develop and maintain a list of all VPDES and High Risk dischargers to the County's MS-4 system.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Solid Waste Department
- **Implementation and Schedule**
 - Prince William County currently maintains a list of all known VPDES Industrial Stormwater permitted and High Risk facilities.
- **Documentation and Reporting**
 - The County currently maintains a list of all known VPDES Industrial Stormwater permitted and High Risk dischargers. This list will be updated periodically to reflect current conditions. Each Annual Report will summarize ongoing efforts to meet permit requirements including updated lists of facilities.
- **Governing Policy**
 - [Prince William County Illicit Discharge Detection and Elimination Manual – Industrial and High Risk](#)
 - [SOP 3.047.5 – Industrial and High Risk Runoff Facilities Inspection](#)

BMP g.2 – Develop Prioritized Schedule for Monitoring VPDES and High Risk Outfalls

Permit Requirements I.B.2.g)2)

“No later than 12-months after the effective date of this state permit, the permittee shall develop and implement a prioritized schedule and procedure to inspect outfalls of facilities with VPDES industrial stormwater permits at the point of connection to the MS4. Prioritization may be based on historical discharges, local water quality impairments, industrial category, or other methods selected by the permittee. The permittee shall inspect all VPDES industrial stormwater permitted outfalls connected to its MS4 a minimum of once every five years.”

Outfalls of VPDES and High Risk facilities are determined using GIS analysis according to specific protocols outlined in the Prince William County's IDDE Program Manual ([Appendix 13](#)). Outfalls are prioritized and inspected according to a probability of pollutant discharge. This probability takes in account an assumed potential for a discharge to occur, possible pollutant discharge effect according to the type of facility and its operations, and the potential for environmental damage according to the facilities proximity to environmentally sensitive areas. This analysis is performed using GIS, and is updated periodically. Outfall prioritization follows an iterative process that incorporates in-field observations. As outfalls are monitored under the County's Dry Weather Monitoring Program ([Appendix 13](#)), those which are determined to have a high potential for pollutant discharge are identified as High Risk and added to the prioritized schedule the next time it is updated. Outfalls of facilities are inspected according to the County's Dry Weather Monitoring protocols ([Appendix 13](#)). Outfalls of all VPDES Industrial Stormwater permitted facilities will be inspected a minimum of once during the permit cycle.

- **Objective and Expected Result**
 - o Develop and maintain a prioritized list of VPDES and High Risk facility outfalls for inspection under the PWC VPDES and High Risk Monitoring Program. Inspect outfalls of all VPDES Industrial Stormwater permitted facilities a minimum of once during the permit cycle.
- **Responsible Party**
 - o Prince William County, Watershed management
- **Implementation and Schedule**
 - o Prince William County currently maintains a list of outfalls prioritized for inspection of VPDES and High Risk facilities. This list is updated on a periodic basis. Outfalls are inspected according to the developed prioritized schedule. Procedures are documented as part of the County's IDDE Program Manual.
- **Documentation and Reporting**
 - o The County will maintain a list of all industrial and high risk dischargers.
 - o Each annual report shall report on implementation of the inspection schedule and include a list of the facilities and/or facility outfalls inspected during the reporting period.
- **Governing Policy**
 - o [Prince William County IDDE Manual – Industrial and High Risk](#)
 - o [SOP 3.047.5 – Industrial and High Risk Runoff Facilities Inspection](#)

BMP g.3 – Review DMR Reports provided by VPDES Permitted Facilities

Permit Requirements I.B.2.g)3)

” The permittee shall review copies of discharge monitoring reports (DMRs) submitted to the permittee by VPDES industrial stormwater permitted facilities as part of the permittee's investigations of significant pollutant loadings. The permittee may conduct additional

monitoring, or may require the facility to conduct additional monitoring, of any stormwater discharges it believes may be a source of significant pollutant loadings.”

Prince William County requests and reviews Discharge Monitoring Reports (DMRs) from all applicable (non-exempt) VPDES permitted facilities that discharge into the County’s MS-4. Prince William County may conduct additional monitoring, or may require the facility to conduct additional monitoring, of any stormwater discharges it believes may be a source of significant pollutant loadings. Facilities that discharge in to the County’s MS-4 and do not provide the DMR’s will be directed to DEQ for compliance review (BMP g.5).

- **Objective and Expected Result**
 - Ensure the submission and review of DMRs from VPDES permitted facilities that discharge into the County’s MS-4 System.
- **Responsible Party**
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - Prince William County currently requests DMRs from VPDES permitted facilities that discharge into its MS-4. This is scheduled to be continued for the length of the permit cycle.
- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Any applicable facility which fails to provide the County with DMRs as requested will be referred to DEQ for compliance review.
- **Governing Policy**
 - [SOP 3.047.5 – Industrial and High Risk Runoff Facilities Inspection](#)

BMP g.4 – Identify High Risk Dischargers Not Covered under VPDES Program or Virginia State Water Control Law

Permit Requirements I.B.2.g)4) & 7)

“The permittee shall coordinate with the Department to report any non-VPDES permitted industrial facility from which the permittee has evidence that a significant pollutant load is entering the MS4 system. Inspections of facilities for which the permittee has evidence of significant pollutant loading may be carried out in conjunction with other county programs.”

In addition,

“The permittee shall maintain a list of any industrial and/or commercial stormwater dischargers not regulated under the Virginia State Water Control Law that it determines may be contributing a significant pollutant loading to the MS4. This list may be individual discharges or categories of discharges.

(a) Outfalls from these facilities shall be included in the prioritized inspection schedule.

(b) *The list shall include, but shall not be limited to: major automotive facilities such as repair shops, body shops, auto detailers, tire repair shops and service stations.*

(c) *The permittee shall require control measures as necessary and/or appropriate for stormwater discharges from these dischargers.”*

As outfalls for facilities determined to have a high risk for pollutant discharge are inspected, those which do not fall under VPDES permitting requirements or Virginia State Water Control Law are identified. These facilities non-VPDES High Risk facilities are identified through a robust GIS analysis. Using County land-use information, land-uses that are identified to have a high potential for the discharge of pollutants are isolated and identified. Alternatively, during IDDE program activities additional facilities which are determined to potentially contribute pollutants to the stormsewer system are identified and added to the list of non-VPDES High Risk discharges. Outfalls from these facilities are included in the prioritized outfall inspection schedule described in BMP g.2. Any facility found to be discharging significant pollutants to the stormsewer system will be required to adopt control measures to prevent these discharges from entering the County’s MS-4 under appropriate regulatory ordinance since they cannot be referred to DEQ for VPDES compliance permitting review. If access to facilities that fall under these conditions cannot be obtained by watershed staff, assistance from the PWC Fire Marshal’s office will be requested.

– **Objective and Expected Result**

- To identify high risk facilities discharging into the County’s MS-4 who cannot be covered under a VPDES permit or Virginia State Water Control Law, and limit pollutant discharges from these sources.

– **Responsible Party**

- Prince William County, Watershed Management
- Prince William County, Fire Marshalls Office

– **Implementation and Schedule**

- Prince William currently monitors outfalls of all High Risk dischargers under its IDDE program. This includes any non-VPDES permitted facilities.

– **Documentation and Reporting**

- There is no specific reporting requirement in the permit. Non-VPDES high risk discharge outfall inspections will be reported as defined in BMP g.2. Each Annual Report will summarize ongoing efforts to meet permit requirements.

– **Governing Policy**

- [SOP 3.047.5 – Industrial and High Risk Runoff Facilities Inspection](#)
- [PWC IDDE Manual – Industrial and High Risk Section](#)

BMP g.5 – Refer Facilities in Noncompliance to DEQ for Review

Permit Requirements I.B.2.g)5)

“The permittee shall refer the following facilities to the Department of Environmental Quality, Northern Regional Office, for DEQ compliance review under the Virginia State Water Control Law:

(a) Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit;

(b) Facilities and operations identified pursuant to 40 CFR Part 122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.

(c) Any VPDES industrial stormwater permit facility where there is evidence of significant pollutant loadings to the MS4.

(d) Facilities that do not submit signed copies of DMRs to the permittee as required under a VPDES industrial stormwater permit.”

PWC is required to refer the following facilities to the Department of Environmental Quality, Northern Regional Office, for DEQ compliance review under the Virginia State Water Control Law:

- Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit;
- Facilities and operations identified pursuant to 40 CFR Part 122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.
- Any VPDES industrial stormwater permit facility where there is evidence of significant pollutant loadings to the MS4.
- Facilities that do not submit signed copies of DMRs to the permittee as required under a VPDES industrial stormwater permit.

- **Objective and Expected Result**
 - To report to DEQ any facility that is non-compliant with VPDES permit requirements.
- **Responsible Party**
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - Prince William County currently reports issues of non-compliance to DEQ.
- **Documentation and Reporting**
 - Each annual report will include a list of referrals to DEQ.
- **Governing Policy**
 - [SOP 3.047.5 – Industrial and High Risk Runoff Facilities Inspection](#)
 - [PWC IDDE Manual – Industrial and High Risk Section](#)

h. Storm Sewer Infrastructure Management

BMP h.1 – Continue Inspection of Publicly Maintained SWM Facilities and Stormsewer System

Permit Requirements I.B.2.h)1)

“For stormwater management (SWM) facilities maintained by the permittee and residential properties where SWM facilities, BMP and Storm Drainage Systems qualify for permittee maintenance (excluding apartments and mobile home parks), the following conditions apply:

- (a) The permittee shall provide for adequate long-term operation and maintenance of its SWM facilities in accordance with written inspection and maintenance procedures included in the MS4 Program Plan.*
- (b) The permittee shall, at a minimum, inspect annually all SWM facilities. The permittee may choose to implement an alternative schedule to inspect these SWM facilities based on a risk assessment that includes facility type and expected maintenance needs provided that the alternative schedule is included in the MS4 Program Plan in accordance with plan modifications as listed in Part I.A.7.a) of this state permit.*
- (c) The permittee shall conduct maintenance on SWM facilities as necessary.*
- (d) The permittee shall continue its stormwater system inspection program and shall inspect no less than 20% of the MS4 annually.*
- (e) The permittee shall dispose of all wastes and wastewaters collected during stormwater system cleaning in accordance with appropriate law and regulations.*
- (f) The permittee shall obtain any required state or federal permit necessary to complete maintenance activities.”*

Prince William County continues a program for the inspection and maintenance of SWM facilities maintained by the County. Publicly maintained facilities include those owned by HOA’s and residential communities or by the County Board of Supervisors. At these facilities basic maintenance such as mowing and trash removal are the responsibility of the property owner while more extensive, “major”, maintenance responsibilities are performed by County staff. This may include the replacement of fencing, replacement of signage, dredging, and the repair of damn embankments or drainage structures.

County Maintained SWM/BMP facilities are typically inspected under two scenarios; through the general inspection program, which occurs at a minimum once a year, or as requested by an impacted property owner. All inspections are managed by Environmental Services Staff through the use of a mobile application. This application tracks required inspection and follow-up dates,

prioritizes maintenance needs, assists in assigning maintenance responsibilities to appropriate staff, manages/compiles maintenance reports, and promotes efficiency and consistency across inspections. Maintenance is prioritized by the severity of maintenance needed for the facility. Maintenance on publicly maintained SWM facilities is performed by Prince William County Construction Services as necessary. All applicable permitting requirements will be met during maintenance activities and all wastes/wastewaters collected during stormwater system cleaning will be disposed of in accordance with appropriate laws and regulations.

In addition, Prince William County conducts routine inspection of its storm drainage system, inspecting no less than 20% of the MS-4 annually. Stormsewer is inspected using visual inspection protocols, as well as using CCTV. The County continues to implement a program to inspect all new drainage systems (eligible for County maintenance) using video cameras, prior to accepting the systems into the County's maintenance program.

- **Objective and Expected Result**
 - Ensure the inspection and maintenance of publicly maintained SWM/BMP facilities and stormwater system in Prince William County through periodic inspections.
- **Responsible Party**
 - Prince William County, Environmental Services
 - Prince William County, Construction Services
- **Implementation and Schedule**
 - Prince William County implements a program for SWM/BMP facility maintenance and inspection along with a stormsewer inspection program to insure proper maintenance of publicly owned and operated SWM systems.
- **Documentation and Reporting**
 - Each annual report shall include a list of activities including inspections, maintenance, and repair of stormwater infrastructure operated by the permittee County-wide as required in Part I.B.2.h)1). This comprises the total number of stormwater structures operated by the permittee, the type and number of structures inspected and maintained, the total miles of storm sewer system owner and/or operated by the permittee, and the miles of storm sewer system inspected.
- **Governing Policy**
 - [SOP 3.047.1 – Publicly Maintained SWM/BMP Facilities Inspection and Maintenance](#)
 - [SOP 3.047.3 – Stormwater Facility Infrastructure Inventory Procedures](#)

BMP h.2 – Continue Inspection of Privately Maintained SWM Facilities with maintenance agreements

Permit Requirements I.B.2.h)2)(a)(1) & (2)

“The permittee shall continue to implement a program to ensure proper maintenance of each privately maintained SWM facility that discharges into the MS4 system as documented in the MS4 Program Plan.

- (1) Beginning with the effective date of this state permit, maintenance agreements may be used but are not required for stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot on which they are located provided that the permittee has developed and implemented a strategy to address maintenance of such stormwater management controls. Should the permittee choose a strategy other than a maintenance agreement, such a strategy shall be provided in writing no later than 12 months after the effective date of this state permit and shall include periodic inspections, homeowner outreach and education, or other methods targeted at promoting the long term maintenance of such facilities.*
- (2) For SWM facilities that are privately maintained and for which maintenance agreements have been established between the permittee and the owner, the permittee shall:
 - (i) Inspect privately maintained SWM facility no later than three years after certification of proper design is submitted to the permittee.*
 - (ii) Inspect all privately maintained facilities no less than one time during the term of this state permit; and,*
 - (iii) Conduct follow-up inspections to ensure that required maintenance has been completed.”**

The County has a program in place to inspect no less than 20 percent of the privately maintained facilities annually and to pursue enforcement actions in instances where maintenance is needed. All privately maintained facilities will be inspected within the five year permit cycle and new facilities are required to be inspected no later than three years after completion. These facilities are comprised of many structures including, dry ponds, wet ponds, constructed wetlands, bioretention facilities, proprietary stormwater inlet BMP facilities, underground storage facilities, and infiltration trenches.

Facilities are selected for inspection starting with the oldest facilities in the County. Facilities in compliance with maintenance requirements are scheduled for re-inspection during the following permit cycle. Facilities with deficiencies are provided adequate time to repair issues and the owner is provided with a detailed report outlining those deficiencies. If deficiencies are not corrected within the time period allotted, as determined by follow-up inspections, a second notice is given and additional time is provided for repairs. If deficiencies still have not been corrected, Prince William County Construction Services conducts maintenance on the facility and the facility owner is required to reimburse the County for expenses. Facility owners are urged to self-report maintenance activities to the County in the form of a detailed engineering report. These reports are due to the County by June 30th of each year. As with the inspection of publicly maintained facilities, a mobile application is used for the tracking of inspections and inspections. This mobile application ensures consistent, accurate inspections are performed according to each facility type, as well as manages follow-up and enforcement actions.

- **Objective and Expected Result**
 - Ensure the inspection and maintenance of privately maintained BMP/SWM facilities in Prince William County through periodic inspections.
- **Responsible Party**
 - Prince William County, Environmental Services
- **Implementation and Schedule**
 - The County implements a program to inspect privately maintained SWM facilities to ensure maintenance responsibilities are completed according to the facilities maintenance agreement. All privately maintained SWM facilities will be inspected during the permit cycle.
- **Documentation and Reporting**
 - Each annual report shall provide a summary of actions taken by the permittee to address failure of privately maintained SWM facilities owners to abide by maintenance agreements.
 - Each annual report will include a County-wide list of activities including inspections performed and notifications of needed maintenance and repair of stormwater facilities not operated by the County as required by Part I.B.2.h)2).
- **Governing Policy**
 - [SOP 3.047.2 – Privately Maintained SWM/BMP Facilities Inspection and Maintenance](#)

BMP h.3 – Continue Inspection of Privately Maintained SWM Facilities without maintenance agreements

Permit Requirements I.B.2.h)2)(a)(3)

“The permittee shall continue to implement a program to ensure proper maintenance of each privately maintained SWM facility that discharges into the MS4 system as documented in the MS4 Program Plan.

(3) For SWM facilities that are privately maintained and for which maintenance agreements have been not established between the permittee and the owner, the permittee shall implement a pilot program consisting of the following:

- (i) No later than 12-months after the effective date of the permit, the permittee shall develop draft procedures and policies that are designed to ensure that inspection and maintenance of privately maintained SWM facilities are being conducted. The draft procedures and policies should identify any expected limitations to the permittee’s ability to implement these procedures and policies and should propose options to overcome these limitations;*
- (ii) No later than 15-months after the effective date of the permit, the permittee shall implement these draft procedures and policies including the proposed options identified in subsection Part I.B.2.h)2)a)(3)(i) above; and,*

- (iii) *No later than 36-months after the effective date of the permit, the permittee shall modify the draft policy and procedures required by Part I.B.2.h)2)a)(3)(i) for the inspection of privately maintained SWM facilities based on the findings of Part I.B.2.h)2)a)(3)(ii) and finalize the inspection procedures.”*

Most privately maintained SWM facilities in Prince William County have established maintenance agreements. There are two scenarios where privately maintained SWM facilities may not have agreements, those under bond, and those which may have been established before the requirement of maintenance agreements.

The County currently implements procedures and policies designed to insure the inspection and maintenance of privately maintained SWM facilities after their construction. Before a privately maintained facility can be removed from bond, it requires a maintenance agreement to ensure the proper upkeep of the facility. The maintenance agreement gives the County the legal authority to inspect and require facilities to maintain good working order.

Alternatively, some SWM/BMP facilities were constructed before maintenance agreements were required by the County. These facilities are bound to maintenance responsibilities through notes in the Deed of Easements, and on the plat of the facility. These notes are assumed to ensure inspection and maintenance in replacement of a dedicated maintenance agreement. Facility inspection and maintenance requirements are conducted in the same manner as if a maintenance agreement existed for the facility.

- **Objective and Expected Result**
 - Insure the inspection and maintenance of privately maintained BMP/SWM facilities in Prince William County which do not have established maintenance agreements.
- **Responsible Party**
 - Prince William County, Environmental Services
- **Implementation and Schedule**
 - Prince William County currently implements policies and procedures to ensure maintenance for privately maintained SWM facilities and for which maintenance agreements have not been established.
- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Each annual report will summarize ongoing efforts to meet permit requirements.
- **Governing Policy**
 - [SOP 3.047.2 – Privately Maintained SWM/BMP Facilities Inspection and Maintenance](#)

BMP h.4 – Identify MS-4 Service Area and Regulated Outfalls

Permit Requirements I.B.2.h)3) & 4) & 5)

“3) No later than 18 months after the effective date of this state permit, the permittee shall map the MS4 service area and each MS4 outfall. The following information shall be tracked for each MS4 outfall:

(a) An individual identification number, local watershed, sixth order HUC and receiving water;

(b) The latitude and longitude in decimal degrees;

(c) New outfalls shall be tracked upon their inclusion into the MS4.

4) No later than 24 months after the effective date of this state permit, the permittee shall identify the following for each local watershed, sixth order HUC, and Chesapeake Bay Segment:

(a) The number of impervious, pervious, and total acres served by the MS4 as of June 30, 2009.

(b) The number of impervious, pervious, and total acres treated by stormwater controls as of June 30, 2009,

5) No later than 54 months after the effective of this state permit, the permittee shall update each of the following:

(a) The number of impervious, pervious, and total acres served by the MS4 for each Prince William County local watershed, sixth order HUC and Chesapeake Bay segment.

(b) The number of impervious, pervious and total acres treated by stormwater controls.”

An integral part of developing the County’s Chesapeake Bay TMDL action plan is determining the MS-4 regulated area. Prince William County maintains a comprehensive GIS database of SWM facilities and its stormsewer system.

Prince William County has identified areas defined under its MS-4 service area. Working with a contractor, the County has identified the outfalls, stormsewer pipe network, and SWM facilities included in its MS-4 service area. For each outfall an individual tracking number, local watershed, sixth order HUC, and receiving water is included. The latitude and longitude of each regulated outfall is also identified. All new outfalls will be tracked upon inclusion into the County’s MS-4.

Within 24 months of permit issuance [December 17th, 2017], the number of impervious, pervious, and total acres served by the County’s MS-4, along with the number of impervious, pervious and total acres treated by stormwater controls, as of June 30th, 2009 was identified and reported.

No later than 54 months from permit issuance [June 17th, 2019], the number of impervious, pervious, and total acres served by the County’s MS-4 for each local watershed, sixth order HUC, and Chesapeake Bay segment, along with the number of impervious, pervious , and total acres treated by stormwater controls will be identified and reported.

- **Objective and Expected Result**
 - Determine the extent of Prince William County’s MS-4 service area and regulated outfalls.
- **Responsible Party**
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - The County has identified the extent of its MS-4 service area. It will continue to develop information related to stormwater controls, and local watersheds.
- **Documentation and Reporting**
 - The MS4 service area map including outfalls and information included in Part I.B.2.h)3) was submitted to the Department as of June 30th, 2016 per permit requirement I.B.2.h)3). This information is maintained electronically and will continue to be made available to the Department upon request.
 - Within 24 months of permit issuance [December 17th, 2017] the County shall include the information included in Part I.B.2.h)4). The information shall be submitted in a format specified by the Department.
 - No later than 54 months from permit issuance [June 17th, 2019] the county Will provide to the department an updated list of all information requested in Part I.B.2.h)5).
- **Governing Policy**
 - N/A

i. County Facilities

BMP i.1 – Promote Good Housekeeping Practices for Municipal Facility Operations

Permit Requirements I.B.2.i)1)

- (a) *The discharge of permittee vehicle wash water into the MS4 at permittee facilities without authorization from a separate VPDES permit shall be prohibited.*
- (b) *The discharge of wastewater into the MS4 at permittee facilities without authorization by a separate VPDES permit shall be prohibited.*
- (c) *The dumping of collected yard waste and grass clippings into the MS4 shall be prohibited.*
- (d) *Fluids leaked from permittee vehicles shall be prevented from entering the storm sewer system. Leaked fluids shall be cleaned up and disposed of properly, as soon as possible but no later than 24-hours after discovery.*
- (e) *No later than 54-months after the effective date of this state permit, the permittee shall install and maintain markings on all stormwater inlets located on high priority municipal facilities, as defined at Part I.F, and on permittee properties with greater than 2-acres of impervious surface.*

Prince William County promotes good housekeeping practices throughout all its municipal facilities. Through its Environmental Management System (EMS) program and other methods, PWC Watershed Management in partnership with PWC Risk Management enforces good housekeeping at County municipal facilities. The EMS program promotes consistency and accountability in the method for addressing environmental concerns through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, procedures, and processes. This program emphasizes objectives such as the identification and prevention of spills, hazardous material storage and removal, storage tank inspection and maintenance, waste disposal and recycling, proper equipment and material storage, and many other environmental good housekeeping practices. Through the County's EMS program, and County facilities MS-4 program, the discharge of wastewater into the MS-4 at County facilities without prior authorization is prohibited.

Police, fire, and other County vehicles are required to be washed in an environmentally safe manner, allowing no wash water to enter storm drain systems. All vehicles appropriate for commercial car washing facilities are washed in this manner through contracts with carwash facilities throughout Prince William County. Vehicles too large for commercial car washing facilities (boats, large tanker trucks, construction equipment, etc.) and police motorcycles are required to be washed at designated areas in a manner which prevents wash water discharges.

PWC Fleet Management has worked closely with Risk Management and Watershed Management to set up a system to prevent the leaking or spilling of vehicles on site waiting for maintenance. These measures, including all preventative maintenance activities designed to reduce leaking from County vehicles are outlined in the Fleet Operations Manual (appendix 10). Leaked fluids are required to be cleaned up and disposed of properly, as soon as possible but no later than 24-hours after discovery.

In addition to the EMS program, Prince William County promotes good housekeeping activities through other means. Facilities are inspected periodically to ensure good housekeeping practices are being followed. Biennial training is provided to applicable County staff with the goal of educating on proper good housekeeping techniques, preventing the discharge of pollutants, recognizing when a discharge has occurred, and taking the proper steps to prevent discharges from entering the stormsewer in the event they occur. An Illicit Discharge Elimination Policy was created specifically to ensure County-wide compliance with good housekeeping measures outlined in the MS4 permit.

Prince William County's storm drain labeling program targets high priority municipal facilities with greater than two acres of impervious surface to maintain markings on storm drain inlets. Inlets at these facilities have been labeled with storm drain markers as of June 1st, 2019. This program not only labels inlets at high priority municipal facilities, but in multiple areas of the county including high risk shopping centers and residential neighborhoods.

- **Objective and Expected Result**
 - Ensure County facilities are operated and maintained according to good housekeeping practices as outlined in the permit.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Risk Management

- Prince William County, Buildings and Grounds
- Prince William County, Solid Waste
- Prince William County, Public Works
- Prince William County, Parks and Recreation
- Prince William County, Mosquito and Forest Pest Management
- **Implementation and Schedule**
 - The County currently operates programs to promote and facilitate good housekeeping practices in municipal facilities. Applicable SOPs and Manuals will be updated to reflect these programs as needed.
- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Each annual report will summarize ongoing efforts to meet the permit requirements.
- **Governing Policy**
 - Risk Management Manual – Section 1101
 - Buildings and Grounds Manual – pgs. 7-8, 9-11, 17-18
 - Fleet Operations Manual – Pages 24, 25-27 & 33
 - Historic Preservation Facilities Operations Manual –10

BMP i.2 – Identify High Priority Municipal Facilities

Permit Requirements I.B.2.i)2)(a)

The permittee shall identify high priority municipal facilities that do not require a separate VPDES industrial stormwater permit no later than 12-months after the effective date of this state permit;”

The County houses municipal facilities that can have a high potential for industrial type discharges. High Priority municipal facilities are considered as any facility owned and operated by Prince William County that includes composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities and vehicle storage and maintenance yards. Some, like the PWC landfill facility and Balls Ford Road composting facility, are currently covered under their own VPDES permit for stormwater discharges. The County maintains a list of facilities that it has determined as High Priority for stormwater discharge of pollutants. The County determines High Priority facilities through a risk based potential for stormwater pollution analysis. Facilities are first screened for their potential stormwater impact through a desktop analyses. Factors included in this analysis include, operating season, proximity to environmentally sensitive areas, absence/presence of hazardous material storage, absence/presence of construction material storage, absence/presence of vehicle or equipment storage, absence/presence of fueling depot or other fuel storage, and presence/size of parking lot areas. Those with significant potential stormwater impact are then selected for a through on-site inspection. Facilities deemed to be High Priority are presented in the following section (BMP i.3).

- **Objective and Expected Result**
 - Identify High Priority municipal facilities that do not require a separate VPDES industrial stormwater permit.

- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Risk Management
- **Implementation and Schedule**
 - The County has identified all facilities determined to be of High Risk for stormwater pollutants and continues to refine and update this list.
- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Each annual report will summarize ongoing efforts to meet the permit requirements.
- **Governing Policy**
 - N/A

BMP i.3 – Develop SWPPPs for Selected High Priority Municipal Facilities

Permit Requirements I.B.2.i)2)(b)

“The permittee shall develop and/or update and implement individual stormwater pollution prevention plans for each high priority municipal facility identified under Part I.B.2.i)2)(a) no later than 36-months after the effective date of this state permit.”

Facilities that were deemed High Priority and are not eligible, or do not require a separate VPDES permit, will be evaluated for the development of a Stormwater Pollution Prevention Plan (SWPPP). SWPPPs will include a site description that includes a site map showing all outfalls, direction of flows, existing source controls, and receiving water bodies; a checklist of potential pollutants and pollutant sources; all potential non-stormwater discharges; a maintenance schedule for all source controls; policies and procedures implemented at the facility for source reduction; an inspection schedule to ensure source reduction controls are implemented and maintained properly; training schedules for facility employees; procedures for annual evaluations of the facility; and all modifications made as a result of a spill or release of pollutant. The following facilities have been identified as potential High Priority Municipal Facilities, and are currently maintaining SWPPP documents:

ST_NO	ST_NAME	ST_TYPE	CITY	ZIP	Building Description	SWPPP_needed
14811	DUMFRIES	RD	MANASSAS	20112	Fleet Admin Bldg	Yes
7500	BEN LOMOND PARK	DR	MANASSAS	20109	Splashdown Maintenance Bldg	Yes
14418	BRISTOW	RD	MANASSAS	20112	Hellwig Maint. Bldg	Yes
7	COUNTY COMPLEX	CT	WOODBIDGE	22192	PWC Stadium Complex	Yes

- **Objective and Expected Result**
 - Development of SWPPPs for all high priority municipal facilities that qualify.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Risk Management
- **Implementation and Schedule**
 - Municipal facilities will be evaluated for the need for a SWPPP. SWPPPs will be developed for these identified facilities within 36 months of permit issuance.

- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Each annual report will summarize ongoing efforts to meet the permit requirements.
- **Governing Policy**
 - N/A

j. Public Education and Participation

BMP j.1 – Promote Public Reporting of Illicit Discharges

Permit Requirements I.B.2.j)1)(a)

“Promote, publicize, and facilitate public reporting of the presence of illicit discharges or improper disposal of materials into the MS4;”

Educating citizens on illicit discharge prevention raises awareness and increases the reporting of illicit discharges by generating more attention to the issue. The County sees public outreach as an effective and cost efficient way of preventing and discovering illicit discharges, eliminating discharges before they have the chance to happen.

Prince William County has developed multiple avenues for the education of illicit discharges. Through the County’s Clean Water Program, multiple brochures, and videos are available for citizens to educate themselves on stormwater issues. The Clean Water Program focuses on 3 areas; private citizens, local commercial businesses, and local industry. As this program expands it will include proactive distribution of outreach material to business and industry found most likely to generate illicit discharges.

Visiting the illicit discharge page on Prince William County’s website (<http://www.pwcgov.org/government/dept/publicworks/environment/Pages/MS-4-Permit.aspx>) provides citizens with basic information on illicit discharge and how citizens can report them and directs them on the best ways to report these discharges to the County. The website provides information on how to prevent pollution from stormwater runoff,. Along with Prince William County staff, the County also partners with nonprofit organizations such as Keep Prince William Beautiful to distribute information on the identification and prevention of stormwater pollution.

The County maintains an illicit discharge hotline (703-792-7070) and an email address (illicitdischarge@pwcgov.org) which connects citizens directly to Watershed Management staff to report potential environmental issues. Outreach materials are carried by IDDE staff and utilized when visiting sites in the field and may be included with warning and violation letters. Prince William County will continue to implement and improve ways citizens can learn and report illicit discharge issues in the future.

- **Objective and Expected Result**
 - Promote the reporting and identification of illicit discharges.
- **Responsible Party**
 - Prince William County, Watershed Management

- Prince William County, Public Works Department
- **Implementation and Schedule**
 - Prince William County’s Clean Water Program is a public outreach initiative with the goal of improving water quality within Prince William County through public outreach initiatives encouraging public awareness of water quality and environmental issues.
- **Documentation and Reporting**
 - Each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan with recommendations for future changes shall also be included.
- **Governing Policy**
 - Prince William County Clean Water Program

BMP j.2 – Continue to Promote Involvement in Local Water Quality Improvement Projects

Permit Requirements I.B.2.j)1)(b)

“Continue to promote individual and group involvement in local water quality improvement initiatives including the promotion of local restoration and clean-up projects, programs, groups, meetings and other opportunities for public involvement;”

The Department of Public Works plays a crucial role in the community’s efforts to improve water quality, protect water resources and prevent pollution. We have created a number of programs and initiatives for residents, businesses and our County coworkers. Our goal is to educate the public, raise awareness and appreciation for the protection of our local waters and encourage participation in volunteer opportunities.

Prince William County works with several nonprofit and government affiliated organizations to promote involvement in local water quality improvement projects. Public Works sponsors a variety of programs and volunteer opportunities, many of these events have been underway for years.

- Public Works provides funding to Keep Prince William Beautiful to support clean ups to keep litter out of our streams, quarterly litter surveys, and efforts to place storm drain labels.
- Public Works provides funding to help support educational programs on landscape and lawn care for the public through the Virginia Cooperative Extension. Citizens learn about environmentally sound ways to care for their lawns to help reduce fertilizer, herbicides and pesticides from entering streams. The Cooperative Extension offers hundreds of informational pamphlets and a variety of courses throughout the year. Their team of Master Gardeners provides tips and landscaping assistance to the community.
- Public Works provides funding to the Prince William Soil and Water Conservation District to support youth education.

- Public Works provides funding to the Prince William Soil and Water Conservation District to sponsor the Adopt-a-Stream and Floatables Monitoring Programs in the community.
 - Public Works provides funding to the Occoquan Testing Laboratories for water monitoring programs, including Bacteria Source Tracking.
 - Public Works has spoken at a number of community events, HOA meetings, civic organizations and public forums.
- **Objective and Expected Result**
 - Increase public participation in local water quality improvement projects.
 - **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Neighborhood Services
 - Prince William County, Public Works
 - **Implementation and Schedule**
 - The County will continue to work with volunteer organizations to promote public involvement in water quality improvement projects. The County will continue to look for and implement projects with the aim of increasing public awareness in local water quality.
 - **Documentation and Reporting**
 - Each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan with recommendations for future changes shall also be included.
 - **Governing Policy**
 - Prince William County Clean Water Program

BMP j.3 – Promote Integrated Management Practice (IMP) Plans for Public and Private Golf courses

Permit Requirement I.B.2.j)1)(c)

“Continue outreach programs with public and private golf courses located within the county that discharge to the permittee’s MS4 that would encourage implementation of integrated management practice (IMP) plans and techniques to reduce runoff of fertilizer and pesticides;”

Golf courses have the potential to generate a significant amount of high nutrient runoff due to the nature of their operations. Prince William County has developed IMPs for all public golf courses in the County through use of a contractor. The contractor ensures the implementation and maintenance of IMPs and is managed through the Department of Parks and Recreation. Contractors are required to hold applicable Nutrient Management Certifications. The County will continue the promotion of IMP’s for privately maintained courses within its MS-4 service area. IMP’s for private golf courses will be promoted through public outreach initiatives as part of the Clean Water Program. According to the Code of Virginia [§ 10.1-104.5](#) all golf courses, private and public, are required to develop nutrient management plans before July 1, 2017.

- **Objective and Expected Result**
 - Encourage IMP development at private and public golf courses in Prince William County discharging to its MS-4.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Public Works
 - Prince William County, Parks and Recreation
- **Implementation and Schedule**
 - All public golf courses will be covered under IMPs by summer of 2016. The County will continue to develop relationships to ensure all private golf courses are covered under IMP plans.
- **Documentation and Reporting**
 - Each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan with recommendations for future changes shall also be included.
- **Governing Policy**
 - Prince William County Clean Water Program

BMP j.4 – Continue to Promote Public Good Housekeeping Practices

Permit Requirements I.B.2.j)1)(d), (e), (f), (g) & (h)

“(d) Promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes;

(e) Promote and publicize the proper disposal of pet waste and household yard waste;

(f) Promote and publicize the use of the permittee’s litter prevention program;

(g) Promote and publicize methods for residential car washing that minimize water quality impacts;

(h) Promote and publicize the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors;”

Public Works has partnered with citizens, business and organizations on opportunities, projects and events to advance our goals to protect and preserve natural resources. One such collaboration is the Local Environmental Education Partners (LEEP). LEEP focuses on environmental programs and community awareness. The goal is to inspire all citizens to play an active role in protecting our local environment. LEEP members share information, collaborate on efforts, network and combine resources.

The Environment and Natural Resources program of Virginia Cooperative Extension Prince William provides research based information to help citizens improve their lawns and landscapes

without negatively impacting the environment including the Promote and publicize the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors.

VCE conducts a post survey gauging awareness and behavior changes made through educational programming. It tracks program effectiveness and reach by evaluating the number of people educated and the number of people that implement the practices they learn.

We have also created a number of online, printed and video pieces to help educate the public and raise awareness about the issues.

- We enhanced our Environmental Services Web pages to include more information for citizens, local businesses, and local industries on pollution prevention and illicit discharge, as well as an online tour of our stream restoration projects.
- Staff has created a web page dedicated to green tips and practices for the community at www.pwcgov.org/gogreen.
- Working with the County Videography team, we created a Public Service Announcement on protecting our streams from runoff down the storm drains.
- We provide information to the public through web pages, local government news channel, bulletin board items on cable, HOA newsletters, public service announcements and e-notification messages.
- We offer printed information about illicit discharge, picking up after pets and pool maintenance.

Prince William County residents may properly dispose of used motor vehicle fluids and household hazardous waste (HHW) at the Prince William County Landfill and Balls Ford Road Compost Facility. There is no charge to County residents for this service. The program is publicized and promoted continuously on the County's Household Hazardous Waste webpage: <http://www.pwcgov.org/government/dept/publicworks/trash/Pages/Household-Hazardous-Waste.aspx>. In accordance with the MS4 permit, the program will be publicized and promoted to residents through another mechanism at least twice per year.

Finally, the Prince William County Clean Water Program has produced good housekeeping outreach material through additional brochures and videos promoting proper car washing, pesticide and fertilizer use, and general good housekeeping practices.

- **Objective and Expected Result**
 - Promote good housekeeping practices to general citizens. Increase awareness of stormwater issues developed in the average household.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Solid Waste Division

- Prince William County, Neighborhood Services
- Prince William County, Public Works
- **Implementation and Schedule**
 - Materials have been and will continue to be developed and implemented throughout the permit cycle. More in depth schedule of outreach development presented in Appendix 11.
- **Documentation and Reporting**
 - Each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan with recommendations for future changes shall also be included.
- **Governing Policy**
 - Prince William County Clean Water Program

BMP j.5 – Encourage Private Property Owners to Implement Voluntary Stormwater Management Techniques and/or Retrofits

Permit Requirements I.B.2.j)1)(i)

“Encourage private property owners to implement voluntary stormwater management techniques and/or retrofits”

Prince William County will continue to develop programs to encourage private property owners to implement voluntary stormwater management retrofits. Currently, the County partners with the Prince William County Soil and Water Conservation District to encourage private property owners to implement voluntary stormwater management retrofits through the Virginia Conservation Assistance Program. This program promotes cost share incentives for private property owners looking to implement BMPs. As part of this partnership PWCSWCD looks to install at a minimum two voluntary retrofit projects per year.

- **Objective and Expected Result**
 - Encourage private property owners to implement voluntary stormwater management techniques and/or retrofits
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Public Works
- **Implementation and Schedule**
 - Prince William County partners with Prince William County Soil and Water Conservation District to encourage private property owners to implement voluntary stormwater management retrofits through the Virginia Conservation Assistance Program.
- **Documentation and Reporting**
 - Each annual report shall provide a summary of voluntary retrofits completed on private property used to demonstrate pollutant reduction requirements.
 - Each annual report shall provide a summary of voluntary stormwater management techniques encouraged on private property.

- **Governing Policy**
 - [Memorandum of Understanding – PWC and PWCSWCD](#)

BMP j.6 – Continue to Promote Commercial, Institutional and Industrial Good Housekeeping Practices

Permit Requirements I.B.2.j)1)(j)

“Target strategies towards local groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts.”

The County will continue to promote commercial and industrial good housekeeping practices through its Clean Water Program. Outreach material such as brochures, pamphlets, and videos are to be developed focusing on promoting stormwater awareness for local businesses. These businesses include restaurants, shopping centers, grocery stores, gas stations, aggregate materials storage and sales, and many more. Materials will be developed for each type of potential pollutant producing businesses. Restaurants will have a focus on the proper disposal of grease, food waste, and making sure disposal areas are clean. Gas station outreach will be focused on spill prevention and cleanup, trash mitigation, and other good housekeeping practices. Aggregate storage will be focused on the proper storage of such materials to prevent runoff during rain events.

Currently, during dry weather monitoring and general discharge inspections, staff promotes good housekeeping efforts to commercial and industrial businesses. If deficiencies are found, staff works with businesses to improve stormwater good housekeeping practices. For more information on commercial and industrial good housekeeping outreach material development, see Appendix 11 of this document.

- **Objective and Expected Result**
 - Promote good housekeeping practices to commercial and industrial businesses. Increase awareness of stormwater issues at local gas stations, restaurants, shopping centers, etc.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Prince William County, Public Works
- **Implementation and Schedule**
 - Materials to be developed and implemented throughout the permit cycle. More in depth schedule of outreach development presented in Appendix 11.
- **Documentation and Reporting**
 - Each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan with recommendations for future changes shall also be included.
- **Governing Policy**
 - Prince William County Clean Water Program

BMP j.7 – Post Required Documents for Public Viewing

Permit Requirements I.B.2.j)2), 3), and 4)

2) The permittee shall post a copy of this state permit on its web page no later than 30-days after the effective date of this state permit and continue to retain a copy of the permit online for the duration of this state permit.

3) The permittee shall post copies of each annual report on its website no later than 30 days after the report submittal to the Department and continue to retain copies of the annual reports online for the duration of this state permit.

4) The permittee shall post the most current MS4 Program Plan on its website no later than 30 days after the effective date of this permit and maintain a current copy on the website. If the MS4 Program Plan is modified or revised, the updated plan shall be posted within 30 days of the revision(s). Copies of the most current MS4 Program Plan shall be made available for public review upon request of interested parties in compliance with all applicable open records requirements.

The County has posted its MS-4 permit on its website as stated in the permit. As annual reports and program plans are updated, they will be posted on the County's website no later than 30 days from the revision date. All documents are/will be located at the following address:

<http://www.pwcgov.org/government/dept/publicworks/environment/Pages/MS-4-Permit.aspx>

– **Objective and Expected Result**

- Post the County's MS-4 permit, Annual Reports, and Program Plan on the County's website for public viewing.

– **Responsible Party**

- Prince William County, Watershed Management

– **Implementation and Schedule**

- The MS-4 permit is currently on the County's website. The Annual Report and Program Plan will be posted when completed.

– **Documentation and Reporting**

- Documents will be posted on the County's website at: <http://www.pwcgov.org/government/dept/publicworks/environment/Pages/MS-4-Permit.aspx>

– **Governing Policy**

- N/A

k. Training

BMP k.1 – Continue to Train Staff in the Recognition of Illicit Discharges and Good Housekeeping Practices

Permit Regulations I.B.2.k)1), 2), 3) & 7)

“1) The permittee shall provide biennial training to appropriate field personnel in the recognition and reporting of illicit discharges.

2) The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed during road, street, and parking lot maintenance.

3) The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed in and around permittee maintenance and public works facilities.

7) The permittee shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around county recreation facilities.”

Prince William County Staff are trained on the recognition and reporting of Illicit Discharges as well as implementation of good housekeeping practices. Currently all staff, including field personnel, grounds maintenance personnel, County maintenance staff, and parks and recreation staff, are presented basic good housekeeping, spill prevention, and illicit discharge prevention practice training through County Mandated EMS training. This training is conducted biennially at a minimum and is required for all staff including full time parks and rec staff.

The County is conducting additional more in depth training on disposal of universal waste, illicit discharge prevention (vehicle/equipment washing, landscaping, and outdoor construction), and spill prevention and response. These trainings will be offered as online or classroom courses to all employees at a minimum of every two years. Employees with day to day exposure to road, street, and parking lot maintenance work, field activities, and those who are employed in and around County maintenance and public works facilities will be targeted for this training.

– **Objective and Expected Result**

- On a biennial minimum, train all applicable staff in the identification and reporting of illicit discharges, good housekeeping practices, and spill prevention and response.

– **Responsible Party**

- Prince William County, Risk Management
- Prince William County, Buildings and Grounds
- Prince William County, Parks and Recreation
- Prince William County, Public Works Department

- **Implementation and Schedule**
 - The County implements a training program in good housekeeping and pollution prevention practices, as well as, illicit discharge recognition and reporting.
- **Documentation and Reporting**
 - Each annual report shall include a list of training events, the date and the estimated number of individuals attending each event.
- **Governing Policy**
 - TBD

BMP k.2 – Continue to ensure Pesticide and Herbicide Application Occurs in Accordance with Pesticide Control Board Regulations

Permit Requirements I.B.2.k)4)

“The permittee shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia). The requirements of the Virginia Pesticide Control Act are established by the Virginia Pesticide Control Board.”

All applicable County staff and staff of County contractors are required to receive appropriate training in pesticide and herbicide application. These include staff of Parks and Recreation, as well as Environmental Services Mosquito and Forest Pest Management staff. All staff are required to stay current in applicable trainings and certifications. In addition, all new staff must have applicable certifications when hired.

- **Objective and Expected Result**
 - Ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia).
- **Responsible Party**
 - Prince William County, Risk Management
 - Prince William County, Environmental Services
 - Prince William County, Parks and Recreation
- **Implementation and Schedule**
 - All staff are currently required to maintain certification for applying pesticides and herbicides
- **Documentation and Reporting**
 - A list of training events, their date, and the number of individuals attending will be presented in each annual report.
- **Governing Policy**
 - [Virginia Pesticide Control Act \(§3.2-3900 et seq. of the Code of Virginia\)](#)
 - [Prince William County, SOP 3.17.7](#)
 - [Prince William County, SOP 3.13.1](#)

BMP k.3 – Continue to ensure County Staff are Trained and Certified in DEQ Stormwater, E&S, and Plan Review Courses

Permit Requirements I.B.2.k)5) &6)

“5) The permittee shall have a program to ensure that County plan reviewers, inspectors, program administrators and construction site operators (e.g. responsible land disturber) are trained and obtain the appropriate certifications to the extent required under the Virginia Erosion and Sediment Control Law and attendant regulations.

6) The permittee shall have a program to ensure that the applicable County employees obtain the appropriate certifications as required under the Virginia Erosion and Sediment Control Law and its attendant regulations to implement the modified stormwater management design criteria.”

All watershed management plan review and E&S staff are required as part of their hiring to complete and certify in DEQ stormwater, E&S, or plan review courses. Required certifications are dependent on job type. All E&S inspectors are required to be certified in DEQ E&S courses. Plan review and watershed inspection staff is required to take the stormwater and plan review certifications. Some administrative staff are required to certify as a combined administrator.

- **Objective and Expected Result**
 - Ensure staff are certified in required DEQ E&S, Plan Review, and Stormwater courses.
- **Responsible Party**
 - Prince William County, Public Works
- **Implementation and Schedule**
 - All staff is currently required to be certified in applicable DEQ courses.
- **Documentation and Reporting**
 - Each annual report shall include a list of training events, the date and the estimated number of individuals attending each event.
- **Governing Policy**
 - N/A

BMP k.4 – Continue to ensure Emergency Response Staff are trained in Spill Response

Permit Requirement I.B.2.k)8)

“The appropriate emergency response employees shall have training in spill response. A summary of the training and/or certification program provided to emergency response employees shall be included in the first annual report.”

All uniform personnel are trained to the hazmat first responder operations level. This training teaches spill control as a defensive manner. This training is regulated by 29 CFR 1910.120(q) and NFPA 472. All HAZMAT technicians or specialists and career personnel are required to be current in this training.

- **Objective and Expected Result**
 - Train emergency response staff in spill response techniques.
- **Responsible Party**
 - Prince William County, Fire and Rescue
 - Prince William County, Risk Management
- **Implementation and Schedule**
 - All staff are currently trained in, and required to maintain, emergency spill response.
- **Documentation and Reporting**
 - Each annual report shall include a list of training events, the date and the estimated number of individuals attending each event.
- **Governing Policy**
 - [29 CFR 1910.120\(q\) and NFPA 472](#)

I. Water Quality Screening Programs

BMP 1.1 – Develop and Maintain a Dry Weather Screening Program

Permit Requirement I.B.2.1)

“The permittee shall continue ongoing efforts to detect the presence of illicit connections and unauthorized discharges to the permittee’s MS4.

- (a) *The permittee shall continue to implement a program of dry weather screening in areas of concern as identified by the permittee including but not limited to: commercial car washes, car dealerships, pet kennels, restaurants, areas with a history of complaints, and areas upstream of sensitive ecosystems. The permittee shall screen at a minimum, 25% of the outfalls discharging to the County’s MS4 within the permit cycle.*
- (b) *Criteria for selection of outfalls to be screened as required by Part I.B.2.1)1)(a) above shall include but is not limited to the following:*
 - (1) *List of sites requiring further investigation, as previously identified;*
 - (2) *Age and density of development with the likelihood of illicit connections such as older residential, commercial and industrial areas;*
 - (3) *Outfalls representing the general land uses of the County;*
 - (4) *Poorly maintained gas stations, service stations, and shopping centers;*
 - (5) *Presence of environmentally sensitive features downstream; and*
 - (6) *History of complaints received on illicit discharges.*

Prince William County's Dry Weather Monitoring Program is a comprehensive program designed to detect non stormwater discharges to the County's stormsewer system. Using an in-depth hot spot analysis which determines areas of the County where discharges may occur, and where those discharges may have the greatest environmental impact, County staff prioritizes outfalls for inspection. Incorporated into the hotspot analysis are areas in proximity to sensitive waterbodies, areas of high risk land use (Car washes, restaurants, gas stations, industrial areas, etc.), VPDES permitted facilities, areas with a history of complaint, and other factors. No more than 50% of the outfalls monitored in the previous 12-month period are screened in the current 12-month period.

Dry weather discharge inspections are guided by the Mobile IDDE application. The Mobile IDDE application guides inspectors through dry weather inspections, schedules follow-up inspections, notifies staff of maintenance issues, and allows program administrators to effectively assess and manipulate data pertaining to the IDDE program. This data is then used to input back into the hotspot analysis to improve program performance. The Mobile IDDE application is designed to increase efficiency, continuity, and accuracy from inspection to inspection, and inspector to inspector.

Once a discharge is found, violators have up to 30 days to mitigate and remove discharges before additional action is taken (unless mitigation is not possible in that timeframe, in this case an action plan is created to ensure compliance). A more in-depth description of the County's Dry Weather Monitoring program including inspection procedures can be found in Appendix 13.

- **Objective and Expected Result**
 - Inspect 25% of all outfalls discharging to the County's MS4.
- **Responsible Party**
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - Prince William County currently implements a Dry Weather Monitoring program designed to detect the presence of illicit connections and unauthorized discharges.
- **Documentation and Reporting**
 - Each annual report shall include a list of locations upon which dry weather screening was conducted, the results and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the dry weather screening.
- **Governing Policy**
 - [PWC IDDE Program Manual](#)
 - [SOP 3.047.6 – Dry Weather Monitoring Program](#)

BMP 1.2 – Develop and Maintain a Wet Weather Screening Program

Permit Requirements I.B.2.1)2)

“In addition to the monitoring required in Part I.C., the permittee shall continue to investigate, and address areas within their jurisdiction that are suspected to be contributing excessive levels of pollutants to the MS4. No later than 12 months after the effective date of this permit, the permittee shall develop written procedures for a wet weather screening program which shall include standard operating procedures to be used

for initial screening and follow-up purposes. The written procedures shall be incorporated as part of the MS4 Program Plan.”

Prince William County has developed a Wet Weather Monitoring Program as required by the Permit. This program is designed to collect and analyze runoff from four significant rain events at two sites in the County. Sites were selected by an initial desktop analysis, followed by a final in-field site assessment. Samples are gathered by Teledyne Isco Model 6712 Full-Size Portable Samplers and analyzed at a certified laboratory. Each annual report following the initial annual report shall include a list of locations upon which wet weather screening was conducted, the results, weather conditions at the time sample was collected to include date and approximate time of most recent storm event preceding sample collection, long term trends analyses, and any follow-up actions.

- **Objective and Expected Result**
 - Investigate areas that may be contributing excessive levels of pollutants to the MS-4 during rain events through a Wet Weather Screening Program.
- **Responsible Party**
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - The County has developed protocols for its Wet Weather Monitoring Program and will complete program development as requested in the permit.
- **Documentation and Reporting**
 - Each annual report following the initial annual report shall include a list of locations upon which wet weather screening was conducted, the results, weather conditions at the time sample was collected to include date and approximate time of most recent storm event preceding sample collection, long term trends analyses, and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the wet weather screening.
- **Governing Policy**
 - [Wet Weather Monitoring Program Manual](#)

m. Infrastructure Coordination

BMP m.1 – Implement Annual Coordination Meeting with VDOT

Permit Requirements I.B.2.m)1)

“Annual Coordination Meeting – The permittee shall meet annually with VDOT for purposes of overall coordination on priority issues for the permittee’s MS4 program plan (including operations and maintenance elements) and TMDL action planning relevant to the interconnectivity of the MS4s.”

Prince William County will meet annually with VDOT to coordinate on priority issues for the implementation of the County’s MS-4 program plan and TMDL action planning relevant to the interconnectivity of the County and VDOT’s MS-4 systems. This meeting will be scheduled between PWC and VDOT sometime during each fiscal year.

- **Objective and Expected Result**
 - Meet with VDOT officials on an annual basis to discuss MS-4 system interconnectivity issues.
- **Responsible Party**
 - Prince William County, Watershed Management
 - Virginia Department of Transportation
- **Implementation and Schedule**
 - The County will coordinate a meeting with VDOT by the end of the fiscal year, and schedule future meetings on an annual basis.
- **Documentation and Reporting**
 - There is no specific reporting requirement in the permit. Each annual report will summarize ongoing efforts to meet the permit requirements.
- **Governing Policy**
 - N/A

BMP m.2 – Coordinate with VDOT on MS-4 Initiatives

Permit Requirements I.B.2.m)2), 3), 4), 5), 6) & 7)

“2) Mapping – The permittee shall inform VDOT of the status of its mapping program, identifying any uncertainty regarding ownership or actual location of MS4 components associated with the physically-interconnected MS4s, and working to resolve such uncertainty. The permittee shall coordinate with VDOT to identify any areas within the permittee’s municipal boundaries that drain to the VDOT MS4.

3) Chesapeake Bay TMDL Action Plans – The permittee shall inform VDOT of the means, methods, and schedule by which the permittee will implement the reductions required by the Chesapeake Bay TMDL Special Condition (Part I.D.1) when those means and methods may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of best management practices (BMPs) may be accelerated or otherwise improved by mutual cooperation. The permittee shall coordinate with VDOT to identify any areas within the permittee’s municipal boundaries that drain to the VDOT MS4 and are unaccounted for in the Chesapeake Bay TMDL Action Plan developed by VDOT or the permittee. The unaccounted areas shall be quantified (acres) in the Chesapeake Bay TMDL Action Plan submitted by the permittee.

4) Other TMDL Action Plans – The permittee shall inform VDOT of TMDL Action Plans and major milestones implemented for other (i.e., non-Chesapeake Bay) TMDLs when those plans may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of BMPs may be accelerated or improved by mutual cooperation.

5) Credit for TMDL Implementation – Permit specific BMP retrofit requirements shall not be double- counted in the calculation of load reductions. If the permittee undertakes the project, the permittee shall be entitled to full credit for the project, but may share credit with VDOT on mutually agreeable terms, which shall be in writing.

6) *Illicit Discharge Detection & Elimination* – The permittee shall continue to be responsible for implementing a program for illicit discharge detection and elimination, including dry weather field screening, for the permittee’s portion of the physically-interconnected MS4. As part of the annual coordination meeting, described in item (1) above, the permittee shall coordinate with VDOT on the identification of high risk industrial facilities. The permittee shall establish procedures for notifying VDOT when an illicit discharge is identified in the VDOT MS4.

7) *Water Quality Monitoring* – The permittee shall conduct water quality monitoring as required by Part I.B.2.1) and Part I.C of this state permit. The permittee shall make available to VDOT all monitoring data collected from areas where the physically-interconnected MS4 discharges to the VDOT MS4 or received flow from the VDOT MS4. The permittee and VDOT are encouraged to cooperate with one another to establish a joint monitoring network.”

Coordination with VDOT will occur as follows:

Mapping – Status of mapping program and the ownership of MS-4 components. This includes identifying any areas within the County’s Municipal boundaries that drain to VDOT MS-4.

Chesapeake Bay TMDL – Means Methods and Schedule for reductions under the Chesapeake Bay TMDL special condition where impacts may occur to interconnected MS-4 areas.

Other TMDL Action Plans – Means Methods and Schedule for reductions under the other TMDL special conditions where impacts may occur to interconnected MS-4 areas.

TMDL Implementation Credit – Ensure BMP retrofits do not encounter double crediting. Discuss sharing of BMP credit if applicable.

Illicit Discharge – Share information pertaining to the County’s IDDE program and coordinate with VDOT on the identification of high risk facilities. Establish procedures for reporting discharges identified from the VDOT MS-4 system.

Water Quality Monitoring – Discuss and present results of the County’s water quality monitoring programs. This includes monitoring data collected from areas where the physically-interconnected MS-4 discharges to or flow is received from the VDOT MS-4.

– **Objective and Expected Result**

- Coordinate with VDOT on important interconnectivity issues during annual meetings.

- **Responsible Party**
 - Prince William County, Watershed Management
 - Virginia Department of Transportation
- **Implementation and Schedule**
 - The County will coordinate a meeting with VDOT on an annual basis
- **Documentation and Reporting**
 - Documentation of coordination efforts that occur during the reporting year between Prince William County and VDOT will be presented in the Annual Report.
- **Governing Policy**
 - N/A

V. Monitoring Requirements

BMP V.1 – Develop a Biological Stream Monitoring Program

Permit Requirement I.C.1

“The permittee shall continue to implement a biological stream monitoring program to evaluate the condition of select stream sites within the county as follows:

a) Five (5) stream sites within the county shall be selected for monitoring during the term of this permit.

b) Monitoring shall be conducted twice per year at each selected stream site.

c)The permittee shall use a biological stream monitoring approach based on the “USEPA’s Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers” and shall include an assessment of the benthic macroinvertebrate community and habitat assessment.”

Prince William County has developed its in-stream biological monitoring program. Five sites within the County are assessed during the term of the permit. The County has paired these biological stream monitoring sites with that used by the in-stream water quality monitoring sites described below in section III.2. Monitoring protocols are consistent with the Permits requirement of RBP. Sampling occurs at least twice a year at each selected stream site. Description of proposed stream sites and the RBP protocols will be included in Appendix 15 of this document. The County is currently analyzing the data from the Biological and In-stream monitoring sites to find potential data trends and corresponding causes. The County will then consider developing an outreach plan to nearby businesses and/or residents.

- **Objective and Expected Result**
 - Develop a Biological Monitoring Program.
- **Responsible Party**
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - The County will develop a Biological Monitoring Program consistent with requirements outlined in this permit.

- **Documentation and Reporting**
 - Each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.
- **Governing Policy**
 - [Biological Monitoring Protocols](#)

BMP V.2 – Develop an In-Stream Monitoring Program

Permit Requirement I.C.2

“The permittee shall continue to implement an in-stream monitoring program to evaluate the condition of select streams within the county as follows:

a) Five (5) stream sites within the county shall be selected for monitoring during the term of this permit.

b) Monitoring shall be conducted once per two months between January 1st and December 31st at each monitoring location.

c) Monitoring shall be performed for the following parameters:

- 1) pH*
- 2) Dissolved Oxygen*
- 3) Temperature*
- 4) Total Suspended Solids*
- 5) Ammonia as Nitrogen*
- 6) Nitrate plus Nitrite Nitrogen*
- 7) Total Kjeldahl Nitrogen*
- 8) Total Nitrogen (calculated)*
- 9) Dissolved Phosphorus*
- 10) Total Phosphorus*
- 11) Escherichia Coli*

d) Monitoring for the parameters listed in Part I.C.2.c) shall be in accordance with Part II.A. of this state permit.

e) The permittee may replace a sampling location with a new proposed location after 15 samples are collected and analyzed. Written notification of the monitoring plan revisions shall be given to the Department in writing and shall include a statistical analysis of the monitoring results, conclusions regarding the data, the proposed new monitoring location, and the reasoning for site location choice.”

The County has maintained an in-stream water quality monitoring program for the past 2 permit cycles. In partnership with the Virginia Tech Occoquan Laboratory, the County maintains 5 sampling sites throughout its Jurisdictional area. The sites and contributing land use are as follows:

1. The “Dawkins Branch Station”, with drainage to be comprised of older industrial and warehouse type of land uses. This station represents industrial land uses in the County.
2. The “Cow Branch Station” with drainage area for the proposed station originating from commercial developments, such as, Potomac Mills Mall and several other commercial and residential uses along I-95 corridor. This represents a relatively high density and highly impervious area corridor.
3. The “Purcell Branch Station” was picked to represent large-acre residential lots, which is also a representative land use in the County.
4. Neabsco Creek at Delaney Rd. – Neabsco Creek is one of the most developed watersheds in the County. This station has drainage areas from several new and much older developments in Dale City area. Continuing this station will help us further establish the water quality trends for an older developed watershed.
5. Little Bull Run at Catharpin Road – Little Bull Run has drainage areas from major known developments such as Piedmont, Dominion Valley Country Club, etc. This Station represents the current development trends of well-planned subdivisions constructed with golf course amenities in the fast growing western part of the County. Continuing this station will help us further establish water quality trends.

Samples will be taken at sites once per every two months at each monitoring location. These sites will also be evaluated for effective biological monitoring sites, as described above.

- **Objective and Expected Result**
 - Develop an In-Stream Water Quality Monitoring Program.
- **Responsible Party**
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - Prince William County will continue to monitor in-stream water quality at representative sites throughout the County.
- **Documentation and Reporting**
 - Each annual report will include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.
- **Governing Policy**
 - [Virginia Tech Occoquan Lab MOU](#)

BMP V.3 – Develop a Floatables Solids Monitoring Program

Permit Requirement I.C.1

“No later than 24 months after the effective date of the permit, the permittee shall develop and implement a floatables monitoring program. The intent of the monitoring program is to determine the loading of floatables from the MS4 to streams within the county. The permittee will implement the floatables monitoring program as follows:

- a) *Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.*
- b) *Monitoring shall be conducted once per quarter after program implementation.*
- c) *The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.”*

Prince William County has developed a floatables and solids monitoring program with the help of Prince William County Soil and Water Conservation district. The Floatables Monitoring Program measures the amount and type of floatables within the bankfull area of a stream quarterly at 5 sites. The program is administered by both trained staff and volunteers. The site assessments and program protocols are included in Appendix 15 of this document. In addition to the Floatables Monitoring Program, the County maintains a litter collection program (see section IV.e) which is dedicated to collecting trash and refuse from highly urban areas of the County.

- **Objective and Expected Result**
 - Develop a Floatables Monitoring Program
- **Responsible Party**
 - Prince William County, Watershed Management
- **Implementation and Schedule**
 - The County had developed and is currently implementing a floatables monitoring program.
- **Documentation and Reporting**
 - Each annual report will include a list of sites monitored, a summary of the monitoring protocols used, and a summary of the monitoring results and analyses.
- **Governing Policy**
 - [Floatables Monitoring Protocols](#)

BMP V.4 – Structural and Source Controls Compliance Monitoring

Permit Requirement I.C.4

“a) The permittee shall maintain an updated electronic database of all known permittee and privately maintained stormwater management (SWM) facilities. The database shall include the following:

- 1) *The SWM facility type, address, and latitude, and longitude (in decimal degrees);*
- 2) *The total pervious and impervious acres treated;*
- 3) *The date brought online (MMYYYY). If the date is unknown, the permittee shall use June 2005 as the date brought online for all previously existing SWM facilities;*
- 4) *The hydrologic unit code (HUC 6) in which the SWM facility is located;*

- 5) *The name of any impaired water segments within each HUC listed on the most recent 305(b)/303(d) Water Quality Assessment Integrated Report to which the SWM facility discharges;*
- 6) *Whether the SWM facility is permittee or privately maintained;*
- 7) *Whether the SWM facility discharges into the permittee's MS4;*
- 8) *Whether a maintenance agreement exists if the SWM is privately maintained; and*
- 9) *The date of last inspection by permittee authorities.*

All known SWM facilities brought online during each reporting year shall be submitted with the appropriate annual report as an electronic file in one or the following formats: shapefile, geodatabase, .xls, .xlsx, .csv, .mdx, .dbf, delimited text, XML, or other file approved by the Department.

No later than 36-months of the effective date of this state permit, the list shall be updated to include the required information for SWM facilities known to exist prior to the effective date of this state permit. The updated information shall be submitted with the fourth annual report.

b) Facilities that solely provide peak flow control as required by the Chesterfield County Code are excluded from the requirements of this section. Inspection and maintenance requirements for these facilities shall be in accordance with all applicable state and local ordinances, regulations, and statutes.”

The County maintains an electronic database containing all BMP/SWM facilities within Prince William County. This database encompasses all permittee and privately maintained facilities constructed and implemented from July 1st 1999 to current day. The database contains information on a facilities type, latitude and longitude, impervious and total acres treated, installation date, HUC 12, privately or permittee maintained status, discharging MS-4 and dates of inspection and maintenance for the past 5 fiscal years. The list is to be updated to include a more accurate representation of pervious and impervious acres treated, an assessment of impaired watersheds, and the status of maintenance agreements as the MS-4 mapping project is completed. All new SWM facilities brought online during each reporting year will be included with the annual report.

Prince William County maintains a program for the inspection and maintenance of permittee and privately maintained SWM/BMP facilities. More information on these inspection programs can be found in section IV.f of this document.

- **Objective and Expected Result**
 - maintain an updated electronic database of all known permittee and privately maintained stormwater management (SWM) facilities
- **Responsible Party**
 - Prince William County, Watershed Management

- **Implementation and Schedule**
 - The County currently maintains an electronic database of all known permittee and privately maintained stormwater management (SWM) facilities.
- **Documentation and Reporting**
 - Each annual report will include a copy of the updated database in electronic format.
 - Each annual report will include a summary of the program to ensure maintenance of private stormwater management facilities.
 - Each annual report will include a summary of the program to ensure maintenance of stormwater management facilities maintained by the permittee.
 - The fourth annual report submitted under this permit will include an updated list of stormwater management facilities existing prior to the effective date of this permit.
- **Governing Policy**
 - N/A

VI. TMDL Action Plan Implementation

1. Chesapeake Bay Watershed TMDL Planning

The County's Chesapeake Bay TMDL action plan was submitted to DEQ on February 21st, 2017 and approved by DEQ on June 28th, 2017.

2. TMDL Action Plans other than the Chesapeake Bay TMDL

The County's local TMDL action plans were submitted to DEQ on December 13th, 2016. The County received comments related to these plans on May 4th, 2018 and responded to them on June 29th, 2018.

Appendix 1: Cost Benefit Analysis

Prince William County is to submit to DEQ a cost benefit analysis of pollutant reduction priority projects. These projects are to be selected from completed watershed studies and should be prioritized according to a number of metrics determined by County. The following link provides the County's cost benefit analysis:

<http://www.pwcgov.org/government/dept/publicworks/environment/Pages/MS-4-Permit.aspx>

Prince William County has developed its Watershed Management Plan. The plan has been completed and was presented to the Department no later than 12 months from permit issuance [December 17th 2015]. This document is posted on the County's website. Updates to this document will be placed on the County's website no later than 30 days after approval. The County will continue to seek public comment in the development of its Watershed Management Plan. The following link provides the County's Watershed Management Plan:

<http://www.pwcgov.org/government/dept/publicworks/environment/Pages/Watershed-Studies.aspx>

Appendix 2: Construction Site Runoff/Post Construction Runoff

The list of projects that qualify under “grandfathering” from VSMP regulations are listed below:

Permit Number	Construction Activity Name	Permit Issued
VAR10G041	Mt Zion Baptist Church Joplin Road Infrastructure Plan	07/30/2014
VAR10G201	Nakkkusa Temple	08/29/2014
VAR10G312	Potomac Science Center at Belmont	10/17/2014
VAR10G362	Cow Branch Stream Restoration Phase 3	11/12/2014
VAR10G773	Wellington Plaza (Phase 2)	04/15/2015
VAR10H003	CABELA'S -[VIRGINIA GATEWAY]	06/16/2015
VAR10H003	Cabela's - Virginia Gateway	08/05/2015
VAR10H045	Purcell Road Widening and Realignment	06/25/2015
VAR10H180	Somerwood	07/29/2015
VAR10H181	Craftsman Autobody	07/29/2015
VAR10H301	Dominion - Possum Point Station	08/26/2015
VAR10H333	Estates at Websters Way	09/03/2015
VAR10H334	Wellingford Industrial Park - Skyworks of Virginia	09/03/2015
VAR10H371	Silver Lake Dam Rehabilitation	09/15/2015
VAR10H422	Prince William Commerce Center	10/01/2015
VAR10H640	The Farm at Broad Run	12/10/2015
VAR10H698	Roy Rogers Gainesville	01/06/2016
VAR10H704	Bristow Shopping Center	01/05/2016
VAR10H854	Sheetz - Caton Hill and Telegraph Road	02/23/2016
VAR10H912	Walnut Tree Farm	03/08/2016
VAR10H936	Prince William County Parkway Widening Phase II - Minnieville Road	03/10/2016
VAR10I024	Lake Point Business Park Prestige Preschool	04/01/2016
VAR10I036	Lake Ridge Middle School Building Addition	04/04/2016
VAR10I152	Prince William County Landfill	04/28/2016
VAR10I173	Blackburn Road	05/05/2016
VAR10I339	Woodbridge Commons Corner	06/09/2016
VAR10I655	American Legion Post 364	08/11/2016
VAR10I864	Antietam Sidewalk	09/26/2016
VAR10I897	Manassas Corporate Center Data Center Building 1	10/03/2016
VAR10I907	Tacketts Village Grocery	10/04/2016
VAR10I941	Prestige Preschool Reids Prospect	10/11/2016
VAR10J066	Bradley Forest Section 3	11/09/2016
VAR10J066	Bradley Forest Section 3	04/29/2019
VAR10J830	Everbrook Academy Gardner Station Phase 2B	11/16/2017
VAR10J830	Everbrook Academy Gardner Station Phase 2B	06/08/2017
VAR10J931	Life Time Fitness at Virginia Gateway	06/28/2017
VAR10K536	Heathcote Commons LandBay 3 Phase 3	04/02/2018
VAR10K536	Heathcote Commons LandBay 3 Phase 3	11/27/2017
VAR10L453	Eagles Pointe East LandBay D Section 1	07/24/2018
VAR10L453	Eagles Pointe East LandBay D Section 1	04/29/2019
VAR10L563	Carters Mill Route 55 Early Grading and Utility Plan	08/21/2018
VAR10L943	Aurora Estates	11/30/2018
VAR10L943	Aurora Estates	04/08/2019



COUNTY OF PRINCE WILLIAM

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Thomas Bruun
Director

DEPARTMENT OF
PUBLIC WORKS



Environmental
Services Division

**AGREEMENT IN LIEU OF A STORMWATER MANAGEMENT PLAN
FOR CONSTRUCTION OF A SINGLE-FAMILY DETACHED RESIDENTIAL
STRUCTURE LOCATED OUTSIDE OF A COMMON PLAN OF
DEVELOPMENT (IN-FILL LOTS ONLY)**

Landowner:

Name:					
Mailing Address:					
City:		State:		Zip:	
Phone 1:			Email 1:		
Phone 2:			Email 2:		

SINGLE-FAMILY DETACHED STRUCTURE LOCATION INFORMATION

GPIN:		Approved LGR #:			
Site Address:					
City:		State:		Zip:	
DISTURBANCE INFORMATION					
Disturbed Area (acres):		Impervious Area (acres):			

In place of a Stormwater Management Plan for the construction of this single-family detached residential structure, I agree to comply with the requirements of this "Agreement in Lieu of a Stormwater Management Plan" (or other requirements as established by the Department of Public Works as applicable) to ensure compliance with Section 23.2-32 of the Stormwater Management Code of Prince William County

REQUIREMENTS

- 1) A copy of this signed and dated "Agreement in Lieu of a Stormwater Management Plan" shall be incorporated on to the lot grading plan.
- 2) Post-construction runoff from the property shall be minimized to the maximum extent practicable and shall be controlled to prevent flooding or erosion damage from occurring on adjacent or downstream properties. In meeting this requirement, I agree to direct:
 - a) runoff from rooftops as non-erosive sheet flow to well-vegetated areas on the property to the maximum extent practicable.
 - b) runoff from on-lot impervious surfaces (e.g., driveways, parking areas, sidewalks) as non-erosive sheet flow to well-vegetated areas on the property to the maximum extent practicable, and

c) runoff from lawns as non-erosive sheet flow to undisturbed naturally-vegetated areas on the property to the maximum extent practicable.

I fully understand that not complying with this agreement may result in the revocation of this "Agreement in Lieu of a Stormwater Management Plan" and the County may require submission of a project-specific Stormwater Management Plan in accordance with Section 23.2-32 of the Stormwater Management Code of Prince William County.

This "Agreement in Lieu of a Stormwater Management Plan" shall be binding on the landowner and any other successors of this property. The landowner hereby agrees to provide access to the property for routine inspections by the County to ensure that the terms of this agreement are still in-place and functional. In addition, the County at its discretion, may require proof from landowner at any time to verify compliance with this agreement.

This "Agreement in Lieu of a Stormwater Management Plan" does not authorize land disturbance. Land-disturbing activities cannot begin until a building permit is issued for construction of a detached residential structure.

Landowner's Name: _____ Title: _____

Landowner's Signature: _____ Date: _____

BMF Table 7-6

BMF Type	Residential 1	Residential 2	VDOT/Highway	Setback	Minimum Lot Requirement	Major Maintenance Responsibility		Easement		BMF Status Retained	What's Included in Maintenance
						Residential	Non-Residential	BMF	Access		
1	Residential 1	A	A	10' from Foundation	Allowed on SF detached - Clear lanes on SF attached	Private	Private	Yes	Yes	No	Agreement/Deed Restriction
2	Shared Entry or Drive to Open Space	A	A	10' from Building/Driveway		Private	Private	Yes	Yes	No	Agreement/Deed Restriction
3	Open Space	A	A	20' from Building/Driveway	Minimum lot size of 20,000 sf on SF detached lots	Private	Private	Yes	Yes	No	Agreement/Deed Restriction
4	Set-Back Amendment	A	R	20' from Building/Driveway if Located on Individual SF Lot	Minimum lot size of 20,000 sf on SF detached lots	Private	Private	No	No	No	Agreement/Deed Restriction
5	Vertical Easement	A	N			Private	Private	No	No	No	Agreement/Deed Restriction
6	Boundary Encroachment	A	R	Residential - Clear Base Non-Residential - N/A		Private	Private	Yes	Yes	No	Agreement/Deed Restriction
7	Encroachment Easement	A	N			Private	Private	No	No	Yes	Agreement/Deed Restriction
8	Utilities	A	R	20' from Driveway 5' from ROW		Private	Private	Yes	Yes	Yes	Agreement/Deed Restriction
9	Encroachment	A	A	20' from Driveway 5' from ROW	Minimum lot size of 20,000 sf on SF detached lots	Private	Private	Yes	Yes	Yes	Agreement/Deed Restriction
10	Driveway	A	R	25' from Driveway	Minimum lot size of 20,000 sf on SF detached lots	Public	Private	Yes	Yes	Yes	Agreement/Deed Restriction

Appendix 3: Retrofitting on Prior Lands

For more information on retrofit projects, including prioritized projects, see below or Appendix 1 for the Cost Benefit Analysis, and Watershed Management plan.

Prince William County is to submit to DEQ a cost benefit analysis of pollutant reduction priority projects. These projects are to be selected from completed watershed studies and should be prioritized according to a number of metrics determined by County. The following link provides the County's cost benefit analysis:

<http://www.pwcgov.org/government/dept/publicworks/environment/Pages/MS-4-Permit.aspx>

Prince William County has developed its Watershed Management Plan. This document is posted on the County's website. Updates to this document will be placed on the County's website no later than 30 days after approval. The County will continue to seek public comment in the development of its Watershed Management Plan. The following link provides the County's Watershed Management Plan:

<http://www.pwcgov.org/government/dept/publicworks/environment/Pages/Watershed-Studies.aspx>



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

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

December 10, 2015

Mr. Marc Aveni, Chief
Environmental Services
Prince William County Public Works
5 County Complex Public Works
Prince William, Virginia 22192

Transmitted electronically: MAveni@pwcgov.org

RE: Chesapeake Bay TMDL Action Plan Reductions and Credit Guarantee

Dear Mr. Aveni:

The Department of Environmental Quality is in receipt of the email from Prince William County staff dated November 16, 2015 requesting clarification regarding how pollutant load reductions required in Part I.D of the MS4 permit (effective December 17, 2014) and the Chesapeake Bay TMDL will be evaluated by DEQ for future reduction requirements. The permit requires the County to reduce the loadings of nutrients and sediment from existing sources equivalent to Level 2 (L2) scoping run reductions simulated in the Chesapeake Bay Watershed Model. MS4 permittees are afforded three permit terms to achieve the total required reductions. By the end of the first full permit term after the approval of the Chesapeake Bay TMDL, permittees are required to achieve 5% of the L2 reduction requirements. During the second and third permit terms, MS4 permittees are required to achieve 35% and 60% of the L2 reductions, respectively.

DEQ understands that in many cases MS4 permittees will need to begin planning several years in advance for future reductions in order to secure funding and meet permit deadlines. To that end, DEQ is providing the following guarantees to permittees:

1. Reductions achieved during the first permit cycle that exceed 5% of L2 reduction requirement will be credited toward future reduction requirements.
2. Implementation of BMPs included in the permittee's first Action Plan approved by DEQ will demonstrate compliance with the reduction requirements for the first permit cycle regardless of efficiency changes that may occur after the Action Plan is submitted. Any

changes in established BMP efficiencies after the Action Plan is submitted will not be retroactively applied to projects approved and implemented during the first permit cycle.

3. Any changes in established BMP efficiencies for BMPs planned to meet future permit reduction requirements will not be retroactively applied provided that the permittee (a) included the BMPs in the first Action Plan approved by DEQ and (b) demonstrates as part of the second action plan, due with the permit reissuance application, that funding for the BMPs has been secured in an adopted Capital Improvement Plan.

If you have any questions, please feel free to contact Jaime Bauer at 804-698-4416 or jaime.bauer@deq.virginia.gov.

Sincerely,

A handwritten signature in cursive script that reads "Allan Brockenbrough II". The signature is written in black ink and includes a stylized flourish at the end.

Allan Brockenbrough II, P.E.
Manager, Office of VPDES Permits

Appendix 4: Roadways

GPIN	ST NO	ST NAME	ST TYPE	DEED ACRES	DESCRIPTION	Impervious Parking Lot? (Yes=1; No=0)	Area of Imp. Parking Lot (Acres)	Impervious Road? (Yes=1; No=0)	Imp. Road (Linear Ft)	Imp. Road (Acres)	Site BMPs (Yes=1; No=0)	Parking Lots Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Miles)	Imp. Roads Not Treated by BMPs (Miles)	NOTES
7499-24-1212	4925	CATHARPIN	RD	1.216	LAWNVALE ESTATES SEC 2 R/W PRIVATE ROAD	0		1	880	0.38	0	0	0	0.00	0.17	
8192-79-8407	13001	CHINN PARK	DR	77.003	CHINN PARK	0		1	97	0.05	1	0	0.05	0.02	0.00	
7492-36-3923	13131	PUBLIC SAFETY	DR	12.081	PUBLIC SAFETY FACILITY - ACREAGE	0		1	585	0.15	1	0	0.15	0.11	0.00	
8090-96-3995	5049	WATERWAY	DR	8.210	MONTCLAIR LIBRARY (UNDER CONSTRUCTION)	0		1	716	0.801	1	0	0.801	0.14	0.00	
7696-22-7770	8636	WELLINGTON	RD	0.857	PWC JUVENILE CTR	0		1	284	0.16	1	0	0.16	0.05	0.00	
8492-05-6058	1040	EXPRESS	DR	2.538	VRE TRAIN STATION WOODBRIDGE	0		1	483	0.65	1	0	0.65	0.09	0.00	
7697-02-7245	7625	AARON	LN	15.264	ELLIS L BARRON PARK	1	0.29	0			1	0.29	0	0.00	0.00	
7493-54-9131	12560	ADEN	RD	97.074	NOKESVILLE COMMUNITY PARK	1	1.87	1	4393	1.4	1	1.87	1.4	0.83	0.00	
7298-16-3599	5901	ANTIOCH	RD	3.800	FIRE STATION ANTIOCH ROAD/ DOMINION VALLEY	1	1.17	1	897	0.62	1	1.17	0.62	0.17	0.00	
7697-21-1810	8051	ASHTON	AV	4.177	BULL RUN LIBRARY	1	1.94	1	231	0.15	1	1.94	0.15	0.04	0.00	
7797-24-8148	7500	BEN LOMOND PARK	DR	240.607	BEN LOMOND PARK	1	1.92	1	1010	0.86	1	1.92	0.86	0.19	0.00	
8291-24-4186	14730	BIRCHDALE	AV	8.656	BIRCHDALE PARK	1	0.77	0			0	0	0	0.00	0.00	
8291-24-7904	14998	BIRCHDALE	AV	0.836	VFD FIRE STATION	1	0.33	1	58	0.038	0	0	0	0.00	0.01	
8291-33-0384	15011	BIRCHDALE	AV	4.146	BIRCHDALE PARK	1	0.165	0			0	0	0	0.00	0.00	
8390-29-1608	15520	BLACKBURN	RD	42.452	RIPPOON LODGE	1	0.48	1	1050	0.58	1	0.48	0.58	0.20	0.00	
7495-81-8775	12401	BRAEMAR	PY	15.172	BRAEMAR PARK	1	0.55	0			1	0.55	0	0.00	0.00	
7891-37-1504	14418	BRISTOW	RD	132.734	HELWIG PARK & LIBRARY	1	6.5	1	3,800	2.18	1	6.5	2.18	0.72	0.00	
7891-47-3629	14422	BRISTOW	RD	1.500	HELWIG PARK ENTRANCE	0		1	167	0.32	1	0	0.32	0.03	0.00	
8192-69-1530	13065	CHINN PARK	DR	14.647	CHINN PARK COMPLEX (Library, Aquatic Center)	1	4.86	1	509	0.29	1	4.86	0.29	0.10	0.00	
8392-52-2520	13850	CHURCH HILL	DR	5.086	COMMUNITY CENTER	1	0.49	1	547	0.25	0	0	0	0.00	0.10	
8291-01-2650	15150	CLOVERDALE	RD	30.190	CLOVERDALE PARK	1	1.57	1	1122	0.49	0	0	0	0.00	0.21	
7697-62-2419	10501	COPELAND	DR	2.974	SUDLEY MANOR COMMUNITY CENTER	1	0.74	0			0	0	0	0.00	0.00	
8293-08-1283	12380	COTTON MILL	DR	4.770	LAKE RIDGE MARINA	1	1.02	1	1163	0.65	1	1.02	0.65	0.22	0.00	
8193-97-4673	12371	COTTON MILL	DR	67.064	LAKE RIDGE PARK, GOLF COURSE	1	2.01	1	1179	0.66	1	2.01	0.66	0.22	0.00	
8193-97-8991	12390	COTTON MILL	DR	4.675	LAKE RIDGE PARK	1	1.15	1	2430	1.16	1	1.15	1.16	0.46	0.00	
8193-04-9341	7	COUNTY COMPLEX	CT	65.547	STADIUM COMPLEX	1	4.88	1	950	0.54	1	4.88	0.54	0.18	0.00	
8193-02-7682	1	COUNTY COMPLEX	CT	40.676	McCOURT & DEVELOPMENT SERVICES BUILDINGS	1	7.03	1	5085	4.8	1	7.03	4.8	0.96	0.00	
8092-75-6865	5180	DALE	BL	7.161	PARKS SKATE NATION	1	1.48	0			1	1.48	0	0.00	0.00	
8092-85-2182	5070	DALE	BL	6.179	BOYS AND GIRLS CLUB	1	0.38	0			1	0.38	0	0.00	0.00	
8092-85-3649	5100	DALE	BL	3.500	BOYS/ GIRLS CLUB/COMMUTER PARKING LOT	1	2.61	1	338	0.24	1	2.61	0.24	0.06	0.00	
8092-43-9145	5301	DALE	BL	218.234	ANDREW LEITCH PARK	1	1.95	1	933	0.46	1	1.95	0.46	0.18	0.00	
8192-40-8843	4249	DALE	BL	0.478	DALE CITY LIBRARY	1	0.1	0			0	0	0	0.00	0.00	
8492-11-3958	14012	DAWSON BEACH	RD	6.230	COMMUNITY CENTER	1	0.16	1	1444	0.47	0	0	0	0.00	0.27	
8290-76-8095	15941	DONALD CURTIS	DR	17.091	FERLAZZO BLDG	1	4.9	1	600	0.5	1	4.9	0.5	0.11	0.00	
7892-43-6746	13712	DUMFRIES	RD	9.540	COLES FIRE STATION	1	0.98	0			1	0.98	0	0.00	0.00	
8190-51-6324	4100	EXETER	DR	5.688	BRITTANY PARK	1	0.96	1	334	0.16	1	0.96	0.16	0.06	0.00	
8390-88-9871	15611	FARM CREEK	DR	2.427	FARM CREEK VRE COMMUTER LOT	1	1.22	0			1	1.22	0	0.00	0.00	
8390-88-6844	15601	FARM CREEK	DR	4.413	FARM CREEK VRE COMMUTER LOT	1	2.65	1	762	0.88	1	2.65	0.88	0.14	0.00	
7493-48-8292	12993	FITZWATER	DR	0.287	NOKESVILLE LIBRARY - PCL 1	1	0.09	0			1	0.09	0	0.00	0.00	
7493-49-8000	12997	FITZWATER	DR	0.287	NOKESVILLE LIBRARY - PCL 2	1	0.05	0			1	0.05	0	0.00	0.00	
7696-32-1228	8900	FREEDOM CENTER	BL	15.398	WESTERN POLICE STATION	1	4.15	1	1453	1.03	1	4.15	1.03	0.28	0.00	
8188-84-0539	18809	FULLER HEIGHTS	RD	42.260	FULLER HEIGHTS PARK	1	0.86	1	1137	0.52	1	0.86	0.52	0.22	0.00	
8393-00-3118	13030	HARBOR	DR	2.293	COMMUTER LOT - TACKETTS MILL	1	1.47	0			1	1.47	0	0.00	0.00	
8192-34-9638	13509	HILLENDALE	DR	3.426	COMMUTER LOT - HILLENDALE RD	1	2.23	0			1	2.23	0	0.00	0.00	
8192-45-4901	13499	HILLENDALE	DR	21.901	JOHN JENKINS PARK	1	0.16	1	413	0.26	1	0.16	0.26	0.08	0.00	
7495-49-9681	12940	HUNTING	CO	2.520	BROAD RUN PARK	1	0.31	0			1	0.31	0	0.00	0.00	
7399-04-0983	4603	JAMES MADISON	HY	163.633	JAMES LONG PARK	1	3.55	1	3025	2.02	1	3.55	2.02	0.57	0.00	
8290-86-0165	15904	JEFFERSON DAVIS	HY	0.960	EASTERN FUELING STATION	1	0.74	0			1	0.74	0	0.00	0.00	
8391-23-7660	14945	JEFFERSON DAVIS	HY	5.065	HILDA BARG HOMELESS CENTER	1	0.3	1	468	0.25	1	0.3	0.25	0.09	0.00	
7397-37-9503	14450	JOHN MARSHALL	HY	3.847	FIRE STATION	1	0.86	1	435	0.26	1	0.86	0.26	0.08	0.00	
7795-48-9175	9250	LEE	AV	2.307	OLD COURTHOUSE/PARKING	1	0.67	0			1	0.67	0	0.00	0.00	
7795-48-7362	9254	LEE	AV	0.201	OLD COURTHOUSE/PARKING	1	0.07	0			1	0.07	0	0.00	0.00	
7795-48-8064	9252	LEE	AV	0.186	OLD COURTHOUSE/PARKING	1	0.05	0			1	0.05	0	0.00	0.00	
7795-48-6760	9256	LEE	AV	0.154	OLD COURTHOUSE/PARKING	1	0.04	0			1	0.04	0	0.00	0.00	
7795-48-6259	9258	LEE	AV	0.163	OLD COURTHOUSE/PARKING	1	0.04	0			1	0.04	0	0.00	0.00	
7795-48-1570	9300	LEE	AV	8.502	OLD COURTHOUSE/PARKING	1	2.2	0			1	2.2	0	0.00	0.00	
7795-48-2430	9301	LEE	AV	4.680	OLD COURTHOUSE/PARKING	1	2.03	0			1	2.03	0	0.00	0.00	
7398-08-1189	14870	LIGHTNER	RD	4.248	GAINESVILLE LIBRARY	1	1.1	0			1	1.1	0	0.00	0.00	
8188-13-1748	4701	LOCUST SHADE	DR	642.151	LOCUST SHADE PARK AND FOREST GREEN GOLF	1	3.9	1	7170	3.95	1	3.9	3.95	1.36	0.00	
7896-09-8423	8460	MAPLEWOOD	DR	27.478	JOSEPH READING PARK	1	0.4	1	1162	0.62	1	0.4	0.62	0.22	0.00	
7896-04-9071	8601	MATHIS	AV	2.748	CENTRAL LIBRARY MANASSAS	1	1.25	0			0	0	0	0.00	0.00	
8091-25-3681	14716	MINNIEVILLE	RD	26.333	HOWISON HOMESTEAD PARK	1	1.3	1	899	0.53	1	1.3	0.53	0.17	0.00	
8191-28-3061	14400	MINNIEVILLE	RD	0.367	DALE CITY RECREATION CENTER PARKING LOT	1	0.23	0			1	0.23	0	0.00	0.00	
8192-30-8906	14300	MINNIEVILLE	RD	30.862	DALE CITY RECREATION CENTER	1	1.4	1	164	0.31	1	1.4	0.31	0.03	0.00	
7795-39-7511	9320	MOSBY	ST	4.759	COURTHOUSE PARKING	1	1.85	0			1	1.85	0	0.00	0.00	
7795-39-6261	9350	MOSBY	ST	9.452	COURTHOUSE PARKING	1	0.05	0			1	0.05	0	0.00	0.00	

GPIN	ST NO	ST NAME	ST TYPE	DEED ACRES	DESCRIPTION	Impervious Parking Lot? (Yes=1; No=0)	Area of Imp. Parking Lot (Acres)	Impervious Road? (Yes=1; No=0)	Imp. Road (Linear Ft)	Imp. Road (Acres)	Site BMPs (Yes=1; No=0)	Parking Lots Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Acres)	Imp. Roads Treated by BMPs (Miles)	Imp. Roads Not Treated by BMPs (Miles)	NOTES
8393-21-3695	2081	OLD BRIDGE	RD	0.700	OLD BRIDGE COMMUTER LOT	1	0.39	0			1	0.39	0	0.00	0.00	
8393-21-2492	2095	OLD BRIDGE	RD	1.138	OLD BRIDGE COMMUTER LOT	1	1.12	0			1	1.12	0	0.00	0.00	
8391-15-3972	2201	OPITZ	BL	3.778	POTOMAC REGIONAL LIBRARY	1	0.93	1	53	0.038	0	0	0	0.00	0.01	
7795-49-0228	9212	PEABODY	ST	3.740	COURTHOUSE PARKING	1	1.51	0			1	1.51	0	0.00	0.00	
7795-48-6370	9307	PEABODY	ST	0.228	COURTHOUSE PARKING	1	0.18	0			0	0	0	0.00	0.00	
7795-48-6277	9305	PEABODY	ST	0.151	COURTHOUSE PARKING	1	0.15	0			0	0	0	0.00	0.00	
7795-48-6085	9303	PEABODY	ST	0.276	COURTHOUSE PARKING	1	0.12	0			0	0	0	0.00	0.00	
7694-08-8382	10699	PIPER	LN	40.330	AIRPORT VRE STATION & COMMUTER LOT	1	4.44	1	1902	1.3	1	4.44	1.3	0.36	0.00	
8392-23-7776	13800	POP MOUBRY	PL	20.880	LANCASTER PARK	1	0.17	1	258	0.13	1	0.17	0.13	0.05	0.00	
8291-65-7904	14700	POTOMAC MILLS	RD	3.580	PRTC POTOMAC MILLS	1	1.78	1	419	0.34	1	1.78	0.34	0.08	0.00	
8291-74-0443	14730	POTOMAC MILLS	RD	0.787	PRTC - HOMELESS SHELTER	1	0.35	0			1	0.35	0	0.00	0.00	
8291-64-9383	14716	POTOMAC MILLS	RD	5.507	PRTC POTOMAC MILLS	1	1.9	0			1	1.9	0	0.00	0.00	
7492-26-7762	13161	PUBLIC SAFETY	DR	8.276	PUBLIC SAFETY TRAINING FACILITY - PCL B	1	0.4	0			1	0.4	0	0.00	0.00	
7492-46-2248	13101	PUBLIC SAFETY	DR	25.052	PUBLIC SAFETY TRAINING FACILITY - PCL A	1	2.29	1	2581	1.8	1	2.29	1.8	0.49	0.00	
8093-81-0264	12731	RIDGEFIELD VILLAG	DR	4.400	EARL CUNARD PARK	1	0.18	0			1	0.18	0	0.00	0.00	
8289-65-5049	17301	RIVER RIDGE	BL	6.262	LACEY COMPTON PARK - WAYSIDE VILLAGE	1	0.35	0			1	0.35	0	0.00	0.00	
8289-48-5585	16530	RIVER RIDGE	BL	5.656	RIVER OAKS FIRE STATION	1	1.03	1	854	0.57	1	1.03	0.57	0.16	0.00	
7198-99-4945	16198	SILVER LAKE	RD	43.753	SILVER LAKE - EQUESTRIAN CENTER	1	0.8	0			1	0.8	0	0.00	0.00	
8290-76-8426	15960	SINDLINGER	WY	4.400	FERLAZZO CENTER	1	1.42	0			1	1.42	0	0.00	0.00	
8392-05-3846	13455	TELEGRAPH	RD	24.609	HORNER RD COMMUTER PARKING LOT	1	10.9	1	1531	2.3	1	10.9	2.3	0.29	0.00	
7595-47-1135	12051	TYGART LAKE	DR	42.074	BROAD RUN LINEAR PARK - PUMP STATION	1	0.38	0			1	0.38	0	0.00	0.00	
7594-60-6443	11930	VALLEY VIEW	DR	125.626	VALLEY VIEW PARK	1	5.4	1	3644	2.8	1	5.4	2.8	0.69	0.00	
8492-00-2786	14300	VETERANS	DR	78.114	VETERANS MEMORIAL PARK	1	3.21	1	4221	2.3	1	3.21	2.3	0.80	0.00	
7395-16-1460	14631	VINT HILL	RD	165.000	PRINCE WILLIAM GOLF COURSE	1	0.8	1	1736	0.804	1	0.8	0.804	0.33	0.00	
8190-35-3512	4450	WATERWAY	DR	13.802	ANN MONCURE WALL PARK	1	1	1	1373	0.66	1	1	0.66	0.26	0.00	
7696-22-6242	8642	WELLINGTON	RD	1.263	PWC JUVENILE CENTER	1	0.17	1	357	0.204	1	0.17	0.204	0.07	0.00	
8392-52-5142	2430	WEST LONGVIEW	DR	4.156	HYLBROOK PARK	1	0.59	0			0	0	0	0.00	0.00	
7991-09-6721	14811	DUMFRIES	RD	1061.984	FLEET BUILDING PARKING LOT ONLY	1	2.09	0			0	0	0	0.00	0.00	
TOTALS						87	132.5	50	67,302	42.9	78	122.9	41.2	12.0	0.8	

Summary:

94 Total Parcels with Impervious Parking Lots or Roads

50 Parcels w/Roads Totaling 12.8 Miles and 42.9 Acres

87 Parcels w/Parking Lots Totaling 132.5 Acres

Data does not include Schools, Service Authority or Landfill parcels

13. CONTRACTING

- a) "Contract Information" form Appendix L
 - 1) Updated throughout the year as contracts expire and changes are noted.
 - 2) "CONTRACTS" notebook is maintained in the Grounds Maintenance Supervisor's office for reference to the hard copy documents.
 - i) CSA (x6386) can help with contract questions and is the B&G liaison with Purchasing.
 - ii) Actual amount of work completed is based on available resources.

- b) Standard procedure once an area has been selected for maintenance:
 - 1) Contact current contractor; latest information is available from the Purchasing contract listing on-line
 - 2) Schedule site visit with the contractor to review the area, mark/paint damaged areas requiring special attention, and discuss opportunities to improve
 - 3) Contractor should provide their written estimate to complete the job (turn key operation)
 - 4) Review contractor's estimate for accuracy
 - 5) Create a Task Order (TO) based on the contractor's estimate for signature
 - 6) Forward signed original TO information to the AA II (x6377) for the creation of a Purchase Order (PO)
 - 7) Upon receipt of the approved PO, schedule start date with the contractor
 - 8) Notify the area user's of work schedule and estimated timeframe for completion

ASPHALT MAINTENANCE

- a) "Cyclic Updates – Pavement" form Appendix M
 - 1) Update annually for budget process
 - 2) Asphalt maintenance to parking lots and roadways are scheduled cyclically.
 - 3) Average lifespan is 15 years
 - 4) Approximately fifty (50) parking lots and roadways are currently listed for evaluation and prioritization each fiscal year
 - i) Rough estimate cost planning formula : \$16.50/SY
 - ii) Appendix N "Asphalt"

PAVEMENT MARKINGS

- a) Paint maintenance to parking lots is scheduled every four (4) years.
 - 1) Appendix O "Markings"

SWEEPING

- a) Sweeping maintenance to parking lots is scheduled every two (2) years.
 - 1) Appendix P "Sweep"

CONCRETE MAINTENANCE

- a) Concrete maintenance is scheduled as needed.
- b) Rough estimate cost planning formula: \$55.00/SY

FENCE MAINTENANCE

- a) Fence maintenance is scheduled as needed. NOTE: this is a Fairfax County contract
- 1) Dumpster Enclosures: there should be at least one at each building
 - 2) Locations without dumpster enclosures
 - 102 - F&R
 - 115 – Health Department
 - 116 - B&G
 - 117 - Senior Center at Manassas
 - 311 - Central
 - 390 - WD Fuel Pumps
 - 401 - McCoart
 - 402 - Owens
 - 420 – Animal Shelter
 - 440 - Juvenile Detention Center
 - 620 - Human Services
 - 701 – Senior Center at Woodbridge
 - 721 - Potomac
 - 3) Additional structures
 - Human Services – wooden wall
 - ES – chain link complex enclosure
 - Ferlazzo – chain link tennis courts
 - Gar-Field Police – brick behind building; chain link and vinyl complex enclosure
 - Gar-Field Pumps – chain link and vinyl complex enclosure
 - HPC – wooden fence behind building & chain link fence
 - IHNL – wooden PA fencing
 - JDC – chain link yard enclosure
 - JC – vinyl vent enclosure
 - Senior Center at Manassas – chain link SWMP
 - Senior Center at Woodbridge – chain link safety (lower) and security (upper) fence
 - WDP – brick and open design complex enclosure
 - WD Fuel Pumps – wooden security enclosure
 - Sam’s – wooden barrier fence around junkyard
 - Pedestrian Bridge – chain link safety fence
 - Fleet – chain link security enclosure

GROUNDS MAINTENANCE & LANDSCAPING SERVICES

a) Parks & Recreation (P&R)

- 1) Twenty-six (26) sites covered by the (P&R) Memo of Understanding (MOU)
 1. Human Services (HS)
 2. Bull Run Regional Library (BRRL)
 3. Central Community Library (Central)
 4. Chinn Park Regional Library (Chinn)
 5. Dale City Neighborhood Library (DCNL)
 6. Environmental Services (ES)
 7. Ferlazzo, Dr. A.J. (Ferlazzo)
 8. Gainesville Neighborhood Library (GNL) (closing 2015)
 9. Gar-Field Police (Gar-Field)

10. Gar-Field Pumps (Pumps)
11. Gypsy Moth Mosquito Control (GMMC)
12. Homeless Prevention Center, Hilda Barg (HPC)
13. Independent Hill Neighborhood Library (IHNL)
14. Juvenile Detention Center (JDC)
15. Molinari Juvenile Shelter (MJS)
16. Manassas Complex (Manassas)
17. McCoart
18. Nokesville Neighborhood Library (NNL)
19. Potomac Community Library (Potomac)
20. Public Safety Training Facility (PSTC)
21. Senior Center at Woodbridge (Sr. Ctr.)
22. Western District Police (WDP)
23. Winter Shelter Hypothermia Unit (WS)
24. Animal Shelter (AS)
25. Fleet
26. Police Impound Lot (PIL)

Pending Locations:

27. Haymarket-Gainesville Community Library (10/1/15)
28. Montclair Community Library (11/1/15)
29. Central District Station

2) Some sites include multiple buildings

i) Gar-Field Pumps

- Juvenile Court Services Unit
- Tower lot

ii) Manassas Complex

- Old Courthouse
- Fire & Rescue
- Voter Registration
- Bennett
- Judicial Center
- Adult Detention Center (ADC) Annex
- Police Evidence
- Health Department
- Buildings & Grounds
- Senior Center at Manassas
- ADC Main Facility
- ADC Modular Facility
- ADC Expansion

iii) McCoart

- Owens
- Development Services
- Plaza

iv) PSTC Main

- PSTC Annex
- Burn Building
- Range
- Shoot House

FY16 Groupings	Site/Complex	Site Acronym	Turf Sq. Footage	Turf Acres	Soil Test (pH)	Lime (lbs/1000 SF)
Priority	Bull Run Regional Library	BRRL	140,000	3.21	6.6	None
Priority	Chinn Park Regional Library	Chinn	80,000	1.84	6.6	None
Priority	Ferlazzo, Dr. A.J.	Ferlazzo	220,000	5.05	6.9	None
Priority	McCoart Complex	McCoart	300,000	6.89	6.4	None
Priority	Western District Police	WDP	460,000	8.49	7.4	None
Medium	Human Services	HS	40,000	0.92	7.0	None
Medium	Central Community Library	Central	70,000	1.61	6.8	None
Medium	Environmental Services	ES	60,000	1.38	5.0	120 lbs
Medium	Gypsy Moth/Mosquito Control	GMMC	70,000	1.61	6.3	50 lbs
Medium	Juvenile Detention Center	JDC	90,000	2.07	7.1	None
Medium	Senior Center at Woodbridge	Sr. Ctr.	90,000	2.07	5.8	100 lbs
Low	Gar-Field Police	Gar-Field	50,000	1.15	6.3	30lbs
Low	Homeless Prevention Center, Hilda Barg	HPC	180,000	4.13		
Low	Juvenile Emergency Shelter, Molinari	JES	60,000	1.38	7.0	None
Low	Manassas Complex	Manassas	480,000	11.02	6.5-6.9	None
Low	Public Safety Training Facility	PSTC	370,000	8.49	6.8	None
Low	Fleet	Fleet	20,000	0.46		
Low	Animal Shelter	AS	43,155	0.99		
Low	Police Impound Lot	PIL	20,170	0.46		
High	Dale City Neighborhood Library	DCNL	20,000	0.46	6.8	None
High	Gainesville Neighborhood Library	GNL	10,000	0.23	6.9	None
High	Gar-Field Pumps Complex	Pumps	100,000	2.30	6.2	30 lbs
High	Independent Hill Neighborhood Library	IHNL	10,000	0.23	6.3	30 lbs
High	Nokesville Neighborhood Library	NNL	10,000	0.23	6.5	None
High	Potomac Community Library	Potomac	50,000	1.15	7.4	None
High	Winter Shelter	WS	90,000	2.07	7.0	None

- 3) Contract maintenance is divided into four (4) groupings (See Table on Previous Page)
 - i) Priority
Sites always receive the highest level of service
 - ii) High
Sites receive the highest level of service on a rotating annual basis
 - iii) Medium
Sites receive a mid-level of service on a rotating annual basis
 - iv) Low
Sites receive the lowest level of contract service on a rotating annual basis
 - v) Minimal
Sites receive minimal maintenance. This occurs when the County is implementing extreme budget reductions Countywide.
 - vi) Annual rotation corresponds with the PWC fiscal budget year and changes every July 1st
Medium → High → Low ...
- 4) The ADC Work Crew is used to manage the turf at the Manassas Complex; below is what is completed by the work crew.
 - a. Mowing
 - b. Frequency: about 22 times per fiscal year
 - c. Edging
 - d. Frequency: about 22 times per fiscal year
- 5) Standard service actions (High/Medium/Low) The table on the following page shows the services that are completed and their frequency at the High/Medium/Low/Minimal sites.

	Groupings						Notes
	Priority	High	Medium	Low	Minimal		
	P	H	M	L	Mini		
Broad Leaf Weed Control	2	2	1	0	0	M completed in October	
Edging	8	8	8	8	8	Manassas completed by ADC Work Force Crew	
Hard Surface Weed Control	3	3	3	2	2		
Landscape Fertilization	1	1	1	0	0		
Landscape Insect and Disease Control	8	8	4	4	4	P&H completed monthly (Apr. - Nov.) M & L completed every other month	
Landscape Weed Control	8	8	4	4	5	P&H completed monthly (Apr. - Nov.) M & L completed every other month	
Mowing	24	24	24	24	24	Manassas completed by ADC Work Force Crew	
Pruning and Shearing	3	3	2	1	1	P&H Dormant (Dec) tree pruning, spring shrub clearing, fall shrub shearing M dormant tree pruning, spring shrub shearing L dormant tree pruning	
Soil Testing	1	1	1	1	0	Every two years	
Turf Aeration and Seeding	1	1	0	0	0		
SWMP		2	2	2			
Goose Control	12					Only at McCoart 12 times a year or less	
Turf Fertilization	3	3	2	1	0	P&H two in the fall, one in the spring M two in the fall L one in the fall	
Annual Frequency							

Additional Service Actions

Mulch and shovel edging	- Completed every other year
Lime application to turf	- Base on soil test results

TRANSPLANTS

B & G does not traditionally transplant trees. However there are times that B&G does accept donations. Below are some examples

- i) Example
 - (1) Memorial trees for staff/citizens
 - (a) Situation specific
 - (b) Donator may pick the tree or request suggestions
 - (c) Donator may pick the location or request suggestions
 - (d) Tree is planted – in-house or contractor
- ii) Suggestions: When and if Grounds Maintenance conducts transplant operations, they will follow the recommended procedures from the following sources.
 - (1) Cooperative Extension Service
 - “Tree and Shrub Planting” article, Bonnie Appleton, Publication (Appendix Q)
 - (2) State Arboretum of Virginia
 - “Memorial/Honorary Tree Policy”
 - Details their policy for selection, replacement, labeling, and donation requirements
 - <http://blandy.virginia.edu/arboretum/honorary-trees>

DISEASE AND INSECT CONTROL IN TREES

- i) Scheduled as part of the Parks & Recreations MOU
 - (1) Landscape Insect and Disease Control
 - a. Contract staff perform visual inspections of the trees during the growing season (April through November)
 - b. Inspection frequency is based on the rotation schedule for the site
 - 1. High (8 times per year); monthly
 - 2. Medium (4 times per year); bi-monthly
 - 3. Low (4 times per year); bi-monthly
 - c. Visual inspections dictate required control measures, if needed
- ii) Staff/citizen concerns about specific trees
 - (1) Work request is received by Buildings and Grounds to review a specific tree or area
 - (2) Concern location is inspected by in-house staff
- iii) Department of Forestry
 - (1) E-mail response for policy information relating to insect and disease conditions and notification with advice to landowners are mandated
 - (2) Code of Virginia

[Titles 10.1-1177 through 10.1-1181/http://law.lis.virginia.gov/vacode/title10.1/chapter11](http://law.lis.virginia.gov/vacode/title10.1/chapter11)

REMOVAL OF DISEASED AND HAZARDOUS TREES

The Department of Public Works Environmental Services Division has an Arborist on staff. When a tree is deemed diseased or hazardous, the Grounds Maintenance Supervisor may seek advice from the Arborist on how best to proceed.

SITE ASSESSMENT CHECKLIST

On an annual basis the Grounds Maintenance crew members will complete the “Site Assessment Checklist” at each B & G maintained facility. The purpose of these assessments is to conduct a systematic review of each site on a periodic basis to detect required maintenance activities. The assessment is a checklist used to review all exterior facility features such as turf, landscaping, parking lots, fencing, etc. Work orders are generated from the completed assessments to repair any found issues. Appendix R is the “Grounds Maintenance – Site Assessment Checklist.”

TURF MANAGEMENT

Grounds maintenance has a multi-faceted turf management program. The turf management program includes mowing, inspection, fertilization; disease & insect control and weed control. The schedule and services, which are part of the P & R MOU, are listed in the table on page 19. Visual inspections dictate required control measures for weeds and disease if needed.

TURF INVENTORY

P & R MOU information “see Table on page 19”

- Condition is evaluated based on soil test results done bi-annually
- VA Tech recommendations are followed to stabilize/improve turf health
- Soil tests results February 2014

HORTICULTURAL SERVICES (INTERIOR)

- Interior Plant Maintenance is scheduled to be done to care for the atrium plants at the Dr. A. J. Ferlazzo and James J. McCoart buildings.
- “Facility Information” form Appendix S

15. SNOW REMOVAL

B & G is responsible for snow removal at all County facilities maintained by B & G. It is B&G's goal to have all facilities passable within 48 hours of the end of a winter weather event. Snow removal is completed with B&G staff and contractual resources.

- a. The following B&G snow response information must be reviewed and updated annually and distributed to B&G supervisory staff:
 1. "Snow and Emergency Notification List (After Hours)"
 - Appendix V "Notification List"
 - "Personnel" spreadsheet
 - Appendix W "Personnel"
 - "In-house West Schedule"
 - Appendix X "In-house West Schedule"
 - "PWC Sites" listing; compilation of B&G and Property Management (PM) building locations
 - Appendix Y "PWC Sites Sample"
- b. The following information is also distributed to the B&G snow removal contractor:
 - "B & G Division Snow and Emergency Response Plan" cover sheet Appendix Z
 - "Contractor Schedule" – listing of locations and priorities
 - Appendix AA "Contractor Schedule"
 - "24-hour locations"
 - Appendix BB "24-hour Locations"
 - "Road Chemical Distribution Log" form – to be returned to B&G at end of shift Appendix CC
 - Map – aerial views of each site Appendix DD
- c. The following informational memos/letters are also distributed to agencies outside B&G:
 - "Point of Contact for Weather Warnings – Winter Storms" memo; Emergency Services Coordinator, F&R Chief, and Police Chief Appendix EE

- “Snow Removal Operations” memo; all County Departments and Agencies Appendix FF
- “Ice Melt Direction” submitted to Risk Management for publication – PWConnects Headlines Appendix GG
- “FAQ’s Snow Removal” submitted to PW Director’s Office for posting on the B&G website Appendix HH
- “Prince William County Emergency Operations Plan” updates should be submitted to F&R. Section “ESF 3B: Snow Removal Plan” is the part relating to B&G. (Latest version available on line http://ourteams.pwccgov.org/fire/SitePages/Emergency_Operations.aspx)
- Buildings & Grounds Snow Removal Equipment memo Appendix II

Appendix CC
Road Chemical Distribution Log - SAMPLE 2015

ROAD CHEMICAL DISTRIBUTION LOG
PRINCE WILLIAM COUNTY PUBLIC WORKS
BUILDINGS & GROUNDS DIVISION

RETURN FORM AT END OF SHIFT TO:
 9412 PEABODY STREET
 MANASSAS, VA 20110
 703-792-6376 - FAX

WO#
Chemicals

#163096



DATE	TIME	SALT (load)	SAND (load)	MIX (load)	DRIVER / TRUCK #
Ex. 8/12/05	5:00 PM	1			JD HOLLEY
3/1/15	12:30-4:30PM	(1)			Mike Ferrall #155426
3/1/15	12:30P-6P	(1)			Mike Stutzman #163096
3/1/15	9P - 12A	(1)			↓
		(3)			
	FY15 usage	1/2 tons salt			
3/2/15	5-8PM	(1)			Mike Stutzman #163096
	FY15 usage	1/2 tons salt			
3/2/15	6-8PM	(1)			Mike Ferrall #154635
	FY15 usage	1/2 tons salt			

WO #
Labor

#155426
#163096

#163096

#154635

NOTE: estimated quantity = 2.00 tons/load; mix = 1.50 ton salt plus 0.50 ton sand

AS OF 11/26/14 FROM BROOKS STORAGE SITE (9002 SOWDER PLACE, NOKESVILLE)
 AS OF 11/26/14 FROM CITY OF MANASSAS SITE (RUSS GRAHAM POC FOR 13 LOADS; 18.98 SALT AND 19.96 SAND)
 AS OF 11/26/14 FROM GAR-FIELD TOWER STORAGE SITE (15960 SINDLINGER WAY, WOODBRIDGE)

Appendix HH
FAQ's Snow Removal FY15

How does B&G prepare for the snow and ice season?

- ◆ During the fall, Buildings & Grounds staff get ready by stockpiling chemicals at strategic locations.
- ◆ Equipment is tested, fire hydrants and storm drains are marked, and contactor information is confirmed.

What areas is B&G responsible for clearing?

- ◆ B&G is responsible for clearing roads, parking lots, and walkways around thirty-nine (39) County-owned properties.
- ◆ County agencies operating out of leased facilities should contact the Property Management Leasing Agent to find out who is responsible for clearing their areas.
- ◆ County Park sites (Recreation/Community Centers and Golf Courses) are the responsibility of the Department of Parks & Recreation.

How does B&G decide which sites to clear first?

- ◆ Priority goes to locations that are staffed/open 24/7.
- ◆ Main roadways which carry the most traffic get top priority.
- ◆ Parking lots also get early snow removal attention.
- ◆ Main walkways, those leading to the front visitor entrance of the building, are top priority during operating hours and while snow/ice is occurring.
- ◆ Once the snow stops, secondary access points into a facility are cleared and treated. Additional "touch-up" work is done to clear more parking spaces and widen roadway access.

How soon will all areas be passable after a storm?

- ◆ Our goal is to make all areas **passable** within 48 hours **after** a storm ends.
- ◆ B&G snow removal crews and contractors work around the clock when a storm occurs until conditions are safe for traveling. At night, icy patches on roads, in parking lots, and on walkways, are treated with abrasives.

What is put down on the roads?

- ◆ Salt is most effective after the snow has accumulated about an inch and the temperature is 27 degrees Fahrenheit or higher. Under these conditions, the salt and snow will mix, melting the snow into a slush that can be plowed off the pavement. This melting occurs within two hours or sooner if traffic is using the roadway and parking lot.
- ◆ Abrasives (sand) are put down to aid traction, and calcium chloride can be added to melt the ice and snow. If the temperature is below 27 F, the salt will not melt the snow and ice, so other methods are used.
- ◆ In order to protect plow equipment from excessive wear, B&G uses an indicator level of 2" minimum before plowing roadways and parking lots.

What is put down on the walks?

- ◆ Mr. Magic Premium Ice Melt manufactured by The Kissner Group
 - Material Safety Data Sheets are available from Intranet Speed Dial (M)SDS

Appendix 5: Pesticide Herbicide and Fertilizer Application

The following table shows County lands where nutrients are applied:

<u>Name</u>	<u>Acres</u>	<u>Longitude (W)</u>	<u>Latitude (N)</u>
H.L. Mooney Plant	4.5	38.6146	77.2684
Spittle Building	2.2	38.681184	77.3492
Anne Wall	11.318024	77*20'39"	38*36'14"
Ben Lomond	49.090921	77*29'37"	38*47'51"
Ben Lomond Community	1.842723	77*30'22"	38*47'22"
Birchdale Rec	2.983583	77*18'40"	38*37'48"
Braemar	3.418874	77*34'9"	38*44'2"
Catharpin	19.750509	77*33'56"	38*51'16"
Chinn	16.841857	77*19'49"	38*40'14"
Cloverdale	13.447417	77*19'10"	38*37'20"
Dale City Rec	7.371609	77*20'42"	38*38'35"
Fairmont	13.231697	77*29'27"	38*46'54"
Forest Greens	105.42	77*21'14"	38*32'35"
Graham Park Pool	0.618607	77*19'11"	38*33'16"
Hellwig	58.982269	77*27'0"	38*38'20"
Howison	15.488018	77*22'57"	38*38'2"
James Long	62.641345	77*38'5"	38*51'13"
Lake Ridge	16	77*19'15"	38*41'31"
Leitch	2.798762	77*22'16"	38*39'26"
Leitch/VEPCO	16.210986	77*22'6"	38*39'13"
Locust Shade	7.008583	77*21'4"	38*32'0"
Mayhew	7.170033	77*29'29"	38*48'24"
Nokesville	42.943161	77*34'39"	38*41'8"
Prince William Golf	200	77*37'50"	38*44'51"
Stadium	22.775254	77*21'5"	38*41'1"
Turley	2.467387	77*18'34"	38*37'40"
Valley View	69.882351	77*32'22"	38*42'4"
VEPCO	3.908403	77*21'49"	38*38'53"
Veterans	48.584245	77*14'59"	38*38'32"
Barg Homeless	1.716532	77*16'32"	38*37'36"
Boys Home /Winter Shelter	2.264584	77*17'43"	38*37'50"
Bull Run Library	1.639026	77*31'14"	38*47'12"
Central Library	1.967365	77*27'19"	38*46'7"
Dawson Beach	4.523858	77*14'42"	38*38'53"
Fire 20	2.192036	77*18'23"	38*38'51"
Fire 23	3.104318	77*18'19"	38*35'11"
Fire 3F	2.17924	77*19'53"	38*33'12"
Fire 4	1.691609	77*37'10"	38*48'14"

Garfield Ferlazzo	8.409373	77*17'40"	38*36'29"
Juvenile Detent/ Gypsy	1.934307	77*25'6"	38*37'57"
Juvenile Emergency Shelter	1.118525	77*31'8"	38*45'48"
Manassas Court	10.690373	77*28'44"	38*45'9"
McCoart	13.218327	77*21'8"	38*40'49"
PWC Safety Training Center	6.27211	77*35'7"	38*39'52"
Western PD	8.423548	77*31'2"	38*45'45"
Total	900.24		

The following is the Nutrient management plan General template:

Nutrient Management Plan

Company Name

Prepared For:

Customer Name

Mailing Address

City State Zip

Phone

Prepared By:

Planner Name

Mailing Address

City State Zip

Phone

Certification Code: Cert. #

Total Acreage: Total

The purpose of this Nutrient Management Plan is to ensure minimum movement of nitrogen and phosphorus from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring that plants have optimum soil nutrient availability for good productivity and quality. By following this soil test based plan you are helping to protect local waters and the Chesapeake Bay.

If you have questions, please contact your plan writer, local Virginia Cooperative Extension



**Nutrient Management Plan for:
Company Name**

Landowner Information	
Company Name	<i>Company Name</i>
Customer Name	<i>Customer Name</i>
Mailing Address	<i>Mailing Address</i>
City State Zip	<i>City State Zip</i>
Phone	<i>Phone</i>
Email	<i>Email</i>

Planners Informaiton	
Planner Name	<i>Planner Name</i>
Mailing Address	<i>Mailing Address</i>
City State Zip	<i>City State Zip</i>
Phone	<i>Phone</i>
Fax	<i>Fax</i>
Email	<i>Email</i>
Certification Code	<i>Cert. #</i>

Location Information	
Physical Address	<i>Physical Address</i>
City State Zip	<i>City State Zip</i>
Coordinates	<i>Lat</i>
Please Use NAD 83 Deg Min Sec	<i>Long</i>
VAHU6 Watershed Code	<i>Watershed</i>
County	<i>County</i>

Square Footage	
Total	<i>Total</i>
Area 1	<i>Area 1</i>
Area 2	<i>Area 2</i>
Area 3	<i>Area 3</i>
Area 4	<i>Area 4</i>

Plan Start Date	<i>Start Date</i>
Plan End Date	<i>End Date</i>

Planner Signature	
-------------------	--

Narrative

Maps

Soil Test Reports

Reference Materials and Notes

Standards and Criteria

Other Turf Management Considerations for Golf Courses, Athletic fields, and Home Lawns

Lime Recommendations

Lime should be recommended based on a soil test to maintain soil pH within an agronomic range for turfgrass. For new seedings where lime is recommended, incorporate the lime into the topsoil for best results.

Returning Grass Clippings

Recycling of clippings on turf should be encouraged as an effective means of recycling nitrogen, phosphorus, and potassium. Proper mowing practices that ensure no more than 1/3 of the leaf blade is removed in any cutting event will enhance turf appearance and performance when clippings are returned. Return all leaf clippings from mowing events to the turf rather than discharging them onto sidewalks or streets. Rotary mulching mowers can further enhance clipping recycling by reducing the size of clippings being returned to the turfgrass canopy.

Management of Collected Clippings

If clippings are collected they should be disposed of properly. They may be composted or spread uniformly as a thin layer over other turf areas or areas where the nutrient content of the clippings can be recycled through actively growing plants. They should not be blown onto impervious surfaces or surface waters, dumped down stormwater drains, or piled outside where rainwater will leach out the nutrients creating the potential for nutrient loss to the environment.

Use of Iron


Iron applications (particularly foliar applications) may periodically be used for enhanced greening as an alternative to nitrogen. These applications are most beneficial if applied in late spring through summer for cool season grasses and in late summer/fall applications for warm-season grasses.

Impervious Surfaces


Do not apply fertilizers containing nitrogen or phosphorus to impervious surfaces (sidewalks, streets, etc.). Remove any granular materials that land on impervious surfaces by sweeping and collecting, and either put the collected material back in the bag, or spread it onto the turf and /or using a leaf blower etc. to return the fertilizer back to the turfgrass canopy.



Standard Operating Procedure
Department of Public Works
Environmental Services Division

Title:	Certification
Number:	3.013.1
Subject:	Documentation of Employees' Required Certifications
Cross Reference:	APWA Management Practice(s) <u>28.7</u>
Date Issued:	May 3, 2010
Date Revised:	December 12, 2018
Date Last Reviewed:	June 30, 2015
Signature of Issuer:	 <hr/> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	December 12, 2018



	SOP Title: Certification	SOP No.: 3.013.1
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to ensure that all required employee certifications and Branch permits are maintained and a regular review is conducted to prevent any lapses.

B. Applicability

This SOP applies to all employees of the Mosquito and Forest Pest Management Branch.

C. Specifics

All employees that apply insecticides must acquire and maintain the VDACS Category 8 (Public Health Pest Control) certification. This occurs initially by passing the CORE and Category 8 examinations conducted at the DMV. Subsequent to the initial certification, employees must attend VDACS-approved training in order to maintain their certification at least every two years.

The original certificate and any copies must be kept with the Assistant Branch Chief and the concerned employee. It is the responsibility of the employee to ensure that their certificate is kept current. The Assistant Branch Chief is required to conduct an annual review of the certifications and inform any employee whose certification may be expiring.

The Branch Chief must ensure that the VPDES Permit (Pesticide Discharge Management Plan) is kept current and updated as required (every 3 years). The Branch Chief is also responsible for informing Branch employees about the scope of this Permit and any changes that may occur.

The Branch Chief must ensure that the VDOT Land Use Permit (SWM facility inspections) is kept current and updated as required (every 3 years). The Branch Chief is also responsible for informing Branch employees about the scope of this Permit and any changes that may occur.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

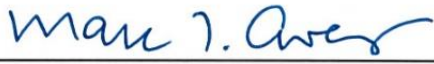
E. Administration

The administration of this SOP shall be the responsibility of the Mosquito and Forest Pest Management Branch Chief.






Standard Operating Procedure
Department of Public Works
Environmental Services Division

Title:	Adult Mosquito Surveillance
Number:	3.017.1
Subject:	Adult Mosquito Surveillance
Cross Reference:	APWA Management Practice (s) <u>28.1, 28.2</u>
Date Issued:	May 3, 2010
Date Revised:	December 12, 2018
Date Last Reviewed:	June 30, 2015
Signature of Issuer:	 <hr/> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	December 12, 2018



	SOP Title: Adult Mosquito Surveillance	SOP No.: 3.017.1
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to establish trapping procedures and methods to collect adult female mosquitoes for the purpose of estimating vector species abundance and distribution as well as determining the presence of arbovirus.

B. Applicability

This SOP applies to all employees of the Mosquito and Forest Pest Management Branch.

C. Specifics

1. Trap Sites

Permanent trap sites in various locations around the County are maintained, as well as pump-station traps. In addition, temporary trap sites may be established to monitor areas of interest in terms of preponderance of mosquito complaints, mosquito density, species present and history of human cases in the area.

2. Trap Types

Three (3) different types of traps are used to collect certain mosquito species. These are the BG Sentinel Trap, CDC Mini-Light Trap and Gravid Trap (see list of ingredients for Gravid water below):

GRAVID WATER Ingredients


55 gal	Water
330 g	Straw
330 g	Hay
330 g	Grass Clippings
22 g	Brewers' Yeast
1,650 g	Chicken Manure

All 3 trap-types are set out in each permanent trap location. Pump-station trap locations receive only a gravid trap. Temporary trap locations may have any combination of trap(s) at the discretion of the field staff and Assistant Branch Chief. The effectiveness of the BG and CDC Light Traps are further enhanced by the addition of CO₂ to attract mosquitoes.

3. Frequency of trapping

Two seasonal trappers are hired during the mosquito season. Traps are set once a week, covering all permanent sites. In case of failure, the trap is re-set. Mobile traps are likewise set and monitored weekly.



	SOP Title: Adult Mosquito Surveillance	SOP No.: 3.017.1
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

4. Sorting and Identification of Mosquitoes

Nets and containers are kept in coolers upon pick-up of traps to immediately kill the mosquitoes and preserve the arbovirus. These are then brought in the laboratory for sorting by the trappers in petri dishes and subsequent identification of species by the Entomologist and other staff with the aid of a microscope and taxonomic keys. Each mosquito is identified to species level and counted and recorded in the Field Data Management System (FDMS). Sorting and identification must be completed within 2 business days from collection.

In addition, mosquitoes are pooled for WNV testing (see SOP 3.017.5)

5. Analysis of Surveillance Data

The FDMS is used to store location information, mosquito population data, locations of arbovirus-positive pools and local weather data. This data is used operationally to enhance control and outreach efforts.

6. Trap and Battery Inventory Management

Each trap is labeled with a code and monitored to determine its performance by recording the nature and frequency of break downs; the unit is monitored until it is deemed unserviceable. A yearly inventory is conducted by the Entomologist at the end of the mosquito season of all traps, with the number of functional and non-functional units recorded. In addition, accessories and parts (such as nets, containers, lures, etc.) of each trap type are likewise inventoried.

Three types of sealed batteries are used depending on the trap type: the CDC Mini-Light Trap uses a 6volt, 20 amp battery. The Gravid Trap uses 6volt, 12 amp while the BG Sentinel Trap uses 12volt, 18 amp. Batteries are also individually coded and labeled to monitor performance and anticipate when a battery needs to be replaced. Like the traps, batteries are inventoried at the end of the season.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

E. Administration

The administration of this SOP shall be the responsibility of the Mosquito and Forest Pest Management Branch Chief.






Standard Operating Procedure
Department of Public Works
Environmental Services Division

Title:	Adulticiding
Number:	3.017.2
Subject:	Adulticiding
Cross Reference:	APWA Management Practice (s) <u>28.2</u>
Date Issued:	May 3, 2010
Date Revised:	December 12, 2018
Date Last Reviewed:	June 30, 2015
Signature of Issuer:	<u>Marc T. Aveni</u> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	December 12, 2018



	SOP Title: Adulticiding	SOP No.: 3.017.2
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

A. Purpose

The purpose of this standard operating procedure (SOP) is to establish a guide to mosquito spraying operations. It is established to ensure that targeted spraying is conducted; it also ensures that adequate safety measures and EPA guidelines on the application of chemicals are followed.

B. Applicability

This SOP applies to all employees of the Mosquito and Forest Pest Management Branch.

C. Specifics

Adulticiding Process

Adulticiding may be triggered by high mosquito trap counts for specific species (mainly *Culex pipiens* and *Cx. restuans*) and positive arbovirus pools in residential areas. The decision to spray is further determined by species composition, presence or absence of non-participants, weather, location, proximity to human habitation and housing density among other factors. Adulticiding is conducted in the spray block where the infected mosquitoes were collected. Additional areas may be treated based on proximity to the trap site associated with the positive pools.


The program does not generally spray based on the density of the Asian Tiger Mosquito (*Aedes albopictus*) or other container breeders. In exceptional cases where highly pestiferous species are present in huge numbers (as evidenced by trap data) such as *Psorophora* spp., spray may also be justified. Furthermore, the branch generally does not spray if it is raining continuously, extreme heat, high winds or Code Red conditions. It is recommended that the sprayer is turned off at a distance of 300 feet from non-participants (NPs).

Citizens are allowed to opt out via email or phone call if they do not want their property to be sprayed. This non-participant database is maintained by the Assistant Branch Chief and GIS analyst and updated annually. Spray block maps include this information when it becomes available.

A public notification is published on the day of spraying once the decision is made to spray. The county's website and other notification systems are used as the media for public notification. The public notification lists the blocks to be sprayed and information on how to access spray block maps on the County Mapper XM.

The branch has two designated spray trucks both of which are equipped with a spray machine. The Assistant Branch Chief is responsible for general vehicle maintenance and spray machine calibration to ensure that the vehicles are in a state of readiness to be deployed during the mosquito season. Each vehicle is also equipped with a Spill Kit which must be checked before each spray operation by the sprayer.



	SOP Title: Adulticiding	SOP No.: 3.017.2
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

Once a spray operation is assigned, the sprayer/driver may request additional staff support. The driver operates the fogger machine while the second person is required to assist with navigation and alert the driver of any impending danger that might not be immediately visible to the driver. A paper map of the spray route is prepared by the GIS Analyst and made available to the vehicle operator.

The branch uses GIS tools on mobile devices linked to the fogging equipment to track and map areas sprayed. GIS data layers (spray route, spray block & NPs) are prepared at the office by the GIS Analyst and then deployed to a handheld Field PC. This device is then attached to the vehicle's control box which is equipped with a GPS. At the end of the spray session the device is disconnected and returned to the office. The data collected is uploaded to GIS and is used to create a spray information map showing the spray line and GPS points indicating when the sprayer was turned on and off. A detailed spray report is produced after the spray operation on the quantity of chemical used, the acreage sprayed and spray activity times and made available to the Field Supervisor and Branch Chief.

D. Chemical Spills

If any spill were to occur the MFPM staff member will immediately inform the on-call person and call 911 for spill cleanup.

Pesticide accidents or incidents that constitute a threat to any person, to public health or safety, and/or to the environment must be reported to the VDACS Office of Pesticide Services. Initial notification must be made by telephone within 48 hours of the occurrence; a written report describing the accident or incident must be filed within 10 days of the initial notification. The above is the responsibility of the Assistant Branch Chief and in his/her absence, the Branch Chief. Additionally, it is their responsibility to notify PWC Risk Management within 24 hours of a spill that is above the thresholds established by this agency.

Spill Response

All vehicles and storage facilities will contain spill kits suitable to address pesticide spills. All staff that use or may potentially come into contact with pesticides will undergo training on spill response.

E. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

F. Administration

The administration of this SOP shall be the responsibility of the Mosquito and Forest Pest Management Branch Chief.






Standard Operating Procedure
Department of Public Works
Environmental Services Division

Title:	Insecticide Storage, Disbursement, Transport and Inventory
Number:	3.017.7
Subject:	Procedures for Insecticide Storage, Disbursement, Transport and Inventory
Cross Reference:	APWA Management Practice (s) <u>28.4</u>
Date Issued:	May 3, 2010
Date Revised:	December 12, 2018
Date Last Reviewed:	June 30, 2015
Signature of Issuer:	<u>Marc T. Aveni</u> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	December 12, 2018



	SOP Title: Insecticide Storage, Disbursement, Transport and Inventory	SOP No.: 3.017.7
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to establish a guide for the storing, handling, and disbursement of insecticides.

B. Applicability

This SOP applies to all employees of the Mosquito and Forest Pest Management Branch (MFPM).

C. Guidelines

Storage: Insecticides such as solid and liquid larvicides, and insecticide tank flush used in the program are stored in the Mosquito Shed located at the MFPM building. Insecticides used on a regular basis during the mosquito season may be held in County vehicles. The liquid adulticide is stored in the Mosquito Shed located at the MFPM building in on spill containment pallets. Each drum storage pallet is properly labeled.

Disbursement: Larvicides and adulticides are distributed on an “as needed basis”. Technicians pick up the larvicides or adulticide. The amount of material that is taken is recorded on an inventory sheet located at the storage sites. The inventory at the storage sites is managed by the Assistant Branch Chief.

Transport: Insecticides must be secured while being transported in County trucks.

Disposal of Empty Insecticide Containers: Empty larvicide bags can be disposed of in the trash. Empty adulticide insecticide containers are picked up by the vendor they were purchased from. Always refer to the Product Label before disposal.


Disposal of Unwanted Insecticide Material: Expired and unwanted insecticides are identified by any staff member and turned over to the County’s Hazardous Waste Contractor by the Assistant Branch Chief.

Safety: Read and follow all instructions on Product Labels. SDS (see below) must also be reviewed.

Safety Data Sheets (SDS): SDS information on all insecticides in use may be found in the storage sheds, staff vehicles and in the department shared drive and the SDS online portal. The Assistant Branch Chief must ensure that all staff has access to the latest versions (in an electronic format) on an at least annual basis.

Chemical Spill: If any spill were to occur the MFPM staff member will immediately inform the on-call person and call 911 for spill cleanup.



	SOP Title: Insecticide Storage, Disbursement, Transport and Inventory	SOP No.: 3.017.7
	Effective Date: 12/12/2018	Supersedes Policy Dated: 6/30/2015

Pesticide Accidents: Pesticide accidents or incidents that constitute a threat to any person, to public health or safety, and/or to the environment must be reported to the VDACS Office of Pesticide Services. Initial notification must be made by telephone within 48 hours of the occurrence; a written report describing the accident or incident must be filed within 10 days of the initial notification. The above is the responsibility of the Assistant Branch Chief and in his/her absence, the Branch Chief. Additionally, it is their responsibility to notify PWC Risk Management within 24 hours of a spill that is above the thresholds established by this agency.

Spill Response: All vehicles and storage facilities will contain spill kits suitable to address pesticide spills. All staff that use or may potentially come into contact with pesticides will undergo training on spill response.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

E. Administration

The administration of this SOP shall be the responsibility of the Mosquito and Forest Pest Management Branch Chief.






Standard Operating Procedure

Department of Public Works

Environmental Services Division


Title:	Mosquito Larval Surveillance
Number:	3.017.8
Subject:	Definitions and Procedures of Mosquito Larval Surveillance
Cross Reference:	APWA Management Practice (s) <u>28.1</u>
Date Issued:	October 1, 2015
Date Revised:	December 12, 2018
Date Last Reviewed:	December 12, 2018
Signature of Issuer:	<u>Marc T. Aveni</u> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	December 12, 2018



	SOP Title: Mosquito Larval Surveillance	SOP No.: 3.017.8
	Effective Date: 12/12/2018	Supersedes Policy Dated: 10/01/2015

- A. **Purpose**
The purpose of this Standard Operating Procedure (SOP) is to describe the mosquito larval surveillance procedure.
- B. **Applicability**
This SOP applies to all employees of the Mosquito and Forest Pest Management Branch (MFPM).
- C. **Mosquito Surveillance**
Mosquito surveillance is a prerequisite to an effective, efficient and environmentally sound mosquito control program. Surveillance provides an estimate of vector species abundance and distribution. The data is used to guide control operations and evaluate the effectiveness of control operations.
- D. **Larval Surveillance**
Larval surveillance is utilized to locate and map potential larval development habitats, to identify mosquito species present and to predict the time and location of effective control strategies. This mapping and location is described in SOP 3.017. - Field Data Collection Process. The MFPM program monitors PWC-owned stormwater management ponds (SWMs), commercial ponds and other mosquito larval habitat within the county (non-SWMs). Data gathered from this surveillance leads to the decision of larval control called larviciding.
- E. **Larviciding**
Larviciding refers to the application of commercial products to kill immature stages (larvae and pupae) of mosquitoes in aquatic habitats. The program routinely targets the larval and pupal stages to preclude the emergence of adults. Sampling is accomplished using a standard dipper attached to a handle or basters for small sources (containers, tires, tree holes). Field staff estimate the number of larvae/pupae present and may remove a sample for identification at the office laboratory if desired.
- F. **Treatment Criteria**
Many factors play a role in the treatment decision; these include the number of larvae, mosquito species and stage of development, habitat type, human population density and abundance of natural predators. If larvae numbers are low and natural predator numbers are high treatment is usually not needed. If sufficient larvae are present, with or without predators, treatment is recommended. Insecticides are selected to have minimal impact on beneficial organisms and wildlife and still achieve reduction in mosquito population. Certain species of mosquitoes do not feed on humans; if these larvae are present treatment is not recommended.



	SOP Title: Mosquito Larval Surveillance	SOP No.: 3.017.8
	Effective Date: 12/12/2018	Supersedes Policy Dated: 10/01/2015

G. Product Application Rate

If treatment is needed the technician will decide on the proper product and formulation based on several factors listed above. The recommended product rate of application is the mid-range dosage on the label.

H. Field Date Management System Data (FDMS) Collection

All data collected is entered into the FDMS as described in SOP 3.017.6 - Field Data Collection Process.

I. Reporting of Issues Related to Stormwater Management (SWM)

Any SWM issues that have relevance to mosquito control such as vegetation overgrowth, trash and debris impeding the smooth flow of water, etc., are immediately referred to the County's Drainage Crew. The Assistant Branch Chief or Branch Chief achieves this by sending an email to the Drainage Crew Supervisor and the Watershed Management Branch identifying the issue and the SWM number of the problem pond (if applicable).

J. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

K. Administration

The administration of this SOP shall be the responsibility of the MFPM Branch Chief.



The following table shows County lands where nutrients are applied:

<u>Name</u>	<u>Acres</u>	<u>Longitude (W)</u>	<u>Latitude (N)</u>
H.L. Mooney Plant	4.5	38.6146	77.2684
Spittle Building	2.2	38.681184	77.3492
Anne Wall	11.318024	77*20'39"	38*36'14"
Ben Lomond	49.090921	77*29'37"	38*47'51"
Ben Lomond Community	1.842723	77*30'22"	38*47'22"
Birchdale Rec	2.983583	77*18'40"	38*37'48"
Braemar	3.418874	77*34'9"	38*44'2"
Catharpin	19.750509	77*33'56"	38*51'16"
Chinn	16.841857	77*19'49"	38*40'14"
Cloverdale	13.447417	77*19'10"	38*37'20"
Dale City Rec	7.371609	77*20'42"	38*38'35"
Fairmont	13.231697	77*29'27"	38*46'54"
Forest Greens	105.42	77*21'14"	38*32'35"
Graham Park Pool	0.618607	77*19'11"	38*33'16"
Hellwig	58.982269	77*27'0"	38*38'20"
Howison	15.488018	77*22'57"	38*38'2"
James Long	62.641345	77*38'5"	38*51'13"
Lake Ridge	16	77*19'15"	38*41'31"
Leitch	2.798762	77*22'16"	38*39'26"
Leitch/VEPCO	16.210986	77*22'6"	38*39'13"
Locust Shade	7.008583	77*21'4"	38*32'0"
Mayhew	7.170033	77*29'29"	38*48'24"
Nokesville	42.943161	77*34'39"	38*41'8"
Prince William Golf	200	77*37'50"	38*44'51"
Stadium	22.775254	77*21'5"	38*41'1"
Turley	2.467387	77*18'34"	38*37'40"
Valley View	69.882351	77*32'22"	38*42'4"
VEPCO	3.908403	77*21'49"	38*38'53"
Veterans	48.584245	77*14'59"	38*38'32"
Barg Homeless	1.716532	77*16'32"	38*37'36"
Boys Home /Winter Shelter	2.264584	77*17'43"	38*37'50"
Bull Run Library	1.639026	77*31'14"	38*47'12"
Central Library	1.967365	77*27'19"	38*46'7"
Dawson Beach	4.523858	77*14'42"	38*38'53"
Fire 20	2.192036	77*18'23"	38*38'51"
Fire 23	3.104318	77*18'19"	38*35'11"
Fire 3F	2.17924	77*19'53"	38*33'12"
Fire 4	1.691609	77*37'10"	38*48'14"

Garfield Ferlazzo	8.409373	77*17'40"	38*36'29"
Juvenile Detent/ Gypsy	1.934307	77*25'6"	38*37'57"
Juvenile Emergency Shelter	1.118525	77*31'8"	38*45'48"
Manassas Court	10.690373	77*28'44"	38*45'9"
McCoart	13.218327	77*21'8"	38*40'49"
PWC Safety Training Center	6.27211	77*35'7"	38*39'52"
Western PD	8.423548	77*31'2"	38*45'45"
Total	900.24		

The following is the Nutrient management plan General template:

Nutrient Management Plan

Company Name

Prepared For:

Customer Name

Mailing Address

City State Zip

Phone

Prepared By:

Planner Name

Mailing Address

City State Zip

Phone

Certification Code: Cert. #

Total Acreage: Total

The purpose of this Nutrient Management Plan is to ensure minimum movement of nitrogen and phosphorus from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring that plants have optimum soil nutrient availability for good productivity and quality. By following this soil test based plan you are helping to protect local waters and the Chesapeake Bay.

If you have questions, please contact your plan writer, local Virginia Cooperative Extension



**Nutrient Management Plan for:
Company Name**

Landowner Information	
Company Name	<i>Company Name</i>
Customer Name	<i>Customer Name</i>
Mailing Address	<i>Mailing Address</i>
City State Zip	<i>City State Zip</i>
Phone	<i>Phone</i>
Email	<i>Email</i>

Planners Informaiton	
Planner Name	<i>Planner Name</i>
Mailing Address	<i>Mailing Address</i>
City State Zip	<i>City State Zip</i>
Phone	<i>Phone</i>
Fax	<i>Fax</i>
Email	<i>Email</i>
Certification Code	<i>Cert. #</i>

Location Information	
Physical Address	<i>Physical Address</i>
City State Zip	<i>City State Zip</i>
Coordinates	<i>Lat</i>
Please Use NAD 83 Deg Min Sec	<i>Long</i>
VAHU6 Watershed Code	<i>Watershed</i>
County	<i>County</i>

Square Footage	
Total	<i>Total</i>
Area 1	<i>Area 1</i>
Area 2	<i>Area 2</i>
Area 3	<i>Area 3</i>
Area 4	<i>Area 4</i>

Plan Start Date	<i>Start Date</i>
Plan End Date	<i>End Date</i>

Planner Signature	
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Narrative

Maps

Soil Test Reports

Reference Materials and Notes

Standards and Criteria

Other Turf Management Considerations for Golf Courses, Athletic fields, and Home Lawns

Lime Recommendations

Lime should be recommended based on a soil test to maintain soil pH within an agronomic range for turfgrass. For new seedings where lime is recommended, incorporate the lime into the topsoil for best results.

Returning Grass Clippings

Recycling of clippings on turf should be encouraged as an effective means of recycling nitrogen, phosphorus, and potassium. Proper mowing practices that ensure no more than 1/3 of the leaf blade is removed in any cutting event will enhance turf appearance and performance when clippings are returned. Return all leaf clippings from mowing events to the turf rather than discharging them onto sidewalks or streets. Rotary mulching mowers can further enhance clipping recycling by reducing the size of clippings being returned to the turfgrass canopy.

Management of Collected Clippings

If clippings are collected they should be disposed of properly. They may be composted or spread uniformly as a thin layer over other turf areas or areas where the nutrient content of the clippings can be recycled through actively growing plants. They should not be blown onto impervious surfaces or surface waters, dumped down stormwater drains, or piled outside where rainwater will leach out the nutrients creating the potential for nutrient loss to the environment.

Use of Iron

Iron applications (particularly foliar applications) may periodically be used for enhanced greening as an alternative to nitrogen. These applications are most beneficial if applied in late spring through summer for cool season grasses and in late summer/fall applications for warm-season grasses.

Impervious Surfaces

Do not apply fertilizers containing nitrogen or phosphorus to impervious surfaces (sidewalks, streets, etc.). Remove any granular materials that land on impervious surfaces by sweeping and collecting, and either put the collected material back in the bag, or spread it onto the turf and /or using a leaf blower etc. to return the fertilizer back to the turfgrass canopy.


Appendix 6: Illicit Discharges and Improper Disposal



Standard Operating Procedure

Department of Public Works

Environmental Services Division

Title:	Dry Weather Monitoring Program
Number:	3.047.6
Subject:	Identification and Removal of Unauthorized Non-Stormwater Discharges to the County's MS4.
Cross Reference:	APWA Management Practice (s) <u> N/A </u>
Date Issued:	June 9, 2015
Date Revised:	November 1, 2018
Date Last Reviewed:	June 9, 2015
Signature of Issuer:	 _____ Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	November 1, 2018





SOP Title: Dry Weather Monitoring Program		SOP No.: 3.047.6
Effective Date: 11/01/2018	Supersedes Policy Dated: 06/09/2015	

A. Purpose

The purpose of this standard operating procedure is to describe the methods for the detection and elimination of all unauthorized, non-storm discharges to the County's Municipal Separate Storm Sewer System (MS4).

B. Applicability

This SOP applies to all storm sewer infrastructures in Prince William County's MS4 through the authority established by the County's MS4 permit, applicable County ordinances, the Virginia Department of Environmental Quality (DEQ), and United States Environmental Protection Agency (USEPA).

C. Specifics

1. Routine Inspection

- a. Stormwater outfalls shall be inspected by County Water Quality Inspectors to check for dry weather flows (See flow chart in Attachment A). A period of at least 48 hours of dry antecedent conditions should exist prior to an inspection. Outfalls to be inspected shall be selected from a prioritized list. The prioritized list will be determined by the following criteria:
 - i. Age and density of development
 - ii. Outfalls representing the general land uses of the county
 - iii. High risk businesses such as gas stations, service centers, and shopping centers
 - iv. Presence of environmentally sensitive elements
 - v. Citizen complaints received on illicit discharges
- b. Upon arrival at the site, an outfall inspection form will be completed using the Illicit Discharge Detection and Elimination (IDDE) mobile application. The outfall inspection form directs the inspector through the identification and characterization of stormwater outfall conditions.
- c. Determine if an illicit discharge is present.
 - i. If there is no flow and no obvious visual evidence of an illicit discharge, the inspection form will be completed and documented in the IDDE application.
 - ii. If obvious visual evidence of an illicit discharge is present, the inspector will proceed to source tracking.
 - iii. If there is a flow and no obvious visual evidence of an illicit discharge, a sample may be taken for further analysis.
 1. If a sample is taken, it will be analyzed in the office or taken to an outside laboratory with more thorough testing capabilities. Office samples will be tested for water temperature, pH, specific conductance, detergents, chlorine, copper, phenol, fluoride, potassium, ammonia, nitrite, and nitrate as determined by the inspector. An illicit discharge exists if one of the parameters exceeds the screening levels.





SOP Title: Dry Weather Monitoring Program		SOP No.: 3.047.6
Effective Date: 11/01/2018	Supersedes Policy Dated: 06/09/2015	

2. Complaint-Based Inspection

- a. Complaints can reach County Water Quality Inspectors through a hotline phone number or email. Complaints will be prioritized over routine inspections to ensure a timely response. Complaint-based inspections may include outfall and inlet inspections.
- b. Determine if an illicit discharge is present.
 - i. If obvious visual evidence of an illicit discharge is present anywhere within the stormsewer system, the inspector will proceed to source tracking.
 - ii. If there is a flow and no obvious visual evidence of an illicit discharge, a sample may be taken for further analysis.
 1. If a sample is taken, it will be analyzed in the office or taken to an outside laboratory with more thorough testing capabilities. Office samples will be tested for water temperature, pH, specific conductance, detergents, chlorine, copper, phenol, fluoride, potassium, ammonia, nitrite, and nitrate as determined by the inspector. An illicit discharge exists if one of the parameters exceeds the screening levels.

3. Source Tracking

- a. If an illicit or unlawful discharge is suspected to have occurred, as referenced by County Ordinance 23.2-4.1, a "trackdown" to identify the source of flow will be conducted. At this time a trackdown report will be created, violations will be tracked by case number and referenced in all documentation. If the source of discharge is not located, the site will be re-inspected within 48 hours for reoccurrence of the illicit discharge. If no illicit discharge is found during re-inspection, an outfall inspection form is to be completed and the outfall may be subject to periodic re-inspection. Corrective action will be discussed with the responsible party if possible.

4. Enforcement

- a. If warranted, a Notice of Violation will be issued/mailed by the issuing inspector stating the activity must cease or be operated in a manner that will avoid the discharge of the pollutant to the storm water system within 30 days of notice. Any mitigation efforts should also be outlined and completed by the assigned date. If the discharge is not ceased or discharge effects not mitigated within the allotted time, the most effective method of elimination/enforcement will be taken. These actions include:
 - i. Issuing a Summons and installing fines per County Ordinance through coordination with the Prince William County Attorney's Office
 - ii. Enforcement of other applicable county ordinances through partnering County agencies (Zoning, Neighborhood Services, Fire Marshalls Office)
 - iii. Contact with the Department of Environmental Quality





SOP Title: Dry Weather Monitoring Program		SOP No.: 3.047.6
Effective Date: 11/01/2018	Supersedes Policy Dated: 06/09/2015	

5. Documentation

- a. A detailed discharge report will be completed for each instance where trackdown is needed, with the outfall inspection form describing steps taken during the discovery of the discharge, trackdown, and follow-up/enforcement. Outfalls with no illicit discharge or flow will be documented in the IDDE application.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

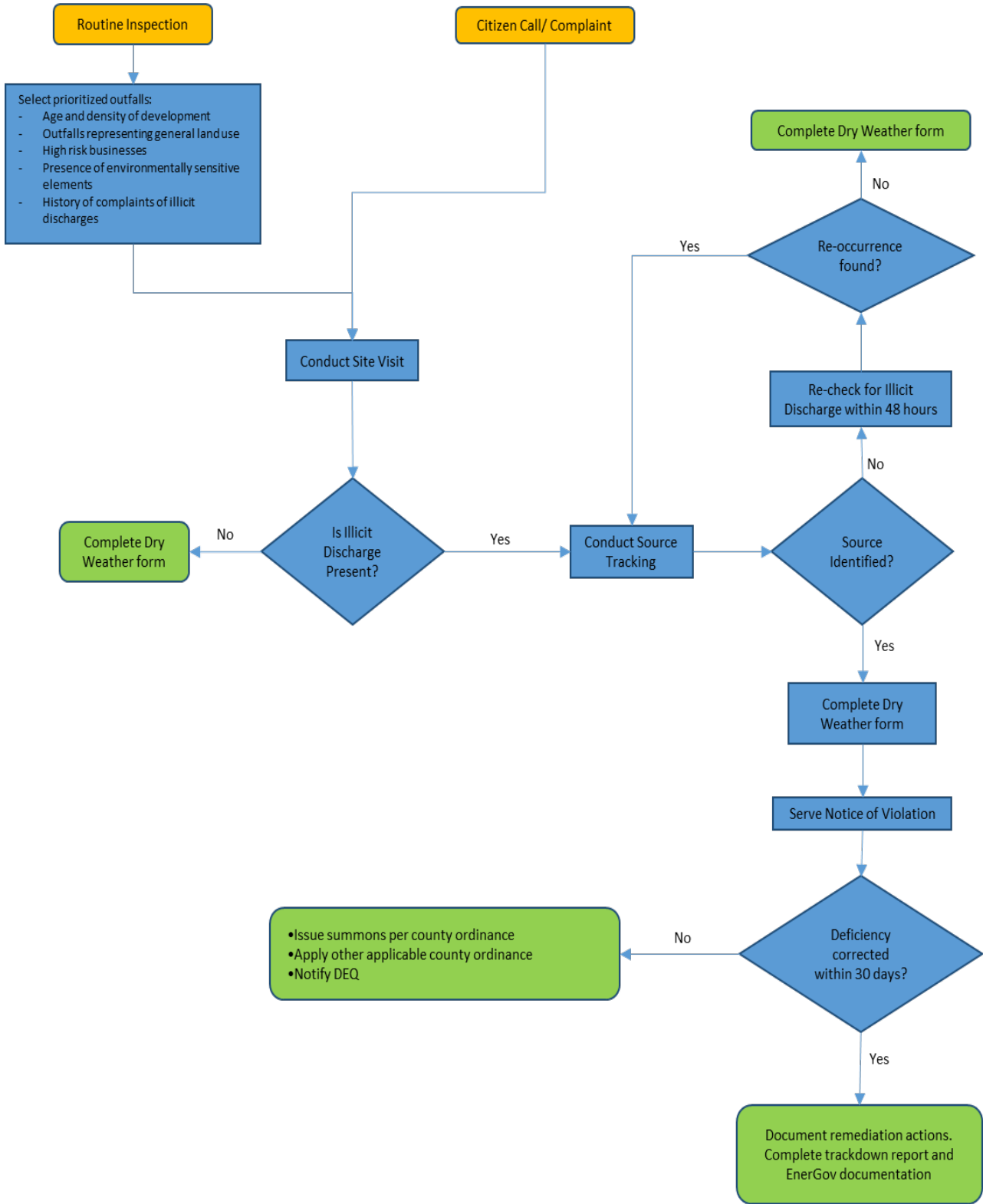
E. Administration

The administration of this SOP shall be the responsibility of the Environmental Services Division Chief and Branch Chiefs.

Attachments: Attachment A: Dry Weather Monitoring Process Flowchart



Attachment A: Dry Weather Monitoring Process Flowchart



11. LITTER CREW PROCEDURES

The Litter Crew has over 25 major roads that are regularly maintained. In addition, there are approximately 55 other roads that the Litter Crew maintains on a quarterly or as-needed basis. When it is necessary, the Crew members can volunteers to work on the weekends to remove illegal signs in the VDOT ROW and to assist with County community clean ups.

The Litter Crew cleans each County scheduled road once every two to three weeks, or as needed.

Arrival at jobsite:

- Beacon and hazard lights are turned on prior to pulling off the road or in the median
- Use ground guides for backing vehicle

- Place proper (Temporary Traffic Control Devices) signs, cones and other TTC at correct locations in correlation to jobsite

Prior to departure:

- Verify all safety lights are on and working properly
- Be sure to use proper signals when pulling into traffic
- Ensure all signs, cones and other equipment is picked up prior to leaving

During the course of their duty day, the Litter Crew will refrain from scavenging when removing litter, trash and debris from County roadways.

- For the purposes of this document, *scavenging* is defined as the unauthorized or uncontrolled removal of waste materials from any Solid Waste Management facility.
- Scavenging will be prohibited at all times.

- Employees will inform any person found scavenging that they are in violation of facility regulations and must cease immediately.
- Employees will report to their supervisor any employees that continue to scavenge after being warned to cease.
- Supervisors will inform the offender that he/she must immediately cease scavenging. The offender will be escorted from the premises if they refuse to comply. Prince William County Police will be called for assistance. The supervisor will complete a Prince William County Sanitary Landfill Incident Report. Solid Waste Division provides this form.
- The Solid Waste Superintendent will determine any necessary disciplinary actions. These may include fines, violations, expulsion from the facility, or other actions as deemed necessary.

This policy applies to all County Solid Waste facilities including the Landfill, Balls Ford Road Compost facility, recycling collection sites and trailers.

12. DUMPSTER DAY CLEAN UPS

The purpose of the Dumpster Day Clean Ups is to allow residents of Prince William County to bring household waste to one central location for disposal where the County will haul it away for them. Planned by the Neighborhood Coordinator and community representatives from participating Magisterial Districts, clean ups can be scheduled for all Districts within the County. Staffing is provided by the Litter Crew who may assist older residents with lifting heavy items from their vehicles in addition to providing traffic control at the site. Once the date at location has been determined, Solid Waste (SW) provides drivers for placement of the containers. (On occasion, containers may be placed on the site the Friday before the event). Coordination for the clean ups includes scheduling drivers from SW and Litter Crew to locate the most accessible area for large trucks and vehicle traffic.

13. CONTRACTORS

Neighborhood Services currently serves as the primary for two contracts: the Landscaping contract, and the Weed, Tree and Debris Removal contract.

14. BID PROCESS

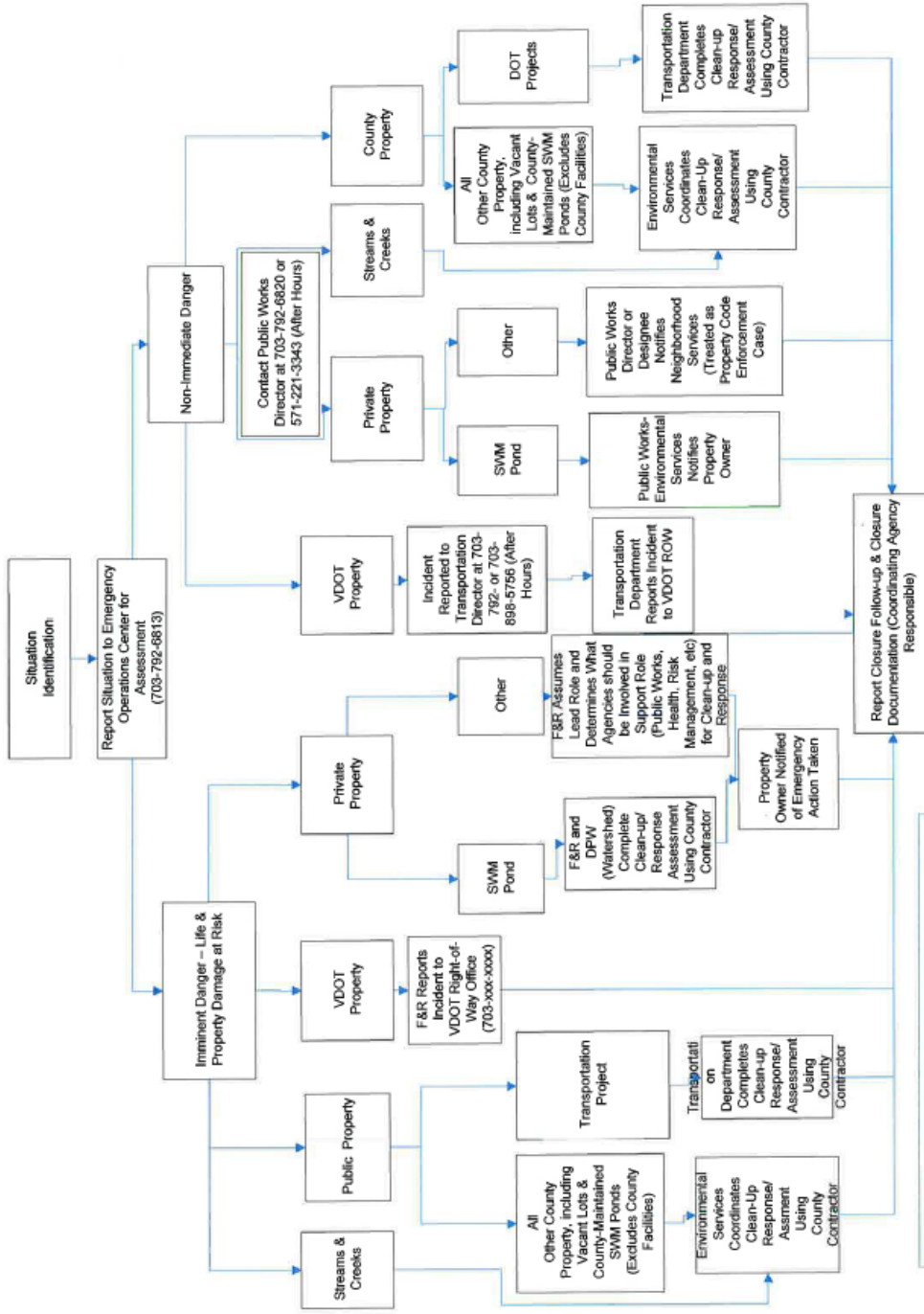
The Field Supervisor holds a pre-proposal bid conference with the assistance of a Purchasing Agent to facilitate any questions from potential contractors regarding upcoming contracts. This is time for the perspective vendors to ask questions regarding what is expected or allowable. Once the bid goes out, the Purchasing Agent and Field Supervisor review it. When the final bids are in, the Field Supervisor conducts a background check on the awardee to ensure proper business practices are in place, and then a selection is determined for the contract award according to what best suits the County.

Purchasing Agent
 Contract Specialist Prince William County Government
 Department of Finance – Purchasing
 McCoart Administration Building
 1 County Complex Court | Prince William, VA 22192
 703-792-5022 (office)

*Vendor References and Checks have been put in place by the Field Supervisor to ensure the contractors responding to bids are legitimate companies so that Neighborhood Services does not award any contracts to dummy or sub-par companies putting the County in an unfortunate situation. Once the lowest bid is

Appendix 7: Spill Prevention and Response

Prince William County Community Environmental Incident Response Procedures



Note: County Facilities have separate spill procedure plans & procedures

Appendix 8: Industrial and High Risk Runoff




Standard Operating Procedure

Department of Public Works

Environmental Services Division

Title:	Industrial & High Risk Runoff Facilities Inspection Program
Number:	3.047.5
Subject:	Identification & Monitoring of all Industrial & High Risk Runoff Facilities that Discharge into Prince William County's Municipal Separate Storm Sewer System (MS4)
Cross Reference:	APWA Management Practice (s) <u> N/A </u>
Date Issued:	April 1, 2015
Date Revised:	November 1, 2018
Date Last Reviewed:	April 1, 2015
Signature of Issuer:	<u> <i>Marc T. Aveni</i> </u> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	November 1, 2018



	SOP Title: Industrial and High Risk Runoff Facilities Inspection Program	SOP No.: 3.047.5
	Effective Date: 11/01/2018	Supersedes Policy Dated: 04/01/2015

A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures involved in the management, identification, and monitoring of industrial and high risk runoff facilities that discharge into the County's Municipal Separate Storm Sewer System (MS4).

B. Applicability

This SOP applies to the inspection of all industrial and high risk facilities that discharge into MS4. This includes all state-permitted Virginia Pollutant Discharge Elimination System (VPDES) and "No Exposure" facilities.

C. Specifics


1. Pre-Inspection

- a. A list of all known industrial and high risk runoff facilities that discharge into Prince William County's MS4 will be maintained and updated as needed. The list will include any industrial or commercial stormwater discharges not covered under the Virginia state water control law that are determined to be contributing to significant pollutant loading to MS-4.
- b. A prioritized schedule to inspect outfalls pertaining to all VPDES permitted facilities that discharge into County's MS4 will be developed and maintained. Prioritization may be based on historical discharges, history of citizen complaint, industrial category, location to nearby sensitive areas, or other method.
- c. Prior to facility inspection, pre-inspection desktop analysis of the site will occur. This includes an assessment of the outfall and storm system, access to the applicable facility components (outfalls discharging to the County's MS4) through County easements, the status of facility permits and monitoring reports (if applicable), and general information pertaining to industrial activities at the facility.

2. Facility Site Inspection

- a. If County easements do not allow for required access to facility components, a letter requesting access to facility stormwater discharge locations will be sent. Upon allowance of access a site inspection will occur, if access is not granted, DEQ will be notified for compliance inspection of the facility.
- b. Outfall locations will be tested for flow. If flow exists samples of the flow will be taken and tested for excess levels of detergents, chlorine, copper, phenol, fluoride, potassium, ammonia, nitrate, and nitrite. If excess sediment or analytes are found to be present, significant pollution discharge is determined to occur and post inspection procedures will commence.



	SOP Title: Industrial and High Risk Runoff Facilities Inspection Program	SOP No.: 3.047.5
	Effective Date: 11/01/2018	Supersedes Policy Dated: 04/01/2015

3. Post-Inspection
 - a. If significant pollutant discharge is determined to occur, VPDES permitted Facilities will be directed to DEQ for compliance review through a notification letter to appropriate department staff. Upon inspection of the facility an Industrial Inspection Form will be completed and documentation of the discharge will occur. The facility will be listed for periodic inspection to confirm removal of the discharge.
 - b. Non-VPDES Permitted Facilities determined to be discharging significant pollutant loads to the MS4 will be directed to DEQ to obtain proper permits. Upon inspection of the facility an Industrial Inspection Form will be completed and documentation of the discharge will occur.
 - c. Facilities which do not meet requirements for stormwater permitting will be listed for prioritized inspection and monitored periodically. These facilities can include major automotive facilities such as repair shops, body shops, auto dealers, car rental dealers, and service stations. Recommendations will be made to the facility to insure compliance and improve storm water pollution prevention controls if needed.
4. High Priority County Municipal Facilities will be identified throughout the County. A stormwater pollution prevention plan will be developed for these facilities if necessary.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

E. Administration

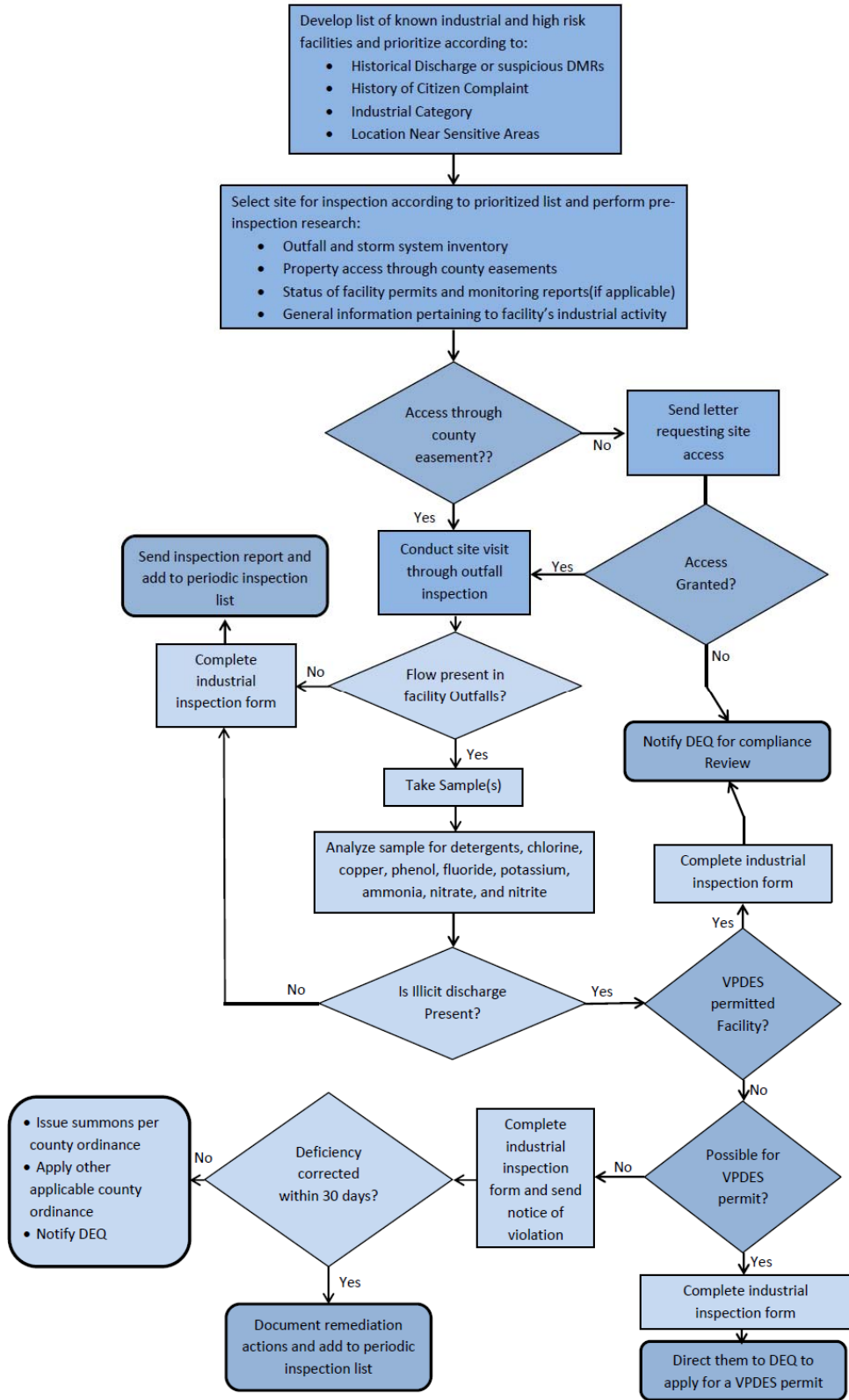
The administration of this SOP shall be the responsibility of the Environmental Services Division Chief and Watershed Management Branch Chief.

Attachment A: Industrial and High Risk Storm Water Runoff Flowchart



Attachment A

Industrial and High Risk Storm Water Runoff Flowchart



2. Inspecting VPDES Permitted and High Risk facility Outfalls

Outfalls of Virginia Pollutant Discharge Elimination System (VPDES) permitted facilities within the County are required to be monitored to ensure these facilities are conforming to requirements of their VPDES General Stormwater Discharge Permit.

Outfalls of VPDES permitted and high risk facilities are included in the hotspot analysis, and have a special focus in Dry Weather Monitoring procedures. VPDES permitted outfalls are to be inspected semi-annually and High Risk outfalls are to be inspected on a yearly basis. High Risk outfalls are identified in the IDDE mobile application by selecting the “High Risk” radial icon in the outfall inspection page. These outfall inspections can be isolated during dry weather monitoring data analysis through the desktop application. A list of VPDES and High Risk outfalls can be seen on the W: drive (W:\Environmental Services\Watershed Management\PWC IDDE\FY 2016\DWM). Letters are to be mailed by certified mail to both the DEQ Northern Virginia Regional office and the high risk/industrial facility. A folder should be created in the PWC industrial VPDES folder on the W: drive (W:\Environmental Services\Watershed Management\PWC IDDE\FY 2016\Industrial VPDES\Site Investigation Reports) compiling any evidence dealing with the referral to DEQ. Evidence of 3 consecutive significant discharges (discharges classified as Illicit under the Dry Weather Monitoring program), 2 consecutive instances of non-reported DMR’s, or facilities determined by the program administrator to pose a significant environmental risk to the County’s storm sewer or regulated waters are to be reported to DEQ for compliance review.

In the event a high risk outfall or other Dry Weather Monitoring activity leads to a determination that a facility should require a VPDES permit or a facility where a VPDES permit is currently held is not performing to standards set by their permit, the facility is to be referred to DEQ for compliance review. This is accomplished by sending a letter to the appropriate DEQ Northern Virginia Regional office staff member. The letter for compliance review for both current and potential VPDES permit holders is included below.



Thomas Bruun
Director

COUNTY OF PRINCE WILLIAM

5 County Complex Court, Suite 170
Prince William, Virginia 22192-5308
(703) 792-7070 Metro 631-1703 FAX: (703) 792-6297

DEPARTMENT OF
PUBLIC WORKS

Environmental
Services Division

[Click here to enter a date.](#)

Ms. Susan Mackert
Regional Industrial Stormwater Coordinator
Virginia Department of Environmental Quality
Northern Regional Office
13901 Crown Court
Woodbridge, VA 22193

Reference: Facility Name
Facility Address

Dear Ms. Mackert:

In accordance with Part I. B. h. 5. of Prince William County's Municipal Separate Storm Sewer System (MS4) permit (No: VA0088595), "the permittee shall refer the following facilities to the Department of Environmental Quality, Northern Regional Office, for DEQ compliance review under the Virginia Water Control Law:

- a. Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit.
- b. Facilities and operations identified under 40 CFR §122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.
- c. Any VPDES-permitted facility where there is evidence of substantial pollutant loadings to the MS4 as determined by continued or regular exceedence of effluent limitations or benchmarks.
- d. Facilities that do not submit signed copies of DMRs to the permittee as required under a VPDES-issued permit. "

The above referenced facility appears to require a compliance review by DEQ in accordance with part(s) (x) from the above list. (Explain the findings of the inspection and why it requires referral to DEQ).

Please report any findings or conclusions regarding this facility to the following address:

David Ungar, Environmental Engineer
Prince William County Department of Public Works, Watershed Management Branch
Environmental Services Division
5 County Complex Court, Suite 170
Prince William, VA 22035-0052

We appreciate your cooperation in this matter. Please contact David Ungar at 703-792-7104 or Dungar@pwcgov.org with any questions or concerns you may have regarding the above request.

Sincerely,

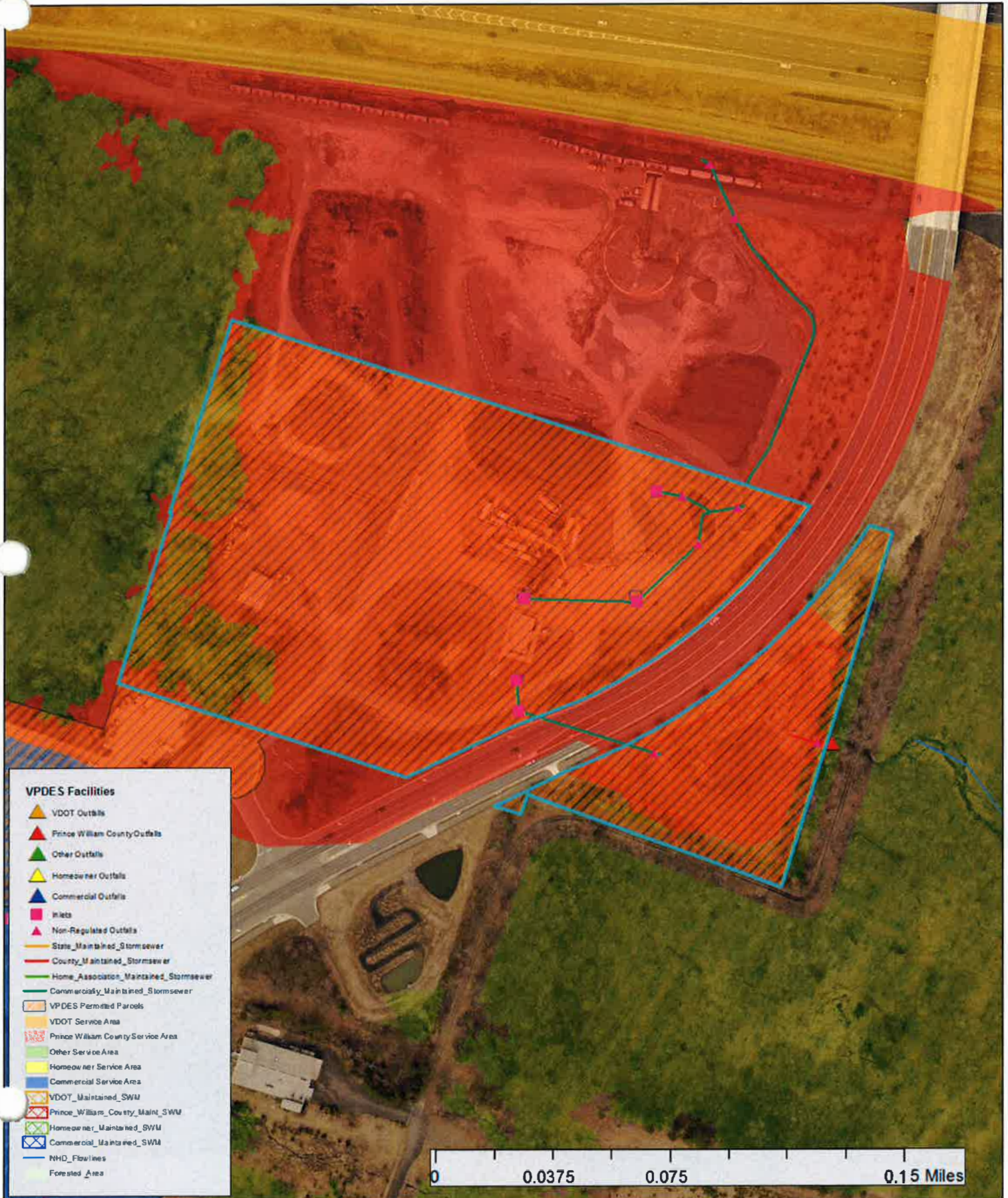
Madan Mohan
Watershed Management Branch Chief

cc: David Ungar, Environmental Engineer, Watershed Management Branch,
Environmental Services Division

	Permit No	Facility	Location Address 1	Type	Location City	Location Zip5	County Name	DMRs
1	VAR05 2243	234 Auto and Truck Salvage Limited Liability Co.	14843 Dumfries Rd	SWG P	Manassas	20112	Prince William County	TBD
2	VAR05 1949	Chemung Contracting Corporation - Gainesville	7201 Rail Line Ct	SWG P	Gainesville	22013	Prince William County	Semi-Annual
3	VAR05 2372	Swift Auto Recycling and Salvage, Inc	14832 Dumfries Rd	SWG P	Manassas	20112	Prince William County	TBD
4	VAR05 1477	First Transit Incorporated	14700 Potomac Mills Rd	SWG P	Woodbridge	22192	Prince William County	Semi-Annual
5	VAR05 2115	Penny's Used Auto Parts	13059 Minnieville Rd	SWG P	Woodbridge	22192	Prince William County	TBD
6	VAR05 1639	Potomac Disposal Services of Virginia, LLC	9650 Hawkins Dr	SWG P	Manassas	20109	Prince William County	Semi-Annual
7	VAG11 0100	Virginia Concrete Company Inc - Gainesville	7300 Rail Line Ct	Concrete	Gainesville	20156	Prince William County	TBD

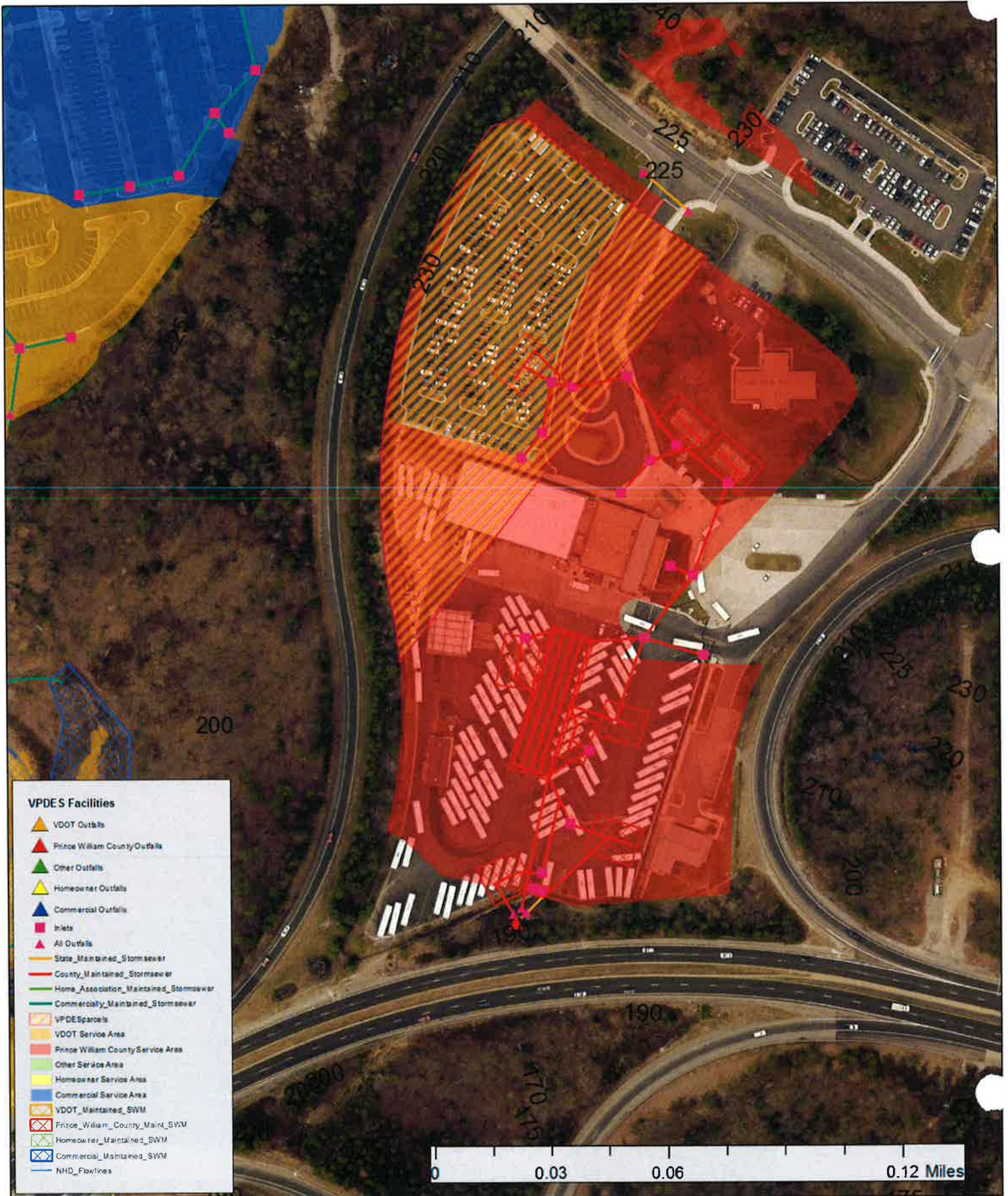
VPDES Permitted Facilities

Chemung Contracting Corporation - Gainesville
Permit No: VAR051949



VPDES Permitted Facilities

First Transit Incorporated
Permit No: VAR051477



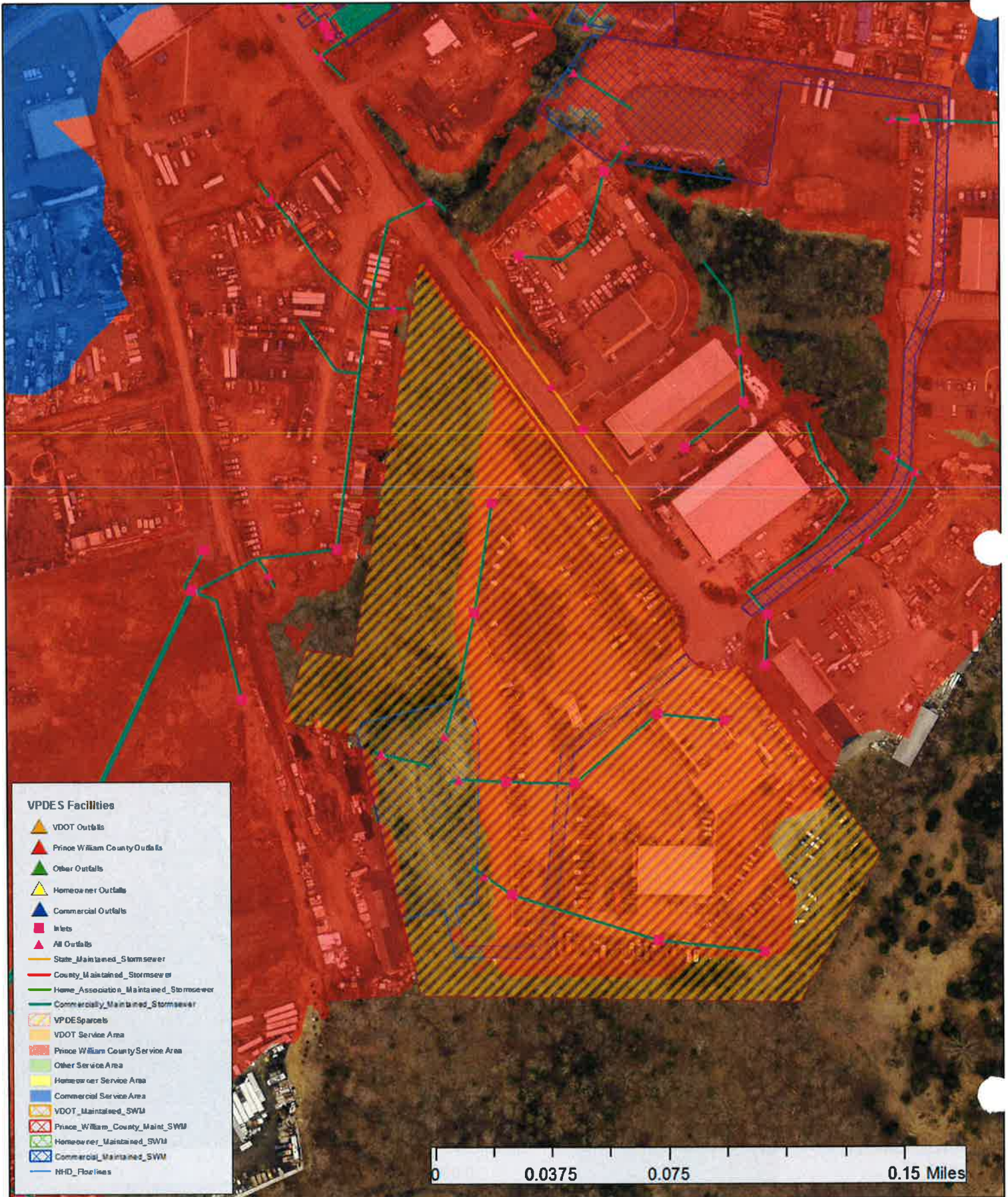
VPDES Permitted Facilities

Penny's Used Auto Parts
Permit No: VAR052115



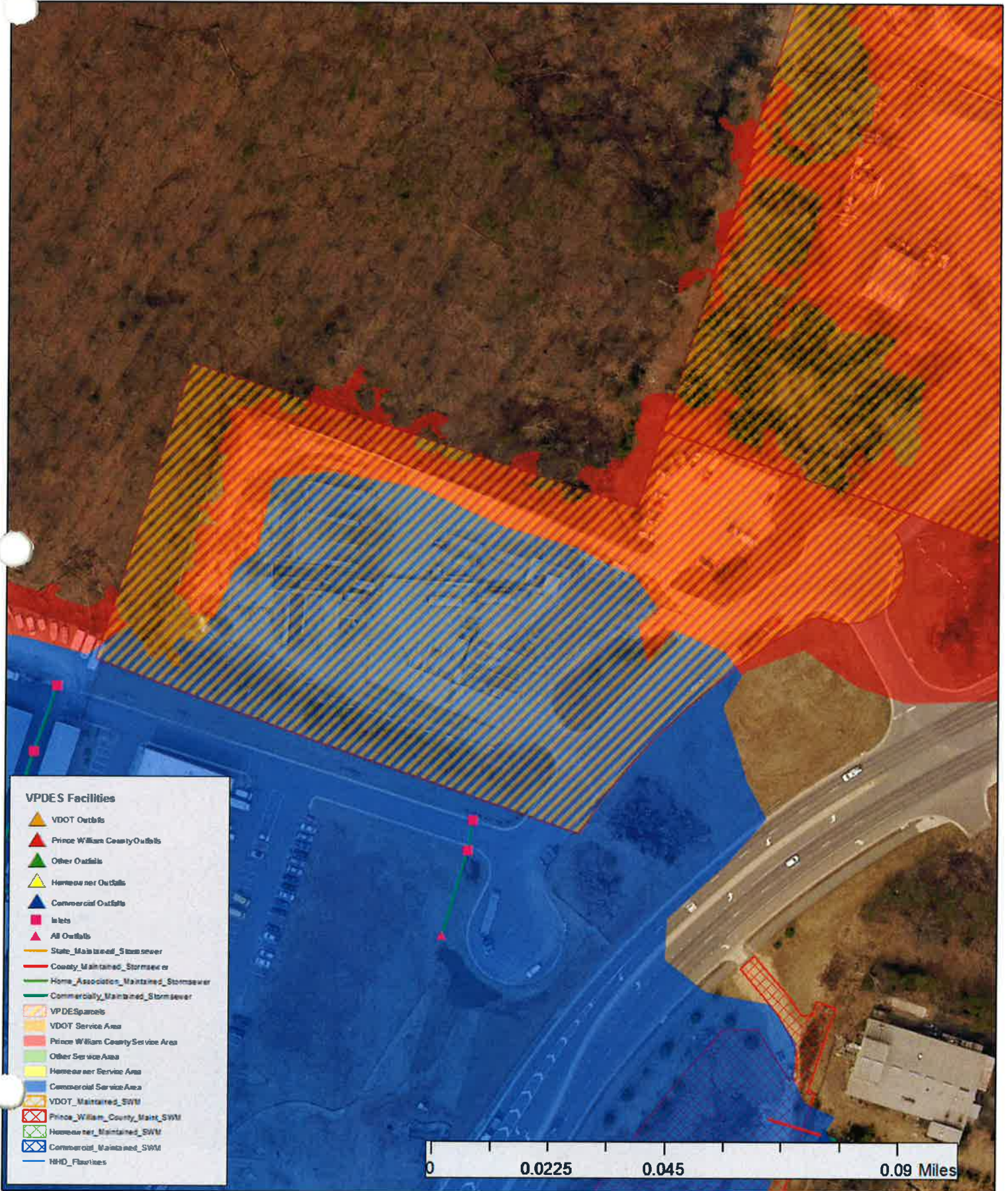
VPDES Permitted Facilities

Potomac Disposal Services of Virginia, LLC
Permit No: VAR051639



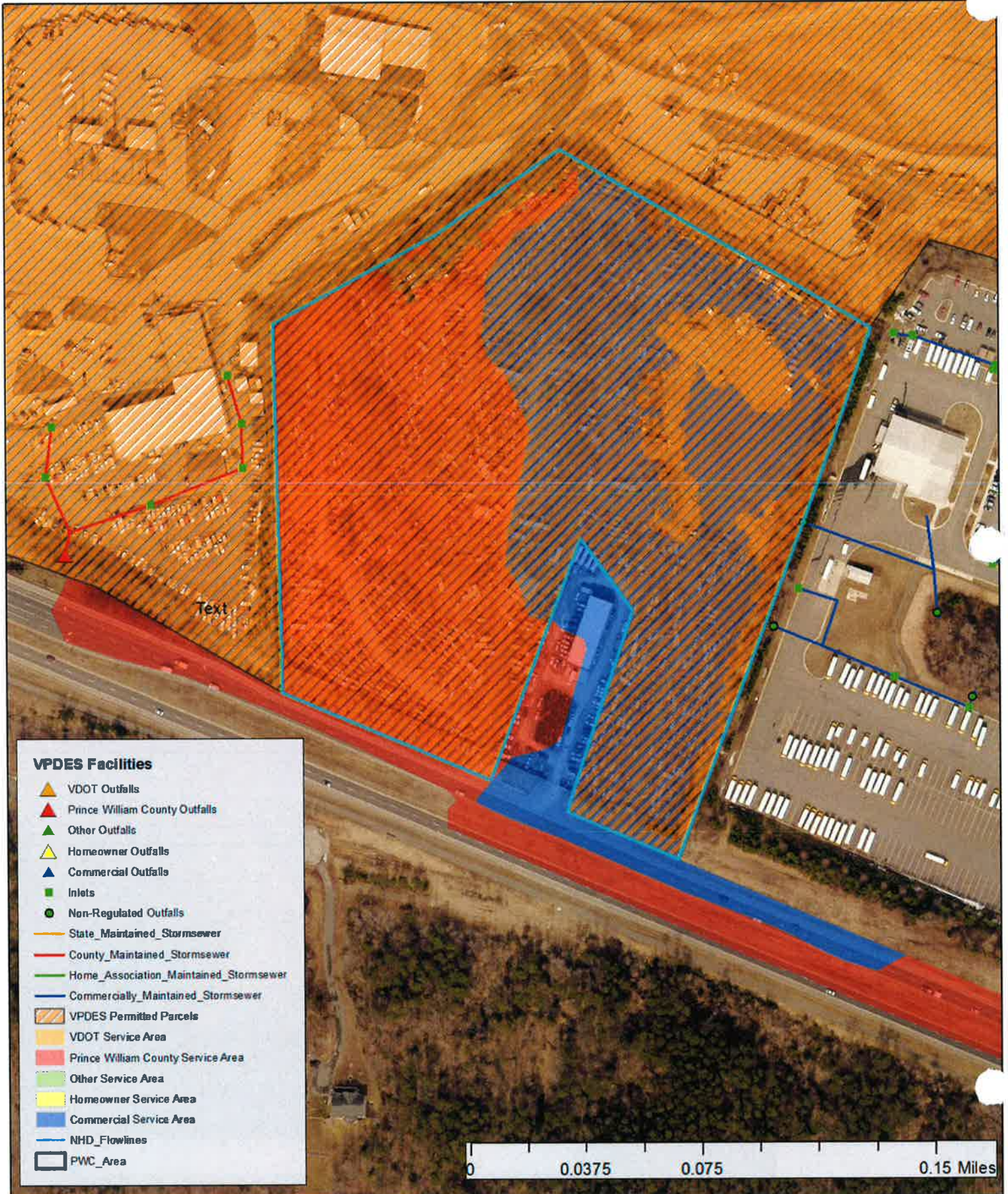
VPDES Permitted Facilities

Virginia Concrete Company Inc - Gainesville
Permit No: VAG110100



VPDES Permitted Facilities

234 Auto and Truck Salvage Limited Liability Company
Permit No: VAR052243



VPDES Permitted Facilities

Chase David D Residence
Permit No: VAG830458



Appendix 9: Stormsewer Infrastructure Management

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	BMP	1	PL-O	PL41	20700100801	414	-77.40147	38.72786	5.39	4.16	1.23
P	GD	3	PL-N	PL42	20700100701	102	-77.64447	38.92714	7.63	5.36	2.27
P	GD	4	PL-N	PL42	20700100701	102	-77.63541	38.92669	8.49	7.78	0.71
P	GD	5	PL-N	PL42	20700100701	116	-77.61301	38.90937	6.18	4.70	1.48
P	GD	6	PL-N	PL42	20700100701	116	-77.61111	38.90919	7.03	6.09	0.94
P	BMP	18	PL-N	PL42	20700100701	118	-77.61888	38.89968	2.86	1.66	1.20
P	GD	19	PL-N	PL42	20700100701	116	-77.61497	38.90304	20.74	17.21	3.53
P	GD	20	PL-N	PL42	20700100701	116	-77.61468	38.90372	0.66	0.46	0.19
P	GD	21	PL-N	PL42	20700100701	116	-77.6141	38.90602	2.37	1.77	0.60
P	GD	22	PL-N	PL42	20700100701	116	-77.60427	38.90696	13.66	12.89	0.77
P	GD	23	PL-N	PL42	20700100701	116	-77.60643	38.89853	2.81	2.62	0.19
P	STP	24	PL-N	PL42	20700100701	116	-77.60784	38.89817	22.72	19.79	2.93
P	GD	26	PL-N	PL42	20700100701	106	-77.66885	38.88164	5.20	4.49	0.72
P	GD	28	PL-N	PL42	20700100701	116	-77.60594	38.90642	59.70	51.30	8.40
P	GD	29	PL-N	PL42	20700100701	106	-77.66624	38.89088	1.87	1.63	0.24
P	GD	30	PL-N	PL42	20700100701	106	-77.66468	38.89047	9.03	8.31	0.72
P	GD	31	PL-N	PL42	20700100701	105	-77.66095	38.89238	9.73	8.97	0.76
P	GD	32	PL-N	PL42	20700100701	106	-77.65371	38.88728	13.01	11.92	1.09
P	GD	33	PL-N	PL42	20700100701	106	-77.66614	38.8846	6.93	6.04	0.89
P	GD	35	PL-N	PL42	20700100701	106	-77.65681	38.88094	4.18	3.46	0.72
P	GD	36	PL-N	PL42	20700100701	106	-77.65338	38.88163	2.49	1.95	0.54
P	RRD	40	PL-N	PL42	20700100701	120	-77.61966	38.88163	4.71	3.94	0.77
P	RRD	41	PL-N	PL42	20700100701	120	-77.62095	38.88505	1.58	1.04	0.53
P	RRD	42	PL-N	PL42	20700100701	120	-77.6173	38.88287	4.32	3.93	0.39
P	RRD	43	PL-N	PL42	20700100701	120	-77.61464	38.88438	13.78	12.60	1.18
P	RRD	44	PL-N	PL42	20700100701	120	-77.61376	38.88458	5.47	4.81	0.65
P	GD	46	PL-N	PL42	20700100701	122	-77.59122	38.88087	10.48	9.51	0.96
P	RRD	47	PL-N	PL42	20700100701	122	-77.58562	38.88375	3.18	2.59	0.59
P	STP	49	PL-N	PL42	20700100701	122	-77.58097	38.88179	1.56	1.32	0.24
P	STP	51	PL-N	PL42	20700100701	122	-77.57628	38.89005	0.33	0.30	0.03
P	STP	52	PL-N	PL42	20700100701	122	-77.5743	38.88459	0.14	0.12	0.02
P	STP	53	PL-N	PL42	20700100701	122	-77.57448	38.8827	0.31	0.30	0.02
P	GD	61	PL-N	PL42	20700100701	140	-77.55517	38.85551	3.00	2.56	0.44
P	STP	62	PL-N	PL42	20700100701	140	-77.55961	38.85896	1.84	1.37	0.47
P	GD	64	PL-N	PL42	20700100701	138	-77.5734	38.86387	0.53	0.42	0.11
P	GD	65	PL-N	PL42	20700100701	138	-77.57345	38.86252	3.40	2.56	0.84
P	GD	67	PL-N	PL43	20700100702	142	-77.57982	38.85711	8.69	7.48	1.21

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	68	PL-N	PL43	20700100702	142	-77.58039	38.855	0.64	0.52	0.12
P	GD	70	PL-N	PL42	20700100701	134	-77.59675	38.86747	17.95	16.21	1.74
P	RRD	72	PL-N	PL42	20700100701	134	-77.59394	38.86066	18.46	16.25	2.21
P	RRD	73	PL-N	PL42	20700100701	136	-77.58419	38.85976	0.10	0.09	0.01
P	STP	74	PL-N	PL42	20700100701	136	-77.58397	38.86089	1.83	1.60	0.23
P	RRD	75	PL-N	PL42	20700100701	136	-77.58405	38.86219	0.03	0.02	0.01
P	GD	76	PL-N	PL43	20700100702	126	-77.59567	38.85413	1.48	1.17	0.31
P	BMP	77	PL-N	PL43	20700100702	126	-77.59902	38.85711	30.45	26.73	3.72
P	GD	78	PL-N	PL43	20700100702	126	-77.60168	38.85692	3.41	2.66	0.75
P	BMP	79	PL-N	PL43	20700100702	126	-77.60326	38.85725	17.87	15.98	1.89
P	GD	89	PL-N	PL43	20700100702	126	-77.60919	38.86013	22.36	19.49	2.87
P	GD	93	PL-N	PL43	20700100702	126	-77.60661	38.8622	6.64	4.96	1.68
P	GD	94	PL-N	PL43	20700100702	126	-77.60584	38.86195	0.31	0.30	0.01
P	STP	95	PL-N	PL43	20700100702	126	-77.6093	38.86282	9.69	7.18	2.51
P	GD	96	PL-N	PL43	20700100702	126	-77.613	38.86235	54.24	44.83	9.41
P	CD	97	PL-N	PL43	20700100702	126	-77.61357	38.86241	7.01	5.26	1.75
P	GD	98	PL-N	PL42	20700100701	134	-77.60245	38.86263	5.47	3.95	1.52
P	BMP	99	PL-N	PL42	20700100701	134	-77.60166	38.86553	39.33	30.93	8.40
P	BMP	100	PL-N	PL43	20700100702	130	-77.61772	38.85399	19.06	16.15	2.91
P	BMP	101	PL-N	PL43	20700100702	114	-77.62141	38.85673	16.35	14.07	2.29
P	STP	102	PL-N	PL43	20700100702	114	-77.62736	38.85809	19.93	18.17	1.76
P	STP	103	PL-N	PL43	20700100702	114	-77.62637	38.86037	9.00	8.02	0.97
P	GD	104	PL-N	PL43	20700100702	126	-77.61996	38.86137	24.44	21.19	3.25
P	GD	105	PL-N	PL43	20700100702	126	-77.61891	38.86132	5.41	4.46	0.94
P	GD	107	PL-N	PL43	20700100702	126	-77.61665	38.86158	7.57	5.78	1.80
P	SRCP	20001	PL-N	PL43	20700100702	126	-77.61873	38.8656	8.64	6.78	1.86
P	RRD	110	PL-N	PL42	20700100701	122	-77.58663	38.87867	4.05	3.38	0.66
P	RRD	113	PL-N	PL42	20700100701	122	-77.58265	38.8794	5.48	4.89	0.59
P	RRD	114	PL-N	PL42	20700100701	122	-77.58253	38.87936	5.05	4.64	0.42
P	RRD	115	PL-N	PL42	20700100701	136	-77.58675	38.8737	19.55	18.29	1.26
P	RRD	116	PL-N	PL42	20700100701	136	-77.58303	38.87184	18.50	17.75	0.75
P	STP	117	PL-N	PL42	20700100701	136	-77.58646	38.87652	0.91	0.72	0.19
P	RRD	118	PL-N	PL42	20700100701	136	-77.58246	38.87391	0.04	0.03	0.01
P	STP	119	PL-N	PL42	20700100701	136	-77.58276	38.87639	20.00	19.26	0.74
P	RRD	120	PL-N	PL42	20700100701	136	-77.58244	38.87638	5.89	5.18	0.71
P	BMP	121	PL-N	PL42	20700100701	122	-77.60114	38.87807	16.56	15.50	1.06
P	GD	122	PL-N	PL42	20700100701	120	-77.6115	38.87638	14.32	11.75	2.57

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	124	PL-N	PL42	20700100701	134	-77.61448	38.87299	13.97	11.92	2.05
P	RRD	125	PL-N	PL42	20700100701	134	-77.61263	38.87163	21.68	17.77	3.91
P	GD	126	PL-N	PL42	20700100701	134	-77.6098	38.87035	22.79	18.19	4.59
P	CD	127	PL-N	PL42	20700100701	134	-77.60799	38.8709	1.88	1.42	0.46
P	CD	128	PL-N	PL42	20700100701	134	-77.60825	38.87087	0.08	0.05	0.03
P	GD	129	PL-N	PL42	20700100701	134	-77.60761	38.87149	15.32	13.26	2.06
P	GD	130	PL-N	PL42	20700100701	134	-77.60365	38.86909	12.19	9.55	2.63
P	GD	131	PL-N	PL42	20700100701	134	-77.60239	38.86838	1.83	1.33	0.50
P	BMP	132	PL-N	PL42	20700100701	134	-77.60036	38.86804	14.32	12.43	1.90
P	RRD	133	PL-N	PL42	20700100701	120	-77.61962	38.87682	8.33	7.13	1.20
P	RRD	134	PL-N	PL42	20700100701	120	-77.61997	38.87871	7.60	6.87	0.73
P	GD	137	PL-N	PL42	20700100701	120	-77.62951	38.87096	12.65	10.78	1.86
P	STP	140	PL-N	PL43	20700100702	126	-77.62415	38.86707	0.16	0.09	0.08
P	GD	142	PL-N	PL42	20700100701	120	-77.62197	38.87204	18.26	14.84	3.42
P	GD	143	PL-N	PL42	20700100701	120	-77.62255	38.87192	12.97	10.72	2.26
P	RRD	145	PL-N	PL42	20700100701	120	-77.62095	38.87422	3.78	2.96	0.81
P	RRD	146	PL-N	PL42	20700100701	120	-77.62254	38.87458	2.79	2.03	0.76
P	STP	155	PL-N	PL42	20700100701	111	-77.64697	38.8708	4.29	3.86	0.43
P	STP	161	PL-N	PL42	20700100701	111	-77.65009	38.87004	2.40	1.91	0.49
P	CD	163	PL-N	PL42	20700100701	106	-77.66142	38.87686	5.10	3.80	1.30
P	BMP	165	PL-N	PL42	20700100701	106	-77.65845	38.87738	24.33	19.91	4.42
P	GD	167	PL-N	PL42	20700100701	106	-77.66978	38.87918	3.36	2.38	0.98
P	GD	168	PL-N	PL42	20700100701	106	-77.66764	38.87978	3.31	2.56	0.75
P	GD	169	PL-N	PL42	20700100701	106	-77.6736	38.87717	15.79	12.57	3.23
P	STP	171	PL-N	PL43	20700100702	112	-77.6857	38.87547	0.08	0.06	0.02
P	STP	172	PL-L	PL32	20700100502	204	-77.68652	38.85579	1.56	1.21	0.35
P	STP	173	PL-L	PL32	20700100502	203	-77.70411	38.84376	0.05	0.04	0.01
P	STP	174	PL-L	PL32	20700100502	206	-77.70332	38.84474	0.25	0.15	0.10
P	STP	175	PL-L	PL32	20700100502	206	-77.69714	38.84484	0.83	0.53	0.30
P	STP	176	PL-L	PL32	20700100502	206	-77.69221	38.84571	0.64	0.59	0.05
P	STP	177	PL-L	PL32	20700100502	206	-77.69039	38.8481	9.32	7.94	1.38
P	STP	178	PL-L	PL32	20700100502	206	-77.68732	38.84582	35.16	32.55	2.61
P	STP	179	PL-L	PL32	20700100502	206	-77.68448	38.8424	4.10	3.22	0.88
P	STP	180	PL-L	PL32	20700100502	212	-77.68221	38.8397	0.59	0.38	0.20
P	GD	181	PL-N	PL43	20700100702	112	-77.68192	38.86362	1.37	0.94	0.43
P	GD	185	PL-N	PL43	20700100702	112	-77.67102	38.86437	4.00	3.42	0.58
P	GD	188	PL-N	PL43	20700100702	112	-77.66774	38.86618	27.63	22.91	4.73

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	189	PL-N	PL43	20700100702	112	-77.66394	38.86429	9.53	8.15	1.39
P	GD	192	PL-N	PL43	20700100702	112	-77.66165	38.85835	5.34	4.23	1.11
P	GD	193	PL-N	PL43	20700100702	112	-77.66111	38.85477	0.20	0.14	0.06
P	GD	194	PL-N	PL43	20700100702	112	-77.65918	38.85549	22.66	20.05	2.62
P	RRD	195	PL-N	PL43	20700100702	112	-77.65272	38.85458	3.47	2.49	0.97
P	BMP	196	PL-N	PL43	20700100702	112	-77.65132	38.85439	20.29	12.46	7.83
P	RRD	197	PL-N	PL43	20700100702	112	-77.65414	38.8531	0.14	0.12	0.02
P	RRD	198	PL-N	PL43	20700100702	112	-77.65449	38.85206	5.29	3.43	1.86
P	RRD	199	PL-N	PL43	20700100702	112	-77.6526	38.85106	1.51	0.74	0.78
P	RRD	201	PL-N	PL43	20700100702	112	-77.65092	38.85343	3.29	1.41	1.88
P	RRD	202	PL-N	PL43	20700100702	114	-77.6432	38.85843	43.62	26.37	17.25
P	RRD	203	PL-N	PL43	20700100702	114	-77.64348	38.85849	1.65	0.71	0.94
P	STP	20112	PL-N	PL43	20700100702	114	-77.63937	38.85438	33.14	20.21	12.93
P	STP	206	PL-N	PL43	20700100702	114	-77.64018	38.85844	6.86	4.33	2.53
P	RRD	209	PL-N	PL43	20700100702	114	-77.63795	38.85805	9.58	6.86	2.72
P	GD	211	PL-N	PL42	20700100701	134	-77.59377	38.86216	1.20	0.82	0.38
P	BMP	213	PL-N	PL43	20700100702	113	-77.65886	38.84199	17.99	11.80	6.19
P	RRD	214	PL-N	PL43	20700100702	113	-77.65726	38.84133	6.54	4.80	1.74
P	RRD	215	PL-N	PL43	20700100702	113	-77.65668	38.84132	2.62	1.54	1.08
P	GD	216	PL-N	PL43	20700100702	113	-77.65633	38.84107	0.44	0.34	0.11
P	RRD	217	PL-N	PL43	20700100702	113	-77.65639	38.84076	9.53	6.13	3.40
P	STP	221	PL-N	PL43	20700100702	114	-77.64159	38.84833	23.22	12.06	11.17
P	BMP	224	PL-N	PL43	20700100702	114	-77.63797	38.84894	57.31	28.43	28.88
P	RRD	226	PL-N	PL43	20700100702	114	-77.63429	38.85016	2.91	2.32	0.59
P	BMP	227	PL-N	PL43	20700100702	114	-77.63296	38.8485	25.98	17.77	8.21
P	RRD	228	PL-N	PL43	20700100702	130	-77.63363	38.8414	7.65	5.14	2.51
P	RRD	229	PL-N	PL43	20700100702	130	-77.63454	38.84096	0.32	0.17	0.15
P	RRD	230	PL-N	PL43	20700100702	132	-77.63457	38.84077	0.61	0.46	0.15
P	RRD	237	PL-N	PL43	20700100702	130	-77.62917	38.84187	3.72	2.81	0.91
P	RRD	238	PL-N	PL43	20700100702	130	-77.63016	38.84206	3.25	2.03	1.22
P	RRD	239	PL-N	PL43	20700100702	130	-77.63106	38.84171	0.95	0.55	0.40
P	RRD	240	PL-N	PL43	20700100702	130	-77.6307	38.84158	1.75	0.93	0.82
P	RRD	241	PL-N	PL43	20700100702	130	-77.63169	38.84122	9.19	5.24	3.94
P	STP	242	PL-N	PL43	20700100702	130	-77.63228	38.84195	1.57	0.77	0.80
P	RRD	243	PL-N	PL43	20700100702	130	-77.63257	38.84099	0.80	0.64	0.16
P	RRD	245	PL-N	PL43	20700100702	130	-77.6151	38.84289	1.81	1.24	0.58
P	RRD	246	PL-N	PL43	20700100702	128	-77.61164	38.85094	4.52	3.45	1.07

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	247	PL-N	PL43	20700100702	128	-77.61026	38.8508	1.44	1.31	0.13
P	RRD	248	PL-N	PL43	20700100702	128	-77.60912	38.85067	0.18	0.15	0.03
P	RRD	249	PL-N	PL43	20700100702	128	-77.60803	38.84924	5.56	4.20	1.36
P	RRD	250	PL-N	PL43	20700100702	130	-77.61485	38.84608	1.54	1.16	0.38
P	RRD	251	PL-N	PL43	20700100702	130	-77.61478	38.84705	4.76	3.76	1.00
P	GD	252	PL-N	PL43	20700100702	130	-77.60349	38.8404	9.20	6.79	2.41
P	GD	253	PL-N	PL43	20700100702	130	-77.59988	38.83989	12.67	9.21	3.45
P	RRD	254	PL-N	PL43	20700100702	130	-77.59967	38.83969	13.30	9.25	4.05
P	RRD	257	PL-N	PL43	20700100702	128	-77.60121	38.84928	2.31	1.40	0.92
P	RRD	258	PL-N	PL43	20700100702	128	-77.60239	38.8473	3.47	2.19	1.27
P	BMP	259	PL-N	PL43	20700100702	128	-77.60198	38.8468	18.53	15.34	3.19
P	BMP	260	PL-N	PL43	20700100702	128	-77.59773	38.84913	36.09	25.10	10.98
P	GD	265	PL-N	PL43	20700100702	142	-77.58532	38.84908	1.98	1.54	0.44
P	GD	266	PL-N	PL43	20700100702	142	-77.58315	38.84652	2.39	1.85	0.54
P	GD	267	PL-N	PL43	20700100702	142	-77.58528	38.84206	4.90	4.34	0.56
P	GD	268	PL-N	PL43	20700100702	142	-77.58854	38.84216	18.74	17.28	1.47
P	GD	269	PL-N	PL43	20700100702	142	-77.59237	38.8423	14.68	13.45	1.24
P	BMP	270	PL-N	PL43	20700100702	142	-77.59474	38.84317	11.79	9.15	2.64
P	RRD	271	PL-N	PL43	20700100702	142	-77.57547	38.85083	3.07	2.55	0.53
P	STP	272	PL-N	PL43	20700100702	142	-77.57389	38.84877	41.50	38.64	2.86
P	BMP	274	PL-N	PL42	20700100701	140	-77.55129	38.84789	0.59	0.59	0.00
P	STP	280	PL-N	PL42	20700100701	140	-77.5387	38.84676	0.07	0.05	0.01
P	RRD	281	PL-N	PL42	20700100701	140	-77.54229	38.84668	1.26	1.03	0.23
P	GD	288	PL-N	PL43	20700100702	148	-77.59599	38.8374	1.71	1.14	0.57
P	RRD	289	PL-N	PL43	20700100702	148	-77.59426	38.82599	2.62	1.41	1.21
P	BMP	290	PL-N	PL43	20700100702	148	-77.59679	38.82849	21.82	12.33	9.49
P	RRD	292	PL-N	PL43	20700100702	130	-77.59899	38.83883	15.49	12.01	3.49
P	STP	293	PL-N	PL43	20700100702	130	-77.5992	38.83821	4.72	3.66	1.06
P	RRD	294	PL-N	PL43	20700100702	130	-77.60001	38.83814	3.51	2.12	1.39
P	RRD	295	PL-N	PL43	20700100702	130	-77.60001	38.83557	6.44	4.79	1.65
P	RRD	296	PL-N	PL43	20700100702	130	-77.59951	38.83424	0.92	0.60	0.32
P	RRD	297	PL-N	PL43	20700100702	130	-77.60115	38.83406	6.12	5.53	0.60
P	RRD	298	PL-N	PL43	20700100702	130	-77.60937	38.82882	5.04	3.18	1.86
P	RRD	299	PL-N	PL43	20700100702	130	-77.61013	38.82743	4.55	3.21	1.34
P	RRD	300	PL-N	PL43	20700100702	130	-77.60962	38.82679	13.64	8.81	4.83
P	STP	301	PL-N	PL43	20700100702	130	-77.61231	38.82682	3.05	1.54	1.51
P	RRD	302	PL-N	PL43	20700100702	130	-77.61285	38.82734	2.87	1.69	1.17

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	303	PL-N	PL43	20700100702	130	-77.61499	38.82757	2.95	1.05	1.91
P	BMP	304	PL-N	PL43	20700100702	130	-77.60832	38.83164	36.76	24.54	12.22
P	RRD	305	PL-N	PL43	20700100702	130	-77.60944	38.83554	6.75	5.81	0.94
P	RRD	306	PL-N	PL43	20700100702	130	-77.61132	38.83751	17.75	14.33	3.42
P	BMP	307	PL-N	PL43	20700100702	130	-77.61508	38.83608	30.16	20.98	9.18
P	BMP	308	PL-N	PL43	20700100702	130	-77.61823	38.83842	18.48	13.45	5.03
P	RRD	309	PL-N	PL43	20700100702	130	-77.61751	38.82915	33.70	22.60	11.10
P	BMP	313	PL-N	PL43	20700100702	132	-77.63036	38.83217	31.17	18.65	12.52
P	BMP	314	PL-N	PL43	20700100702	132	-77.63107	38.83028	13.97	9.15	4.82
P	RRD	315	PL-N	PL43	20700100702	132	-77.63071	38.82765	10.32	6.66	3.65
P	RRD	316	PL-N	PL43	20700100702	132	-77.63043	38.82871	1.42	0.88	0.54
P	RRD	317	PL-N	PL43	20700100702	132	-77.63012	38.82637	2.30	1.52	0.79
P	RRD	318	PL-N	PL43	20700100702	132	-77.62938	38.82551	7.27	3.20	4.08
P	RRD	319	PL-N	PL43	20700100702	132	-77.62978	38.8252	1.25	0.77	0.47
P	GD	320	PL-N	PL43	20700100702	132	-77.62965	38.82626	13.46	10.03	3.43
P	RRD	323	PL-N	PL43	20700100702	132	-77.63525	38.83697	2.26	1.27	1.00
P	RRD	325	PL-N	PL43	20700100702	132	-77.63567	38.83487	17.61	13.12	4.49
P	RRD	326	PL-N	PL43	20700100702	132	-77.63572	38.83061	9.03	5.14	3.89
P	RRD	327	PL-N	PL43	20700100702	132	-77.63685	38.82841	17.88	13.57	4.31
P	BMP	328	PL-N	PL43	20700100702	132	-77.63615	38.82837	7.81	5.16	2.65
P	GD	331	PL-N	PL43	20700100702	132	-77.63916	38.82636	3.00	1.81	1.19
P	RRD	332	PL-N	PL43	20700100702	132	-77.6419	38.8283	14.29	8.97	5.32
P	RRD	333	PL-N	PL43	20700100702	132	-77.64338	38.82962	1.70	1.12	0.58
P	RRD	334	PL-N	PL43	20700100702	132	-77.64948	38.82907	2.13	1.13	1.00
P	RRD	335	PL-N	PL43	20700100702	132	-77.64828	38.82932	2.64	1.50	1.14
P	RRD	336	PL-N	PL43	20700100702	113	-77.64809	38.83153	1.38	0.50	0.88
P	RRD	337	PL-N	PL43	20700100702	113	-77.64988	38.83394	3.01	1.55	1.46
P	RRD	338	PL-N	PL43	20700100702	113	-77.6488	38.83245	4.21	2.14	2.07
P	RRD	339	PL-N	PL43	20700100702	113	-77.64544	38.83048	4.41	2.58	1.83
P	RRD	340	PL-N	PL43	20700100702	132	-77.64367	38.83052	5.43	3.51	1.93
P	RRD	341	PL-N	PL43	20700100702	132	-77.64304	38.83061	5.18	3.46	1.71
P	RRD	342	PL-N	PL43	20700100702	132	-77.64285	38.8314	2.21	1.62	0.59
P	RRD	343	PL-N	PL43	20700100702	132	-77.64236	38.83257	35.03	24.29	10.74
P	RRD	345	PL-N	PL43	20700100702	113	-77.64534	38.83462	1.00	0.54	0.46
P	RRD	346	PL-N	PL43	20700100702	113	-77.64498	38.83474	3.11	2.04	1.06
P	RRD	348	PL-N	PL43	20700100702	113	-77.64611	38.83354	1.40	0.80	0.60
P	RRD	351	PL-N	PL43	20700100702	113	-77.64719	38.83572	0.43	0.18	0.26

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	355	PL-N	PL43	20700100702	113	-77.65179	38.84024	6.44	4.05	2.39
P	GD	356	PL-N	PL43	20700100702	113	-77.65241	38.83966	1.20	0.57	0.62
P	RRD	357	PL-N	PL43	20700100702	113	-77.65224	38.83811	0.89	0.52	0.37
P	RRD	358	PL-N	PL43	20700100702	113	-77.65203	38.83839	1.77	1.05	0.72
P	BMP	359	PL-N	PL43	20700100702	113	-77.65437	38.83937	39.56	24.15	15.41
P	RRD	360	PL-N	PL43	20700100702	113	-77.65829	38.83949	2.90	2.54	0.37
P	GD	361	PL-N	PL43	20700100702	113	-77.65691	38.83897	2.92	2.01	0.91
P	RRD	362	PL-N	PL43	20700100702	113	-77.65338	38.83803	5.50	4.41	1.10
P	RRD	363	PL-N	PL43	20700100702	113	-77.65203	38.83652	5.09	4.16	0.93
P	RRD	364	PL-N	PL43	20700100702	113	-77.66237	38.8352	71.18	57.31	13.87
P	RRD	365	PL-N	PL43	20700100702	113	-77.66149	38.83575	0.60	0.35	0.25
P	RRD	366	PL-N	PL43	20700100702	113	-77.66142	38.83599	0.98	0.52	0.45
P	RRD	367	PL-N	PL43	20700100702	113	-77.66048	38.83552	1.81	1.15	0.66
P	RRD	368	PL-N	PL43	20700100702	113	-77.66097	38.83646	7.99	7.00	0.99
P	RRD	369	PL-N	PL43	20700100702	113	-77.66063	38.83672	1.53	1.19	0.34
P	GD	370	PL-N	PL43	20700100702	113	-77.66013	38.83693	1.56	0.89	0.67
P	RRD	371	PL-N	PL43	20700100702	113	-77.6595	38.83635	1.42	0.60	0.81
P	RRD	372	PL-N	PL43	20700100702	113	-77.65874	38.8368	0.15	0.09	0.06
P	GD	373	PL-N	PL43	20700100702	113	-77.65863	38.83764	11.52	10.40	1.11
P	RRD	374	PL-N	PL43	20700100702	113	-77.65863	38.83751	1.03	0.78	0.26
P	RRD	375	PL-N	PL43	20700100702	113	-77.65634	38.83809	2.07	1.07	1.00
P	RRD	376	PL-N	PL43	20700100702	113	-77.6564	38.83719	1.97	1.51	0.45
P	RRD	377	PL-N	PL43	20700100702	113	-77.65575	38.83759	3.13	2.11	1.02
P	RRD	378	PL-N	PL43	20700100702	113	-77.66198	38.83377	1.35	0.65	0.70
P	RRD	379	PL-N	PL43	20700100702	113	-77.66195	38.83264	1.68	0.79	0.89
P	RRD	380	PL-N	PL43	20700100702	113	-77.6618	38.83262	8.56	5.41	3.15
P	RRD	381	PL-N	PL43	20700100702	113	-77.6607	38.83315	12.05	7.49	4.57
P	RRD	382	PL-N	PL43	20700100702	113	-77.66078	38.83383	1.62	0.72	0.91
P	RRD	383	PL-N	PL43	20700100702	113	-77.65919	38.83294	7.93	5.13	2.80
P	RRD	384	PL-N	PL43	20700100702	113	-77.65841	38.83311	13.51	8.97	4.54
P	RRD	385	PL-N	PL43	20700100702	113	-77.65855	38.83408	2.35	1.26	1.09
P	RRD	386	PL-N	PL43	20700100702	113	-77.65878	38.83456	4.01	2.05	1.95
P	RRD	387	PL-N	PL43	20700100702	113	-77.65813	38.83475	1.84	1.21	0.63
P	RRD	388	PL-N	PL43	20700100702	113	-77.65819	38.83489	0.39	0.16	0.23
P	RRD	389	PL-N	PL43	20700100702	113	-77.65775	38.83509	3.23	2.41	0.82
P	RRD	390	PL-N	PL43	20700100702	113	-77.65752	38.83544	1.16	0.67	0.49
P	RRD	391	PL-N	PL43	20700100702	113	-77.65768	38.83582	3.47	1.75	1.72

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	392	PL-N	PL43	20700100702	113	-77.65773	38.8372	1.56	0.58	0.98
P	RRD	393	PL-N	PL43	20700100702	113	-77.65704	38.83628	1.38	0.92	0.46
P	RRD	396	PL-N	PL43	20700100702	113	-77.6516	38.83398	0.64	0.33	0.31
P	BMP	402	PL-L	PL32	20700100502	206	-77.66325	38.81379	119.93	79.67	40.27
P	RRD	403	PL-N	PL43	20700100702	132	-77.64361	38.82283	8.12	3.96	4.16
P	RRD	404	PL-N	PL43	20700100702	132	-77.64163	38.82562	1.27	0.52	0.74
P	RRD	405	PL-N	PL43	20700100702	132	-77.64066	38.82522	0.32	0.05	0.27
P	RRD	406	PL-N	PL43	20700100702	132	-77.64029	38.82497	10.45	2.92	7.53
P	RRD	407	PL-N	PL43	20700100702	132	-77.63996	38.82447	0.45	0.18	0.27
P	RRD	408	PL-N	PL43	20700100702	132	-77.63975	38.82407	1.18	0.24	0.94
P	RRD	409	PL-N	PL43	20700100702	132	-77.63982	38.82344	1.10	0.29	0.81
P	RRD	410	PL-N	PL43	20700100702	132	-77.63973	38.82303	4.72	1.35	3.37
P	RRD	412	PL-N	PL43	20700100702	132	-77.63949	38.8216	3.14	1.16	1.98
P	RRD	414	PL-N	PL43	20700100702	132	-77.63465	38.82343	1.54	1.08	0.46
P	BMP	415	PL-N	PL43	20700100702	132	-77.63705	38.82259	3.64	2.01	1.63
P	BMP	417	PL-N	PL43	20700100702	132	-77.63371	38.82263	8.71	5.51	3.20
P	RRD	418	PL-N	PL43	20700100702	132	-77.63764	38.82551	1.32	0.68	0.64
P	RRD	419	PL-N	PL43	20700100702	132	-77.63725	38.82521	17.51	8.06	9.45
P	GD	420	PL-N	PL43	20700100702	132	-77.63105	38.82463	3.14	1.47	1.67
P	RRD	422	PL-N	PL43	20700100702	132	-77.6306	38.8199	0.82	0.62	0.20
P	RRD	423	PL-N	PL43	20700100702	132	-77.63024	38.81646	8.21	4.91	3.31
P	RRD	425	PL-N	PL43	20700100702	132	-77.6302	38.81751	14.97	12.23	2.75
P	STP	426	PL-N	PL43	20700100702	132	-77.62962	38.81772	4.05	2.07	1.98
P	STP	427	PL-N	PL43	20700100702	132	-77.62973	38.81801	1.85	0.91	0.95
P	RRD	428	PL-N	PL43	20700100702	132	-77.62908	38.81878	2.26	1.39	0.87
P	RRD	429	PL-N	PL43	20700100702	132	-77.62926	38.81837	1.50	1.01	0.49
P	RRD	430	PL-N	PL43	20700100702	132	-77.62589	38.81701	8.60	4.88	3.72
P	RRD	431	PL-N	PL43	20700100702	132	-77.62527	38.81652	0.95	0.42	0.53
P	RRD	432	PL-N	PL43	20700100702	132	-77.62543	38.8176	2.22	1.34	0.88
P	RRD	433	PL-N	PL43	20700100702	132	-77.62523	38.81825	2.46	1.80	0.66
P	RRD	434	PL-N	PL43	20700100702	132	-77.62529	38.8192	6.31	3.47	2.83
P	RRD	435	PL-N	PL43	20700100702	132	-77.6254	38.82201	119.69	90.04	29.65
P	RRD	436	PL-N	PL43	20700100702	150	-77.62007	38.82452	23.05	16.89	6.16
P	GD	437	PL-N	PL43	20700100702	150	-77.61964	38.82432	0.55	0.17	0.38
P	GD	438	PL-N	PL43	20700100702	150	-77.61906	38.82422	0.31	0.15	0.16
P	GD	439	PL-N	PL43	20700100702	150	-77.61855	38.82405	0.68	0.17	0.50
P	GD	440	PL-N	PL43	20700100702	150	-77.6175	38.82372	5.46	2.96	2.50

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	441	PL-N	PL43	20700100702	150	-77.61562	38.82135	9.12	5.89	3.23
P	RRD	443	PL-N	PL43	20700100702	132	-77.61971	38.81813	34.36	23.88	10.48
P	BMP	444	PL-N	PL43	20700100702	132	-77.62112	38.81792	19.29	9.80	9.49
P	BMP	446	PL-N	PL43	20700100702	132	-77.61931	38.81591	82.36	45.10	37.26
P	RRD	447	PL-N	PL43	20700100702	150	-77.61496	38.8237	14.43	10.50	3.93
P	STP	448	PL-N	PL43	20700100702	150	-77.61429	38.82257	11.24	6.50	4.74
P	STP	449	PL-N	PL43	20700100702	150	-77.61407	38.82341	7.21	5.14	2.08
P	RRD	450	PL-N	PL43	20700100702	150	-77.61434	38.82154	1.97	1.36	0.62
P	RRD	454	PL-N	PL43	20700100702	150	-77.61425	38.81628	3.22	2.15	1.07
P	BMP	455	PL-N	PL43	20700100702	150	-77.61383	38.81398	27.86	13.60	14.27
P	BMP	456	PL-N	PL43	20700100702	150	-77.61062	38.81616	26.33	16.42	9.91
P	RRD	457	PL-N	PL43	20700100702	150	-77.60795	38.81403	2.97	1.36	1.61
P	BMP	458	PL-N	PL43	20700100702	150	-77.60681	38.81451	12.81	6.14	6.67
P	BMP	459	PL-N	PL43	20700100702	150	-77.60419	38.81333	24.47	14.79	9.68
P	BMP	461	PL-N	PL43	20700100702	150	-77.60835	38.81604	61.36	38.45	22.91
P	RRD	466	PL-N	PL43	20700100702	150	-77.60055	38.81637	0.08	0.06	0.03
P	GD	467	PL-N	PL43	20700100702	150	-77.60017	38.81593	6.95	3.69	3.26
P	RRD	468	PL-N	PL43	20700100702	150	-77.60017	38.81474	4.18	1.89	2.29
P	RRD	469	PL-N	PL43	20700100702	150	-77.6004	38.81453	1.57	0.94	0.63
P	RRD	470	PL-N	PL43	20700100702	150	-77.59889	38.81247	1.53	0.51	1.01
P	RRD	471	PL-N	PL43	20700100702	150	-77.59895	38.81224	3.20	1.90	1.31
P	BMP	472	PL-N	PL43	20700100702	150	-77.59813	38.81329	18.99	13.76	5.23
P	BMP	473	PL-N	PL43	20700100702	150	-77.59429	38.8128	5.76	4.16	1.60
P	BMP	474	PL-N	PL43	20700100702	150	-77.59425	38.81445	78.59	55.60	22.99
P	BMP	475	PL-N	PL43	20700100702	150	-77.59124	38.81629	34.42	22.79	11.63
P	RRD	476	PL-N	PL43	20700100702	150	-77.58718	38.81874	16.06	10.20	5.86
P	RRD	477	PL-N	PL43	20700100702	148	-77.58598	38.82062	0.63	0.28	0.35
P	RRD	478	PL-N	PL43	20700100702	148	-77.5914	38.8222	2.56	1.37	1.19
P	BMP	479	PL-N	PL43	20700100702	148	-77.5899	38.82211	15.48	10.23	5.25
P	RRD	481	PL-N	PL43	20700100702	146	-77.57987	38.82487	31.78	29.83	1.95
P	RRD	490	PL-N	PL44	20700100703	166	-77.49884	38.79827	3.16	1.44	1.72
P	STP	491	PL-N	PL44	20700100703	166	-77.49858	38.79756	0.53	0.33	0.20
P	RRD	494	PL-N	PL44	20700100703	166	-77.50198	38.79746	0.71	0.27	0.44
P	BMP	534	PL-N	PL43	20700100702	150	-77.59769	38.81168	25.88	15.29	10.60
P	RRD	538	PL-N	PL42	20700100701	101	-77.63975	38.93172	1.09	0.85	0.25
P	RRD	539	PL-N	PL42	20700100701	101	-77.63927	38.93185	1.36	1.17	0.19
P	RRD	540	PL-N	PL42	20700100701	101	-77.63927	38.93296	5.46	4.44	1.02

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	541	PL-N	PL42	20700100701	101	-77.6395	38.93443	1.32	1.01	0.31
P	GD	542	PL-N	PL42	20700100701	101	-77.63895	38.93555	3.27	2.64	0.63
P	BMP	544	PL-N	PL42	20700100701	102	-77.63289	38.92628	14.94	12.60	2.34
P	GD	546	PL-N	PL42	20700100701	101	-77.64014	38.92914	9.42	7.86	1.56
P	GD	547	PL-N	PL42	20700100701	102	-77.64551	38.92442	0.74	0.51	0.23
P	RRD	549	PL-N	PL43	20700100702	150	-77.61497	38.80856	0.48	0.30	0.19
P	RRD	550	PL-N	PL43	20700100702	150	-77.61417	38.80851	55.39	44.16	11.23
P	RRD	551	PL-N	PL43	20700100702	150	-77.61382	38.80841	0.51	0.20	0.31
P	RRD	552	PL-N	PL43	20700100702	150	-77.61398	38.80898	1.81	1.02	0.79
P	RRD	553	PL-N	PL43	20700100702	150	-77.61345	38.80946	0.80	0.34	0.45
P	RRD	554	PL-N	PL43	20700100702	150	-77.61353	38.81034	1.70	0.81	0.90
P	RRD	555	PL-N	PL43	20700100702	150	-77.61399	38.80985	13.06	6.27	6.79
P	RRD	556	PL-N	PL43	20700100702	150	-77.61407	38.80952	0.53	0.42	0.11
P	RRD	558	PL-N	PL43	20700100702	150	-77.611	38.8106	1.99	1.48	0.51
P	RRD	559	PL-N	PL43	20700100702	150	-77.612	38.81054	3.92	2.28	1.64
P	RRD	560	PL-N	PL43	20700100702	150	-77.61255	38.81087	9.02	4.83	4.19
P	BMP	561	PL-N	PL43	20700100702	150	-77.61028	38.81153	8.19	4.36	3.83
P	GD	565	PL-L	PL32	20700100502	219	-77.62649	38.80098	4.20	2.04	2.16
P	BMP	566	PL-L	PL32	20700100502	219	-77.62958	38.80225	18.93	10.52	8.41
P	GD	568	PL-L	PL32	20700100502	219	-77.63177	38.80292	11.50	6.42	5.08
P	GD	570	PL-L	PL32	20700100502	219	-77.6283	38.80527	27.95	15.14	12.82
P	RRD	571	PL-L	PL32	20700100502	219	-77.62845	38.80474	4.20	1.87	2.33
P	STP	573	PL-N	PL43	20700100702	150	-77.61757	38.80831	7.40	4.43	2.98
P	BMP	574	PL-N	PL43	20700100702	150	-77.61559	38.80863	0.23	0.12	0.11
P	GD	576	PL-L	PL32	20700100502	219	-77.63586	38.80481	3.46	1.58	1.88
P	RRD	578	PL-L	PL32	20700100502	220	-77.64952	38.80242	8.60	6.86	1.74
P	RRD	580	PL-L	PL32	20700100502	214	-77.65831	38.80698	14.98	13.05	1.93
P	GD	581	PL-L	PL32	20700100502	214	-77.66267	38.80752	2.78	1.57	1.21
P	BMP	582	PL-L	PL32	20700100502	216	-77.66791	38.79408	10.33	7.84	2.50
P	BMP	584	PL-L	PL32	20700100502	220	-77.65894	38.79041	2.79	1.91	0.88
P	BMP	585	PL-L	PL32	20700100502	220	-77.65839	38.78931	8.27	5.68	2.59
P	RRD	586	PL-L	PL32	20700100502	220	-77.65654	38.79221	13.02	9.80	3.22
P	BMP	588	PL-L	PL32	20700100502	220	-77.65281	38.78955	8.62	5.75	2.87
P	RRD	590	PL-L	PL32	20700100502	218	-77.64931	38.79178	6.45	3.82	2.63
P	RRD	591	PL-L	PL32	20700100502	218	-77.64989	38.78962	4.18	2.99	1.19
P	RRD	592	PL-L	PL32	20700100502	218	-77.64681	38.78444	14.49	7.40	7.09
P	STP	593	PL-L	PL32	20700100502	218	-77.64457	38.78518	2.55	1.50	1.05

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	596	PL-L	PL32	20700100502	218	-77.64758	38.78473	0.98	0.62	0.36
P	STP	597	PL-L	PL32	20700100502	218	-77.64724	38.78469	0.06	0.02	0.04
P	RRD	603	PL-L	PL32	20700100502	236	-77.63548	38.78586	2.94	1.99	0.95
P	BMP	605	PL-L	PL32	20700100502	238	-77.6264	38.79801	11.01	9.29	1.72
P	BMP	618	PL-L	PL32	20700100502	240	-77.6233	38.78503	75.46	63.72	11.74
P	GD	624	PL-L	PL34	20700100504	242	-77.61314	38.78817	11.13	8.31	2.82
P	GD	627	PL-L	PL34	20700100504	242	-77.61164	38.78622	2.71	2.04	0.67
P	BMP	628	PL-L	PL34	20700100504	242	-77.60902	38.78628	5.99	3.99	1.99
P	RRD	644	PL-L	PL34	20700100504	242	-77.59994	38.79059	9.96	4.25	5.70
P	BMP	652	PL-L	PL34	20700100504	244	-77.58623	38.79473	35.02	27.90	7.11
P	GD	669	PL-L	PL34	20700100504	262	-77.5341	38.7882	17.42	8.26	9.15
P	BMP	670	PL-L	PL34	20700100504	262	-77.53268	38.78571	24.07	14.64	9.43
P	BMP	675	PL-N	PL44	20700100703	166	-77.52374	38.78902	21.45	10.24	11.21
P	RRD	679	PL-N	PL44	20700100703	166	-77.52074	38.7902	1.71	1.09	0.62
P	RRD	680	PL-N	PL44	20700100703	166	-77.52083	38.79047	0.42	0.36	0.06
P	BMP	683	PL-N	PL44	20700100703	166	-77.51797	38.79058	14.31	4.36	9.95
P	RRD	690	PL-N	PL44	20700100703	166	-77.51786	38.79191	0.90	0.75	0.15
P	RRD	691	PL-N	PL44	20700100703	166	-77.51785	38.79259	13.70	6.72	6.98
P	STP	708	PL-N	PL44	20700100703	166	-77.5052	38.79603	2.13	1.08	1.05
P	RRD	709	PL-N	PL44	20700100703	166	-77.50523	38.79671	7.81	4.27	3.54
P	RRD	710	PL-N	PL44	20700100703	166	-77.50584	38.7966	2.76	1.34	1.41
P	BMP	713	PL-N	PL44	20700100703	166	-77.50533	38.795	23.42	10.53	12.88
P	STP	714	PL-N	PL44	20700100703	166	-77.50504	38.79458	0.98	0.70	0.28
P	STP	715	PL-N	PL44	20700100703	166	-77.50578	38.79359	0.45	0.36	0.09
P	RRD	716	PL-N	PL44	20700100703	166	-77.50645	38.79292	4.68	3.06	1.62
P	RRD	717	PL-N	PL44	20700100703	166	-77.50787	38.79174	9.95	6.02	3.94
P	RRD	718	PL-N	PL44	20700100703	166	-77.5082	38.79206	27.61	13.78	13.83
P	RRD	720	PL-N	PL44	20700100703	166	-77.50861	38.79143	1.88	0.96	0.92
P	STP	721	PL-N	PL44	20700100703	166	-77.50243	38.78528	2.53	1.87	0.66
P	STP	722	PL-N	PL44	20700100703	168	-77.49661	38.78767	14.76	10.72	4.03
P	STP	723	PL-N	PL44	20700100703	168	-77.49609	38.78926	3.75	2.70	1.05
P	GD	724	PL-N	PL44	20700100703	168	-77.49595	38.78983	15.50	11.23	4.27
P	STP	725	PL-N	PL44	20700100703	168	-77.49532	38.79006	0.56	0.37	0.18
P	STP	726	PL-N	PL44	20700100703	168	-77.49552	38.79065	2.48	1.93	0.55
P	STP	727	PL-N	PL44	20700100703	168	-77.49518	38.79134	14.84	11.19	3.65
P	STP	728	PL-N	PL44	20700100703	168	-77.49446	38.79285	0.87	0.61	0.26
P	STP	729	PL-N	PL44	20700100703	168	-77.49513	38.79305	7.85	6.01	1.84

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	730	PL-N	PL44	20700100703	168	-77.49425	38.79375	2.53	1.91	0.62
P	STP	731	PL-N	PL44	20700100703	168	-77.49448	38.79438	2.15	1.58	0.57
P	STP	732	PL-N	PL44	20700100703	168	-77.4946	38.79578	3.74	2.92	0.82
P	STP	733	PL-N	PL44	20700100703	168	-77.49328	38.79638	4.05	2.79	1.26
P	STP	734	PL-N	PL44	20700100703	166	-77.4974	38.79483	8.36	6.45	1.91
P	GD	735	PL-N	PL44	20700100703	166	-77.49968	38.79654	2.06	1.40	0.66
P	GD	736	PL-N	PL44	20700100703	166	-77.49915	38.79604	1.08	0.70	0.38
P	GD	737	PL-N	PL44	20700100703	166	-77.4994	38.7962	3.42	1.90	1.52
P	GD	738	PL-N	PL44	20700100703	166	-77.50014	38.79414	3.64	2.25	1.39
P	STP	739	PL-N	PL44	20700100703	166	-77.50632	38.78551	3.39	2.65	0.74
P	STP	741	PL-N	PL44	20700100703	166	-77.50603	38.78471	22.36	9.47	12.89
P	STP	742	PL-N	PL44	20700100703	166	-77.50254	38.78839	1.05	0.73	0.32
P	STP	743	PL-N	PL44	20700100703	166	-77.50225	38.78939	1.56	1.21	0.35
P	BMP	744	PL-N	PL44	20700100703	166	-77.50254	38.78991	6.66	4.68	1.98
P	GD	745	PL-N	PL44	20700100703	166	-77.50257	38.79043	2.24	1.09	1.15
P	STP	746	PL-N	PL44	20700100703	166	-77.50227	38.79049	1.19	0.85	0.34
P	GD	747	PL-N	PL44	20700100703	166	-77.50216	38.79165	1.14	0.70	0.45
P	GD	748	PL-N	PL44	20700100703	166	-77.50249	38.79104	7.84	4.67	3.16
P	GD	749	PL-N	PL44	20700100703	166	-77.50212	38.79242	2.32	1.55	0.77
P	GD	750	PL-N	PL44	20700100703	166	-77.50159	38.79261	7.24	4.95	2.29
P	GD	751	PL-N	PL44	20700100703	166	-77.50227	38.79318	2.19	1.01	1.18
P	STP	752	PL-N	PL44	20700100703	166	-77.5023	38.79343	0.90	0.71	0.19
P	STP	753	PL-N	PL44	20700100703	166	-77.50195	38.79361	3.59	2.40	1.19
P	STP	754	PL-N	PL44	20700100703	166	-77.50301	38.79434	5.54	3.43	2.12
P	STP	755	PL-N	PL44	20700100703	166	-77.50316	38.79499	2.29	1.61	0.67
P	GD	756	PL-N	PL44	20700100703	166	-77.50267	38.79616	4.08	2.64	1.44
P	STP	757	PL-N	PL44	20700100703	166	-77.50362	38.79645	0.61	0.44	0.17
P	RRD	758	PL-N	PL44	20700100703	166	-77.50365	38.79684	0.47	0.25	0.22
P	CD	759	PL-N	PL44	20700100703	168	-77.49111	38.7968	0.90	0.60	0.30
P	STP	760	PL-N	PL44	20700100703	168	-77.48985	38.79572	10.32	7.52	2.80
P	STP	761	PL-N	PL44	20700100703	168	-77.48919	38.79483	34.86	25.78	9.08
P	STP	762	PL-N	PL44	20700100703	168	-77.48867	38.7952	4.54	3.23	1.31
P	STP	763	PL-N	PL44	20700100703	168	-77.48644	38.79526	0.88	0.59	0.29
P	STP	764	PL-N	PL44	20700100703	168	-77.48508	38.79468	4.11	3.34	0.77
P	RRD	765	PL-N	PL44	20700100703	168	-77.4837	38.79293	89.13	66.91	22.22
P	STP	766	PL-N	PL44	20700100703	168	-77.48392	38.79376	1.35	0.93	0.42
P	RRD	767	PL-N	PL44	20700100703	168	-77.48338	38.79399	2.77	1.71	1.06

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	768	PL-N	PL44	20700100703	173	-77.48831	38.78462	2.79	2.11	0.68
P	STP	769	PL-N	PL44	20700100703	173	-77.48801	38.78474	8.05	5.96	2.08
P	STP	770	PL-N	PL44	20700100703	173	-77.48948	38.78458	1.16	0.88	0.28
P	STP	771	PL-N	PL44	20700100703	173	-77.48942	38.78483	11.40	8.30	3.10
P	STP	772	PL-N	PL44	20700100703	173	-77.49105	38.78452	1.23	0.91	0.32
P	STP	774	PL-N	PL44	20700100703	173	-77.49186	38.78359	5.58	3.89	1.69
P	GD	775	PL-N	PL44	20700100703	173	-77.48441	38.78292	10.32	7.77	2.55
P	RRD	776	PL-N	PL44	20700100703	173	-77.48749	38.78096	4.21	2.67	1.55
P	RRD	778	PL-N	PL44	20700100703	173	-77.48808	38.78032	13.80	10.54	3.26
P	RRD	779	PL-N	PL44	20700100703	173	-77.48856	38.77951	12.01	9.05	2.95
P	BMP	780	PL-N	PL44	20700100703	173	-77.49029	38.77876	23.42	14.98	8.44
P	RRD	781	PL-N	PL44	20700100703	173	-77.48939	38.77803	2.17	1.53	0.64
P	STP	782	PL-N	PL44	20700100703	173	-77.4896	38.77759	11.37	8.75	2.63
P	CD	783	PL-N	PL44	20700100703	170	-77.4918	38.77703	3.36	2.42	0.94
P	STP	784	PL-N	PL44	20700100703	173	-77.49042	38.77627	2.86	2.39	0.47
P	GD	785	PL-N	PL44	20700100703	172	-77.49225	38.7731	3.56	2.71	0.85
P	STP	786	PL-N	PL44	20700100703	172	-77.49148	38.77417	0.84	0.70	0.14
P	STP	787	PL-N	PL44	20700100703	172	-77.49319	38.77168	7.28	4.30	2.97
P	CD	788	PL-N	PL44	20700100703	172	-77.4873	38.773	9.29	6.88	2.41
P	GD	789	PL-N	PL44	20700100703	172	-77.48589	38.77299	9.86	8.46	1.41
P	STP	792	PL-N	PL44	20700100703	176	-77.47908	38.77777	42.48	36.93	5.54
P	STP	793	PL-N	PL44	20700100703	176	-77.48055	38.78224	4.06	3.11	0.96
P	STP	794	PL-N	PL44	20700100703	176	-77.48057	38.78324	10.32	8.92	1.40
P	GD	795	PL-N	PL44	20700100703	173	-77.48347	38.78384	3.43	2.53	0.89
P	STP	796	PL-N	PL44	20700100703	176	-77.48132	38.7835	2.14	1.59	0.55
P	GD	797	PL-N	PL44	20700100703	173	-77.48302	38.7843	1.63	1.21	0.42
P	STP	798	PL-N	PL44	20700100703	173	-77.48536	38.7844	1.30	1.02	0.28
P	STP	799	PL-N	PL44	20700100703	173	-77.48508	38.78515	1.43	1.09	0.35
P	STP	800	PL-N	PL44	20700100703	182	-77.48394	38.78563	0.92	0.70	0.22
P	STP	801	PL-N	PL44	20700100703	182	-77.48187	38.78497	3.82	2.80	1.03
P	STP	802	PL-N	PL44	20700100703	182	-77.48362	38.78658	20.02	14.73	5.29
P	STP	804	PL-N	PL44	20700100703	182	-77.48147	38.78614	3.45	2.51	0.94
P	STP	805	PL-N	PL44	20700100703	182	-77.48105	38.78827	3.12	2.46	0.66
P	STP	806	PL-N	PL44	20700100703	182	-77.47967	38.78749	3.09	2.27	0.81
P	STP	807	PL-N	PL44	20700100703	182	-77.47881	38.78806	5.06	3.63	1.43
P	STP	808	PL-N	PL44	20700100703	182	-77.48031	38.78922	4.11	3.13	0.97
P	STP	809	PL-N	PL44	20700100703	182	-77.47962	38.79004	5.71	4.03	1.68

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	810	PL-N	PL44	20700100703	182	-77.47752	38.78899	4.57	3.64	0.94
P	STP	811	PL-N	PL44	20700100703	182	-77.47688	38.7893	2.38	1.68	0.70
P	STP	812	PL-N	PL44	20700100703	182	-77.47643	38.78977	0.74	0.55	0.18
P	RRD	814	PL-N	PL44	20700100703	168	-77.48164	38.79432	2.64	1.49	1.14
P	RRD	815	PL-N	PL44	20700100703	168	-77.48095	38.79422	3.16	1.91	1.25
P	STP	816	PL-N	PL44	20700100703	182	-77.47512	38.78933	3.76	2.91	0.86
P	GD	817	PL-N	PL44	20700100703	182	-77.47533	38.78947	0.18	0.14	0.04
P	STP	818	PL-N	PL44	20700100703	182	-77.4763	38.79106	1.44	1.21	0.22
P	STP	819	PL-N	PL44	20700100703	183	-77.47566	38.79172	8.97	6.90	2.08
P	STP	820	PL-N	PL44	20700100703	183	-77.47392	38.79274	8.67	6.79	1.88
P	STP	821	PL-N	PL44	20700100703	183	-77.47398	38.79291	12.49	9.67	2.82
P	STP	822	PL-N	PL44	20700100703	183	-77.47242	38.79306	2.59	2.06	0.54
P	STP	823	PL-N	PL44	20700100703	183	-77.47208	38.79345	1.25	1.23	0.02
P	STP	824	PL-N	PL44	20700100703	183	-77.47082	38.79385	44.85	35.37	9.48
P	STP	825	PL-N	PL44	20700100703	183	-77.4707	38.79428	5.87	4.50	1.36
P	STP	826	PL-N	PL44	20700100703	187	-77.46951	38.79574	0.21	0.17	0.05
P	STP	827	PL-N	PL44	20700100703	182	-77.47259	38.78906	2.99	2.39	0.60
P	STP	828	PL-N	PL44	20700100703	180	-77.47456	38.78714	2.86	2.29	0.57
P	STP	830	PL-N	PL44	20700100703	187	-77.46655	38.79602	1.30	0.82	0.47
P	RRD	831	PL-N	PL46	20700100705	187	-77.46379	38.78848	27.65	26.18	1.47
P	STP	834	PL-N	PL46	20700100705	187	-77.46338	38.79451	5.58	3.22	2.36
P	RRD	838	PL-N	PL46	20700100705	187	-77.45743	38.79543	29.42	17.42	12.00
P	GD	839	PL-N	PL46	20700100705	100	-77.45384	38.7959	15.17	9.71	5.46
P	RRD	840	PL-N	PL46	20700100705	100	-77.45164	38.79622	4.51	2.69	1.82
P	RRD	854	PL-N	PL46	20700100705	186	-77.45695	38.78619	40.63	36.01	4.63
P	STP	856	PL-N	PL46	20700100705	186	-77.45274	38.78852	17.53	13.28	4.25
P	STP	861	PL-N	PL46	20700100705	100	-77.43926	38.79448	2.70	2.15	0.55
P	RRD	862	PL-N	PL46	20700100705	186	-77.43828	38.78737	1.53	1.20	0.33
P	STP	865	PL-N	PL46	20700100705	184	-77.44379	38.7796	2.81	2.37	0.44
P	STP	870	PL-N	PL46	20700100705	184	-77.45075	38.77378	21.74	20.51	1.23
P	STP	879	PL-N	PL44	20700100703	176	-77.47933	38.77917	7.74	6.06	1.68
P	STP	880	PL-N	PL44	20700100703	176	-77.47908	38.77893	1.15	0.92	0.23
P	STP	881	PL-N	PL44	20700100703	176	-77.47889	38.78061	100.94	99.82	1.12
P	STP	882	PL-N	PL44	20700100703	176	-77.47934	38.78119	4.40	3.48	0.92
P	STP	883	PL-N	PL44	20700100703	173	-77.49393	38.78133	2.00	1.39	0.61
P	STP	885	PL-N	PL44	20700100703	170	-77.50241	38.77857	0.83	0.34	0.49
P	RRD	886	PL-N	PL44	20700100703	170	-77.50155	38.77869	1.72	0.85	0.87

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	887	PL-N	PL44	20700100703	170	-77.50072	38.77892	0.73	0.29	0.44
P	RRD	888	PL-N	PL44	20700100703	170	-77.50019	38.77908	1.07	0.54	0.53
P	RRD	889	PL-N	PL44	20700100703	173	-77.49947	38.77925	0.79	0.37	0.42
P	RRD	890	PL-N	PL44	20700100703	173	-77.49902	38.77946	0.70	0.21	0.49
P	RRD	891	PL-N	PL44	20700100703	173	-77.49817	38.77971	8.94	4.56	4.39
P	RRD	893	PL-N	PL44	20700100703	173	-77.4971	38.78001	2.07	1.11	0.97
P	STP	894	PL-N	PL44	20700100703	173	-77.49593	38.77885	4.86	2.53	2.33
P	GD	895	PL-N	PL44	20700100703	173	-77.49499	38.78148	11.51	8.20	3.30
P	RRD	897	PL-N	PL44	20700100703	173	-77.49171	38.78337	1.90	1.08	0.83
P	RRD	899	PL-N	PL44	20700100703	170	-77.493	38.77691	5.43	2.91	2.53
P	GD	906	PL-N	PL44	20700100703	172	-77.49626	38.77063	3.85	1.26	2.59
P	RRD	911	PL-N	PL44	20700100703	170	-77.50322	38.77022	5.24	1.63	3.62
P	GD	954	PL-L	PL34	20700100504	260	-77.56429	38.77391	5.40	4.67	0.73
P	RRD	955	PL-L	PL34	20700100504	260	-77.56409	38.77283	2.73	1.67	1.06
P	RRD	956	PL-L	PL34	20700100504	260	-77.56392	38.7723	3.41	1.83	1.59
P	RRD	957	PL-L	PL34	20700100504	260	-77.56409	38.77112	3.22	2.03	1.19
P	BMP	958	PL-L	PL34	20700100504	260	-77.56514	38.77016	64.08	41.33	22.75
P	BMP	970	PL-L	PL34	20700100504	246	-77.59933	38.76949	86.76	61.55	25.22
P	GD	971	PL-L	PL34	20700100504	246	-77.59958	38.76858	2.59	1.83	0.76
P	GD	972	PL-L	PL34	20700100504	246	-77.59923	38.76875	13.81	10.33	3.48
P	GD	973	PL-L	PL34	20700100504	246	-77.6049	38.77694	81.28	56.78	24.50
P	GD	974	PL-L	PL34	20700100504	246	-77.60506	38.77601	0.89	0.67	0.22
P	GD	975	PL-L	PL34	20700100504	246	-77.60466	38.7759	0.62	0.46	0.16
P	GD	976	PL-L	PL34	20700100504	246	-77.60476	38.77485	2.01	1.39	0.62
P	BMP	977	PL-L	PL34	20700100504	246	-77.60267	38.77276	19.28	13.97	5.31
P	BMP	978	PL-L	PL34	20700100504	246	-77.60487	38.77249	7.79	5.04	2.75
P	RRD	979	PL-L	PL34	20700100504	246	-77.6058	38.77362	0.81	0.41	0.40
P	RRD	981	PL-L	PL34	20700100504	242	-77.60789	38.78308	1.00	0.49	0.51
P	GD	983	PL-L	PL34	20700100504	246	-77.60599	38.78164	1.14	0.90	0.24
P	GD	985	PL-L	PL34	20700100504	246	-77.60826	38.77731	4.96	3.58	1.38
P	RRD	986	PL-L	PL34	20700100504	246	-77.60807	38.77665	4.33	3.30	1.03
P	GD	987	PL-L	PL34	20700100504	246	-77.6067	38.78006	5.12	3.85	1.27
P	GD	988	PL-L	PL34	20700100504	246	-77.60788	38.77917	30.27	19.06	11.21
P	GD	989	PL-L	PL34	20700100504	246	-77.60709	38.77545	33.85	22.70	11.14
P	RRD	991	PL-L	PL32	20700100502	240	-77.62196	38.77205	5.68	3.56	2.12
P	BMP	992	PL-L	PL32	20700100502	240	-77.62122	38.77488	3.89	2.27	1.62
P	BMP	993	PL-L	PL32	20700100502	240	-77.62061	38.77415	1.80	1.02	0.78

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	994	PL-L	PL32	20700100502	240	-77.62157	38.77663	1.54	1.03	0.51
P	RRD	995	PL-L	PL32	20700100502	240	-77.62099	38.77733	2.11	1.22	0.89
P	RRD	996	PL-L	PL32	20700100502	240	-77.61937	38.77774	0.77	0.47	0.30
P	RRD	997	PL-L	PL32	20700100502	246	-77.61811	38.77855	1.30	0.65	0.64
P	RRD	998	PL-L	PL32	20700100502	240	-77.62479	38.77939	1.25	0.86	0.39
P	RRD	999	PL-L	PL32	20700100502	240	-77.62411	38.77943	0.86	0.46	0.40
P	RRD	1014	PL-L	PL32	20700100502	230	-77.64515	38.77444	12.90	9.22	3.68
P	RRD	1016	PL-L	PL32	20700100502	230	-77.64668	38.77909	42.34	27.67	14.67
P	RRD	1021	PL-L	PL32	20700100502	236	-77.63821	38.78389	8.54	5.28	3.26
P	RRD	1022	PL-L	PL32	20700100502	236	-77.63863	38.78389	0.29	0.24	0.05
P	RRD	1023	PL-L	PL32	20700100502	236	-77.63895	38.78252	5.84	3.56	2.28
P	BMP	1024	PL-L	PL32	20700100502	236	-77.6418	38.77999	11.67	7.18	4.50
P	BMP	1025	PL-L	PL32	20700100502	236	-77.64313	38.78132	17.93	14.09	3.84
P	GD	1031	PL-L	PL32	20700100502	230	-77.65578	38.77725	7.00	4.24	2.76
P	BMP	1032	PL-L	PL32	20700100502	220	-77.65688	38.78415	11.07	7.29	3.78
P	RRD	1035	PL-L	PL32	20700100502	220	-77.65708	38.78443	2.25	1.63	0.63
P	RRD	1036	PL-L	PL32	20700100502	226	-77.66233	38.77517	6.94	5.21	1.74
P	RRD	1037	PL-L	PL32	20700100502	226	-77.66693	38.7794	1.24	1.19	0.05
P	RRD	1038	PL-L	PL32	20700100502	226	-77.66111	38.78082	67.91	43.84	24.07
P	RRD	1039	PL-L	PL32	20700100502	226	-77.66044	38.78074	3.49	2.62	0.87
P	RRD	1040	PL-L	PL32	20700100502	226	-77.66634	38.78008	24.54	17.55	6.98
P	GD	1041	PL-L	PL32	20700100502	229	-77.66248	38.76274	0.57	0.43	0.14
P	GD	1042	PL-L	PL32	20700100502	229	-77.66245	38.76263	0.91	0.57	0.34
P	BMP	1043	PL-L	PL32	20700100502	229	-77.65831	38.76294	0.36	0.34	0.02
P	GD	1044	PL-L	PL32	20700100502	229	-77.66199	38.76276	0.25	0.22	0.03
P	GD	1045	PL-L	PL32	20700100502	229	-77.66199	38.76265	0.46	0.26	0.19
P	GD	1046	PL-L	PL34	20700100504	250	-77.6161	38.75811	0.98	0.44	0.54
P	BMP	1047	PL-L	PL34	20700100504	248	-77.61026	38.76124	76.95	44.15	32.80
P	STP	1048	PL-L	PL34	20700100504	246	-77.60703	38.77035	27.93	14.72	13.21
P	STP	1049	PL-L	PL34	20700100504	246	-77.60548	38.77045	2.13	1.01	1.12
P	STP	1050	PL-L	PL34	20700100504	246	-77.60546	38.77058	4.19	2.56	1.63
P	RRD	1051	PL-L	PL34	20700100504	248	-77.60868	38.76436	86.11	49.27	36.83
P	RRD	1052	PL-L	PL34	20700100504	246	-77.60231	38.77055	0.90	0.63	0.27
P	RRD	1053	PL-L	PL34	20700100504	246	-77.60117	38.76972	0.96	0.68	0.27
P	GD	1054	PL-L	PL34	20700100504	246	-77.59994	38.76846	1.90	1.53	0.37
P	GD	1055	PL-L	PL34	20700100504	246	-77.59914	38.76808	3.45	2.05	1.40
P	RRD	1056	PL-L	PL34	20700100504	246	-77.59863	38.76827	1.77	0.83	0.94

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	1057	PL-L	PL34	20700100504	246	-77.59917	38.76775	2.04	1.23	0.81
P	RRD	1058	PL-L	PL34	20700100504	248	-77.60125	38.76094	1.26	0.57	0.69
P	GD	1059	PL-L	PL34	20700100504	248	-77.60193	38.76168	37.14	23.17	13.98
P	BMP	1060	PL-L	PL34	20700100504	248	-77.60067	38.76184	22.08	14.17	7.91
P	RRD	1061	PL-L	PL34	20700100504	248	-77.59919	38.76006	1.10	0.53	0.57
P	BMP	1062	PL-L	PL34	20700100504	248	-77.59882	38.76127	34.99	22.20	12.79
P	BMP	1063	PL-L	PL34	20700100504	248	-77.59786	38.76057	9.83	6.98	2.85
P	RRD	1064	PL-L	PL34	20700100504	248	-77.59804	38.7612	15.46	8.52	6.94
P	RRD	1065	PL-L	PL34	20700100504	258	-77.59577	38.75826	10.71	7.61	3.11
P	RRD	1066	PL-L	PL34	20700100504	246	-77.58952	38.75872	4.76	3.60	1.15
P	RRD	1067	PL-L	PL34	20700100504	246	-77.59004	38.75901	12.76	9.62	3.14
P	RRD	1068	PL-L	PL34	20700100504	246	-77.58891	38.75908	1.84	1.36	0.48
P	BMP	1069	PL-L	PL34	20700100504	246	-77.58975	38.7593	27.89	21.72	6.17
P	BMP	1071	PL-L	PL34	20700100504	244	-77.5817	38.76289	17.41	11.13	6.27
P	RRD	1073	PL-L	PL34	20700100504	244	-77.58304	38.76138	0.74	0.50	0.24
P	GD	1074	PL-L	PL34	20700100504	244	-77.5827	38.76154	9.95	7.32	2.63
P	RRD	1076	PL-L	PL34	20700100504	244	-77.58304	38.76062	1.50	0.66	0.84
P	GD	1077	PL-L	PL34	20700100504	244	-77.58375	38.75867	16.74	11.19	5.55
P	BMP	1078	PL-L	PL34	20700100504	244	-77.58163	38.75945	6.66	4.40	2.26
P	BMP	1079	PL-L	PL34	20700100504	246	-77.59121	38.7599	0.26	0.17	0.08
P	BMP	1080	PL-L	PL34	20700100504	246	-77.5906	38.75937	1.16	0.62	0.54
P	BMP	1081	PL-L	PL34	20700100504	246	-77.59137	38.76072	6.11	4.50	1.61
P	BMP	1082	PL-L	PL34	20700100504	246	-77.59184	38.76248	14.34	8.82	5.52
P	BMP	1083	PL-L	PL34	20700100504	246	-77.59174	38.76304	1.43	0.83	0.60
P	BMP	1084	PL-L	PL34	20700100504	246	-77.59024	38.76392	5.37	3.20	2.17
P	BMP	1085	PL-L	PL34	20700100504	246	-77.59093	38.76403	0.49	0.22	0.27
P	BMP	1086	PL-L	PL34	20700100504	246	-77.58968	38.76678	6.44	3.69	2.75
P	BMP	1087	PL-L	PL34	20700100504	246	-77.59218	38.76553	8.92	4.93	3.99
P	BMP	1088	PL-L	PL34	20700100504	246	-77.59216	38.76585	0.89	0.38	0.52
P	BMP	1089	PL-L	PL34	20700100504	246	-77.59193	38.76576	0.38	0.15	0.23
P	BMP	1090	PL-L	PL34	20700100504	246	-77.59266	38.7665	1.60	0.78	0.83
P	GD	1091	PL-L	PL34	20700100504	246	-77.59266	38.76643	0.83	0.62	0.21
P	BMP	1092	PL-L	PL34	20700100504	246	-77.5945	38.76706	9.37	4.97	4.40
P	RRD	1093	PL-L	PL34	20700100504	246	-77.59573	38.76726	2.22	1.43	0.79
P	RRD	1094	PL-L	PL34	20700100504	246	-77.59715	38.76743	3.15	1.80	1.35
P	GD	1095	PL-L	PL34	20700100504	246	-77.59578	38.76775	6.18	3.69	2.49
P	RRD	1096	PL-L	PL34	20700100504	246	-77.59364	38.77016	5.81	3.55	2.26

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	1097	PL-L	PL34	20700100504	246	-77.5933	38.77024	0.18	0.11	0.07
P	RRD	1098	PL-L	PL34	20700100504	246	-77.59394	38.76948	0.31	0.08	0.23
P	GD	1099	PL-L	PL34	20700100504	246	-77.59353	38.76952	0.54	0.27	0.27
P	GD	1100	PL-L	PL34	20700100504	260	-77.56937	38.75867	43.24	27.57	15.67
P	RRD	1101	PL-L	PL34	20700100504	260	-77.5705	38.75918	35.24	22.24	13.00
P	RRD	1102	PL-L	PL34	20700100504	260	-77.56749	38.75808	4.90	3.10	1.80
P	RRD	1103	PL-L	PL34	20700100504	260	-77.56639	38.75796	13.54	12.93	0.60
P	RRD	1104	PL-L	PL34	20700100504	260	-77.56712	38.75799	0.38	0.34	0.05
P	RRD	1105	PL-L	PL34	20700100504	260	-77.56685	38.75827	0.69	0.34	0.35
P	RRD	1106	PL-L	PL34	20700100504	260	-77.56671	38.75795	5.90	4.29	1.62
P	RRD	1107	PL-L	PL34	20700100504	260	-77.56734	38.75835	4.65	2.70	1.96
P	RRD	1108	PL-L	PL34	20700100504	260	-77.5638	38.75806	3.24	2.02	1.22
P	RRD	1109	PL-L	PL34	20700100504	260	-77.56353	38.75748	0.80	0.80	0.00
P	RRD	1110	PL-L	PL34	20700100504	260	-77.56593	38.76192	27.09	17.17	9.91
P	RRD	1111	PL-L	PL34	20700100504	260	-77.56615	38.76146	6.21	3.79	2.42
P	RRD	1112	PL-L	PL34	20700100504	260	-77.56564	38.76054	3.60	1.75	1.85
P	RRD	1113	PL-L	PL34	20700100504	260	-77.56347	38.76006	3.55	2.17	1.38
P	RRD	1114	PL-L	PL34	20700100504	260	-77.5654	38.76185	15.28	9.05	6.23
P	RRD	1115	PL-L	PL34	20700100504	260	-77.56619	38.76376	27.14	18.07	9.07
P	RRD	1116	PL-L	PL34	20700100504	260	-77.56585	38.76623	2.04	1.32	0.72
P	RRD	1118	PL-L	PL34	20700100504	260	-77.56581	38.76716	10.22	7.03	3.19
P	GD	1119	PL-L	PL34	20700100504	260	-77.5661	38.76743	7.03	4.59	2.44
P	RRD	1120	PL-L	PL34	20700100504	260	-77.56519	38.76808	1.02	0.56	0.46
P	RRD	1121	PL-L	PL34	20700100504	260	-77.56539	38.76864	1.09	0.87	0.22
P	RRD	1122	PL-L	PL34	20700100504	260	-77.5647	38.76678	15.04	9.05	5.99
P	GD	1123	PL-L	PL34	20700100504	260	-77.56426	38.76698	0.72	0.43	0.29
P	GD	1124	PL-L	PL34	20700100504	260	-77.56419	38.76745	1.42	0.74	0.68
P	RRD	1125	PL-L	PL34	20700100504	260	-77.56396	38.76851	9.62	4.86	4.76
P	RRD	1126	PL-L	PL34	20700100504	260	-77.56429	38.7696	12.15	7.31	4.84
P	RRD	1127	PL-L	PL34	20700100504	260	-77.56607	38.76313	8.04	4.81	3.22
P	RRD	1128	PL-L	PL34	20700100504	260	-77.56315	38.75814	6.11	3.41	2.70
P	RRD	1129	PL-L	PL34	20700100504	260	-77.56322	38.75808	0.38	0.15	0.23
P	RRD	1130	PL-L	PL34	20700100504	260	-77.56339	38.75862	14.83	8.88	5.96
P	RRD	1131	PL-L	PL34	20700100504	260	-77.56279	38.75682	1.05	0.61	0.44
P	STP	1132	PL-L	PL34	20700100504	260	-77.56267	38.75725	0.03	0.03	0.00
P	RRD	1135	PL-L	PL34	20700100504	260	-77.56156	38.76279	15.15	9.84	5.31
P	RRD	1136	PL-L	PL34	20700100504	260	-77.56153	38.76228	1.27	1.02	0.25

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	1137	PL-L	PL34	20700100504	260	-77.5615	38.76244	1.46	0.74	0.72
P	RRD	1138	PL-L	PL34	20700100504	262	-77.55608	38.75824	6.90	3.34	3.56
P	RRD	1139	PL-L	PL34	20700100504	262	-77.55616	38.75856	29.28	16.95	12.33
P	RRD	1140	PL-L	PL34	20700100504	262	-77.55508	38.75814	4.55	2.60	1.94
P	RRD	1141	PL-L	PL34	20700100504	262	-77.55505	38.75819	70.49	45.33	25.16
P	RRD	1142	PL-L	PL34	20700100504	262	-77.55498	38.75895	1.02	0.80	0.22
P	RRD	1143	PL-L	PL34	20700100504	262	-77.55511	38.76055	2.69	1.23	1.46
P	RRD	1144	PL-L	PL34	20700100504	262	-77.55444	38.76028	4.95	2.23	2.72
P	RRD	1145	PL-L	PL34	20700100504	262	-77.55437	38.76071	5.86	2.23	3.62
P	RRD	1146	PL-L	PL34	20700100504	262	-77.55489	38.7614	6.57	3.29	3.28
P	RRD	1147	PL-L	PL34	20700100504	262	-77.55381	38.76267	1.63	0.74	0.89
P	RRD	1148	PL-L	PL34	20700100504	262	-77.55376	38.76368	2.11	1.00	1.11
P	RRD	1149	PL-L	PL34	20700100504	262	-77.55379	38.76323	3.88	1.41	2.47
P	BMP	1150	PL-L	PL34	20700100504	262	-77.55347	38.76514	25.79	13.52	12.27
P	RRD	1151	PL-L	PL34	20700100504	262	-77.54868	38.76866	15.59	8.73	6.86
P	RRD	1153	PL-L	PL34	20700100504	262	-77.55103	38.76943	7.78	4.01	3.78
P	RRD	1155	PL-L	PL34	20700100504	262	-77.55494	38.76523	8.48	5.12	3.37
P	STP	1156	PL-L	PL34	20700100504	262	-77.55517	38.76502	0.43	0.24	0.19
P	RRD	1158	PL-L	PL34	20700100504	262	-77.55547	38.76254	3.26	1.63	1.63
P	STP	1159	PL-L	PL34	20700100504	262	-77.55679	38.7634	7.66	4.60	3.06
P	RRD	1160	PL-L	PL34	20700100504	262	-77.55558	38.76249	6.52	4.12	2.40
P	RRD	1162	PL-L	PL34	20700100504	262	-77.55811	38.76581	3.68	1.99	1.68
P	RRD	1163	PL-L	PL34	20700100504	262	-77.55836	38.76596	1.50	0.99	0.51
P	RRD	1164	PL-L	PL34	20700100504	262	-77.55392	38.76674	1.91	1.38	0.53
P	RRD	1165	PL-L	PL34	20700100504	262	-77.55836	38.76656	2.08	1.54	0.55
P	RRD	1167	PL-L	PL34	20700100504	262	-77.55937	38.76846	0.16	0.08	0.08
P	BMP	1169	PL-L	PL34	20700100504	262	-77.55918	38.76901	19.31	13.29	6.02
P	RRD	1171	PL-L	PL34	20700100504	262	-77.55585	38.76717	2.43	0.71	1.72
P	BMP	1178	PL-L	PL34	20700100504	276	-77.51859	38.76339	0.14	0.10	0.04
P	RRD	1188	PL-N	PL44	20700100703	170	-77.50476	38.7684	20.49	14.22	6.28
P	STP	1195	PL-N	PL46	20700100705	100	-77.38058	38.73185	0.58	0.42	0.16
P	GD	1196	PL-O	PL41	20700100801	414	-77.38772	38.73074	0.21	0.14	0.08
P	BMP	1197	PL-O	PL41	20700100801	414	-77.38976	38.73429	2.22	1.66	0.57
P	GD	1198	PL-O	PL41	20700100801	414	-77.38994	38.73087	0.29	0.19	0.09
P	GD	1199	PL-O	PL41	20700100801	414	-77.39244	38.73312	1.86	1.35	0.51
P	GD	1200	PL-O	PL41	20700100801	414	-77.39155	38.72964	0.16	0.11	0.06
P	GD	1201	PL-O	PL41	20700100801	414	-77.39052	38.72929	0.35	0.28	0.08

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	1202	PL-O	PL41	20700100801	414	-77.39265	38.72815	0.51	0.38	0.13
P	GD	1203	PL-O	PL41	20700100801	414	-77.39833	38.73154	0.13	0.13	0.00
P	GD	1204	PL-O	PL41	20700100801	414	-77.39709	38.73148	0.17	0.14	0.02
P	BMP	1205	PL-O	PL41	20700100801	414	-77.39684	38.73172	0.72	0.53	0.19
P	BMP	1206	PL-O	PL41	20700100801	414	-77.39759	38.73006	1.58	1.25	0.32
P	BMP	1207	PL-O	PL41	20700100801	414	-77.40221	38.72798	0.67	0.55	0.12
P	GD	1208	PL-O	PL41	20700100801	414	-77.39687	38.72945	0.53	0.40	0.13
P	GD	1210	PL-N	PL46	20700100705	198	-77.40028	38.73355	3.82	3.00	0.82
P	GD	1211	PL-N	PL46	20700100705	198	-77.39986	38.7335	1.01	0.69	0.32
P	STP	1212	PL-N	PL46	20700100705	198	-77.40498	38.73759	0.33	0.20	0.13
P	BMP	1213	PL-N	PL46	20700100705	198	-77.40559	38.73635	1.57	1.08	0.48
P	BMP	1214	PL-N	PL46	20700100705	198	-77.40434	38.73629	4.97	3.98	0.98
P	GD	1217	PL-O	PL41	20700100801	414	-77.38862	38.72778	1.14	0.85	0.30
P	BMP	1219	PL-O	PL41	20700100801	412	-77.40961	38.72873	16.78	13.15	3.63
P	GD	1220	PL-N	PL46	20700100705	100	-77.41539	38.73417	2.92	2.09	0.83
P	CD	1221	PL-N	PL46	20700100705	100	-77.41439	38.73716	0.34	0.25	0.08
P	GD	1222	PL-N	PL46	20700100705	100	-77.41418	38.73699	0.38	0.29	0.08
P	CD	1223	PL-N	PL46	20700100705	100	-77.41483	38.73675	0.58	0.47	0.11
P	GD	1224	PL-N	PL46	20700100705	100	-77.41472	38.73651	0.29	0.23	0.06
P	RRD	1225	PL-N	PL46	20700100705	100	-77.41102	38.7351	4.89	3.70	1.19
P	RRD	1226	PL-N	PL46	20700100705	100	-77.41194	38.73265	1.40	1.08	0.32
P	GD	1227	PL-N	PL46	20700100705	100	-77.4129	38.73413	0.61	0.42	0.19
P	GD	1228	PL-N	PL46	20700100705	100	-77.41325	38.73965	1.49	1.13	0.36
P	BMP	1229	PL-N	PL46	20700100705	100	-77.41487	38.74072	2.56	1.94	0.62
P	RRD	1230	PL-N	PL46	20700100705	100	-77.41713	38.74115	1.54	1.20	0.34
P	GD	1231	PL-N	PL46	20700100705	194	-77.42078	38.74206	12.37	10.40	1.98
P	GD	1232	PL-N	PL46	20700100705	194	-77.42173	38.74269	7.59	6.44	1.14
P	BMP	1233	PL-N	PL46	20700100705	194	-77.42161	38.74378	2.29	1.82	0.47
P	BMP	1234	PL-N	PL46	20700100705	194	-77.42128	38.74419	0.61	0.52	0.10
P	GD	1235	PL-N	PL46	20700100705	194	-77.41962	38.74359	9.84	9.03	0.82
P	BMP	1236	PL-O	PL41	20700100801	410	-77.41858	38.72962	22.84	17.01	5.84
P	BMP	1237	PL-O	PL41	20700100801	410	-77.41941	38.72872	3.31	2.48	0.83
P	RRD	1238	PL-O	PL41	20700100801	410	-77.42352	38.72904	88.09	74.82	13.27
P	GD	1239	PL-N	PL46	20700100705	194	-77.42406	38.73832	5.26	4.28	0.98
P	GD	1240	PL-N	PL46	20700100705	194	-77.42226	38.73964	11.90	9.09	2.81
P	GD	1241	PL-N	PL46	20700100705	194	-77.42172	38.74014	6.30	5.07	1.23
P	GD	1242	PL-N	PL46	20700100705	194	-77.43733	38.73993	1.70	1.45	0.25

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	1244	PL-O	PL41	20700100801	410	-77.42922	38.73417	12.82	9.98	2.84
P	GD	1245	PL-O	PL41	20700100801	410	-77.43806	38.7328	0.05	0.05	0.00
P	RRD	1246	PL-O	PL41	20700100801	410	-77.44024	38.73345	23.67	21.41	2.27
P	BMP	1248	PL-O	PL41	20700100801	410	-77.42839	38.731	5.62	4.63	1.00
P	CD	1249	PL-O	PL41	20700100801	410	-77.42696	38.72998	3.29	2.72	0.57
P	GD	1250	PL-N	PL46	20700100705	194	-77.43814	38.73837	32.63	28.52	4.10
P	RRD	1252	PL-O	PL41	20700100801	410	-77.43326	38.73383	0.85	0.52	0.33
P	CD	1253	PL-O	PL41	20700100801	408	-77.45281	38.73648	44.01	39.95	4.07
P	RRD	1254	PL-O	PL41	20700100801	408	-77.45117	38.73448	1.32	1.32	0.00
P	BMP	1255	PL-O	PL41	20700100801	408	-77.45407	38.73336	5.82	4.61	1.21
P	RRD	1256	PL-N	PL46	20700100705	194	-77.44776	38.74252	10.80	8.29	2.51
P	RRD	1257	PL-N	PL46	20700100705	194	-77.44617	38.74387	6.36	4.71	1.64
P	BMP	1258	PL-N	PL46	20700100705	194	-77.44817	38.74504	6.60	4.93	1.66
P	RRD	1261	PL-N	PL46	20700100705	194	-77.4451	38.7451	1.49	1.12	0.37
P	RRD	1262	PL-N	PL46	20700100705	194	-77.44569	38.74486	1.56	1.17	0.39
P	RRD	1263	PL-N	PL46	20700100705	194	-77.44612	38.74558	6.60	5.03	1.57
P	RRD	1264	PL-N	PL46	20700100705	194	-77.44577	38.74559	1.71	1.20	0.51
P	RRD	1265	PL-N	PL46	20700100705	194	-77.44533	38.74558	0.05	0.03	0.02
P	RRD	1266	PL-N	PL46	20700100705	194	-77.44381	38.74584	29.31	25.99	3.32
P	RRD	1267	PL-N	PL46	20700100705	194	-77.44322	38.74542	2.09	1.51	0.58
P	RRD	1268	PL-N	PL46	20700100705	194	-77.44201	38.74615	4.06	3.08	0.98
P	GD	1274	PL-O	PL41	20700100801	408	-77.45528	38.73296	2.84	2.19	0.64
P	GD	1275	PL-O	PL41	20700100801	408	-77.4561	38.73205	1.96	1.42	0.54
P	RRD	1277	PL-O	PL41	20700100801	408	-77.45486	38.7287	40.11	27.90	12.21
P	BMP	1278	PL-O	PL41	20700100801	408	-77.4618	38.73224	67.37	63.98	3.39
P	BMP	1279	PL-O	PL41	20700100801	408	-77.46024	38.73233	9.28	8.55	0.72
P	RRD	1280	PL-O	PL41	20700100801	408	-77.45926	38.73143	0.47	0.34	0.12
P	BMP	1282	PL-L	PL34	20700100504	288	-77.48262	38.72893	4.31	3.25	1.06
P	STP	1284	PL-L	PL34	20700100504	290	-77.47931	38.73002	2.18	1.42	0.76
P	RRD	1286	PL-L	PL34	20700100504	282	-77.49963	38.73295	1.25	0.95	0.31
P	RRD	1287	PL-L	PL34	20700100504	282	-77.50151	38.73206	0.04	0.03	0.01
P	STP	1290	PL-L	PL34	20700100504	282	-77.50225	38.73217	2.01	1.55	0.45
P	CD	1291	PL-L	PL34	20700100504	282	-77.50255	38.73246	4.57	3.41	1.17
P	RRD	1294	PL-L	PL34	20700100504	274	-77.53593	38.73994	31.37	8.30	23.07
P	BMP	1303	PL-L	PL34	20700100504	274	-77.54375	38.73105	57.66	40.27	17.39
P	BMP	1311	PL-L	PL34	20700100504	268	-77.5566	38.73848	76.83	56.38	20.45
P	RRD	1312	PL-L	PL34	20700100504	268	-77.5582	38.73978	3.13	1.70	1.43

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	1313	PL-L	PL34	20700100504	268	-77.55817	38.74027	1.43	1.01	0.41
P	RRD	1314	PL-L	PL34	20700100504	268	-77.55893	38.73997	0.84	0.27	0.57
P	RRD	1315	PL-L	PL34	20700100504	268	-77.55899	38.74034	2.26	1.87	0.40
P	RRD	1318	PL-L	PL34	20700100504	268	-77.56022	38.74069	0.84	0.69	0.15
P	STP	1319	PL-L	PL34	20700100504	268	-77.5601	38.74089	0.99	0.91	0.08
P	RRD	1320	PL-L	PL34	20700100504	268	-77.56193	38.74032	10.11	6.12	3.99
P	RRD	1321	PL-L	PL34	20700100504	268	-77.56111	38.74191	1.36	0.86	0.51
P	RRD	1322	PL-L	PL34	20700100504	268	-77.56156	38.73628	16.82	11.35	5.47
P	RRD	1323	PL-L	PL34	20700100504	268	-77.56344	38.73805	4.85	3.22	1.64
P	RRD	1324	PL-L	PL34	20700100504	268	-77.5626	38.73885	1.50	1.03	0.47
P	RRD	1325	PL-L	PL34	20700100504	268	-77.56217	38.738	5.49	3.89	1.60
P	RRD	1327	PL-L	PL34	20700100504	268	-77.56672	38.73482	0.29	0.25	0.04
P	RRD	1328	PL-L	PL34	20700100504	268	-77.56686	38.73539	1.73	1.24	0.49
P	GD	1329	PL-L	PL34	20700100504	268	-77.56573	38.7342	3.76	1.83	1.94
P	GD	1330	PL-L	PL34	20700100504	268	-77.56723	38.73565	1.05	0.56	0.49
P	GD	1331	PL-L	PL34	20700100504	268	-77.5672	38.73646	0.87	0.33	0.54
P	RRD	1332	PL-L	PL34	20700100504	268	-77.56676	38.73658	6.91	3.91	3.00
P	GD	1333	PL-L	PL34	20700100504	268	-77.56776	38.73696	5.00	3.55	1.45
P	GD	1334	PL-L	PL34	20700100504	268	-77.56767	38.73683	9.19	5.91	3.28
P	RRD	1335	PL-L	PL34	20700100504	268	-77.56601	38.73906	1.66	0.83	0.83
P	RRD	1336	PL-L	PL34	20700100504	268	-77.56764	38.73765	0.71	0.51	0.20
P	GD	1337	PL-L	PL34	20700100504	268	-77.56695	38.73854	10.96	7.93	3.02
P	RRD	1338	PL-L	PL34	20700100504	268	-77.56641	38.73792	1.64	0.62	1.02
P	RRD	1339	PL-L	PL34	20700100504	268	-77.56658	38.73926	0.03	0.03	0.00
P	RRD	1340	PL-L	PL34	20700100504	268	-77.56721	38.73958	0.10	0.08	0.02
P	RRD	1341	PL-L	PL34	20700100504	268	-77.56519	38.73918	5.32	2.96	2.36
P	STP	1342	PL-L	PL34	20700100504	268	-77.56364	38.73913	0.01	0.01	0.00
P	STP	1343	PL-L	PL34	20700100504	268	-77.56327	38.73928	0.02	0.02	0.00
P	STP	1344	PL-L	PL34	20700100504	268	-77.57478	38.73413	29.20	26.29	2.91
P	RRD	1345	PL-L	PL34	20700100504	268	-77.57755	38.73438	39.15	27.93	11.22
P	RRD	1346	PL-L	PL34	20700100504	268	-77.57632	38.73613	3.99	2.35	1.64
P	RRD	1347	PL-L	PL34	20700100504	268	-77.57553	38.73648	8.78	4.97	3.81
P	RRD	1348	PL-L	PL34	20700100504	268	-77.57282	38.73935	6.03	3.61	2.42
P	RRD	1349	PL-L	PL34	20700100504	268	-77.57272	38.73629	1.76	1.13	0.63
P	RRD	1350	PL-L	PL34	20700100504	268	-77.57285	38.73606	2.09	1.32	0.76
P	RRD	1351	PL-L	PL34	20700100504	268	-77.57253	38.73579	4.71	3.27	1.43
P	RRD	1352	PL-L	PL34	20700100504	268	-77.57268	38.73784	1.61	1.26	0.35

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	1353	PL-L	PL34	20700100504	268	-77.57035	38.74265	6.08	3.78	2.29
P	RRD	1354	PL-L	PL34	20700100504	268	-77.57135	38.74091	18.93	11.13	7.80
P	RRD	1355	PL-L	PL34	20700100504	268	-77.57034	38.7403	1.17	0.75	0.43
P	RRD	1356	PL-L	PL34	20700100504	268	-77.56876	38.74067	0.71	0.55	0.16
P	RRD	1357	PL-L	PL34	20700100504	268	-77.56841	38.74036	0.71	0.60	0.11
P	BMP	1360	PL-L	PL33	20700100503	256	-77.5917	38.73399	0.55	0.33	0.23
P	BMP	1361	PL-L	PL33	20700100503	256	-77.59174	38.73391	3.06	2.54	0.51
P	RRD	1362	PL-L	PL34	20700100504	258	-77.58812	38.73789	22.95	17.98	4.97
P	RRD	1363	PL-L	PL34	20700100504	258	-77.58858	38.73843	9.54	8.64	0.90
P	RRD	1364	PL-L	PL34	20700100504	258	-77.58741	38.73842	0.08	0.04	0.03
P	RRD	1365	PL-L	PL34	20700100504	258	-77.5868	38.73733	17.44	11.00	6.44
P	RRD	1366	PL-L	PL34	20700100504	258	-77.58632	38.7389	8.15	4.80	3.35
P	RRD	1367	PL-L	PL34	20700100504	258	-77.58691	38.73925	2.24	1.28	0.97
P	RRD	1368	PL-L	PL34	20700100504	258	-77.5838	38.73849	6.54	3.73	2.81
P	RRD	1369	PL-L	PL34	20700100504	258	-77.58833	38.74068	17.51	14.24	3.27
P	GD	1370	PL-L	PL34	20700100504	258	-77.58565	38.74053	1.13	0.57	0.56
P	RRD	1371	PL-L	PL34	20700100504	258	-77.58616	38.74079	2.07	1.19	0.88
P	RRD	1372	PL-L	PL34	20700100504	258	-77.58465	38.74056	5.95	3.56	2.38
P	RRD	1373	PL-L	PL34	20700100504	258	-77.58571	38.74137	1.87	0.89	0.98
P	GD	1374	PL-L	PL34	20700100504	258	-77.58505	38.74162	7.05	4.39	2.66
P	RRD	1375	PL-L	PL34	20700100504	258	-77.58543	38.74253	3.05	1.43	1.62
P	RRD	1376	PL-L	PL34	20700100504	258	-77.58472	38.74317	8.79	5.63	3.16
P	RRD	1377	PL-L	PL33	20700100503	252	-77.6396	38.73319	6.65	6.44	0.20
P	RRD	1378	PL-L	PL33	20700100503	252	-77.64187	38.73404	38.63	34.41	4.22
P	RRD	1380	PL-L	PL34	20700100504	258	-77.5981	38.75596	3.90	2.19	1.70
P	RRD	1381	PL-L	PL34	20700100504	258	-77.59843	38.75487	0.57	0.22	0.34
P	RRD	1382	PL-L	PL34	20700100504	258	-77.59663	38.75482	1.41	0.85	0.57
P	BMP	1383	PL-L	PL34	20700100504	258	-77.59559	38.75532	16.19	11.36	4.83
P	BMP	1384	PL-L	PL34	20700100504	258	-77.59334	38.75468	0.06	0.03	0.03
P	BMP	1385	PL-L	PL34	20700100504	258	-77.59332	38.75498	1.91	1.29	0.62
P	BMP	1386	PL-L	PL34	20700100504	258	-77.58717	38.75413	8.14	6.37	1.78
P	BMP	1387	PL-L	PL34	20700100504	246	-77.58586	38.75597	6.74	5.19	1.55
P	RRD	1388	PL-L	PL34	20700100504	258	-77.58506	38.75477	0.87	0.74	0.12
P	STP	1390	PL-L	PL34	20700100504	258	-77.59194	38.75016	34.67	21.22	13.45
P	GD	1391	PL-L	PL34	20700100504	258	-77.58623	38.7523	2.94	2.63	0.31
P	RRD	1392	PL-L	PL34	20700100504	258	-77.58543	38.75227	2.39	0.91	1.48
P	RRD	1393	PL-L	PL34	20700100504	258	-77.58532	38.74371	8.04	5.13	2.91

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	1394	PL-L	PL34	20700100504	258	-77.58438	38.74452	11.51	6.98	4.52
P	RRD	1395	PL-L	PL34	20700100504	258	-77.58498	38.74496	5.53	3.61	1.91
P	RRD	1396	PL-L	PL34	20700100504	258	-77.58433	38.7458	3.17	1.77	1.40
P	RRD	1397	PL-L	PL34	20700100504	258	-77.58485	38.74609	22.10	16.99	5.11
P	RRD	1398	PL-L	PL34	20700100504	258	-77.58483	38.74673	13.25	7.36	5.89
P	RRD	1399	PL-L	PL34	20700100504	258	-77.58334	38.74621	22.15	10.86	11.29
P	RRD	1401	PL-L	PL34	20700100504	258	-77.58298	38.74815	18.46	11.23	7.23
P	RRD	1402	PL-L	PL34	20700100504	258	-77.58171	38.74887	2.51	1.22	1.29
P	RRD	1403	PL-L	PL34	20700100504	258	-77.58302	38.74678	10.74	5.80	4.94
P	RRD	1404	PL-L	PL34	20700100504	258	-77.58186	38.74947	9.84	4.54	5.29
P	RRD	1405	PL-L	PL34	20700100504	258	-77.58247	38.74972	1.91	0.81	1.10
P	RRD	1406	PL-L	PL34	20700100504	258	-77.5825	38.74954	13.82	7.08	6.74
P	RRD	1407	PL-L	PL34	20700100504	258	-77.58443	38.7505	1.99	0.89	1.10
P	RRD	1408	PL-L	PL34	20700100504	258	-77.58289	38.7511	1.02	0.48	0.54
P	RRD	1409	PL-L	PL34	20700100504	258	-77.58131	38.74974	0.86	0.62	0.23
P	STP	1410	PL-L	PL34	20700100504	258	-77.58009	38.75082	0.71	0.47	0.25
P	RRD	1411	PL-L	PL34	20700100504	268	-77.57925	38.74984	2.90	1.62	1.27
P	RRD	1412	PL-L	PL34	20700100504	268	-77.57722	38.74804	0.91	0.44	0.46
P	RRD	1413	PL-L	PL34	20700100504	268	-77.57777	38.74846	2.23	1.05	1.18
P	RRD	1414	PL-L	PL34	20700100504	268	-77.57616	38.74731	4.07	2.01	2.06
P	RRD	1415	PL-L	PL34	20700100504	268	-77.57557	38.74693	9.55	4.65	4.91
P	RRD	1416	PL-L	PL34	20700100504	268	-77.57519	38.74711	0.21	0.20	0.01
P	RRD	1417	PL-L	PL34	20700100504	268	-77.57443	38.74683	10.72	5.46	5.27
P	RRD	1419	PL-L	PL34	20700100504	268	-77.57129	38.74678	15.19	8.57	6.61
P	GD	1420	PL-L	PL34	20700100504	268	-77.56858	38.74603	4.87	2.71	2.16
P	GD	1422	PL-L	PL34	20700100504	260	-77.57008	38.75345	28.99	19.71	9.28
P	RRD	1423	PL-L	PL34	20700100504	260	-77.56932	38.75213	0.05	0.05	0.00
P	RRD	1431	PL-L	PL34	20700100504	268	-77.57343	38.74556	4.25	2.69	1.56
P	GD	1432	PL-L	PL34	20700100504	268	-77.57278	38.74451	31.83	15.80	16.03
P	RRD	1433	PL-L	PL34	20700100504	268	-77.57667	38.75148	8.66	6.13	2.53
P	BMP	1434	PL-L	PL34	20700100504	258	-77.58028	38.75393	13.53	9.87	3.65
P	BMP	1435	PL-L	PL34	20700100504	258	-77.58045	38.75503	18.67	12.50	6.17
P	BMP	1436	PL-L	PL34	20700100504	260	-77.56531	38.75468	6.09	5.24	0.85
P	BMP	1437	PL-L	PL34	20700100504	260	-77.56129	38.75363	28.19	17.74	10.44
P	STP	1438	PL-L	PL34	20700100504	260	-77.55996	38.75242	3.91	2.90	1.01
P	RRD	1439	PL-L	PL34	20700100504	262	-77.55684	38.7565	7.08	3.93	3.15
P	BMP	1441	PL-L	PL34	20700100504	264	-77.55114	38.75074	5.95	2.80	3.14

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	1446	PL-L	PL34	20700100504	260	-77.55975	38.74545	0.46	0.31	0.15
P	RRD	1447	PL-L	PL34	20700100504	260	-77.55994	38.747	2.40	1.81	0.59
P	RRD	1448	PL-L	PL34	20700100504	260	-77.56013	38.74351	12.73	9.52	3.21
P	BMP	1449	PL-L	PL34	20700100504	266	-77.55115	38.74759	44.67	29.90	14.78
P	RRD	1450	PL-L	PL34	20700100504	266	-77.55464	38.74853	2.93	1.39	1.54
P	BMP	1451	PL-L	PL34	20700100504	266	-77.55736	38.74924	44.36	30.38	13.99
P	BMP	1454	PL-L	PL34	20700100504	264	-77.54551	38.74608	83.54	37.11	46.43
P	STP	1460	PL-L	PL34	20700100504	280	-77.52453	38.74303	48.90	47.56	1.34
P	GD	1461	PL-L	PL34	20700100504	280	-77.52526	38.74146	42.22	42.22	0.00
P	RRD	1469	PL-L	PL34	20700100504	276	-77.52121	38.75303	6.60	4.04	2.56
P	RRD	1470	PL-L	PL34	20700100504	276	-77.51987	38.75111	8.46	3.35	5.11
P	BMP	1474	PL-L	PL34	20700100504	276	-77.51411	38.75423	3.11	0.70	2.42
P	STP	1478	PL-N	PL46	20700100705	194	-77.42519	38.75544	2.95	2.23	0.72
P	RRD	1482	PL-N	PL46	20700100705	194	-77.4244	38.74459	0.51	0.42	0.09
P	BMP	1483	PL-N	PL46	20700100705	194	-77.42618	38.74411	0.43	0.35	0.08
P	BMP	1484	PL-N	PL46	20700100705	194	-77.42904	38.74452	19.83	17.11	2.72
P	STP	1485	PL-N	PL46	20700100705	100	-77.39991	38.74411	0.92	0.84	0.08
P	STP	1486	PL-N	PL46	20700100705	100	-77.39645	38.74208	0.80	0.63	0.17
P	STP	1487	PL-N	PL46	20700100705	100	-77.39398	38.74561	0.19	0.13	0.06
P	STP	1488	PL-N	PL46	20700100705	100	-77.39237	38.74653	0.42	0.30	0.12
P	GD	1490	PL-L	PL32	20700100502	240	-77.61698	38.77109	0.60	0.44	0.16
P	RRD	1491	PL-L	PL32	20700100502	240	-77.61738	38.77092	0.75	0.39	0.37
P	GD	1492	PL-L	PL32	20700100502	240	-77.6172	38.77011	0.06	0.03	0.03
P	GD	1493	PL-L	PL32	20700100502	240	-77.61754	38.76998	0.06	0.06	0.00
P	GD	1495	PL-L	PL32	20700100502	240	-77.62023	38.76755	0.09	0.09	0.00
P	BMP	1496	PL-L	PL34	20700100504	248	-77.61224	38.75956	76.89	42.55	34.34
P	GD	1498	PL-L	PL34	20700100504	242	-77.61425	38.79121	4.26	3.34	0.92
P	GD	1499	PL-L	PL34	20700100504	242	-77.61405	38.79025	3.09	2.48	0.61
P	RRD	1502	PL-L	PL34	20700100504	242	-77.61727	38.7925	10.71	7.62	3.09
P	RRD	1505	PL-N	PL46	20700100705	194	-77.44224	38.7455	2.86	2.01	0.85
P	RRD	1506	PL-N	PL43	20700100702	150	-77.61598	38.8085	5.21	2.30	2.91
P	GD	1507	PL-N	PL43	20700100702	150	-77.61584	38.80825	1.49	0.76	0.73
P	RRD	1510	PL-N	PL43	20700100702	112	-77.65395	38.8535	1.23	0.78	0.45
P	STP	1511	PL-N	PL43	20700100702	112	-77.65417	38.85413	3.30	2.35	0.95
P	STP	1512	PL-N	PL43	20700100702	112	-77.65372	38.85403	1.11	0.66	0.45
P	STP	1513	PL-L	PL32	20700100502	206	-77.69425	38.84517	0.67	0.55	0.12
P	STP	1514	PL-L	PL32	20700100502	206	-77.70052	38.84709	2.57	1.91	0.67

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	1516	PL-N	PL43	20700100702	150	-77.61476	38.81988	8.51	4.66	3.84
P	GD	1527	PL-N	PL46	20700100705	194	-77.43906	38.74359	44.52	39.35	5.17
P	STP	1540	PL-N	PL42	20700100701	103	-77.64028	38.91383	0.04	0.02	0.02
P	STP	1541	PL-N	PL42	20700100701	102	-77.6408	38.91898	0.21	0.18	0.03
P	STP	1542	PL-N	PL42	20700100701	102	-77.64026	38.92151	1.30	1.05	0.25
P	STP	1543	PL-N	PL42	20700100701	102	-77.63918	38.9206	1.07	0.89	0.18
P	STP	1544	PL-N	PL42	20700100701	102	-77.63655	38.92022	0.13	0.11	0.02
P	STP	1545	PL-N	PL42	20700100701	103	-77.63725	38.91225	1.78	1.57	0.21
P	STP	1546	PL-N	PL42	20700100701	102	-77.65083	38.91857	12.78	9.50	3.28
P	RRD	1579	PL-N	PL42	20700100701	120	-77.62	38.88044	2.43	2.21	0.21
P	STP	1580	PL-N	PL42	20700100701	136	-77.58259	38.86128	0.07	0.05	0.02
P	STP	1581	PL-N	PL43	20700100702	126	-77.62457	38.86463	0.38	0.32	0.06
P	RRD	1582	PL-L	PL32	20700100502	204	-77.69218	38.85483	18.91	15.03	3.88
P	GD	1588	PL-L	PL34	20700100504	258	-77.57944	38.7527	3.19	2.16	1.04
P	RRD	1589	PL-L	PL34	20700100504	276	-77.52129	38.75335	0.15	0.03	0.12
P	STP	1590	PL-N	PL46	20700100705	194	-77.44718	38.74523	0.27	0.11	0.16
P	STP	1592	PL-N	PL46	20700100705	100	-77.40504	38.74007	5.12	4.24	0.88
P	STP	1593	PL-N	PL46	20700100705	198	-77.40082	38.73782	0.15	0.09	0.06
P	STP	1594	PL-N	PL46	20700100705	198	-77.39857	38.739	5.30	4.05	1.25
P	STP	1595	PL-N	PL46	20700100705	100	-77.39371	38.74118	1.10	0.83	0.28
P	GD	1596	PL-O	PL41	20700100801	412	-77.40543	38.72816	1.53	1.17	0.35
P	RRD	1597	PL-O	PL41	20700100801	412	-77.40623	38.73254	3.10	2.44	0.66
P	RRD	1598	PL-O	PL41	20700100801	412	-77.40883	38.73183	5.98	4.68	1.30
P	GD	1599	PL-N	PL46	20700100705	100	-77.41116	38.73822	10.11	7.41	2.70
P	STP	1600	PL-N	PL46	20700100705	100	-77.40891	38.74025	0.44	0.31	0.13
P	RRD	1601	PL-N	PL46	20700100705	194	-77.42972	38.74142	1.93	1.80	0.13
P	RRD	1602	PL-L	PL34	20700100504	290	-77.48077	38.7292	0.04	0.04	0.00
P	RRD	1603	PL-L	PL34	20700100504	282	-77.5005	38.73237	2.12	1.61	0.52
P	RRD	1604	PL-L	PL34	20700100504	282	-77.49949	38.73272	0.22	0.17	0.05
P	RRD	1608	PL-L	PL34	20700100504	268	-77.56202	38.73756	1.22	0.82	0.40
P	RRD	1612	PL-L	PL34	20700100504	268	-77.56651	38.73695	0.52	0.25	0.28
P	RRD	1613	PL-L	PL34	20700100504	268	-77.57337	38.73856	69.26	39.88	29.38
P	RRD	1615	PL-L	PL34	20700100504	274	-77.54771	38.72576	49.40	39.99	9.40
P	BMP	1617	PL-L	PL33	20700100503	272	-77.54803	38.72084	135.76	81.21	54.55
P	STP	1618	PL-L	PL33	20700100503	272	-77.54762	38.72	4.37	2.53	1.84
P	STP	1619	PL-L	PL33	20700100503	272	-77.54597	38.71919	7.47	3.67	3.80
P	STP	1620	PL-L	PL33	20700100503	272	-77.54604	38.71914	3.08	1.81	1.27

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	1627	PL-L	PL33	20700100503	272	-77.55369	38.70372	0.12	0.04	0.08
P	GD	1628	PL-L	PL33	20700100503	272	-77.55402	38.70406	0.42	0.26	0.17
P	BMP	1631	PL-L	PL34	20700100504	282	-77.50212	38.72788	121.83	109.69	12.14
P	BMP	1633	PL-L	PL34	20700100504	282	-77.49819	38.72497	47.09	42.87	4.22
P	RRD	1636	PL-L	PL34	20700100504	288	-77.48158	38.72833	2.28	1.95	0.33
P	BMP	1637	PL-L	PL34	20700100504	288	-77.48525	38.72784	8.07	6.18	1.89
P	BMP	1638	PL-L	PL34	20700100504	288	-77.48607	38.72792	26.44	20.34	6.10
P	STP	1639	PL-L	PL34	20700100504	288	-77.48674	38.72784	0.55	0.45	0.10
P	GD	1640	PL-L	PL34	20700100504	288	-77.48784	38.72713	13.94	10.22	3.72
P	BMP	1641	PL-L	PL34	20700100504	288	-77.4874	38.72684	2.16	1.53	0.63
P	BMP	1642	PL-L	PL34	20700100504	288	-77.48897	38.72612	9.16	6.59	2.58
P	GD	1643	PL-L	PL34	20700100504	288	-77.4874	38.72429	34.75	25.38	9.37
P	CD	1644	PL-L	PL34	20700100504	288	-77.4902	38.72424	0.93	0.69	0.24
P	BMP	1648	PL-L	PL34	20700100504	291	-77.4769	38.71757	44.00	31.52	12.47
P	GD	1650	PL-O	PL41	20700100801	408	-77.45844	38.72579	10.29	6.50	3.79
P	GD	1651	PL-O	PL41	20700100801	408	-77.45796	38.72643	2.13	1.79	0.34
P	RRD	1652	PL-O	PL41	20700100801	408	-77.45699	38.72747	13.09	8.61	4.47
P	GD	1653	PL-O	PL41	20700100801	408	-77.45864	38.72516	0.18	0.18	0.00
P	GD	1655	PL-O	PL41	20700100801	408	-77.46143	38.71909	0.31	0.31	0.00
P	BMP	1656	PL-O	PL41	20700100801	408	-77.45818	38.71889	7.10	5.23	1.87
P	RRD	1659	PL-O	PL41	20700100801	408	-77.45623	38.71694	1.93	1.09	0.84
P	GD	1660	PL-O	PL41	20700100801	408	-77.45481	38.71741	2.83	2.20	0.63
P	GD	1661	PL-O	PL41	20700100801	408	-77.45277	38.71763	0.87	0.70	0.18
P	GD	1664	PL-O	PL41	20700100801	408	-77.45349	38.72084	2.61	1.95	0.65
P	RRD	1665	PL-O	PL41	20700100801	408	-77.45247	38.72043	1.36	1.10	0.26
P	GD	1666	PL-O	PL41	20700100801	408	-77.45229	38.71917	1.83	1.37	0.46
P	GD	1667	PL-O	PL41	20700100801	408	-77.45107	38.71977	1.87	1.54	0.32
P	GD	1669	PL-O	PL41	20700100801	408	-77.4479	38.7203	1.46	1.17	0.29
P	RRD	1671	PL-O	PL41	20700100801	408	-77.44844	38.72322	7.15	5.86	1.30
P	GD	1672	PL-O	PL41	20700100801	410	-77.44123	38.72254	8.50	7.14	1.35
P	GD	1673	PL-O	PL41	20700100801	408	-77.44862	38.72324	1.73	1.45	0.28
P	GD	1674	PL-O	PL41	20700100801	410	-77.44048	38.72285	3.44	2.79	0.65
P	STP	1679	PL-O	PL41	20700100801	410	-77.43829	38.72229	0.67	0.49	0.18
P	RRD	1680	PL-O	PL41	20700100801	410	-77.44118	38.72646	1.11	0.79	0.32
P	RRD	1681	PL-O	PL41	20700100801	410	-77.43948	38.72596	0.88	0.68	0.20
P	GD	1682	PL-O	PL41	20700100801	410	-77.44341	38.72516	18.02	15.33	2.69
P	GD	1683	PL-O	PL41	20700100801	410	-77.44166	38.72631	8.82	6.89	1.93

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	1684	PL-O	PL41	20700100801	410	-77.43969	38.72572	2.64	2.06	0.58
P	RRD	1688	PL-O	PL41	20700100801	410	-77.43578	38.72379	0.65	0.43	0.22
P	RRD	1689	PL-O	PL41	20700100801	410	-77.43571	38.72398	0.38	0.19	0.19
P	RRD	1690	PL-O	PL41	20700100801	410	-77.43536	38.72361	0.40	0.30	0.10
P	RRD	1691	PL-O	PL41	20700100801	410	-77.43532	38.72381	1.36	1.07	0.29
P	GD	1692	PL-O	PL41	20700100801	408	-77.45964	38.72338	8.75	5.19	3.56
P	RRD	1693	PL-O	PL41	20700100801	410	-77.43526	38.72235	0.07	0.07	0.00
P	RRD	1694	PL-O	PL41	20700100801	410	-77.43532	38.72252	0.21	0.15	0.06
P	RRD	1695	PL-O	PL41	20700100801	410	-77.43583	38.72229	0.03	0.03	0.00
P	BMP	1696	PL-O	PL41	20700100801	410	-77.43401	38.72108	1.11	0.87	0.24
P	GD	1697	PL-O	PL41	20700100801	410	-77.43237	38.7199	0.05	0.03	0.02
P	CD	1698	PL-O	PL41	20700100801	410	-77.43352	38.71984	1.16	0.95	0.21
P	BMP	1699	PL-O	PL41	20700100801	410	-77.43564	38.71936	6.29	4.99	1.31
P	RRD	1700	PL-O	PL41	20700100801	410	-77.436	38.71985	5.79	4.44	1.36
P	RRD	1701	PL-O	PL41	20700100801	410	-77.43484	38.71988	0.07	0.07	0.00
P	BMP	1703	PL-O	PL41	20700100801	410	-77.4228	38.72271	3.23	2.46	0.76
P	STP	1704	PL-O	PL41	20700100801	410	-77.42258	38.72108	1.99	1.46	0.54
P	BMP	1706	PL-O	PL41	20700100801	410	-77.43871	38.71621	21.97	20.40	1.57
P	STP	1708	PL-O	PL41	20700100801	410	-77.42274	38.71977	8.83	6.59	2.25
P	GD	1709	PL-O	PL41	20700100801	410	-77.43782	38.72538	2.69	2.03	0.66
P	STP	1710	PL-O	PL41	20700100801	410	-77.4232	38.7181	6.99	5.57	1.42
P	STP	1711	PL-O	PL41	20700100801	410	-77.42348	38.71724	0.09	0.06	0.03
P	STP	1712	PL-O	PL41	20700100801	410	-77.424	38.71581	3.15	2.83	0.32
P	GD	1713	PL-O	PL41	20700100801	410	-77.41762	38.7264	8.61	6.42	2.19
P	GD	1714	PL-O	PL41	20700100801	410	-77.41947	38.72583	6.30	5.04	1.26
P	BMP	1715	PL-O	PL41	20700100801	410	-77.42181	38.72594	1.71	1.44	0.28
P	RRD	1716	PL-O	PL41	20700100801	410	-77.42075	38.72417	8.06	6.45	1.61
P	RRD	1717	PL-O	PL41	20700100801	412	-77.41859	38.71551	0.50	0.41	0.09
P	RRD	1718	PL-O	PL41	20700100801	412	-77.41697	38.71702	2.14	1.70	0.44
P	RRD	1719	PL-O	PL41	20700100801	412	-77.418	38.71725	1.72	1.38	0.34
P	RRD	1720	PL-O	PL41	20700100801	412	-77.41829	38.71824	0.90	0.77	0.13
P	RRD	1721	PL-O	PL41	20700100801	412	-77.41776	38.71836	3.52	2.99	0.53
P	RRD	1722	PL-O	PL41	20700100801	412	-77.41772	38.7156	0.44	0.35	0.10
P	RRD	1723	PL-O	PL41	20700100801	412	-77.41634	38.71457	0.52	0.41	0.11
P	CD	1724	PL-O	PL41	20700100801	412	-77.41439	38.71666	0.58	0.47	0.11
P	CD	1725	PL-O	PL41	20700100801	412	-77.41444	38.71722	0.68	0.55	0.13
P	STP	1726	PL-O	PL41	20700100801	412	-77.41197	38.71483	0.92	0.64	0.28

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	1727	PL-O	PL41	20700100801	412	-77.40855	38.72678	0.94	0.77	0.17
P	RRD	1728	PL-O	PL41	20700100801	412	-77.41443	38.72264	2.55	1.97	0.58
P	GD	1729	PL-O	PL41	20700100801	412	-77.41481	38.72388	3.36	2.56	0.80
P	RRD	1730	PL-O	PL41	20700100801	412	-77.4143	38.72445	1.10	0.90	0.20
P	GD	1731	PL-O	PL41	20700100801	412	-77.41459	38.72488	1.86	1.35	0.51
P	GD	1732	PL-O	PL41	20700100801	412	-77.41266	38.72126	6.08	4.57	1.51
P	BMP	1733	PL-O	PL41	20700100801	412	-77.41071	38.72466	3.63	2.86	0.77
P	RRD	1734	PL-O	PL41	20700100801	412	-77.40709	38.72221	0.53	0.46	0.07
P	STP	1735	PL-O	PL41	20700100801	412	-77.40671	38.72113	9.39	7.17	2.21
P	RRD	1736	PL-O	PL41	20700100801	414	-77.40104	38.72575	1.48	1.11	0.37
P	GD	1737	PL-O	PL41	20700100801	414	-77.39626	38.72559	0.22	0.17	0.05
P	GD	1738	PL-O	PL41	20700100801	414	-77.3957	38.72756	3.06	2.41	0.66
P	GD	1739	PL-O	PL41	20700100801	414	-77.39397	38.72721	0.28	0.18	0.11
P	GD	1740	PL-O	PL41	20700100801	416	-77.39387	38.72649	1.07	0.84	0.23
P	GD	1741	PL-O	PL41	20700100801	416	-77.39419	38.72476	0.99	0.76	0.23
P	GD	1742	PL-O	PL41	20700100801	416	-77.39503	38.72393	0.06	0.06	0.01
P	STP	1743	PL-O	PL41	20700100801	416	-77.39336	38.72152	0.15	0.11	0.04
P	STP	1746	PL-O	PL41	20700100801	414	-77.39622	38.71926	0.38	0.30	0.08
P	STP	1747	PL-O	PL41	20700100801	414	-77.39765	38.71741	0.71	0.56	0.15
P	GD	1748	PL-O	PL41	20700100801	416	-77.40148	38.71328	4.08	3.15	0.93
P	GD	1749	PL-O	PL41	20700100801	416	-77.39913	38.7131	2.01	1.58	0.43
P	BMP	1750	PL-O	PL41	20700100801	416	-77.4026	38.71644	3.29	2.65	0.64
P	GD	1751	PL-O	PL41	20700100801	412	-77.40629	38.71708	8.44	6.75	1.68
P	GD	1752	PL-O	PL41	20700100801	412	-77.40528	38.71932	0.63	0.49	0.14
P	GD	1753	PL-O	PL41	20700100801	416	-77.39133	38.72534	0.14	0.14	0.01
P	GD	1754	PL-O	PL41	20700100801	416	-77.39194	38.72261	0.58	0.46	0.12
P	GD	1755	PL-O	PL41	20700100801	416	-77.39185	38.72319	0.08	0.07	0.01
P	GD	1756	PL-O	PL41	20700100801	414	-77.39082	38.72733	0.72	0.52	0.21
P	GD	1757	PL-O	PL41	20700100801	414	-77.38905	38.72678	0.04	0.04	0.00
P	GD	1758	PL-O	PL41	20700100801	416	-77.38953	38.72643	0.21	0.16	0.05
P	GD	1759	PL-O	PL41	20700100801	416	-77.38888	38.72591	0.11	0.08	0.03
P	GD	1760	PL-O	PL41	20700100801	416	-77.38997	38.72021	0.88	0.67	0.21
P	GD	1761	PL-O	PL41	20700100801	416	-77.39017	38.72113	0.02	0.02	0.00
P	GD	1762	PL-O	PL41	20700100801	416	-77.39027	38.72264	0.17	0.11	0.05
P	GD	1763	PL-O	PL41	20700100801	416	-77.38866	38.72442	0.89	0.75	0.14
P	GD	1764	PL-O	PL41	20700100801	416	-77.38795	38.72405	0.43	0.24	0.20
P	GD	1765	PL-O	PL41	20700100801	416	-77.38693	38.72203	0.12	0.11	0.01

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	1766	PL-O	PL41	20700100801	416	-77.38717	38.72001	0.77	0.53	0.24
P	STP	1767	PL-O	PL41	20700100801	416	-77.38541	38.71799	4.65	3.50	1.15
P	STP	1768	PL-O	PL47	20700100802	416	-77.38221	38.71746	0.53	0.44	0.09
P	RRD	1769	PL-O	PL41	20700100801	416	-77.3893	38.71606	0.52	0.44	0.09
P	GD	1770	PL-O	PL41	20700100801	416	-77.38867	38.71584	0.07	0.07	0.00
P	RRD	1771	PL-O	PL41	20700100801	412	-77.4091	38.7164	1.12	0.80	0.32
P	STP	1772	PL-O	PL41	20700100801	412	-77.41376	38.71916	0.35	0.25	0.10
P	RRD	1773	PL-O	PL41	20700100801	414	-77.39973	38.72052	0.28	0.23	0.05
P	STP	1775	PL-O	PL47	20700100802	428	-77.35693	38.72282	0.67	0.45	0.22
P	STP	1776	PL-O	PL47	20700100802	428	-77.35323	38.71783	0.65	0.48	0.18
P	RRD	1777	PL-O	PL47	20700100802	428	-77.35561	38.71907	0.88	0.65	0.22
P	GD	1778	PL-O	PL47	20700100802	428	-77.35835	38.71657	0.38	0.30	0.09
P	GD	1779	PL-O	PL47	20700100802	428	-77.35509	38.71484	3.98	3.03	0.95
P	GD	1780	PL-O	PL47	20700100802	428	-77.35355	38.7148	0.17	0.14	0.03
P	GD	1781	PL-O	PL47	20700100802	426	-77.36164	38.71476	6.47	4.71	1.76
P	RRD	1782	PL-O	PL47	20700100802	428	-77.34659	38.71239	0.47	0.44	0.03
P	RRD	1783	PL-O	PL47	20700100802	428	-77.34771	38.71246	2.46	1.94	0.53
P	GD	1785	PL-O	PL47	20700100802	428	-77.34856	38.71253	0.81	0.76	0.05
P	GD	1786	PL-O	PL47	20700100802	428	-77.34624	38.71323	1.99	1.50	0.50
P	RRD	1787	PL-O	PL47	20700100802	428	-77.34685	38.71529	0.81	0.67	0.14
P	RRD	1788	PL-O	PL47	20700100802	428	-77.34715	38.7147	0.69	0.63	0.06
P	RRD	1789	PL-O	PL47	20700100802	428	-77.34068	38.71473	2.92	2.02	0.90
P	STP	1790	PL-O	PL47	20700100802	428	-77.34593	38.71788	0.09	0.06	0.04
P	STP	1791	PL-O	PL47	20700100802	428	-77.34454	38.71914	0.19	0.14	0.05
P	STP	1792	PL-O	PL47	20700100802	428	-77.34454	38.71903	0.81	0.59	0.23
P	STP	1793	PL-O	PL47	20700100802	428	-77.33605	38.71506	3.97	2.79	1.18
P	GD	1794	PL-L	PL33	20700100503	272	-77.55434	38.70288	1.83	1.39	0.45
P	STP	1797	PL-L	PL34	20700100504	289	-77.49642	38.70537	1.37	0.92	0.44
P	STP	1798	PL-L	PL34	20700100504	289	-77.49474	38.70517	8.58	7.06	1.53
P	GD	1799	PL-L	PL34	20700100504	289	-77.49791	38.71057	3.34	2.38	0.96
P	GD	1800	PL-L	PL34	20700100504	289	-77.48967	38.71139	9.96	8.04	1.91
P	STP	1802	PL-L	PL34	20700100504	291	-77.48436	38.70286	0.12	0.10	0.03
P	GD	1803	PL-L	PL34	20700100504	291	-77.48959	38.70296	1.61	1.28	0.32
P	GD	1804	PL-L	PL34	20700100504	291	-77.48977	38.70261	0.60	0.43	0.16
P	BMP	1806	PL-L	PL33	20700100503	286	-77.53346	38.70503	99.82	94.39	5.44
P	BMP	1807	PL-L	PL33	20700100503	286	-77.5263	38.70511	158.91	151.44	7.47
P	RRD	1809	PL-O	PL41	20700100801	406	-77.46947	38.70683	21.63	18.07	3.56

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	1810	PL-O	PL41	20700100801	406	-77.46691	38.70702	4.22	3.27	0.94
P	BMP	1811	PL-O	PL41	20700100801	406	-77.46574	38.70644	13.78	10.79	2.99
P	GD	1812	PL-O	PL41	20700100801	406	-77.4642	38.70633	1.79	1.51	0.28
P	GD	1813	PL-O	PL41	20700100801	406	-77.4637	38.70644	0.94	0.70	0.24
P	GD	1814	PL-O	PL41	20700100801	406	-77.46285	38.70656	1.51	1.12	0.39
P	GD	1815	PL-O	PL41	20700100801	406	-77.46197	38.70605	6.08	4.75	1.34
P	BMP	1816	PL-O	PL41	20700100801	406	-77.46027	38.70829	3.07	2.22	0.86
P	GD	1817	PL-O	PL41	20700100801	406	-77.4592	38.7067	1.65	1.28	0.37
P	BMP	1818	PL-O	PL41	20700100801	406	-77.45878	38.71244	5.33	4.36	0.97
P	GD	1819	PL-O	PL41	20700100801	406	-77.4575	38.71217	1.26	0.79	0.47
P	GD	1820	PL-O	PL41	20700100801	406	-77.45893	38.70569	1.00	0.82	0.18
P	RRD	1821	PL-O	PL41	20700100801	406	-77.45734	38.7118	1.59	1.28	0.31
P	GD	1822	PL-O	PL41	20700100801	406	-77.45708	38.71124	0.10	0.09	0.01
P	GD	1823	PL-O	PL41	20700100801	406	-77.4575	38.70767	2.24	1.78	0.45
P	BMP	1824	PL-O	PL41	20700100801	406	-77.45713	38.70485	12.01	9.66	2.34
P	STP	1827	PL-O	PL41	20700100801	408	-77.44427	38.71674	3.21	3.04	0.17
P	RRD	1828	PL-O	PL41	20700100801	408	-77.44488	38.70855	1.00	0.72	0.27
P	RRD	1829	PL-O	PL41	20700100801	408	-77.44273	38.70766	23.53	18.89	4.64
P	GD	1835	PL-O	PL41	20700100801	410	-77.43913	38.71352	9.59	8.02	1.57
P	GD	1836	PL-O	PL41	20700100801	410	-77.438	38.71317	1.64	1.23	0.41
P	GD	1837	PL-O	PL41	20700100801	410	-77.4372	38.71062	0.54	0.40	0.14
P	BMP	1838	PL-O	PL41	20700100801	410	-77.43615	38.70922	0.82	0.58	0.25
P	GD	1840	PL-O	PL41	20700100801	410	-77.43017	38.70969	1.85	1.43	0.42
P	GD	1841	PL-O	PL41	20700100801	410	-77.42695	38.70904	1.96	1.65	0.31
P	BMP	1842	PL-O	PL41	20700100801	410	-77.42593	38.7137	2.25	1.73	0.52
P	GD	1843	PL-O	PL41	20700100801	410	-77.42346	38.71125	0.22	0.21	0.02
P	GD	1844	PL-O	PL41	20700100801	410	-77.42408	38.70803	3.23	2.59	0.64
P	RRD	1845	PL-O	PL41	20700100801	408	-77.44035	38.70779	3.64	2.77	0.88
P	BMP	1846	PL-O	PL41	20700100801	408	-77.43867	38.70791	0.99	0.80	0.20
P	BMP	1847	PL-O	PL41	20700100801	410	-77.43753	38.70897	0.48	0.39	0.10
P	BMP	1848	PL-O	PL41	20700100801	408	-77.43892	38.70888	1.04	0.85	0.18
P	BMP	1849	PL-O	PL41	20700100801	408	-77.43642	38.70735	0.19	0.18	0.02
P	RRD	1850	PL-O	PL41	20700100801	408	-77.43727	38.70766	0.46	0.39	0.07
P	RRD	1851	PL-O	PL41	20700100801	408	-77.4366	38.70676	1.07	0.96	0.11
P	BMP	1852	PL-O	PL41	20700100801	408	-77.43332	38.70738	2.15	1.84	0.31
P	BMP	1853	PL-O	PL41	20700100801	408	-77.43457	38.70656	1.03	0.75	0.28
P	BMP	1854	PL-O	PL41	20700100801	408	-77.43494	38.70659	1.29	0.99	0.30

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	BMP	1855	PL-O	PL41	20700100801	408	-77.43481	38.70602	0.64	0.59	0.05
P	RRD	1856	PL-O	PL41	20700100801	408	-77.44067	38.7021	1.19	0.97	0.23
P	RRD	1857	PL-O	PL41	20700100801	408	-77.4412	38.70277	0.89	0.70	0.19
P	RRD	1858	PL-O	PL41	20700100801	408	-77.44055	38.70293	0.38	0.36	0.02
P	RRD	1859	PL-O	PL41	20700100801	408	-77.44065	38.70321	0.03	0.03	0.00
P	RRD	1860	PL-O	PL41	20700100801	408	-77.43658	38.70156	0.75	0.70	0.05
P	GD	1861	PL-O	PL41	20700100801	408	-77.43054	38.70209	1.01	0.80	0.20
P	GD	1862	PL-O	PL41	20700100801	422	-77.42526	38.70113	1.60	1.15	0.45
P	RRD	1863	PL-O	PL41	20700100801	408	-77.4287	38.70299	3.52	2.81	0.71
P	GD	1864	PL-O	PL41	20700100801	412	-77.42202	38.70521	1.57	1.10	0.47
P	GD	1865	PL-O	PL41	20700100801	412	-77.42022	38.70538	1.63	1.16	0.47
P	GD	1866	PL-O	PL41	20700100801	412	-77.41908	38.70543	1.00	0.67	0.34
P	RRD	1867	PL-O	PL41	20700100801	418	-77.41685	38.70107	1.78	1.38	0.40
P	GD	1868	PL-O	PL41	20700100801	418	-77.4166	38.70234	0.32	0.31	0.02
P	BMP	1869	PL-O	PL41	20700100801	418	-77.41618	38.70383	8.49	6.29	2.20
P	GD	1870	PL-O	PL41	20700100801	418	-77.41493	38.70596	2.04	1.55	0.48
P	GD	1871	PL-O	PL41	20700100801	418	-77.41537	38.70722	0.39	0.32	0.07
P	GD	1872	PL-O	PL41	20700100801	418	-77.41613	38.70809	0.22	0.21	0.01
P	RRD	1873	PL-O	PL41	20700100801	412	-77.41228	38.71116	1.13	0.83	0.30
P	RRD	1874	PL-O	PL41	20700100801	412	-77.41371	38.71257	0.42	0.34	0.08
P	BMP	1875	PL-O	PL41	20700100801	412	-77.41033	38.71212	2.91	2.51	0.40
P	BMP	1876	PL-O	PL41	20700100801	418	-77.40751	38.71199	3.21	2.63	0.57
P	BMP	1877	PL-O	PL41	20700100801	418	-77.40591	38.71145	2.87	2.24	0.63
P	CD	1878	PL-O	PL41	20700100801	418	-77.40834	38.70897	0.14	0.14	0.00
P	CD	1879	PL-O	PL41	20700100801	418	-77.40816	38.70846	0.13	0.13	0.00
P	GD	1880	PL-O	PL41	20700100801	418	-77.4101	38.70529	3.40	2.61	0.79
P	GD	1881	PL-O	PL41	20700100801	418	-77.40956	38.70349	1.70	1.24	0.46
P	RRD	1882	PL-O	PL41	20700100801	418	-77.4083	38.70087	2.60	2.03	0.57
P	RRD	1883	PL-O	PL41	20700100801	418	-77.40805	38.70046	4.26	3.36	0.90
P	RRD	1884	PL-O	PL41	20700100801	418	-77.40815	38.701	0.60	0.56	0.04
P	GD	1885	PL-O	PL41	20700100801	418	-77.40413	38.70079	1.02	0.77	0.25
P	GD	1886	PL-O	PL41	20700100801	418	-77.40517	38.70087	0.59	0.46	0.13
P	RRD	1888	PL-O	PL41	20700100801	418	-77.40322	38.7027	1.88	1.44	0.44
P	RRD	1889	PL-O	PL41	20700100801	418	-77.40849	38.70236	0.13	0.13	0.00
P	GD	1890	PL-O	PL41	20700100801	418	-77.40865	38.70296	3.22	2.40	0.83
P	GD	1891	PL-O	PL41	20700100801	418	-77.4136	38.70859	0.47	0.37	0.10
P	RRD	1892	PL-O	PL41	20700100801	418	-77.40876	38.70621	0.08	0.08	0.00

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	1893	PL-O	PL41	20700100801	418	-77.4076	38.70689	0.32	0.28	0.05
P	RRD	1894	PL-O	PL41	20700100801	418	-77.40434	38.70583	6.34	4.90	1.44
P	GD	1895	PL-O	PL41	20700100801	418	-77.40444	38.7081	3.42	2.59	0.84
P	GD	1896	PL-O	PL41	20700100801	418	-77.40265	38.70962	2.73	2.14	0.59
P	RRD	1897	PL-O	PL41	20700100801	418	-77.40077	38.70826	4.31	3.39	0.91
P	BMP	1898	PL-O	PL41	20700100801	416	-77.39529	38.71101	12.07	9.16	2.91
P	RRD	1899	PL-O	PL41	20700100801	416	-77.3958	38.70218	0.21	0.17	0.04
P	BMP	1900	PL-O	PL41	20700100801	416	-77.39813	38.70483	11.56	9.51	2.05
P	GD	1901	PL-O	PL41	20700100801	416	-77.38985	38.70844	2.17	1.44	0.73
P	BMP	1902	PL-O	PL41	20700100801	416	-77.38529	38.70906	7.53	5.54	1.99
P	RRD	1903	PL-O	PL41	20700100801	416	-77.38509	38.70865	0.39	0.34	0.04
P	BMP	1904	PL-O	PL41	20700100801	416	-77.39233	38.71119	8.79	6.78	2.01
P	RRD	1905	PL-O	PL41	20700100801	416	-77.38698	38.70488	1.08	0.83	0.25
P	RRD	1906	PL-O	PL41	20700100801	416	-77.38634	38.70651	3.53	2.65	0.87
P	RRD	1907	PL-O	PL41	20700100801	416	-77.38491	38.70541	1.31	1.05	0.27
P	RRD	1908	PL-O	PL41	20700100801	416	-77.38522	38.70577	0.83	0.61	0.22
P	RRD	1909	PL-O	PL41	20700100801	416	-77.38542	38.7054	1.72	1.18	0.54
P	RRD	1910	PL-O	PL41	20700100801	416	-77.38557	38.70583	0.20	0.11	0.09
P	RRD	1911	PL-O	PL41	20700100801	416	-77.38786	38.70725	1.68	1.20	0.48
P	STP	1912	PL-O	PL41	20700100801	416	-77.38873	38.7071	0.10	0.07	0.03
P	RRD	1913	PL-O	PL41	20700100801	416	-77.38455	38.70353	2.49	1.90	0.59
P	RRD	1914	PL-O	PL47	20700100802	416	-77.37811	38.71336	0.20	0.15	0.04
P	RRD	1915	PL-O	PL41	20700100801	418	-77.40585	38.70504	4.28	3.32	0.96
P	RRD	1916	PL-O	PL41	20700100801	416	-77.38494	38.7017	3.08	2.29	0.79
P	GD	1917	PL-O	PL47	20700100802	416	-77.38138	38.70818	0.11	0.11	0.00
P	GD	1918	PL-O	PL47	20700100802	426	-77.3637	38.70023	2.26	1.78	0.48
P	GD	1919	PL-O	PL47	20700100802	426	-77.36744	38.7097	6.16	4.68	1.49
P	GD	1920	PL-O	PL47	20700100802	426	-77.36659	38.71206	1.23	0.88	0.34
P	BMP	1921	PL-O	PL47	20700100802	426	-77.36296	38.7111	7.09	5.19	1.89
P	GD	1922	PL-O	PL47	20700100802	426	-77.36318	38.71306	1.92	1.40	0.52
P	GD	1923	PL-O	PL47	20700100802	426	-77.36317	38.71222	0.77	0.61	0.16
P	GD	1924	PL-O	PL47	20700100802	426	-77.36217	38.71375	1.21	0.88	0.33
P	STP	1925	PL-O	PL47	20700100802	426	-77.35898	38.71178	5.12	3.82	1.30
P	BMP	1926	PL-O	PL47	20700100802	426	-77.36003	38.71085	6.95	5.18	1.76
P	GD	1927	PL-O	PL47	20700100802	426	-77.3589	38.7096	0.49	0.41	0.08
P	RRD	1928	PL-O	PL47	20700100802	426	-77.3576	38.70946	4.97	3.74	1.23
P	GD	1929	PL-O	PL47	20700100802	426	-77.36134	38.70991	1.07	0.78	0.29

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	BMP	1930	PL-O	PL47	20700100802	426	-77.35835	38.70724	4.83	3.59	1.24
P	GD	1931	PL-O	PL47	20700100802	426	-77.36114	38.70683	3.63	2.73	0.90
P	RRD	1932	PL-O	PL47	20700100802	426	-77.3657	38.7039	1.51	1.23	0.28
P	GD	1933	PL-O	PL47	20700100802	426	-77.36556	38.70393	1.87	1.45	0.42
P	GD	1934	PL-O	PL47	20700100802	426	-77.36138	38.70512	0.40	0.34	0.06
P	GD	1935	PL-O	PL47	20700100802	426	-77.36089	38.70572	1.29	0.92	0.37
P	GD	1936	PL-O	PL47	20700100802	426	-77.3588	38.7034	1.00	0.76	0.24
P	GD	1937	PL-O	PL47	20700100802	426	-77.35926	38.70379	1.18	0.89	0.29
P	GD	1938	PL-O	PL47	20700100802	426	-77.36021	38.70403	1.00	0.81	0.20
P	GD	1939	PL-O	PL47	20700100802	426	-77.35892	38.70092	1.27	0.90	0.37
P	GD	1940	PL-O	PL47	20700100802	426	-77.36191	38.70184	0.58	0.39	0.19
P	GD	1941	PL-O	PL47	20700100802	426	-77.36395	38.70116	8.83	6.77	2.06
P	GD	1942	PL-O	PL47	20700100802	426	-77.35827	38.70324	3.06	2.37	0.69
P	RRD	1944	PL-O	PL47	20700100802	430	-77.33585	38.70111	1.59	1.20	0.39
P	RRD	1946	PL-O	PL47	20700100802	430	-77.34064	38.70131	2.93	2.02	0.90
P	RRD	1947	PL-O	PL47	20700100802	430	-77.33784	38.70243	1.41	0.88	0.53
P	RRD	1948	PL-O	PL47	20700100802	430	-77.33511	38.70234	1.55	1.01	0.55
P	RRD	1949	PL-O	PL47	20700100802	430	-77.33694	38.70441	0.26	0.14	0.12
P	GD	1950	PL-O	PL47	20700100802	430	-77.33916	38.70357	0.20	0.16	0.04
P	RRD	1951	PL-O	PL47	20700100802	430	-77.33891	38.70392	0.70	0.44	0.25
P	RRD	1952	PL-O	PL47	20700100802	430	-77.34311	38.70142	2.80	1.14	1.65
P	GD	1953	PL-O	PL47	20700100802	430	-77.34071	38.70349	1.59	1.08	0.51
P	RRD	1954	PL-O	PL47	20700100802	430	-77.34068	38.70444	0.25	0.15	0.09
P	RRD	1955	PL-O	PL47	20700100802	430	-77.34047	38.70444	1.59	1.13	0.46
P	RRD	1956	PL-O	PL47	20700100802	430	-77.34017	38.70519	1.49	1.00	0.49
P	RRD	1957	PL-O	PL47	20700100802	430	-77.33939	38.7063	0.24	0.18	0.06
P	RRD	1958	PL-O	PL47	20700100802	430	-77.3372	38.70894	1.41	1.01	0.41
P	RRD	1959	PL-O	PL47	20700100802	430	-77.34879	38.70127	1.75	0.94	0.80
P	RRD	1960	PL-O	PL47	20700100802	430	-77.34676	38.7011	8.99	4.94	4.05
P	STP	1961	PL-O	PL47	20700100802	430	-77.34549	38.70278	0.56	0.43	0.13
P	STP	1962	PL-O	PL47	20700100802	430	-77.34548	38.70351	1.04	0.78	0.27
P	STP	1963	PL-O	PL47	20700100802	430	-77.34557	38.70502	0.89	0.65	0.24
P	STP	1964	PL-O	PL47	20700100802	430	-77.34584	38.70588	0.13	0.07	0.06
P	RRD	1965	PL-O	PL47	20700100802	430	-77.33879	38.70992	0.92	0.63	0.29
P	RRD	1966	PL-O	PL47	20700100802	430	-77.3406	38.70712	0.80	0.57	0.23
P	RRD	1967	PL-O	PL47	20700100802	430	-77.33997	38.70934	0.41	0.35	0.06
P	RRD	1968	PL-O	PL47	20700100802	430	-77.34007	38.70919	0.26	0.24	0.01

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	1969	PL-O	PL47	20700100802	430	-77.34068	38.70893	1.10	0.88	0.22
P	RRD	1970	PL-O	PL47	20700100802	430	-77.34045	38.7093	0.24	0.16	0.08
P	RRD	1971	PL-O	PL47	20700100802	430	-77.33987	38.71062	0.11	0.06	0.05
P	RRD	1972	PL-O	PL47	20700100802	430	-77.33998	38.71068	0.44	0.23	0.21
P	GD	1973	PL-O	PL47	20700100802	430	-77.34033	38.70948	0.28	0.17	0.11
P	RRD	1974	PL-O	PL47	20700100802	430	-77.34076	38.71132	2.17	1.52	0.65
P	STP	1975	PL-O	PL47	20700100802	430	-77.33927	38.71075	0.66	0.48	0.19
P	STP	1976	PL-O	PL47	20700100802	430	-77.32305	38.71045	0.71	0.44	0.26
P	RRD	1977	PL-O	PL47	20700100802	440	-77.29726	38.70199	0.55	0.39	0.15
P	RRD	1978	PL-O	PL47	20700100802	440	-77.29935	38.70324	0.82	0.60	0.21
P	RRD	1979	PL-O	PL47	20700100802	436	-77.30161	38.69961	1.32	0.90	0.42
P	STP	1980	PL-O	PL47	20700100802	436	-77.29943	38.70007	1.22	0.87	0.35
P	RRD	1981	PL-O	PL47	20700100802	436	-77.29939	38.69956	0.86	0.67	0.18
P	RRD	1982	PL-O	PL47	20700100802	436	-77.30281	38.70194	1.36	0.51	0.84
P	RRD	1983	PL-O	PL47	20700100802	436	-77.30278	38.7008	0.73	0.28	0.45
P	GD	1984	PL-O	PL47	20700100802	436	-77.30384	38.70015	0.75	0.54	0.20
P	RRD	1985	PL-O	PL47	20700100802	428	-77.32865	38.70929	0.32	0.21	0.11
P	RRD	1986	PL-O	PL47	20700100802	428	-77.32796	38.70952	1.42	1.09	0.33
P	RRD	1987	PL-O	PL47	20700100802	434	-77.30294	38.70496	1.33	0.97	0.36
P	RRD	1988	PL-O	PL47	20700100802	434	-77.30402	38.70595	2.14	1.22	0.92
P	RRD	1989	PL-O	PL47	20700100802	434	-77.30569	38.70661	1.79	0.97	0.82
P	RRD	1990	PL-O	PL47	20700100802	434	-77.30502	38.70481	1.42	0.96	0.46
P	RRD	1991	PL-O	PL47	20700100802	434	-77.30529	38.7044	1.58	1.15	0.44
P	RRD	1992	PL-O	PL47	20700100802	434	-77.30584	38.70541	1.33	0.59	0.74
P	RRD	1993	PL-O	PL47	20700100802	434	-77.30676	38.70444	0.36	0.27	0.08
P	RRD	1994	PL-O	PL47	20700100802	434	-77.30622	38.70318	1.29	0.94	0.35
P	RRD	1995	PL-O	PL47	20700100802	434	-77.3051	38.70194	1.96	1.28	0.68
P	RRD	1996	PL-O	PL47	20700100802	434	-77.30526	38.70097	1.58	0.96	0.62
P	RRD	1997	PL-O	PL47	20700100802	434	-77.30635	38.70078	0.66	0.44	0.23
P	RRD	1998	PL-O	PL47	20700100802	434	-77.30671	38.7015	0.28	0.22	0.06
P	RRD	1999	PL-O	PL47	20700100802	434	-77.30647	38.69977	2.49	1.78	0.71
P	RRD	2000	PL-O	PL47	20700100802	434	-77.30695	38.69963	0.47	0.35	0.13
P	BMP	2001	PL-O	PL47	20700100802	434	-77.30951	38.70011	0.05	0.02	0.03
P	BMP	2002	PL-O	PL47	20700100802	434	-77.30921	38.70033	1.13	0.59	0.54
P	BMP	2003	PL-O	PL47	20700100802	434	-77.30958	38.70076	0.20	0.17	0.03
P	BMP	2004	PL-O	PL47	20700100802	434	-77.30956	38.70195	0.05	0.05	0.00
P	BMP	2005	PL-O	PL47	20700100802	434	-77.30877	38.70174	0.74	0.27	0.46

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	BMP	2006	PL-O	PL47	20700100802	434	-77.30846	38.70325	1.11	0.58	0.53
P	BMP	2007	PL-O	PL47	20700100802	434	-77.30838	38.70441	1.05	0.54	0.52
P	BMP	2008	PL-O	PL47	20700100802	434	-77.30895	38.70528	0.23	0.09	0.14
P	BMP	2009	PL-O	PL47	20700100802	434	-77.31036	38.70426	0.90	0.44	0.46
P	BMP	2010	PL-O	PL47	20700100802	434	-77.31094	38.70284	0.67	0.36	0.31
P	BMP	2011	PL-O	PL47	20700100802	434	-77.31126	38.70166	1.05	0.49	0.56
P	BMP	2012	PL-O	PL47	20700100802	434	-77.31098	38.70126	0.11	0.07	0.05
P	BMP	2013	PL-O	PL47	20700100802	434	-77.31165	38.70082	1.09	0.65	0.44
P	BMP	2014	PL-O	PL47	20700100802	434	-77.31161	38.7004	0.09	0.04	0.05
P	RRD	2015	PL-O	PL47	20700100802	434	-77.313	38.70022	0.57	0.27	0.29
P	RRD	2016	PL-O	PL47	20700100802	434	-77.31297	38.69984	2.43	1.29	1.14
P	RRD	2017	PL-O	PL47	20700100802	430	-77.32826	38.70754	1.43	1.07	0.36
P	RRD	2018	PL-O	PL47	20700100802	430	-77.32998	38.70742	3.54	2.63	0.91
P	RRD	2019	PL-O	PL47	20700100802	430	-77.33186	38.70781	2.59	1.87	0.72
P	RRD	2020	PL-O	PL47	20700100802	430	-77.33299	38.70808	1.09	0.76	0.34
P	RRD	2021	PL-O	PL47	20700100802	430	-77.33404	38.70851	1.59	1.12	0.47
P	RRD	2022	PL-O	PL47	20700100802	430	-77.33562	38.70447	1.88	1.32	0.55
P	RRD	2023	PL-O	PL47	20700100802	430	-77.33465	38.70564	0.90	0.58	0.31
P	RRD	2024	PL-O	PL47	20700100802	430	-77.33335	38.7054	3.78	2.58	1.20
P	GD	2025	PL-O	PL47	20700100802	430	-77.33191	38.705	7.22	5.15	2.07
P	GD	2026	PL-O	PL47	20700100802	430	-77.33153	38.70539	3.36	2.31	1.06
P	GD	2027	PL-O	PL47	20700100802	432	-77.33096	38.70246	6.61	4.79	1.81
P	GD	2028	PL-O	PL47	20700100802	432	-77.32872	38.70191	7.74	5.08	2.66
P	STP	2029	PL-O	PL47	20700100802	432	-77.32827	38.7018	11.68	6.38	5.29
P	BMP	2030	PL-O	PL47	20700100802	432	-77.32568	38.70095	11.38	6.86	4.52
P	BMP	2031	PL-O	PL47	20700100802	432	-77.31931	38.69959	6.07	2.97	3.10
P	GD	2035	PL-L	PL34	20700100504	288	-77.48665	38.72746	1.22	0.95	0.27
P	BMP	2036	PL-O	PL41	20700100801	410	-77.43604	38.72435	1.55	1.06	0.49
P	GD	2037	PL-O	PL41	20700100801	412	-77.40959	38.72538	2.07	1.47	0.61
P	GD	2040	PL-O	PL41	20700100801	414	-77.3978	38.72587	0.47	0.34	0.12
P	GD	2041	PL-O	PL41	20700100801	414	-77.39912	38.72659	2.51	2.00	0.51
P	GD	2042	PL-O	PL41	20700100801	414	-77.3989	38.72635	1.36	1.08	0.28
P	STP	2043	PL-O	PL41	20700100801	414	-77.39465	38.7185	0.00	0.00	0.00
P	STP	2044	PL-O	PL41	20700100801	414	-77.39445	38.71822	0.00	0.00	0.00
P	RRD	2045	PL-O	PL47	20700100802	428	-77.34029	38.71485	1.17	0.91	0.27
P	CD	2047	PL-O	PL47	20700100802	430	-77.34697	38.70574	0.19	0.13	0.06
P	CD	2048	PL-O	PL47	20700100802	430	-77.34666	38.70562	1.06	0.76	0.30

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2049	PL-L	PL34	20700100504	288	-77.4808	38.72828	24.23	18.11	6.12
P	GD	2050	PL-L	PL34	20700100504	288	-77.48135	38.72761	52.52	41.87	10.65
P	RRD	2052	PL-O	PL41	20700100801	408	-77.46134	38.72079	0.36	0.36	0.00
P	RRD	2055	PL-O	PL41	20700100801	406	-77.47024	38.7195	0.14	0.13	0.01
P	RRD	2056	PL-L	PL34	20700100504	291	-77.48027	38.71796	0.99	0.77	0.22
P	RRD	2057	PL-L	PL34	20700100504	291	-77.48199	38.71835	0.36	0.30	0.06
P	BMP	2058	PL-L	PL34	20700100504	288	-77.48182	38.72761	0.52	0.30	0.23
P	GD	2059	PL-L	PL34	20700100504	288	-77.4817	38.7269	4.96	3.80	1.16
P	STP	2063	PL-O	PL47	20700100802	430	-77.35387	38.70585	8.56	6.67	1.89
P	STP	2064	PL-O	PL47	20700100802	430	-77.35341	38.70604	0.87	0.72	0.15
P	STP	2065	PL-O	PL47	20700100802	430	-77.35136	38.70609	0.98	0.71	0.27
P	STP	2066	PL-O	PL47	20700100802	430	-77.35059	38.70603	0.21	0.16	0.05
P	STP	2067	PL-O	PL47	20700100802	430	-77.35061	38.70333	2.96	2.06	0.91
P	STP	2068	PL-O	PL47	20700100802	430	-77.35062	38.70437	1.05	0.73	0.32
P	STP	2069	PL-O	PL47	20700100802	430	-77.34473	38.70645	2.19	1.56	0.63
P	STP	2070	PL-O	PL47	20700100802	430	-77.34322	38.70729	0.09	0.05	0.04
P	STP	2071	PL-O	PL47	20700100802	430	-77.34713	38.70858	0.10	0.07	0.03
P	STP	2072	PL-O	PL47	20700100802	428	-77.33697	38.7102	0.39	0.26	0.13
P	STP	2073	PL-O	PL47	20700100802	428	-77.33649	38.71004	0.65	0.45	0.20
P	STP	2074	PL-O	PL41	20700100801	408	-77.42972	38.70079	1.33	1.08	0.26
P	STP	2079	PL-O	PL41	20700100801	412	-77.40866	38.71762	4.44	3.15	1.29
P	STP	2080	PL-O	PL41	20700100801	412	-77.40885	38.72527	0.59	0.43	0.16
P	CD	2081	PL-O	PL41	20700100801	414	-77.40185	38.72633	1.80	1.21	0.59
P	CD	2082	PL-O	PL41	20700100801	414	-77.40165	38.72638	0.81	0.59	0.22
P	STP	2083	PL-O	PL41	20700100801	414	-77.40354	38.72462	1.21	0.97	0.24
P	RRD	2084	PL-O	PL47	20700100802	432	-77.32883	38.7037	0.10	0.06	0.03
P	RRD	2085	PL-O	PL47	20700100802	432	-77.32172	38.69984	2.34	1.62	0.72
P	STP	2086	PL-O	PL47	20700100802	428	-77.35207	38.70993	0.04	0.03	0.01
P	STP	2088	PL-O	PL41	20700100801	410	-77.42149	38.70823	0.10	0.10	0.00
P	STP	2092	PL-O	PL41	20700100801	406	-77.46807	38.71148	0.21	0.12	0.09
P	GD	2094	PL-O	PL41	20700100801	405	-77.47277	38.70266	4.03	3.07	0.96
P	RRD	2096	PL-O	PL41	20700100801	405	-77.47092	38.70112	0.54	0.47	0.07
P	STP	2097	PL-L	PL34	20700100504	289	-77.49171	38.70754	1.19	1.00	0.19
P	STP	2098	PL-L	PL34	20700100504	291	-77.49193	38.70418	0.20	0.11	0.09
P	STP	2099	PL-L	PL34	20700100504	289	-77.49837	38.70951	0.05	0.03	0.01
P	STP	2100	PL-L	PL34	20700100504	289	-77.49987	38.70985	0.25	0.18	0.07
P	RRD	2104	PL-M	PL40	20700100606	302	-77.58221	38.69905	3.59	2.13	1.46

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	2106	PL-M	PL40	20700100606	302	-77.57031	38.69194	53.72	48.41	5.31
P	GD	2107	PL-L	PL33	20700100503	272	-77.55658	38.69852	32.97	29.29	3.69
P	GD	2108	PL-L	PL33	20700100503	272	-77.55505	38.70113	29.79	28.66	1.14
P	STP	2109	PL-L	PL33	20700100503	272	-77.54186	38.70115	5.59	5.19	0.40
P	STP	2110	PL-L	PL33	20700100503	272	-77.54264	38.69994	5.47	4.77	0.70
P	GD	2111	PL-L	PL33	20700100503	272	-77.54358	38.69716	8.84	7.74	1.11
P	GD	2112	PL-L	PL33	20700100503	272	-77.54473	38.69468	0.06	0.06	0.00
P	GD	2113	PL-L	PL33	20700100503	286	-77.52692	38.69859	7.69	6.93	0.76
P	GD	2114	PL-L	PL33	20700100503	286	-77.52507	38.69668	1.74	1.43	0.31
P	GD	2115	PL-L	PL33	20700100503	286	-77.52511	38.69654	7.57	6.88	0.69
P	GD	2116	PL-L	PL33	20700100503	286	-77.52474	38.69667	0.25	0.14	0.11
P	GD	2117	PL-L	PL33	20700100503	286	-77.52476	38.69653	13.33	12.97	0.36
P	GD	2118	PL-L	PL33	20700100503	286	-77.52383	38.69784	2.84	2.57	0.28
P	GD	2119	PL-L	PL34	20700100504	291	-77.4882	38.69943	1.38	1.10	0.28
P	GD	2121	PL-O	PL41	20700100801	405	-77.45535	38.6916	1.18	0.82	0.37
P	GD	2122	PL-O	PL41	20700100801	405	-77.4577	38.69173	1.74	1.33	0.41
P	GD	2123	PL-O	PL41	20700100801	405	-77.45858	38.69148	6.47	4.76	1.71
P	RRD	2124	PL-O	PL41	20700100801	405	-77.46032	38.68939	2.79	2.21	0.58
P	GD	2125	PL-O	PL41	20700100801	405	-77.45982	38.68741	1.04	0.81	0.23
P	GD	2126	PL-O	PL41	20700100801	405	-77.45133	38.69223	0.01	0.01	0.00
P	RRD	2127	PL-O	PL41	20700100801	405	-77.45179	38.69209	1.43	1.07	0.36
P	RRD	2128	PL-O	PL41	20700100801	405	-77.45026	38.69064	5.74	4.36	1.38
P	GD	2129	PL-O	PL41	20700100801	405	-77.45324	38.69028	0.06	0.04	0.02
P	GD	2130	PL-O	PL41	20700100801	405	-77.45283	38.68895	0.02	0.02	0.00
P	GD	2131	PL-O	PL41	20700100801	405	-77.45245	38.68935	0.00	0.00	0.00
P	RRD	2134	PL-O	PL41	20700100801	405	-77.44533	38.69468	9.03	7.19	1.84
P	GD	2135	PL-O	PL41	20700100801	405	-77.4476	38.68888	2.28	1.92	0.35
P	GD	2136	PL-O	PL41	20700100801	405	-77.45523	38.68842	0.59	0.50	0.09
P	RRD	2137	PL-O	PL41	20700100801	408	-77.4401	38.69651	1.34	1.12	0.22
P	RRD	2138	PL-O	PL41	20700100801	408	-77.43983	38.6967	0.05	0.05	0.00
P	RRD	2139	PL-O	PL41	20700100801	408	-77.44009	38.69615	0.74	0.63	0.10
P	RRD	2140	PL-O	PL41	20700100801	408	-77.43983	38.69625	0.03	0.03	0.00
P	RRD	2141	PL-O	PL41	20700100801	408	-77.43897	38.69743	0.02	0.02	0.00
P	RRD	2142	PL-O	PL41	20700100801	408	-77.43891	38.69748	0.08	0.06	0.02
P	RRD	2143	PL-O	PL41	20700100801	408	-77.43896	38.69745	2.20	1.64	0.56
P	RRD	2144	PL-O	PL41	20700100801	408	-77.43887	38.69936	1.40	1.26	0.14
P	RRD	2145	PL-O	PL41	20700100801	408	-77.43688	38.69868	0.04	0.04	0.00

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2146	PL-O	PL41	20700100801	408	-77.43684	38.69871	0.07	0.07	0.00
P	RRD	2147	PL-O	PL41	20700100801	408	-77.43688	38.69872	6.68	5.27	1.41
P	RRD	2148	PL-O	PL41	20700100801	408	-77.43726	38.69983	0.04	0.04	0.00
P	RRD	2149	PL-O	PL41	20700100801	408	-77.43469	38.69966	1.21	0.92	0.30
P	RRD	2150	PL-O	PL41	20700100801	408	-77.434	38.70005	2.33	1.78	0.56
P	STP	2151	PL-O	PL41	20700100801	422	-77.43374	38.68721	21.16	15.81	5.35
P	GD	2152	PL-O	PL41	20700100801	422	-77.43314	38.6893	2.27	1.71	0.56
P	RRD	2153	PL-O	PL41	20700100801	422	-77.43339	38.68937	13.43	10.18	3.25
P	GD	2154	PL-O	PL41	20700100801	422	-77.43357	38.69089	4.66	3.80	0.86
P	RRD	2155	PL-O	PL41	20700100801	422	-77.43082	38.69027	4.49	3.32	1.17
P	GD	2158	PL-O	PL41	20700100801	422	-77.43015	38.6935	16.34	12.57	3.77
P	GD	2159	PL-O	PL41	20700100801	422	-77.43113	38.69543	5.05	3.97	1.08
P	GD	2160	PL-O	PL41	20700100801	422	-77.42956	38.69752	3.25	2.55	0.71
P	GD	2161	PL-O	PL41	20700100801	422	-77.4274	38.69795	0.93	0.73	0.20
P	GD	2162	PL-O	PL41	20700100801	422	-77.427	38.69832	1.88	1.52	0.37
P	RRD	2163	PL-O	PL41	20700100801	422	-77.42886	38.69531	7.99	5.66	2.33
P	RRD	2164	PL-O	PL41	20700100801	422	-77.43153	38.68701	8.17	6.07	2.10
P	GD	2165	PL-O	PL41	20700100801	422	-77.42529	38.70044	4.28	3.21	1.07
P	RRD	2166	PL-O	PL41	20700100801	408	-77.43252	38.70007	2.74	2.17	0.57
P	GD	2167	PL-O	PL41	20700100801	422	-77.4233	38.69268	1.98	1.52	0.46
P	STP	2168	PL-O	PL41	20700100801	422	-77.42249	38.69117	1.81	1.45	0.37
P	RRD	2169	PL-O	PL41	20700100801	416	-77.39302	38.69019	0.57	0.45	0.12
P	RRD	2170	PL-O	PL41	20700100801	416	-77.39252	38.69007	1.09	0.94	0.15
P	RRD	2171	PL-O	PL41	20700100801	416	-77.39274	38.69128	1.11	0.78	0.33
P	RRD	2172	PL-O	PL41	20700100801	416	-77.39405	38.69191	1.05	0.81	0.24
P	RRD	2173	PL-O	PL41	20700100801	416	-77.39391	38.69158	18.77	14.48	4.28
P	RRD	2174	PL-O	PL41	20700100801	416	-77.39092	38.68766	0.67	0.54	0.13
P	RRD	2175	PL-O	PL41	20700100801	416	-77.39041	38.68678	1.53	1.16	0.37
P	GD	2178	PL-O	PL41	20700100801	416	-77.3914	38.69553	0.36	0.36	0.00
P	GD	2179	PL-O	PL41	20700100801	418	-77.40663	38.69269	1.41	1.12	0.28
P	GD	2180	PL-O	PL41	20700100801	418	-77.4032	38.69156	2.10	1.63	0.47
P	RRD	2181	PL-O	PL41	20700100801	418	-77.40322	38.69353	9.91	7.83	2.08
P	RRD	2182	PL-O	PL41	20700100801	418	-77.40343	38.69442	12.48	9.76	2.72
P	RRD	2183	PL-O	PL41	20700100801	418	-77.40459	38.69482	4.64	3.41	1.23
P	RRD	2184	PL-O	PL41	20700100801	418	-77.40549	38.69823	0.08	0.08	0.00
P	RRD	2185	PL-O	PL41	20700100801	418	-77.40627	38.69879	3.69	2.90	0.79
P	GD	2186	PL-O	PL41	20700100801	418	-77.40535	38.69764	6.79	5.44	1.35

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2187	PL-O	PL41	20700100801	416	-77.39449	38.68725	1.49	1.10	0.39
P	GD	2188	PL-O	PL41	20700100801	416	-77.39488	38.68754	0.01	0.01	0.00
P	RRD	2189	PL-O	PL41	20700100801	416	-77.39496	38.68742	0.51	0.41	0.10
P	RRD	2190	PL-O	PL41	20700100801	416	-77.39445	38.68711	3.65	2.76	0.89
P	RRD	2191	PL-O	PL41	20700100801	418	-77.41938	38.69957	9.82	7.16	2.66
P	GD	2192	PL-O	PL41	20700100801	418	-77.41705	38.69658	1.24	1.02	0.21
P	GD	2193	PL-O	PL41	20700100801	418	-77.41554	38.69542	3.92	2.99	0.93
P	GD	2194	PL-O	PL41	20700100801	418	-77.41436	38.69386	3.76	3.20	0.56
P	RRD	2195	PL-O	PL41	20700100801	418	-77.41602	38.69178	9.69	7.46	2.24
P	GD	2196	PL-O	PL41	20700100801	418	-77.41513	38.69104	3.05	2.53	0.52
P	GD	2197	PL-O	PL41	20700100801	418	-77.41528	38.69034	2.15	1.89	0.26
P	GD	2198	PL-O	PL41	20700100801	418	-77.41548	38.68934	0.97	0.91	0.06
P	GD	2199	PL-O	PL41	20700100801	418	-77.41574	38.68857	11.70	9.41	2.29
P	RRD	2200	PL-O	PL41	20700100801	418	-77.40849	38.69922	1.74	1.40	0.35
P	GD	2201	PL-O	PL41	20700100801	418	-77.40015	38.68806	2.10	1.56	0.53
P	GD	2202	PL-O	PL41	20700100801	416	-77.39768	38.69794	0.09	0.09	0.00
P	RRD	2203	PL-O	PL41	20700100801	416	-77.39798	38.698	0.11	0.11	0.00
P	GD	2204	PL-O	PL41	20700100801	416	-77.3764	38.68704	0.16	0.16	0.00
P	RRD	2205	PL-O	PL41	20700100801	416	-77.37527	38.69333	7.10	5.43	1.68
P	RRD	2206	PL-O	PL41	20700100801	416	-77.37335	38.69495	15.32	11.61	3.71
P	RRD	2207	PL-O	PL41	20700100801	416	-77.37148	38.69692	4.62	3.62	1.00
P	GD	2208	PL-O	PL41	20700100801	416	-77.37029	38.68819	2.15	1.71	0.44
P	GD	2209	PL-O	PL41	20700100801	416	-77.36828	38.68801	1.14	0.96	0.18
P	GD	2210	PL-O	PL41	20700100801	416	-77.37119	38.69049	2.10	1.67	0.43
P	GD	2211	PL-O	PL41	20700100801	416	-77.37007	38.69022	1.12	0.85	0.26
P	GD	2212	PL-O	PL41	20700100801	416	-77.36938	38.69039	4.36	3.41	0.94
P	GD	2213	PL-O	PL41	20700100801	416	-77.36893	38.69049	6.07	4.86	1.22
P	RRD	2215	PL-O	PL47	20700100802	426	-77.36308	38.6939	3.57	2.51	1.07
P	RRD	2216	PL-O	PL47	20700100802	426	-77.36459	38.69662	1.73	1.17	0.56
P	RRD	2217	PL-O	PL47	20700100802	426	-77.36475	38.69509	2.93	2.14	0.79
P	GD	2218	PL-O	PL41	20700100801	416	-77.36604	38.68696	6.89	5.25	1.64
P	GD	2219	PL-O	PL41	20700100801	416	-77.366	38.68713	0.85	0.66	0.19
P	RRD	2220	PL-O	PL47	20700100802	432	-77.35629	38.69607	7.13	6.18	0.95
P	GD	2221	PL-O	PL41	20700100801	416	-77.36654	38.68997	3.45	2.76	0.69
P	GD	2222	PL-O	PL41	20700100801	416	-77.36748	38.69	0.69	0.52	0.17
P	GD	2223	PL-O	PL47	20700100802	432	-77.35342	38.69756	2.35	1.78	0.57
P	RRD	2224	PL-O	PL47	20700100802	432	-77.34321	38.69759	12.27	8.14	4.13

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	2225	PL-O	PL47	20700100802	432	-77.35161	38.69691	8.66	6.52	2.14
P	GD	2226	PL-O	PL47	20700100802	432	-77.3513	38.69581	2.11	1.64	0.48
P	GD	2227	PL-O	PL47	20700100802	432	-77.34894	38.69505	1.24	0.99	0.25
P	GD	2228	PL-O	PL47	20700100802	432	-77.34842	38.69483	0.45	0.31	0.14
P	GD	2229	PL-O	PL47	20700100802	432	-77.34872	38.69312	0.34	0.27	0.08
P	STP	2233	PL-O	PL47	20700100802	432	-77.34442	38.69336	9.29	7.45	1.84
P	STP	2234	PL-O	PL47	20700100802	432	-77.34164	38.69474	16.81	12.26	4.55
P	GD	2237	PL-O	PL47	20700100802	432	-77.33895	38.69411	1.34	0.94	0.39
P	RRD	2238	PL-O	PL47	20700100802	432	-77.33986	38.69877	4.25	2.90	1.35
P	RRD	2239	PL-O	PL47	20700100802	432	-77.33688	38.69587	0.73	0.65	0.08
P	RRD	2243	PL-O	PL47	20700100802	432	-77.33763	38.68963	6.01	3.56	2.46
P	GD	2244	PL-O	PL47	20700100802	432	-77.33853	38.69062	4.08	2.95	1.12
P	RRD	2245	PL-O	PL47	20700100802	432	-77.34144	38.68797	10.24	6.93	3.31
P	RRD	2246	PL-O	PL47	20700100802	432	-77.33929	38.68855	1.48	0.78	0.70
P	RRD	2247	PL-O	PL47	20700100802	432	-77.33854	38.68839	2.47	1.26	1.21
P	BMP	2248	PL-O	PL47	20700100802	432	-77.3504	38.6928	2.58	1.89	0.69
P	RRD	2249	PL-O	PL47	20700100802	432	-77.34541	38.69462	0.81	0.31	0.50
P	GD	2251	PL-O	PL47	20700100802	432	-77.33606	38.69751	0.52	0.44	0.09
P	GD	2252	PL-O	PL47	20700100802	432	-77.33429	38.69652	1.23	0.96	0.27
P	RRD	2253	PL-O	PL47	20700100802	432	-77.33601	38.6937	2.89	2.08	0.81
P	RRD	2254	PL-O	PL47	20700100802	432	-77.33502	38.69384	1.91	1.37	0.54
P	RRD	2255	PL-O	PL47	20700100802	432	-77.33514	38.69486	0.34	0.27	0.07
P	RRD	2256	PL-O	PL47	20700100802	432	-77.33492	38.69488	0.00	0.00	0.00
P	RRD	2257	PL-O	PL47	20700100802	432	-77.33511	38.69462	0.29	0.26	0.03
P	RRD	2258	PL-O	PL47	20700100802	432	-77.33491	38.69461	1.10	0.81	0.29
P	RRD	2259	PL-O	PL47	20700100802	432	-77.33426	38.69505	0.16	0.12	0.03
P	GD	2260	PL-O	PL47	20700100802	432	-77.33235	38.69687	1.24	0.87	0.37
P	GD	2261	PL-O	PL47	20700100802	432	-77.33199	38.69754	9.26	6.80	2.46
P	GD	2262	PL-O	PL47	20700100802	432	-77.33176	38.69778	2.87	2.04	0.82
P	RRD	2263	PL-O	PL47	20700100802	432	-77.33018	38.69667	8.10	6.13	1.97
P	GD	2264	PL-O	PL47	20700100802	432	-77.32899	38.69707	0.53	0.39	0.14
P	GD	2265	PL-O	PL47	20700100802	432	-77.32765	38.69674	0.91	0.65	0.26
P	GD	2266	PL-O	PL47	20700100802	432	-77.32655	38.69447	5.23	3.87	1.37
P	RRD	2267	PL-O	PL47	20700100802	432	-77.32689	38.69193	12.74	8.00	4.74
P	RRD	2268	PL-O	PL47	20700100802	432	-77.32623	38.69278	2.25	0.89	1.36
P	RRD	2269	PL-O	PL47	20700100802	432	-77.32626	38.69337	0.14	0.09	0.05
P	RRD	2270	PL-O	PL47	20700100802	432	-77.32544	38.69421	0.21	0.17	0.04

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2271	PL-O	PL47	20700100802	432	-77.32523	38.69386	0.11	0.07	0.04
P	CD	2273	PL-O	PL47	20700100802	432	-77.32618	38.69318	0.41	0.25	0.16
P	RRD	2278	PL-O	PL47	20700100802	432	-77.32254	38.68961	3.33	1.71	1.61
P	RRD	2280	PL-O	PL47	20700100802	432	-77.32336	38.68852	0.72	0.32	0.41
P	RRD	2281	PL-O	PL47	20700100802	432	-77.32292	38.6874	2.65	1.18	1.46
P	RRD	2283	PL-O	PL47	20700100802	432	-77.3241	38.68821	2.89	1.05	1.85
P	STP	2284	PL-O	PL47	20700100802	432	-77.32398	38.68655	3.86	2.02	1.84
P	RRD	2285	PL-O	PL47	20700100802	432	-77.32491	38.69354	6.21	4.04	2.17
P	RRD	2286	PL-O	PL47	20700100802	432	-77.32658	38.68831	4.47	3.20	1.26
P	RRD	2287	PL-O	PL47	20700100802	432	-77.32832	38.68982	0.93	0.54	0.39
P	STP	2288	PL-O	PL47	20700100802	432	-77.32812	38.68913	0.47	0.28	0.18
P	RRD	2289	PL-O	PL47	20700100802	432	-77.32898	38.6907	0.47	0.33	0.15
P	RRD	2290	PL-O	PL47	20700100802	432	-77.32985	38.69174	0.94	0.57	0.37
P	RRD	2291	PL-O	PL47	20700100802	432	-77.33044	38.69308	0.79	0.57	0.22
P	RRD	2292	PL-O	PL47	20700100802	432	-77.33154	38.69403	0.92	0.67	0.25
P	RRD	2293	PL-O	PL47	20700100802	432	-77.33206	38.69388	1.07	0.82	0.25
P	RRD	2294	PL-O	PL47	20700100802	432	-77.33309	38.69297	1.34	0.91	0.43
P	RRD	2295	PL-O	PL47	20700100802	432	-77.33154	38.69265	0.47	0.20	0.28
P	CD	2296	PL-O	PL47	20700100802	432	-77.33256	38.69182	0.65	0.52	0.14
P	CD	2297	PL-O	PL47	20700100802	432	-77.3319	38.69203	1.59	0.98	0.61
P	CD	2298	PL-O	PL47	20700100802	432	-77.33365	38.69129	0.55	0.46	0.09
P	RRD	2299	PL-O	PL47	20700100802	432	-77.33308	38.69061	1.59	0.55	1.04
P	RRD	2300	PL-O	PL47	20700100802	432	-77.33205	38.6904	1.22	0.47	0.76
P	RRD	2301	PL-O	PL47	20700100802	432	-77.33501	38.69035	3.44	2.46	0.98
P	RRD	2302	PL-O	PL47	20700100802	432	-77.33499	38.6896	5.02	3.49	1.53
P	GD	2303	PL-O	PL47	20700100802	432	-77.33597	38.68959	4.12	2.82	1.31
P	GD	2304	PL-O	PL47	20700100802	432	-77.33625	38.68799	1.50	1.05	0.45
P	RRD	2305	PL-O	PL47	20700100802	432	-77.33657	38.68674	2.79	1.95	0.84
P	RRD	2306	PL-O	PL47	20700100802	432	-77.33311	38.68903	2.00	0.96	1.04
P	STP	2307	PL-O	PL47	20700100802	432	-77.33141	38.68899	1.34	0.63	0.71
P	RRD	2308	PL-O	PL47	20700100802	432	-77.33224	38.68858	3.55	1.87	1.68
P	RRD	2309	PL-O	PL47	20700100802	432	-77.33197	38.68817	0.59	0.22	0.36
P	RRD	2310	PL-O	PL47	20700100802	432	-77.33218	38.68799	3.32	2.23	1.09
P	STP	2311	PL-O	PL47	20700100802	432	-77.3318	38.68742	1.77	1.07	0.70
P	RRD	2312	PL-O	PL47	20700100802	432	-77.33114	38.68731	1.20	0.64	0.57
P	RRD	2313	PL-O	PL47	20700100802	432	-77.3301	38.6869	2.43	1.41	1.03
P	RRD	2314	PL-O	PL47	20700100802	432	-77.3298	38.68636	1.58	0.75	0.83

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2315	PL-O	PL47	20700100802	432	-77.32985	38.68599	0.75	0.58	0.17
P	RRD	2316	PL-O	PL47	20700100802	432	-77.331	38.68942	0.50	0.13	0.37
P	RRD	2317	PL-O	PL47	20700100802	432	-77.32982	38.69	0.43	0.23	0.20
P	RRD	2318	PL-O	PL47	20700100802	432	-77.32967	38.68954	0.57	0.35	0.22
P	RRD	2319	PL-O	PL47	20700100802	432	-77.32988	38.68847	5.02	2.95	2.07
P	RRD	2320	PL-O	PL47	20700100802	432	-77.32298	38.69508	4.50	3.11	1.39
P	RRD	2321	PL-O	PL47	20700100802	432	-77.32251	38.69673	6.24	4.08	2.16
P	RRD	2322	PL-O	PL47	20700100802	432	-77.32069	38.69701	1.94	0.99	0.95
P	RRD	2323	PL-O	PL47	20700100802	434	-77.31705	38.69586	1.68	1.26	0.42
P	GD	2324	PL-O	PL47	20700100802	432	-77.31809	38.69806	0.67	0.35	0.32
P	RRD	2325	PL-O	PL47	20700100802	434	-77.31648	38.69632	4.22	2.68	1.53
P	RRD	2326	PL-O	PL47	20700100802	434	-77.31509	38.6959	1.66	1.20	0.45
P	RRD	2327	PL-O	PL47	20700100802	434	-77.31564	38.69706	1.59	0.86	0.73
P	RRD	2328	PL-O	PL47	20700100802	434	-77.31502	38.69783	0.24	0.12	0.11
P	RRD	2329	PL-O	PL47	20700100802	434	-77.31403	38.69774	2.83	1.50	1.34
P	RRD	2330	PL-O	PL47	20700100802	434	-77.31557	38.69918	1.31	0.57	0.73
P	RRD	2331	PL-O	PL47	20700100802	434	-77.31492	38.69933	1.34	0.74	0.60
P	RRD	2332	PL-O	PL47	20700100802	434	-77.31297	38.69888	1.18	0.62	0.56
P	RRD	2333	PL-O	PL47	20700100802	434	-77.31077	38.69844	1.64	1.14	0.50
P	RRD	2334	PL-O	PL47	20700100802	434	-77.31003	38.69917	1.53	0.96	0.57
P	RRD	2335	PL-O	PL47	20700100802	434	-77.30874	38.69842	0.52	0.39	0.13
P	RRD	2336	PL-O	PL47	20700100802	434	-77.30707	38.6981	2.55	1.83	0.72
P	RRD	2337	PL-O	PL47	20700100802	434	-77.30762	38.6974	0.30	0.24	0.06
P	RRD	2338	PL-O	PL47	20700100802	434	-77.3091	38.69683	3.26	2.36	0.90
P	RRD	2339	PL-O	PL47	20700100802	434	-77.30901	38.69537	1.53	1.10	0.44
P	STP	2340	PL-O	PL47	20700100802	434	-77.31071	38.69419	2.29	1.66	0.64
P	GD	2341	PL-O	PL47	20700100802	434	-77.31006	38.69345	6.84	4.81	2.03
P	RRD	2342	PL-O	PL47	20700100802	434	-77.30929	38.69294	1.82	0.72	1.10
P	RRD	2347	PL-O	PL47	20700100802	434	-77.31084	38.68978	3.85	2.19	1.66
P	RRD	2349	PL-O	PL47	20700100802	434	-77.31055	38.68913	10.20	5.74	4.46
P	RRD	2350	PL-O	PL47	20700100802	434	-77.30804	38.68856	1.63	0.82	0.81
P	GD	2351	PL-O	PL47	20700100802	434	-77.30877	38.68909	1.87	0.97	0.90
P	RRD	2352	PL-O	PL47	20700100802	434	-77.30664	38.6889	1.52	0.80	0.72
P	RRD	2353	PL-O	PL47	20700100802	434	-77.30671	38.68884	5.77	3.46	2.30
P	RRD	2354	PL-O	PL47	20700100802	434	-77.30688	38.68881	0.78	0.53	0.25
P	RRD	2356	PL-O	PL47	20700100802	434	-77.3081	38.6908	8.37	4.70	3.67
P	RRD	2358	PL-O	PL47	20700100802	434	-77.30797	38.69157	1.52	0.75	0.77

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	2359	PL-O	PL47	20700100802	434	-77.30672	38.69286	1.82	1.18	0.64
P	RRD	2360	PL-O	PL47	20700100802	434	-77.30824	38.69344	1.44	1.02	0.42
P	RRD	2361	PL-O	PL47	20700100802	434	-77.30958	38.69585	4.18	2.96	1.22
P	RRD	2362	PL-O	PL47	20700100802	434	-77.3066	38.69506	5.03	3.38	1.65
P	RRD	2363	PL-O	PL47	20700100802	434	-77.31032	38.69833	1.41	0.96	0.45
P	RRD	2364	PL-O	PL47	20700100802	434	-77.3098	38.69846	1.61	1.13	0.48
P	STP	2365	PL-O	PL47	20700100802	434	-77.31377	38.69524	4.85	3.50	1.35
P	STP	2366	PL-O	PL47	20700100802	434	-77.31398	38.69572	1.53	0.91	0.62
P	RRD	2368	PL-O	PL47	20700100802	434	-77.31776	38.69363	1.61	1.07	0.54
P	RRD	2369	PL-O	PL47	20700100802	434	-77.3176	38.69354	0.44	0.36	0.08
P	RRD	2370	PL-O	PL47	20700100802	434	-77.31685	38.69215	1.03	0.76	0.27
P	RRD	2371	PL-O	PL47	20700100802	434	-77.31436	38.69176	1.47	0.97	0.49
P	STP	2372	PL-O	PL47	20700100802	434	-77.31634	38.69083	2.16	1.53	0.64
P	RRD	2373	PL-O	PL47	20700100802	434	-77.31608	38.69018	1.66	1.00	0.66
P	RRD	2374	PL-O	PL47	20700100802	434	-77.31579	38.69031	19.54	10.39	9.15
P	RRD	2375	PL-O	PL47	20700100802	434	-77.31361	38.69025	1.20	1.00	0.20
P	RRD	2377	PL-O	PL47	20700100802	434	-77.3179	38.68951	43.93	19.08	24.85
P	RRD	2379	PL-O	PL47	20700100802	434	-77.3078	38.68792	0.71	0.33	0.38
P	GD	2380	PL-O	PL47	20700100802	434	-77.30912	38.68707	1.01	0.54	0.46
P	RRD	2382	PL-O	PL47	20700100802	440	-77.30265	38.68591	1.10	0.76	0.35
P	STP	2383	PL-O	PL47	20700100802	436	-77.3026	38.69285	5.47	3.95	1.53
P	CD	2384	PL-O	PL47	20700100802	436	-77.30293	38.69303	0.95	0.62	0.33
P	RRD	2385	PL-O	PL47	20700100802	436	-77.30412	38.69349	3.10	2.16	0.94
P	RRD	2386	PL-O	PL47	20700100802	436	-77.30369	38.69352	0.54	0.39	0.15
P	RRD	2387	PL-O	PL47	20700100802	436	-77.30273	38.69476	1.47	1.06	0.42
P	RRD	2388	PL-O	PL47	20700100802	436	-77.30233	38.6956	1.94	1.35	0.59
P	RRD	2389	PL-O	PL47	20700100802	436	-77.30284	38.69647	1.97	0.83	1.14
P	RRD	2390	PL-O	PL47	20700100802	436	-77.3038	38.69587	0.20	0.14	0.07
P	RRD	2391	PL-O	PL47	20700100802	436	-77.30188	38.69755	0.10	0.03	0.07
P	RRD	2392	PL-O	PL47	20700100802	436	-77.30205	38.69745	1.27	0.49	0.78
P	RRD	2393	PL-O	PL47	20700100802	436	-77.303	38.69825	1.18	0.79	0.39
P	RRD	2394	PL-O	PL47	20700100802	436	-77.30334	38.69763	1.05	0.64	0.41
P	RRD	2395	PL-O	PL47	20700100802	434	-77.305	38.69821	0.89	0.70	0.19
P	RRD	2396	PL-O	PL47	20700100802	434	-77.30488	38.69744	0.67	0.49	0.17
P	RRD	2397	PL-O	PL47	20700100802	436	-77.29774	38.69534	0.98	0.71	0.27
P	STP	2398	PL-O	PL47	20700100802	440	-77.29696	38.69664	2.44	1.79	0.65
P	STP	2399	PL-O	PL47	20700100802	440	-77.29532	38.69753	1.88	1.36	0.52

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2400	PL-O	PL47	20700100802	440	-77.29447	38.69464	12.43	8.86	3.56
P	GD	2401	PL-O	PL47	20700100802	440	-77.29462	38.69572	2.18	1.74	0.43
P	STP	2402	PL-O	PL47	20700100802	440	-77.29225	38.69493	4.71	3.40	1.31
P	STP	2403	PL-O	PL47	20700100802	440	-77.2899	38.69514	3.88	2.84	1.03
P	STP	2404	PL-O	PL47	20700100802	440	-77.28899	38.69446	1.63	1.17	0.46
P	GD	2405	PL-O	PL47	20700100802	440	-77.28776	38.69557	1.02	0.70	0.32
P	STP	2406	PL-O	PL47	20700100802	440	-77.28731	38.69484	0.77	0.53	0.24
P	GD	2407	PL-O	PL47	20700100802	440	-77.28608	38.69511	0.81	0.51	0.30
P	GD	2408	PL-O	PL47	20700100802	440	-77.28748	38.69717	0.38	0.25	0.13
P	GD	2409	PL-O	PL47	20700100802	440	-77.28526	38.6965	1.36	0.92	0.44
P	STP	2410	PL-O	PL47	20700100802	440	-77.29517	38.68572	2.84	2.34	0.50
P	RRD	2411	PL-O	PL47	20700100802	440	-77.29687	38.68984	0.83	0.45	0.38
P	STP	2412	PL-O	PL47	20700100802	440	-77.29631	38.68914	1.50	0.59	0.91
P	RRD	2413	PL-O	PL47	20700100802	440	-77.29675	38.68864	0.62	0.39	0.23
P	STP	2414	PL-O	PL47	20700100802	440	-77.29698	38.68836	0.91	0.49	0.42
P	RRD	2415	PL-O	PL47	20700100802	440	-77.29645	38.68853	1.57	0.73	0.83
P	RRD	2416	PL-O	PL47	20700100802	440	-77.29594	38.68739	0.66	0.29	0.37
P	STP	2417	PL-O	PL47	20700100802	440	-77.29386	38.68853	3.51	3.14	0.37
P	STP	2418	PL-O	PL47	20700100802	440	-77.29368	38.68718	1.41	1.02	0.39
P	STP	2419	PL-O	PL47	20700100802	440	-77.29346	38.68951	10.54	7.45	3.08
P	STP	2420	PL-O	PL47	20700100802	440	-77.29311	38.68895	0.54	0.40	0.14
P	RRD	2421	PL-O	PL47	20700100802	440	-77.29173	38.68821	1.20	0.75	0.45
P	STP	2422	PL-O	PL47	20700100802	440	-77.2915	38.68863	1.30	0.95	0.35
P	RRD	2423	PL-O	PL47	20700100802	440	-77.29158	38.68681	1.10	0.76	0.34
P	STP	2424	PL-O	PL47	20700100802	440	-77.2913	38.68791	0.82	0.48	0.35
P	STP	2425	PL-O	PL47	20700100802	440	-77.28928	38.68782	0.20	0.14	0.06
P	STP	2426	PL-O	PL47	20700100802	440	-77.28851	38.68903	1.13	0.75	0.38
P	STP	2427	PL-O	PL47	20700100802	440	-77.29189	38.69019	3.06	2.08	0.98
P	RRD	2428	PL-O	PL47	20700100802	440	-77.29156	38.69094	6.77	4.78	1.99
P	RRD	2429	PL-O	PL47	20700100802	440	-77.29132	38.69075	0.77	0.47	0.30
P	STP	2430	PL-O	PL47	20700100802	440	-77.28967	38.69179	0.99	0.61	0.38
P	STP	2431	PL-O	PL47	20700100802	440	-77.28793	38.69046	0.62	0.40	0.23
P	STP	2432	PL-O	PL47	20700100802	440	-77.28606	38.69041	0.45	0.29	0.16
P	STP	2433	PL-O	PL47	20700100802	440	-77.2887	38.68687	3.19	2.12	1.07
P	STP	2434	PL-O	PL47	20700100802	440	-77.28431	38.68587	0.73	0.55	0.18
P	STP	2435	PL-O	PL47	20700100802	440	-77.28849	38.69285	0.39	0.28	0.10
P	STP	2436	PL-O	PL47	20700100802	440	-77.28606	38.69288	1.16	0.72	0.43

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	2437	PL-O	PL47	20700100802	440	-77.28638	38.69366	1.11	0.83	0.28
P	GD	2438	PL-O	PL47	20700100802	436	-77.30122	38.68876	5.49	3.94	1.55
P	STP	2439	PL-O	PL47	20700100802	436	-77.301	38.68902	2.00	1.40	0.60
P	RRD	2440	PL-O	PL47	20700100802	436	-77.30093	38.69048	3.53	2.56	0.97
P	RRD	2441	PL-O	PL47	20700100802	436	-77.30128	38.69116	9.26	6.72	2.54
P	RRD	2442	PL-O	PL47	20700100802	436	-77.29987	38.69231	0.19	0.15	0.04
P	STP	2444	PL-O	PL47	20700100802	436	-77.29928	38.69167	12.57	7.89	4.68
P	RRD	2445	PL-O	PL47	20700100802	440	-77.29781	38.6862	8.67	5.34	3.33
P	RRD	2446	PL-O	PL47	20700100802	440	-77.29767	38.68608	1.32	0.75	0.57
P	RRD	2447	PL-O	PL47	20700100802	440	-77.29725	38.68599	1.31	0.69	0.62
P	STP	2449	PL-O	PL47	20700100802	440	-77.27908	38.69242	2.15	1.52	0.63
P	STP	2450	PL-O	PL47	20700100802	440	-77.28001	38.69196	1.72	1.31	0.41
P	RRD	2451	PL-O	PL47	20700100802	440	-77.28075	38.68985	1.68	1.20	0.48
P	STP	2452	PL-O	PL47	20700100802	440	-77.28079	38.68945	1.17	0.80	0.37
P	STP	2453	PL-O	PL47	20700100802	440	-77.28253	38.6882	0.19	0.12	0.07
P	STP	2454	PL-O	PL47	20700100802	440	-77.28111	38.6869	3.83	2.82	1.02
P	STP	2455	PL-O	PL47	20700100802	440	-77.28244	38.68658	11.01	8.02	2.99
P	RRD	2456	PL-O	PL48	20700100803	448	-77.27834	38.68759	1.21	0.86	0.36
P	RRD	2463	PL-O	PL48	20700100803	448	-77.27457	38.68979	3.25	1.77	1.48
P	RRD	2464	PL-O	PL48	20700100803	448	-77.27238	38.68987	3.19	1.47	1.73
P	RRD	2465	PL-O	PL48	20700100803	448	-77.27211	38.68877	5.40	2.94	2.46
P	RRD	2466	PL-O	PL48	20700100803	448	-77.27173	38.6894	2.29	0.86	1.42
P	RRD	2467	PL-O	PL48	20700100803	448	-77.2701	38.68824	7.19	3.90	3.29
P	RRD	2468	PL-O	PL48	20700100803	448	-77.269	38.68769	1.92	1.03	0.89
P	RRD	2469	PL-O	PL48	20700100803	448	-77.26888	38.6874	2.86	1.72	1.14
P	RRD	2470	PL-O	PL48	20700100803	448	-77.26653	38.68641	6.00	3.11	2.90
P	GD	2878	PL-L	PL34	20700100504	291	-77.49572	38.70045	2.02	1.55	0.47
P	RRD	2882	PL-O	PL47	20700100802	436	-77.30128	38.69767	0.92	0.74	0.18
P	RRD	2883	PL-O	PL47	20700100802	436	-77.30075	38.69662	1.10	0.78	0.32
P	RRD	2884	PL-O	PL47	20700100802	436	-77.30037	38.69614	0.92	0.61	0.31
P	RRD	2885	PL-O	PL41	20700100801	416	-77.38205	38.68657	0.33	0.33	0.00
P	GD	2891	PL-O	PL41	20700100801	422	-77.42443	38.69529	5.60	4.43	1.17
P	RRD	2892	PL-O	PL41	20700100801	416	-77.39346	38.69641	0.55	0.55	0.00
P	RRD	2893	PL-O	PL41	20700100801	418	-77.40079	38.70037	1.77	1.34	0.44
P	RRD	2894	PL-O	PL47	20700100802	440	-77.29226	38.69918	1.29	0.98	0.31
P	BMP	2895	PL-O	PL47	20700100802	432	-77.32233	38.6996	9.88	6.22	3.65
P	RRD	2898	PL-O	PL41	20700100801	418	-77.40749	38.69975	0.09	0.09	0.00

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2900	PL-O	PL41	20700100801	418	-77.40273	38.69997	2.76	2.14	0.61
P	RRD	2901	PL-O	PL47	20700100802	426	-77.36398	38.70001	1.10	0.87	0.23
P	RRD	2902	PL-O	PL47	20700100802	436	-77.29827	38.69893	0.33	0.24	0.09
P	STP	2908	PL-M	PL40	20700100606	302	-77.57818	38.69328	0.40	0.36	0.05
P	STP	2909	PL-M	PL40	20700100606	302	-77.57692	38.69209	0.09	0.07	0.01
P	STP	2910	PL-M	PL40	20700100606	302	-77.57662	38.69263	0.25	0.20	0.05
P	STP	2911	PL-L	PL33	20700100503	286	-77.51531	38.69588	41.97	40.19	1.78
P	RRD	2912	PL-L	PL33	20700100503	286	-77.51131	38.69533	2.04	1.86	0.17
P	STP	2929	PL-O	PL41	20700100801	404	-77.47545	38.69118	0.32	0.24	0.08
P	GD	2935	PL-O	PL41	20700100801	405	-77.46022	38.6891	0.76	0.61	0.16
P	RRD	2936	PL-O	PL41	20700100801	405	-77.44807	38.68794	7.35	6.20	1.16
P	GD	2940	PL-O	PL41	20700100801	405	-77.44641	38.69169	0.52	0.42	0.10
P	RRD	2941	PL-O	PL41	20700100801	405	-77.44561	38.6917	1.03	0.82	0.21
P	GD	2944	PL-O	PL41	20700100801	405	-77.44575	38.69053	6.31	5.07	1.24
P	GD	2945	PL-O	PL41	20700100801	408	-77.43879	38.69128	0.18	0.18	0.00
P	RRD	2946	PL-O	PL41	20700100801	408	-77.43621	38.69996	0.35	0.31	0.04
P	RRD	2947	PL-O	PL41	20700100801	422	-77.42425	38.69632	1.61	1.26	0.35
P	RRD	2948	PL-O	PL41	20700100801	418	-77.40991	38.69764	0.88	0.72	0.16
P	GD	2949	PL-O	PL41	20700100801	416	-77.38724	38.689	0.04	0.04	0.00
P	RRD	2950	PL-O	PL47	20700100802	426	-77.36023	38.6981	1.23	0.91	0.33
P	GD	2951	PL-O	PL47	20700100802	426	-77.35741	38.69992	4.25	3.38	0.87
P	RRD	2954	PL-O	PL47	20700100802	432	-77.32368	38.69327	3.03	2.09	0.94
P	RRD	2955	PL-O	PL47	20700100802	434	-77.31748	38.6907	1.59	0.54	1.05
P	RRD	2956	PL-O	PL47	20700100802	434	-77.31642	38.69321	5.68	3.97	1.71
P	STP	2977	PL-M	PL40	20700100606	302	-77.57679	38.69518	0.09	0.05	0.04
P	STP	2979	PL-L	PL33	20700100503	272	-77.54018	38.6935	0.96	0.77	0.19
P	STP	2980	PL-L	PL33	20700100503	286	-77.51917	38.69573	3.32	3.10	0.22
P	FIELD	4803	PL-N	PL43	20700100702	132	-77.64332	38.81866	0.04	0.02	0.01
P	FIELD	4804	PL-N	PL43	20700100702	132	-77.64173	38.81747	2.47	0.92	1.56
P	RRD	4807	PL-N	PL43	20700100702	132	-77.62681	38.8133	7.52	4.01	3.51
P	RRD	4808	PL-N	PL43	20700100702	132	-77.62688	38.81317	1.90	1.67	0.23
P	RR	20000	PL-N	PL42	20700100701	100	-77.55699	38.8709	2.80	2.78	0.02
P	RR	20002	PL-N	PL43	20700100702	130	-77.62217	38.8379	20.12	13.28	6.83
P	RR	20004	PL-N	PL43	20700100702	130	-77.62763	38.84111	13.94	9.30	4.63
P	RR	20005	PL-N	PL43	20700100702	130	-77.6272	38.84052	1.77	1.26	0.51
P	RR	20006	PL-N	PL43	20700100702	130	-77.62777	38.83996	10.63	6.78	3.85
P	RR	20003	PL-N	PL43	20700100702	130	-77.62733	38.84156	5.41	3.13	2.28

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RR	20007	PL-N	PL43	20700100702	130	-77.62764	38.84201	0.93	0.39	0.54
P	RCP	20008	PL-N	PL43	20700100702	130	-77.62651	38.8419	2.78	1.45	1.33
P	RCP	20009	PL-N	PL43	20700100702	130	-77.62649	38.84187	0.76	0.37	0.39
P	BMP	20013	PL-L	PL32	20700100502	206	-77.68546	38.82345	1.72	1.37	0.35
P	RRD	20016	PL-N	PL43	20700100702	130	-77.62347	38.84184	18.95	13.86	5.09
P	RRD	20017	PL-N	PL43	20700100702	130	-77.62405	38.84199	1.45	0.88	0.58
P	RR	20036	PL-L	PL34	20700100504	242	-77.60173	38.79192	3.87	2.96	0.91
P	RR	20037	PL-L	PL34	20700100504	242	-77.6009	38.78905	2.99	2.92	0.07
P	RR	20040	PL-L	PL32	20700100502	206	-77.66445	38.81176	0.38	0.38	0.00
P	RR	20041	PL-L	PL32	20700100502	218	-77.64029	38.7943	7.73	6.68	1.06
P	RR	20042	PL-L	PL32	20700100502	218	-77.64043	38.79388	1.00	0.75	0.25
P	RR	20043	PL-L	PL32	20700100502	218	-77.64017	38.79316	3.55	3.15	0.39
P	RR	20044	PL-L	PL32	20700100502	218	-77.64216	38.79403	6.86	5.54	1.32
P	RR	20045	PL-L	PL32	20700100502	218	-77.63963	38.79255	6.47	4.08	2.39
P	HDP	20046	PL-L	PL32	20700100502	236	-77.63773	38.79149	2.44	1.34	1.11
P	HDP	20047	PL-L	PL32	20700100502	236	-77.63745	38.7914	0.27	0.19	0.08
P	HDP	20048	PL-L	PL32	20700100502	236	-77.63702	38.79103	4.36	2.78	1.58
P	HDP	20049	PL-L	PL32	20700100502	236	-77.63697	38.79031	0.48	0.35	0.13
P	HDP	20050	PL-L	PL32	20700100502	218	-77.63918	38.79103	1.07	0.71	0.35
P	BMP	20051	PL-L	PL32	20700100502	218	-77.64525	38.79549	13.78	10.34	3.44
P	GD	20052	PL-L	PL32	20700100502	240	-77.62354	38.77281	4.40	2.88	1.51
P	GD	20053	PL-L	PL32	20700100502	240	-77.62283	38.7785	6.04	4.67	1.37
P	BMP	20054	PL-L	PL32	20700100502	240	-77.62207	38.77856	1.47	1.03	0.44
P	BMP	20055	PL-L	PL32	20700100502	240	-77.6246	38.77533	7.85	5.14	2.71
P	BMP	20056	PL-L	PL34	20700100504	250	-77.619	38.76147	40.98	28.50	12.48
P	RR	20057	PL-L	PL34	20700100504	248	-77.60863	38.76426	1.25	0.56	0.68
P	RR	20058	PL-L	PL34	20700100504	248	-77.60747	38.76249	7.76	5.29	2.47
P	RCP	20059	PL-L	PL34	20700100504	244	-77.58263	38.76939	13.20	9.62	3.59
P	RR	20065	PL-L	PL34	20700100504	264	-77.54761	38.76033	0.76	0.27	0.49
P	RR	20066	PL-L	PL34	20700100504	264	-77.54763	38.75912	1.30	0.79	0.51
P	RR	20067	PL-L	PL34	20700100504	264	-77.54763	38.75755	6.16	3.99	2.17
P	RR	20068	PL-L	PL34	20700100504	264	-77.54888	38.75359	12.38	7.38	5.00
P	RCP	20073	PL-N	PL44	20700100703	172	-77.49973	38.76432	14.85	8.16	6.69
P	RCP	20076	PL-N	PL46	20700100705	184	-77.44956	38.77547	3.22	1.25	1.97
P	NS	20078	PL-N	PL46	20700100705	194	-77.4182	38.74492	7.43	6.95	0.48
P	GD	20079	PL-N	PL46	20700100705	194	-77.41943	38.74417	0.95	0.74	0.21
P	PVC	20080	PL-N	PL46	20700100705	194	-77.43101	38.74121	5.73	5.73	0.01

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RR	20081	PL-N	PL46	20700100705	194	-77.43064	38.74097	15.43	15.26	0.17
P	RR	20082	PL-N	PL46	20700100705	194	-77.42991	38.73859	4.09	3.81	0.27
P	GD	20083	PL-N	PL46	20700100705	194	-77.43072	38.74137	0.24	0.24	0.00
P	GD	20084	PL-N	PL46	20700100705	194	-77.43085	38.74139	0.13	0.13	0.00
P	RR	20085	PL-N	PL44	20700100703	172	-77.4807	38.75422	32.50	32.50	0.00
P	RR	20086	PL-N	PL44	20700100703	172	-77.48119	38.7523	37.57	37.57	0.00
P	HDPE	20105	PL-L	PL34	20700100504	268	-77.57504	38.74736	11.94	8.20	3.74
P	RR	20107	PL-O	PL41	20700100801	408	-77.45317	38.72366	8.75	5.82	2.93
P	RR	20108	PL-O	PL41	20700100801	410	-77.43584	38.72239	0.12	0.08	0.04
P	RR	20109	PL-O	PL41	20700100801	418	-77.40692	38.70194	1.68	1.31	0.37
P	GD	2471	PL-O	PL48	20700100803	448	-77.26625	38.67797	1.48	1.21	0.27
P	RRD	2474	PL-O	PL48	20700100803	448	-77.26144	38.67728	0.20	0.08	0.12
P	RRD	2475	PL-O	PL48	20700100803	448	-77.26116	38.67586	2.77	1.55	1.21
P	RRD	2477	PL-O	PL48	20700100803	448	-77.25973	38.67562	1.78	1.17	0.61
P	RRD	2478	PL-O	PL48	20700100803	448	-77.25835	38.67604	6.99	3.32	3.67
P	RRD	2488	PL-O	PL48	20700100803	450	-77.2653	38.67215	8.65	5.43	3.22
P	RRD	2490	PL-O	PL48	20700100803	448	-77.26504	38.68513	3.52	2.04	1.48
P	STP	2492	PL-O	PL48	20700100803	450	-77.26984	38.67605	17.38	11.30	6.08
P	STP	2493	PL-O	PL48	20700100803	450	-77.26969	38.67508	1.47	0.71	0.76
P	RRD	2499	PL-O	PL48	20700100803	450	-77.27046	38.67329	65.88	41.38	24.50
P	RRD	2502	PL-O	PL47	20700100802	444	-77.28293	38.67485	51.79	22.31	29.48
P	GD	2503	PL-O	PL47	20700100802	444	-77.2842	38.6754	4.57	2.57	2.00
P	RRD	2504	PL-O	PL47	20700100802	440	-77.28371	38.68184	2.55	1.78	0.77
P	RRD	2505	PL-O	PL47	20700100802	440	-77.28315	38.68202	0.36	0.27	0.09
P	STP	2506	PL-O	PL47	20700100802	440	-77.27934	38.68159	4.45	3.42	1.03
P	RRD	2507	PL-O	PL47	20700100802	440	-77.27993	38.68229	2.86	2.19	0.66
P	STP	2508	PL-O	PL47	20700100802	440	-77.27891	38.68214	3.23	2.45	0.79
P	RRD	2509	PL-O	PL48	20700100803	448	-77.27378	38.68123	30.90	15.39	15.51
P	RRD	2510	PL-O	PL48	20700100803	448	-77.27376	38.68213	9.70	5.73	3.98
P	STP	2511	PL-O	PL48	20700100803	448	-77.27293	38.683	3.21	1.71	1.50
P	STP	2512	PL-O	PL48	20700100803	448	-77.2727	38.68273	3.03	1.49	1.54
P	RRD	2513	PL-O	PL48	20700100803	448	-77.27247	38.68351	3.45	1.89	1.56
P	RRD	2514	PL-O	PL48	20700100803	448	-77.27171	38.68526	1.83	0.82	1.01
P	RRD	2515	PL-O	PL48	20700100803	448	-77.27131	38.6834	1.13	0.47	0.67
P	STP	2516	PL-O	PL47	20700100802	440	-77.28119	38.67986	10.82	7.43	3.40
P	RRD	2517	PL-O	PL47	20700100802	440	-77.28219	38.68103	1.19	0.85	0.35
P	STP	2518	PL-O	PL48	20700100803	448	-77.27873	38.68464	2.49	1.89	0.61

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2519	PL-O	PL47	20700100802	444	-77.29827	38.67356	18.62	14.58	4.03
P	STP	2520	PL-O	PL47	20700100802	444	-77.29323	38.6726	24.67	18.47	6.20
P	RRD	2521	PL-O	PL47	20700100802	444	-77.28658	38.6773	0.04	0.04	0.00
P	RRD	2522	PL-O	PL47	20700100802	444	-77.28583	38.67767	2.81	2.14	0.67
P	STP	2523	PL-O	PL47	20700100802	444	-77.28833	38.67779	3.51	2.35	1.16
P	STP	2524	PL-O	PL47	20700100802	444	-77.28997	38.67743	3.73	2.74	0.99
P	RRD	2525	PL-O	PL47	20700100802	444	-77.29133	38.67841	0.76	0.42	0.34
P	STP	2527	PL-O	PL47	20700100802	444	-77.29364	38.68069	2.65	1.63	1.02
P	STP	2528	PL-O	PL47	20700100802	444	-77.29311	38.68028	1.78	1.20	0.58
P	RRD	2529	PL-O	PL47	20700100802	444	-77.29457	38.68068	3.01	1.81	1.21
P	RRD	2530	PL-O	PL47	20700100802	444	-77.29458	38.68043	1.55	0.76	0.79
P	RRD	2531	PL-O	PL47	20700100802	444	-77.29678	38.679	0.86	0.71	0.15
P	STP	2532	PL-O	PL47	20700100802	444	-77.29776	38.68082	0.49	0.34	0.15
P	STP	2533	PL-O	PL47	20700100802	444	-77.29893	38.68128	5.11	3.77	1.34
P	RRD	2534	PL-O	PL47	20700100802	440	-77.30074	38.68508	1.85	1.22	0.63
P	RRD	2535	PL-O	PL47	20700100802	440	-77.30125	38.68538	7.80	4.21	3.59
P	RRD	2536	PL-O	PL47	20700100802	440	-77.29936	38.6847	1.23	0.56	0.67
P	RRD	2537	PL-O	PL47	20700100802	440	-77.29844	38.68449	5.39	3.09	2.30
P	STP	2538	PL-O	PL47	20700100802	440	-77.29891	38.68432	2.67	1.35	1.31
P	STP	2539	PL-O	PL47	20700100802	440	-77.29763	38.68428	1.70	0.85	0.85
P	RRD	2540	PL-O	PL47	20700100802	440	-77.29699	38.68512	1.52	0.58	0.94
P	STP	2541	PL-O	PL47	20700100802	440	-77.29666	38.68473	1.48	0.51	0.96
P	STP	2542	PL-O	PL47	20700100802	440	-77.29303	38.68431	0.02	0.02	0.00
P	RRD	2543	PL-O	PL47	20700100802	440	-77.29325	38.68542	1.45	1.02	0.44
P	STP	2544	PL-O	PL47	20700100802	440	-77.29338	38.68523	1.00	0.75	0.25
P	RRD	2545	PL-O	PL47	20700100802	440	-77.29211	38.68495	1.46	1.05	0.41
P	STP	2546	PL-O	PL47	20700100802	440	-77.29047	38.685	1.17	0.78	0.39
P	STP	2550	PL-O	PL47	20700100802	444	-77.28902	38.67974	1.16	0.76	0.40
P	CD	2551	PL-O	PL47	20700100802	444	-77.29252	38.67776	2.96	1.63	1.33
P	STP	2552	PL-O	PL47	20700100802	444	-77.29411	38.67679	3.71	2.42	1.29
P	STP	2553	PL-O	PL47	20700100802	444	-77.29573	38.67622	4.95	3.00	1.95
P	STP	2554	PL-O	PL47	20700100802	444	-77.29779	38.67494	0.58	0.41	0.16
P	GD	2555	PL-O	PL47	20700100802	444	-77.29867	38.67388	0.17	0.13	0.03
P	STP	2556	PL-O	PL47	20700100802	444	-77.29903	38.67484	0.17	0.13	0.04
P	RRD	2558	PL-O	PL47	20700100802	444	-77.29939	38.67676	4.98	3.43	1.54
P	STP	2559	PL-O	PL47	20700100802	444	-77.29863	38.67596	0.95	0.66	0.29
P	STP	2560	PL-O	PL47	20700100802	444	-77.29871	38.67757	0.89	0.60	0.29

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	2561	PL-O	PL47	20700100802	444	-77.29878	38.67879	0.63	0.42	0.21
P	RRD	2562	PL-O	PL47	20700100802	444	-77.29916	38.67912	5.85	3.97	1.88
P	STP	2563	PL-O	PL47	20700100802	444	-77.29121	38.67653	5.76	4.24	1.52
P	STP	2564	PL-O	PL47	20700100802	444	-77.2918	38.67474	1.17	0.83	0.35
P	STP	2566	PL-O	PL47	20700100802	444	-77.28999	38.67342	0.17	0.16	0.01
P	RRD	2567	PL-O	PL47	20700100802	444	-77.29014	38.67301	2.06	1.49	0.58
P	STP	2568	PL-O	PL47	20700100802	440	-77.28452	38.68353	12.12	8.80	3.32
P	STP	2569	PL-O	PL47	20700100802	440	-77.28462	38.68269	0.80	0.53	0.27
P	STP	2571	PL-O	PL47	20700100802	444	-77.28472	38.67471	10.58	7.99	2.58
P	RRD	2572	PL-O	PL47	20700100802	442	-77.31522	38.683	6.38	5.17	1.21
P	RRD	2573	PL-O	PL47	20700100802	442	-77.31503	38.6816	1.37	1.00	0.37
P	RRD	2574	PL-O	PL47	20700100802	442	-77.31556	38.68119	14.76	11.19	3.57
P	RRD	2575	PL-O	PL47	20700100802	442	-77.31449	38.68155	1.13	0.81	0.33
P	STP	2576	PL-O	PL47	20700100802	442	-77.31429	38.68099	1.12	0.81	0.31
P	GD	2577	PL-O	PL47	20700100802	442	-77.31424	38.68089	0.94	0.62	0.31
P	RRD	2578	PL-O	PL47	20700100802	442	-77.31314	38.6811	1.72	1.30	0.41
P	RRD	2579	PL-O	PL47	20700100802	442	-77.31206	38.6815	1.29	0.89	0.40
P	RRD	2580	PL-O	PL47	20700100802	442	-77.31244	38.68276	0.95	0.72	0.24
P	RRD	2581	PL-O	PL47	20700100802	442	-77.31294	38.68346	4.01	2.90	1.11
P	RRD	2582	PL-O	PL47	20700100802	442	-77.31006	38.68227	8.71	6.22	2.48
P	RRD	2583	PL-O	PL47	20700100802	442	-77.30921	38.68041	1.63	1.18	0.45
P	GD	2584	PL-O	PL47	20700100802	442	-77.30845	38.67903	0.39	0.29	0.10
P	RRD	2585	PL-O	PL47	20700100802	442	-77.30747	38.67921	6.37	4.49	1.88
P	GD	2586	PL-O	PL47	20700100802	442	-77.30666	38.67804	0.54	0.42	0.12
P	GD	2587	PL-O	PL47	20700100802	442	-77.30546	38.67821	6.95	4.93	2.02
P	GD	2588	PL-O	PL47	20700100802	442	-77.30538	38.67799	0.58	0.41	0.17
P	RRD	2589	PL-O	PL47	20700100802	442	-77.30544	38.67649	5.39	3.98	1.41
P	GD	2590	PL-O	PL47	20700100802	442	-77.30424	38.67661	1.47	1.13	0.33
P	RRD	2591	PL-O	PL47	20700100802	445	-77.30419	38.6753	5.56	3.92	1.64
P	STP	2592	PL-O	PL47	20700100802	445	-77.30522	38.67511	1.09	0.86	0.23
P	GD	2593	PL-O	PL47	20700100802	445	-77.30386	38.67429	2.46	1.83	0.63
P	RRD	2594	PL-O	PL47	20700100802	445	-77.30344	38.67451	1.33	0.60	0.73
P	RRD	2595	PL-O	PL47	20700100802	445	-77.30258	38.67362	1.48	0.75	0.73
P	GD	2596	PL-O	PL47	20700100802	442	-77.30856	38.67733	0.83	0.64	0.20
P	RRD	2597	PL-O	PL47	20700100802	442	-77.30955	38.67639	5.31	3.81	1.50
P	CD	2598	PL-O	PL47	20700100802	442	-77.31062	38.67741	1.13	0.88	0.25
P	CD	2599	PL-O	PL47	20700100802	442	-77.31021	38.67749	0.89	0.65	0.24

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2600	PL-O	PL47	20700100802	442	-77.31141	38.67817	2.02	1.44	0.58
P	BMP	2601	PL-O	PL47	20700100802	442	-77.3128	38.67881	1.03	0.68	0.35
P	STP	2602	PL-O	PL47	20700100802	442	-77.31262	38.67722	1.51	1.07	0.45
P	STP	2603	PL-O	PL47	20700100802	442	-77.31297	38.67646	0.14	0.12	0.01
P	GD	2604	PL-O	PL47	20700100802	442	-77.3123	38.67621	1.08	0.76	0.32
P	GD	2605	PL-O	PL47	20700100802	442	-77.31389	38.67587	9.03	6.46	2.57
P	RRD	2606	PL-O	PL47	20700100802	442	-77.31471	38.67719	7.58	5.46	2.12
P	RRD	2607	PL-O	PL47	20700100802	442	-77.31615	38.67584	14.29	10.67	3.62
P	RRD	2608	PL-O	PL47	20700100802	442	-77.31647	38.6757	1.78	1.16	0.62
P	RRD	2609	PL-O	PL47	20700100802	442	-77.31625	38.67525	0.21	0.16	0.05
P	RRD	2610	PL-O	PL47	20700100802	442	-77.31696	38.67567	0.47	0.40	0.07
P	RRD	2611	PL-O	PL47	20700100802	442	-77.31798	38.6754	5.10	3.36	1.74
P	GD	2612	PL-O	PL47	20700100802	442	-77.31671	38.675	4.00	2.91	1.09
P	RRD	2613	PL-O	PL47	20700100802	442	-77.3187	38.67478	1.29	0.69	0.59
P	RRD	2614	PL-O	PL47	20700100802	442	-77.31823	38.67377	19.21	14.27	4.94
P	GD	2615	PL-O	PL47	20700100802	445	-77.309	38.67243	7.78	5.64	2.14
P	RRD	2616	PL-O	PL47	20700100802	445	-77.30814	38.67271	0.49	0.38	0.11
P	GD	2617	PL-O	PL47	20700100802	445	-77.30807	38.67255	2.20	1.68	0.52
P	RRD	2618	PL-O	PL47	20700100802	445	-77.30676	38.67297	1.50	1.05	0.45
P	GD	2619	PL-O	PL47	20700100802	445	-77.30598	38.67298	2.47	1.74	0.74
P	RRD	2620	PL-O	PL47	20700100802	445	-77.30369	38.67412	3.95	2.74	1.21
P	RRD	2621	PL-O	PL47	20700100802	445	-77.30655	38.67311	3.01	2.32	0.69
P	RRD	2622	PL-O	PL47	20700100802	440	-77.30241	38.68563	1.13	0.50	0.62
P	RRD	2623	PL-O	PL47	20700100802	440	-77.30153	38.68519	1.74	0.80	0.94
P	RRD	2624	PL-O	PL47	20700100802	440	-77.30325	38.68446	0.81	0.38	0.43
P	GD	2625	PL-O	PL47	20700100802	440	-77.30344	38.68413	0.40	0.21	0.19
P	RRD	2626	PL-O	PL47	20700100802	440	-77.3026	38.68412	0.47	0.18	0.28
P	RRD	2627	PL-O	PL47	20700100802	440	-77.30193	38.68413	0.65	0.21	0.44
P	RRD	2628	PL-O	PL47	20700100802	432	-77.33191	38.68557	7.60	4.32	3.27
P	RRD	2629	PL-O	PL47	20700100802	432	-77.33109	38.68518	3.20	2.30	0.90
P	RRD	2630	PL-O	PL47	20700100802	432	-77.3322	38.68407	2.18	1.23	0.95
P	RRD	2631	PL-O	PL47	20700100802	432	-77.33286	38.68351	4.65	2.64	2.01
P	RRD	2632	PL-O	PL47	20700100802	432	-77.33247	38.6832	1.81	0.89	0.92
P	RRD	2633	PL-O	PL47	20700100802	432	-77.3334	38.68217	7.91	5.75	2.16
P	STP	2636	PL-O	PL47	20700100802	432	-77.33228	38.68032	0.84	0.56	0.27
P	RRD	2637	PL-O	PL47	20700100802	432	-77.33166	38.68001	1.70	0.93	0.76
P	RRD	2638	PL-O	PL47	20700100802	432	-77.33113	38.67924	2.35	1.91	0.44

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2639	PL-O	PL47	20700100802	432	-77.33049	38.67813	2.59	1.30	1.29
P	RRD	2640	PL-O	PL47	20700100802	432	-77.33031	38.6779	7.86	3.90	3.96
P	RRD	2641	PL-O	PL47	20700100802	442	-77.32543	38.67516	11.80	7.02	4.78
P	GD	2642	PL-O	PL47	20700100802	442	-77.32423	38.67567	1.03	0.67	0.36
P	RRD	2643	PL-O	PL47	20700100802	442	-77.32372	38.67564	2.47	1.73	0.74
P	RRD	2644	PL-O	PL47	20700100802	442	-77.32401	38.67741	9.13	6.77	2.37
P	RRD	2645	PL-O	PL47	20700100802	442	-77.3213	38.67651	17.20	11.33	5.87
P	STP	2646	PL-O	PL47	20700100802	442	-77.32036	38.67568	2.29	1.60	0.69
P	STP	2647	PL-O	PL47	20700100802	442	-77.32018	38.67577	0.94	0.52	0.42
P	RRD	2648	PL-O	PL47	20700100802	442	-77.32142	38.67288	5.51	3.40	2.11
P	RRD	2649	PL-O	PL47	20700100802	442	-77.32094	38.67313	3.49	1.68	1.81
P	RRD	2650	PL-O	PL47	20700100802	442	-77.31978	38.67316	5.65	4.12	1.53
P	RRD	2651	PL-O	PL47	20700100802	442	-77.31944	38.67451	1.57	0.73	0.84
P	RRD	2652	PL-O	PL47	20700100802	442	-77.31973	38.67492	1.57	0.94	0.63
P	RRD	2653	PL-O	PL47	20700100802	442	-77.327	38.67261	17.38	10.92	6.46
P	GD	2654	PL-O	PL47	20700100802	432	-77.32665	38.6826	13.78	7.59	6.19
P	RRD	2655	PL-O	PL47	20700100802	432	-77.32638	38.68333	6.09	4.06	2.03
P	RRD	2656	PL-O	PL47	20700100802	432	-77.32649	38.68369	1.50	1.09	0.41
P	RRD	2657	PL-O	PL47	20700100802	432	-77.32828	38.68488	4.59	3.24	1.34
P	GD	2658	PL-O	PL47	20700100802	432	-77.32911	38.68547	0.78	0.52	0.26
P	RRD	2659	PL-O	PL47	20700100802	432	-77.33004	38.68202	19.94	10.34	9.59
P	RRD	2660	PL-O	PL47	20700100802	432	-77.33112	38.68288	15.02	6.72	8.31
P	RRD	2661	PL-O	PL47	20700100802	432	-77.33456	38.68005	0.99	0.67	0.32
P	RRD	2662	PL-O	PL47	20700100802	432	-77.33475	38.68011	4.34	3.09	1.25
P	RRD	2663	PL-O	PL47	20700100802	432	-77.33453	38.67882	88.64	47.44	41.20
P	STP	2666	PL-O	PL47	20700100802	432	-77.32118	38.68561	28.86	11.56	17.30
P	RRD	2671	PL-O	PL47	20700100802	432	-77.34416	38.68214	12.98	6.56	6.43
P	STP	2672	PL-O	PL47	20700100802	432	-77.34025	38.68534	1.43	0.76	0.68
P	STP	2673	PL-O	PL47	20700100802	432	-77.33941	38.68457	1.05	0.78	0.27
P	STP	2674	PL-O	PL47	20700100802	432	-77.33739	38.68518	2.12	1.47	0.65
P	GD	2675	PL-O	PL47	20700100802	432	-77.33818	38.6833	6.11	4.22	1.89
P	RRD	2676	PL-O	PL47	20700100802	432	-77.34029	38.68161	0.46	0.38	0.09
P	RRD	2677	PL-O	PL47	20700100802	432	-77.33889	38.68032	6.48	4.64	1.84
P	RRD	2678	PL-O	PL47	20700100802	432	-77.34171	38.67984	0.81	0.64	0.17
P	RRD	2679	PL-O	PL47	20700100802	432	-77.34222	38.68004	38.57	22.16	16.41
P	RRD	2680	PL-O	PL47	20700100802	432	-77.34488	38.67929	5.87	2.65	3.22
P	RRD	2681	PL-O	PL47	20700100802	432	-77.35378	38.6828	34.70	18.03	16.67

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	2682	PL-O	PL49	20700100804	820	-77.34284	38.67353	0.40	0.29	0.11
P	STP	2683	PL-O	PL49	20700100804	820	-77.34336	38.67318	12.59	9.40	3.19
P	RRD	2684	PL-O	PL49	20700100804	820	-77.34272	38.67302	14.14	7.70	6.44
P	STP	2685	PL-O	PL49	20700100804	820	-77.36214	38.67346	23.52	14.57	8.95
P	RRD	2687	PL-O	PL49	20700100804	820	-77.35751	38.67379	16.22	11.36	4.85
P	RRD	2688	PL-O	PL49	20700100804	820	-77.35577	38.67448	11.48	4.87	6.61
P	RRD	2689	PL-O	PL49	20700100804	820	-77.3561	38.67528	0.34	0.11	0.23
P	RRD	2690	PL-O	PL49	20700100804	820	-77.35619	38.67574	1.97	0.47	1.49
P	RRD	2691	PL-O	PL49	20700100804	820	-77.35622	38.67645	0.05	0.04	0.02
P	RRD	2692	PL-O	PL49	20700100804	820	-77.3564	38.677	2.78	1.07	1.71
P	STP	2693	PL-O	PL47	20700100802	432	-77.35873	38.68087	0.07	0.07	0.00
P	RRD	2695	PL-O	PL41	20700100801	416	-77.36394	38.68259	18.54	8.73	9.81
P	RRD	2696	PL-O	PL41	20700100801	416	-77.36845	38.68347	0.17	0.17	0.00
P	GD	2697	PL-O	PL41	20700100801	416	-77.36842	38.68257	0.04	0.04	0.00
P	GD	2698	PL-O	PL41	20700100801	416	-77.36819	38.68255	0.07	0.07	0.00
P	RRD	2702	PL-O	PL41	20700100801	416	-77.38087	38.67615	2.54	2.12	0.42
P	RRD	2703	PL-O	PL41	20700100801	416	-77.37973	38.67673	5.60	4.44	1.16
P	RRD	2704	PL-O	PL41	20700100801	416	-77.37932	38.67898	2.65	1.91	0.75
P	RRD	2705	PL-O	PL41	20700100801	416	-77.37846	38.6788	3.96	2.80	1.16
P	RRD	2706	PL-O	PL41	20700100801	416	-77.37721	38.67812	1.64	1.10	0.54
P	STP	2707	PL-O	PL41	20700100801	416	-77.38036	38.67974	2.01	1.43	0.57
P	GD	2708	PL-O	PL41	20700100801	416	-77.37737	38.68207	1.85	1.40	0.45
P	GD	2709	PL-O	PL41	20700100801	416	-77.37637	38.6802	0.39	0.30	0.09
P	GD	2710	PL-O	PL41	20700100801	416	-77.37377	38.67968	0.64	0.40	0.24
P	GD	2711	PL-O	PL41	20700100801	416	-77.37386	38.68039	3.27	2.35	0.92
P	GD	2712	PL-O	PL41	20700100801	416	-77.37505	38.6814	0.17	0.10	0.07
P	GD	2713	PL-O	PL41	20700100801	416	-77.37409	38.68171	1.93	1.51	0.42
P	GD	2715	PL-O	PL41	20700100801	416	-77.37278	38.68327	1.01	0.83	0.18
P	GD	2716	PL-O	PL41	20700100801	416	-77.37244	38.68306	1.29	0.87	0.42
P	GD	2717	PL-O	PL41	20700100801	416	-77.38573	38.67957	0.34	0.26	0.08
P	GD	2719	PL-O	PL41	20700100801	416	-77.3855	38.67974	0.00	0.00	0.00
P	RRD	2721	PL-O	PL41	20700100801	416	-77.38525	38.68018	0.04	0.03	0.01
P	GD	2722	PL-O	PL41	20700100801	416	-77.38538	38.68016	0.35	0.33	0.02
P	RRD	2723	PL-O	PL41	20700100801	416	-77.3853	38.68046	0.43	0.39	0.03
P	STP	2724	PL-O	PL41	20700100801	416	-77.38493	38.68079	0.28	0.23	0.05
P	RRD	2725	PL-O	PL41	20700100801	416	-77.38515	38.68127	8.62	6.78	1.84
P	RRD	2726	PL-O	PL41	20700100801	416	-77.37202	38.6786	3.27	2.60	0.67

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	2728	PL-O	PL41	20700100801	416	-77.39498	38.68568	1.40	1.14	0.26
P	RRD	2729	PL-O	PL41	20700100801	416	-77.39584	38.68595	0.60	0.55	0.05
P	GD	2730	PL-O	PL41	20700100801	416	-77.39575	38.68566	0.04	0.04	0.00
P	GD	2731	PL-O	PL41	20700100801	416	-77.39526	38.68484	3.51	2.98	0.52
P	GD	2732	PL-O	PL41	20700100801	416	-77.39537	38.68344	1.32	1.10	0.22
P	GD	2733	PL-O	PL41	20700100801	416	-77.39564	38.68325	0.53	0.39	0.13
P	GD	2734	PL-O	PL41	20700100801	418	-77.39785	38.68484	1.46	1.11	0.35
P	GD	2735	PL-O	PL41	20700100801	418	-77.39919	38.68506	0.26	0.21	0.05
P	GD	2736	PL-O	PL41	20700100801	418	-77.39922	38.68486	3.56	2.81	0.75
P	GD	2737	PL-O	PL41	20700100801	418	-77.40066	38.68536	2.45	1.96	0.49
P	GD	2738	PL-O	PL41	20700100801	418	-77.4016	38.68516	0.33	0.27	0.06
P	GD	2739	PL-O	PL41	20700100801	418	-77.40346	38.68359	0.70	0.55	0.16
P	GD	2740	PL-O	PL41	20700100801	418	-77.4024	38.68326	0.32	0.25	0.07
P	GD	2741	PL-O	PL41	20700100801	418	-77.39819	38.68196	1.84	1.38	0.46
P	RRD	2742	PL-O	PL41	20700100801	420	-77.39766	38.68016	2.53	2.03	0.50
P	GD	2743	PL-O	PL41	20700100801	420	-77.39548	38.6792	2.99	2.37	0.63
P	GD	2745	PL-O	PL49	20700100804	805	-77.395	38.67698	0.97	0.73	0.25
P	RRD	2746	PL-O	PL49	20700100804	805	-77.39411	38.67631	2.66	2.15	0.51
P	RRD	2747	PL-O	PL49	20700100804	805	-77.39509	38.67687	3.47	3.07	0.39
P	GD	2750	PL-O	PL49	20700100804	805	-77.38945	38.67551	3.10	2.44	0.66
P	GD	2751	PL-O	PL49	20700100804	805	-77.3898	38.67372	4.23	2.66	1.57
P	RRD	2752	PL-O	PL41	20700100801	416	-77.39206	38.68167	3.40	2.77	0.62
P	GD	2753	PL-O	PL41	20700100801	416	-77.39181	38.68246	1.45	1.15	0.29
P	RRD	2754	PL-O	PL41	20700100801	416	-77.39108	38.68253	5.99	4.76	1.23
P	RRD	2756	PL-O	PL41	20700100801	416	-77.39036	38.68534	6.97	5.32	1.65
P	GD	2757	PL-O	PL41	20700100801	420	-77.40386	38.68154	0.83	0.65	0.18
P	GD	2759	PL-O	PL41	20700100801	420	-77.40527	38.67373	0.74	0.65	0.09
P	RRD	2760	PL-O	PL41	20700100801	420	-77.40688	38.67393	17.78	13.06	4.73
P	GD	2762	PL-O	PL41	20700100801	420	-77.41504	38.6751	2.22	1.70	0.52
P	GD	2765	PL-O	PL41	20700100801	420	-77.40727	38.67454	0.54	0.45	0.09
P	BMP	2766	PL-O	PL41	20700100801	420	-77.40811	38.67624	2.08	1.73	0.35
P	RRD	2767	PL-O	PL41	20700100801	420	-77.41046	38.68291	17.08	13.18	3.90
P	GD	2768	PL-O	PL41	20700100801	420	-77.41206	38.68209	0.26	0.18	0.08
P	RRD	2769	PL-O	PL41	20700100801	420	-77.41462	38.68127	2.70	1.82	0.88
P	RRD	2770	PL-O	PL41	20700100801	420	-77.41447	38.68064	3.41	2.69	0.72
P	GD	2771	PL-O	PL41	20700100801	420	-77.41704	38.67989	3.51	2.92	0.59
P	RRD	2772	PL-O	PL41	20700100801	420	-77.41696	38.68012	0.82	0.65	0.17

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	2773	PL-O	PL41	20700100801	420	-77.41602	38.68032	4.80	3.89	0.91
P	GD	2775	PL-O	PL41	20700100801	422	-77.42352	38.68039	7.83	6.02	1.81
P	GD	2776	PL-O	PL41	20700100801	422	-77.42451	38.68451	4.00	2.63	1.37
P	CD	2778	PL-O	PL41	20700100801	420	-77.41457	38.67435	0.15	0.13	0.02
P	GD	2779	PL-O	PL41	20700100801	420	-77.4081	38.67821	0.90	0.71	0.19
P	RRD	2780	PL-O	PL41	20700100801	422	-77.42321	38.67437	17.46	13.15	4.31
P	GD	2781	PL-O	PL41	20700100801	422	-77.42435	38.67561	9.41	7.02	2.39
P	GD	2782	PL-O	PL41	20700100801	420	-77.41689	38.68163	0.68	0.50	0.17
P	GD	2783	PL-O	PL41	20700100801	422	-77.438	38.68431	2.08	1.49	0.59
P	GD	2784	PL-O	PL41	20700100801	422	-77.43613	38.68468	0.84	0.65	0.19
P	GD	2785	PL-O	PL41	20700100801	422	-77.43573	38.68484	0.42	0.33	0.09
P	GD	2786	PL-O	PL41	20700100801	422	-77.43467	38.68468	0.52	0.43	0.09
P	GD	2787	PL-O	PL41	20700100801	422	-77.43407	38.68475	0.45	0.39	0.06
P	GD	2788	PL-O	PL41	20700100801	422	-77.43354	38.68454	2.12	1.62	0.49
P	RRD	2789	PL-O	PL41	20700100801	422	-77.43221	38.68452	0.40	0.36	0.04
P	GD	2791	PL-O	PL41	20700100801	422	-77.43271	38.68559	1.16	0.73	0.43
P	GD	2792	PL-O	PL41	20700100801	422	-77.43125	38.6861	1.40	1.08	0.32
P	RRD	2793	PL-O	PL41	20700100801	422	-77.43301	38.68385	0.19	0.16	0.03
P	GD	2794	PL-O	PL41	20700100801	422	-77.43546	38.68127	13.83	10.55	3.28
P	GD	2795	PL-O	PL41	20700100801	422	-77.43522	38.681	0.06	0.06	0.00
P	GD	2796	PL-O	PL41	20700100801	422	-77.43661	38.67946	4.80	3.70	1.10
P	GD	2797	PL-O	PL41	20700100801	422	-77.43623	38.67803	1.51	1.19	0.32
P	GD	2798	PL-O	PL41	20700100801	422	-77.43761	38.67788	5.64	3.93	1.71
P	GD	2799	PL-O	PL41	20700100801	422	-77.43909	38.67771	3.20	2.48	0.72
P	RRD	2800	PL-O	PL41	20700100801	422	-77.43903	38.67751	21.87	17.01	4.86
P	GD	2801	PL-O	PL41	20700100801	422	-77.43777	38.68314	0.31	0.28	0.02
P	GD	2802	PL-O	PL41	20700100801	422	-77.43646	38.6842	1.59	1.27	0.31
P	RRD	2803	PL-O	PL41	20700100801	422	-77.42982	38.6851	0.52	0.40	0.12
P	GD	2804	PL-O	PL41	20700100801	422	-77.42938	38.68506	0.47	0.35	0.12
P	GD	2805	PL-O	PL41	20700100801	422	-77.43008	38.68484	0.19	0.16	0.03
P	GD	2806	PL-O	PL41	20700100801	422	-77.42884	38.68295	2.09	1.55	0.54
P	RRD	2807	PL-O	PL41	20700100801	422	-77.42543	38.68413	10.43	8.51	1.92
P	RRD	2811	PL-O	PL41	20700100801	422	-77.43074	38.67959	7.19	5.86	1.33
P	RRD	2812	PL-O	PL41	20700100801	422	-77.43182	38.67906	0.07	0.06	0.00
P	RRD	2813	PL-O	PL41	20700100801	422	-77.43147	38.6787	0.18	0.17	0.02
P	GD	2814	PL-O	PL41	20700100801	422	-77.42976	38.67858	0.78	0.61	0.17
P	GD	2815	PL-O	PL41	20700100801	422	-77.42822	38.6781	12.08	8.63	3.45

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	2816	PL-O	PL41	20700100801	422	-77.42945	38.67764	1.91	1.47	0.43
P	GD	2817	PL-O	PL41	20700100801	422	-77.42933	38.67544	1.46	1.21	0.25
P	STP	2818	PL-O	PL41	20700100801	422	-77.42851	38.67515	0.00	0.00	0.00
P	RRD	2819	PL-O	PL41	20700100801	422	-77.42741	38.675	0.74	0.63	0.11
P	GD	2820	PL-O	PL41	20700100801	422	-77.42854	38.67463	4.27	2.62	1.65
P	RRD	2821	PL-O	PL41	20700100801	422	-77.42624	38.67415	0.62	0.41	0.21
P	RRD	2822	PL-O	PL41	20700100801	422	-77.43274	38.67792	2.35	1.76	0.59
P	GD	2823	PL-O	PL41	20700100801	422	-77.43347	38.67749	0.51	0.39	0.11
P	RRD	2824	PL-O	PL41	20700100801	422	-77.43276	38.67679	7.89	5.97	1.93
P	RRD	2825	PL-O	PL41	20700100801	422	-77.43432	38.67568	1.90	1.38	0.52
P	RRD	2826	PL-O	PL41	20700100801	422	-77.4341	38.67534	1.57	1.24	0.33
P	RRD	2827	PL-O	PL41	20700100801	422	-77.43451	38.67484	1.59	1.22	0.37
P	GD	2828	PL-O	PL41	20700100801	422	-77.43529	38.67496	1.54	1.14	0.40
P	RRD	2829	PL-O	PL41	20700100801	422	-77.43523	38.67359	11.33	8.22	3.11
P	RRD	2830	PL-O	PL41	20700100801	422	-77.42636	38.67477	7.02	5.32	1.69
P	GD	2831	PL-O	PL41	20700100801	422	-77.42545	38.68096	1.05	0.71	0.35
P	GD	2832	PL-O	PL41	20700100801	424	-77.45044	38.68298	6.56	5.25	1.31
P	GD	2833	PL-O	PL41	20700100801	424	-77.44935	38.68257	3.02	2.27	0.75
P	GD	2834	PL-O	PL41	20700100801	424	-77.45256	38.68296	6.35	4.62	1.74
P	RRD	2835	PL-O	PL41	20700100801	424	-77.45631	38.6819	9.36	6.81	2.55
P	GD	2836	PL-O	PL41	20700100801	424	-77.45904	38.68091	2.79	1.98	0.81
P	RRD	2837	PL-O	PL41	20700100801	424	-77.45741	38.68125	0.58	0.43	0.15
P	GD	2838	PL-O	PL41	20700100801	424	-77.45738	38.67887	3.51	2.68	0.83
P	GD	2839	PL-O	PL41	20700100801	424	-77.45614	38.67912	5.83	4.21	1.62
P	GD	2840	PL-O	PL41	20700100801	424	-77.45658	38.67698	1.73	1.42	0.31
P	GD	2841	PL-O	PL41	20700100801	424	-77.45376	38.67823	5.71	4.30	1.40
P	RRD	2842	PL-O	PL41	20700100801	424	-77.44768	38.67876	13.12	10.22	2.90
P	GD	2843	PL-O	PL41	20700100801	424	-77.45348	38.68235	5.76	4.36	1.40
P	RRD	2844	PL-O	PL41	20700100801	405	-77.44468	38.68521	1.41	1.10	0.31
P	GD	2845	PL-O	PL41	20700100801	405	-77.44526	38.68299	4.31	3.16	1.16
P	GD	2846	PL-O	PL41	20700100801	424	-77.45322	38.67758	0.18	0.15	0.03
P	STP	2847	PL-O	PL41	20700100801	404	-77.47079	38.67937	0.66	0.52	0.13
P	STP	2848	PL-O	PL41	20700100801	404	-77.47179	38.67884	0.06	0.03	0.03
P	GD	2849	PL-O	PL41	20700100801	424	-77.46241	38.68289	7.79	5.44	2.35
P	STP	2850	PL-O	PL41	20700100801	424	-77.46129	38.68453	6.33	4.86	1.47
P	GD	2855	PL-M	PL40	20700100606	324	-77.50621	38.68038	5.07	4.06	1.01
P	GD	2860	PL-M	PL40	20700100606	326	-77.50134	38.6807	1.19	0.89	0.30

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	2861	PL-M	PL40	20700100606	326	-77.50272	38.68004	6.01	4.61	1.41
P	STP	2862	PL-M	PL40	20700100606	326	-77.49754	38.68324	11.77	9.91	1.85
P	GD	2863	PL-M	PL40	20700100606	324	-77.50871	38.67622	11.52	9.66	1.87
P	GD	2864	PL-M	PL40	20700100606	324	-77.50964	38.68004	2.62	1.90	0.72
P	GD	2865	PL-M	PL40	20700100606	324	-77.52343	38.68507	19.87	19.07	0.80
P	GD	2866	PL-M	PL40	20700100606	324	-77.5222	38.68643	14.67	14.06	0.60
P	GD	2869	PL-M	PL40	20700100606	306	-77.56998	38.67671	74.68	68.59	6.09
P	GD	2870	PL-M	PL40	20700100606	306	-77.57377	38.6793	4.77	3.86	0.91
P	STP	2871	PL-M	PL40	20700100606	308	-77.57034	38.68417	11.81	10.56	1.24
P	STP	2872	PL-O	PL47	20700100802	444	-77.29443	38.67193	0.29	0.24	0.05
P	RRD	2873	PL-O	PL47	20700100802	444	-77.28907	38.67207	21.64	16.61	5.02
P	STP	2875	PL-O	PL41	20700100801	420	-77.40632	38.67749	7.36	5.41	1.95
P	RRD	2876	PL-O	PL41	20700100801	420	-77.40322	38.67331	3.56	2.76	0.81
P	GD	2879	PL-M	PL40	20700100606	326	-77.49238	38.67595	18.36	16.79	1.57
P	GD	2880	PL-O	PL48	20700100803	448	-77.26266	38.67714	7.30	2.38	4.93
P	GD	2881	PL-O	PL47	20700100802	444	-77.28485	38.67649	3.44	2.21	1.22
P	RRD	2888	PL-O	PL41	20700100801	416	-77.37691	38.67799	0.29	0.21	0.08
P	GD	2889	PL-O	PL41	20700100801	416	-77.37283	38.67637	1.32	0.99	0.32
P	GD	2904	PL-O	PL41	20700100801	424	-77.45272	38.67604	6.56	5.20	1.37
P	GD	2905	PL-O	PL41	20700100801	424	-77.45107	38.67531	10.08	7.85	2.23
P	GD	2906	PL-O	PL41	20700100801	424	-77.44855	38.67581	25.14	19.06	6.07
P	GD	2907	PL-O	PL41	20700100801	424	-77.4464	38.67744	12.48	9.71	2.77
P	STP	2959	PL-O	PL48	20700100803	450	-77.26664	38.67296	0.25	0.14	0.11
P	BMP	2963	PL-O	PL47	20700100802	442	-77.3111	38.68013	1.54	1.10	0.44
P	RRD	2967	PL-O	PL47	20700100802	432	-77.36027	38.68425	0.00	0.00	0.00
P	RRD	2968	PL-O	PL41	20700100801	420	-77.40405	38.67526	1.50	1.12	0.38
P	RRD	2969	PL-O	PL41	20700100801	416	-77.39072	38.67848	2.40	1.79	0.62
P	GD	2976	PL-O	PL41	20700100801	420	-77.41801	38.68242	3.85	2.95	0.90
P	GD	2987	PL-O	PL47	20700100802	442	-77.31073	38.67793	1.95	1.38	0.57
P	STP	2994	PL-M	PL40	20700100606	326	-77.48527	38.67625	14.34	11.79	2.55
P	STP	2997	PL-M	PL40	20700100606	308	-77.573	38.68534	1.37	1.16	0.21
P	RRD	2998	PL-O	PL47	20700100802	444	-77.28899	38.6718	3.53	2.69	0.84
P	GD	2999	PL-O	PL47	20700100802	446	-77.32352	38.66707	0.38	0.29	0.09
P	CD	3001	PL-M	PL40	20700100606	314	-77.56995	38.66334	2.70	2.27	0.42
P	GD	3002	PL-M	PL40	20700100606	324	-77.53684	38.67015	25.06	24.21	0.85
P	GD	3003	PL-M	PL40	20700100606	324	-77.53185	38.66987	10.18	9.51	0.66
P	GD	3004	PL-M	PL40	20700100606	332	-77.49957	38.66027	0.84	0.84	0.00

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	3006	PL-M	PL40	20700100606	332	-77.49857	38.66	0.31	0.29	0.02
P	STP	3009	PL-M	PL40	20700100606	330	-77.49451	38.66208	20.58	19.47	1.10
P	GD	3010	PL-M	PL40	20700100606	326	-77.4858	38.66671	2.66	1.92	0.73
P	GD	3011	PL-M	PL40	20700100606	326	-77.48566	38.66492	4.80	3.52	1.28
P	GD	3012	PL-M	PL40	20700100606	326	-77.48212	38.66812	0.87	0.62	0.25
P	GD	3013	PL-M	PL40	20700100606	326	-77.48097	38.66833	2.47	1.84	0.63
P	GD	3014	PL-M	PL40	20700100606	326	-77.47932	38.66868	2.34	1.67	0.66
P	STP	3015	PL-M	PL40	20700100606	326	-77.48156	38.67126	4.48	3.91	0.57
P	GD	3016	PL-M	PL40	20700100606	326	-77.48724	38.6628	1.19	0.60	0.60
P	RRD	3017	PL-O	PL41	20700100801	404	-77.47404	38.66831	4.85	3.54	1.30
P	GD	3018	PL-O	PL41	20700100801	424	-77.465	38.6614	27.94	19.92	8.02
P	GD	3019	PL-O	PL41	20700100801	424	-77.46431	38.6615	2.32	1.67	0.65
P	RRD	3020	PL-O	PL41	20700100801	424	-77.46711	38.66454	2.16	1.62	0.54
P	GD	3021	PL-O	PL41	20700100801	424	-77.46753	38.66397	2.19	1.43	0.76
P	GD	3022	PL-O	PL41	20700100801	424	-77.46555	38.66647	4.11	3.04	1.07
P	STP	3023	PL-O	PL41	20700100801	424	-77.46118	38.66172	1.52	1.04	0.47
P	GD	3024	PL-O	PL41	20700100801	424	-77.44825	38.66768	17.65	13.27	4.38
P	GD	3025	PL-O	PL41	20700100801	424	-77.44874	38.66793	1.36	0.97	0.39
P	GD	3026	PL-O	PL41	20700100801	424	-77.45224	38.66916	19.49	15.25	4.24
P	RRD	3027	PL-O	PL41	20700100801	424	-77.46091	38.65928	1.77	1.34	0.43
P	GD	3028	PL-O	PL41	20700100801	424	-77.46049	38.65958	1.31	0.91	0.40
P	GD	3029	PL-O	PL41	20700100801	424	-77.45701	38.66032	2.74	2.04	0.69
P	GD	3030	PL-O	PL41	20700100801	424	-77.45769	38.66209	3.17	2.45	0.72
P	GD	3031	PL-O	PL41	20700100801	424	-77.45789	38.66224	0.31	0.23	0.07
P	GD	3032	PL-O	PL41	20700100801	424	-77.45702	38.6634	4.84	3.65	1.19
P	GD	3033	PL-O	PL41	20700100801	424	-77.45812	38.66397	0.70	0.57	0.13
P	GD	3034	PL-O	PL41	20700100801	424	-77.45796	38.66562	1.72	1.30	0.43
P	GD	3035	PL-O	PL41	20700100801	424	-77.45723	38.66836	3.05	2.35	0.70
P	GD	3036	PL-O	PL41	20700100801	424	-77.45189	38.66264	12.52	9.39	3.13
P	GD	3037	PL-O	PL41	20700100801	424	-77.44901	38.66186	3.17	2.41	0.76
P	RRD	3038	PL-O	PL41	20700100801	424	-77.4466	38.66073	16.68	7.19	9.49
P	RRD	3039	PL-O	PL41	20700100801	424	-77.44656	38.66018	0.87	0.73	0.15
P	GD	3040	PL-O	PL41	20700100801	424	-77.45189	38.66385	3.09	2.59	0.50
P	GD	3041	PL-O	PL41	20700100801	424	-77.45262	38.66505	0.70	0.49	0.21
P	GD	3042	PL-O	PL41	20700100801	424	-77.45158	38.66542	3.55	2.80	0.75
P	GD	3043	PL-O	PL41	20700100801	424	-77.45346	38.66628	0.42	0.34	0.08
P	GD	3044	PL-O	PL41	20700100801	424	-77.45351	38.66621	3.52	2.55	0.97

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	3046	PL-O	PL41	20700100801	424	-77.45457	38.67298	1.16	0.87	0.29
P	GD	3047	PL-O	PL41	20700100801	424	-77.45563	38.67207	1.92	1.53	0.38
P	GD	3048	PL-O	PL41	20700100801	424	-77.45451	38.67069	0.59	0.50	0.09
P	GD	3049	PL-O	PL41	20700100801	424	-77.45443	38.67056	4.41	3.22	1.19
P	GD	3050	PL-O	PL41	20700100801	424	-77.44559	38.66557	2.12	1.70	0.42
P	GD	3051	PL-O	PL41	20700100801	424	-77.44736	38.66664	1.52	1.12	0.40
P	STP	3052	PL-O	PL41	20700100801	424	-77.44305	38.66357	6.64	5.29	1.35
P	RRD	3053	PL-O	PL41	20700100801	422	-77.43559	38.67195	1.53	1.16	0.37
P	STP	3054	PL-O	PL41	20700100801	422	-77.43531	38.66989	3.41	2.47	0.95
P	RRD	3055	PL-O	PL41	20700100801	422	-77.43703	38.66953	0.13	0.11	0.02
P	GD	3056	PL-O	PL41	20700100801	422	-77.43642	38.66756	1.00	0.75	0.25
P	GD	3057	PL-O	PL41	20700100801	422	-77.43621	38.66733	2.28	1.74	0.53
P	GD	3058	PL-O	PL41	20700100801	422	-77.43475	38.66819	2.42	1.53	0.89
P	RRD	3059	PL-O	PL41	20700100801	422	-77.43433	38.66664	0.83	0.66	0.17
P	GD	3060	PL-O	PL41	20700100801	422	-77.43612	38.66298	6.06	4.68	1.38
P	GD	3061	PL-O	PL41	20700100801	422	-77.43723	38.66339	1.79	1.04	0.75
P	GD	3062	PL-O	PL41	20700100801	422	-77.43773	38.66068	1.11	0.87	0.24
P	GD	3063	PL-O	PL41	20700100801	422	-77.43845	38.66024	1.87	1.46	0.41
P	GD	3064	PL-O	PL41	20700100801	422	-77.43678	38.66032	2.64	2.06	0.58
P	GD	3065	PL-O	PL41	20700100801	422	-77.43661	38.66114	0.30	0.25	0.05
P	GD	3066	PL-O	PL41	20700100801	422	-77.4368	38.66236	0.23	0.19	0.04
P	STP	3067	PL-O	PL41	20700100801	422	-77.43264	38.66008	1.33	1.11	0.22
P	GD	3068	PL-O	PL41	20700100801	422	-77.43185	38.6647	12.79	8.79	4.00
P	RRD	3069	PL-O	PL41	20700100801	422	-77.43173	38.66558	1.52	1.14	0.39
P	RRD	3070	PL-O	PL41	20700100801	422	-77.43161	38.66529	1.76	1.36	0.40
P	RRD	3071	PL-O	PL41	20700100801	422	-77.43147	38.6662	1.28	1.00	0.28
P	STP	3072	PL-O	PL41	20700100801	422	-77.43017	38.66807	7.03	5.02	2.01
P	GD	3073	PL-O	PL41	20700100801	422	-77.4292	38.66904	1.43	1.12	0.31
P	RRD	3074	PL-O	PL41	20700100801	422	-77.42829	38.6697	2.13	1.45	0.69
P	GD	3075	PL-O	PL41	20700100801	422	-77.42885	38.66927	0.59	0.44	0.15
P	RRD	3076	PL-O	PL41	20700100801	422	-77.42799	38.67053	2.09	1.29	0.80
P	GD	3077	PL-O	PL41	20700100801	422	-77.42834	38.67168	2.78	1.89	0.88
P	RRD	3078	PL-O	PL41	20700100801	422	-77.42806	38.67163	2.85	1.70	1.15
P	RRD	3079	PL-O	PL41	20700100801	422	-77.42687	38.6702	3.00	2.17	0.83
P	GD	3080	PL-O	PL41	20700100801	422	-77.42742	38.67273	2.50	1.52	0.97
P	RRD	3081	PL-O	PL41	20700100801	422	-77.42623	38.67242	1.03	0.73	0.30
P	RRD	3082	PL-O	PL41	20700100801	422	-77.42747	38.66892	4.87	3.52	1.35

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	3083	PL-O	PL41	20700100801	422	-77.42809	38.66764	0.63	0.48	0.15
P	RRD	3084	PL-O	PL41	20700100801	422	-77.42832	38.66627	1.18	0.87	0.30
P	STP	3085	PL-O	PL41	20700100801	422	-77.42788	38.66554	1.83	1.32	0.52
P	RRD	3086	PL-O	PL41	20700100801	422	-77.42809	38.66441	1.29	0.99	0.30
P	RRD	3087	PL-O	PL41	20700100801	422	-77.42763	38.66388	4.24	3.17	1.08
P	GD	3088	PL-O	PL41	20700100801	422	-77.42817	38.66295	12.62	8.99	3.62
P	RRD	3089	PL-O	PL41	20700100801	422	-77.42764	38.66648	0.44	0.38	0.06
P	RRD	3090	PL-O	PL41	20700100801	422	-77.42494	38.67211	0.04	0.03	0.00
P	RRD	3091	PL-O	PL41	20700100801	422	-77.42482	38.67219	13.73	10.04	3.70
P	GD	3094	PL-O	PL41	20700100801	422	-77.42389	38.66158	10.24	7.96	2.28
P	GD	3097	PL-O	PL41	20700100801	422	-77.42196	38.66982	13.19	10.16	3.02
P	GD	3098	PL-O	PL41	20700100801	422	-77.42358	38.67165	4.28	3.22	1.06
P	GD	3099	PL-O	PL41	20700100801	420	-77.40835	38.66973	0.41	0.33	0.08
P	RRD	3100	PL-O	PL41	20700100801	420	-77.4099	38.67046	6.26	4.97	1.29
P	RRD	3101	PL-O	PL41	20700100801	420	-77.40767	38.67247	0.58	0.36	0.22
P	GD	3102	PL-O	PL41	20700100801	420	-77.40992	38.67291	7.73	5.94	1.80
P	RRD	3103	PL-O	PL41	20700100801	420	-77.40764	38.6664	4.29	3.39	0.90
P	GD	3104	PL-O	PL41	20700100801	420	-77.40816	38.66403	5.89	4.52	1.37
P	RRD	3105	PL-O	PL49	20700100804	805	-77.39689	38.66596	7.16	4.14	3.03
P	RRD	3106	PL-O	PL49	20700100804	805	-77.39645	38.66605	0.93	0.61	0.32
P	RRD	3107	PL-O	PL49	20700100804	805	-77.39854	38.66543	11.65	7.79	3.86
P	STP	3108	PL-O	PL49	20700100804	805	-77.39617	38.66657	2.38	1.76	0.61
P	STP	3109	PL-O	PL49	20700100804	805	-77.39542	38.66635	14.51	11.03	3.48
P	STP	3110	PL-O	PL49	20700100804	805	-77.39457	38.6671	0.37	0.26	0.11
P	RRD	3111	PL-O	PL49	20700100804	805	-77.39428	38.66781	49.31	31.67	17.65
P	GD	3112	PL-O	PL49	20700100804	805	-77.3932	38.66726	8.72	6.54	2.18
P	RRD	3113	PL-O	PL49	20700100804	805	-77.39257	38.66772	3.98	2.27	1.70
P	RRD	3114	PL-O	PL49	20700100804	805	-77.39226	38.66719	0.76	0.51	0.25
P	RRD	3115	PL-O	PL49	20700100804	805	-77.39151	38.66739	2.53	1.78	0.74
P	RRD	3116	PL-O	PL49	20700100804	805	-77.39154	38.66711	4.50	3.31	1.19
P	STP	3117	PL-O	PL49	20700100804	805	-77.39174	38.66837	1.28	0.68	0.60
P	RRD	3118	PL-O	PL49	20700100804	805	-77.39072	38.6679	0.85	0.71	0.14
P	RRD	3119	PL-O	PL49	20700100804	805	-77.39074	38.66864	1.59	1.25	0.34
P	STP	3120	PL-O	PL49	20700100804	805	-77.39008	38.66901	0.78	0.50	0.28
P	GD	3121	PL-O	PL49	20700100804	805	-77.39027	38.66901	0.50	0.40	0.11
P	GD	3122	PL-O	PL49	20700100804	805	-77.38947	38.66928	11.21	7.50	3.71
P	RRD	3124	PL-P	PL51	20700110103	710	-77.40662	38.66006	1.92	1.17	0.74

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	3125	PL-O	PL49	20700100804	805	-77.39325	38.66055	12.31	9.78	2.52
P	GD	3126	PL-O	PL49	20700100804	805	-77.39354	38.6604	1.29	0.94	0.35
P	GD	3127	PL-O	PL49	20700100804	805	-77.39051	38.65931	4.72	3.45	1.26
P	GD	3128	PL-O	PL49	20700100804	805	-77.38974	38.67245	6.19	4.07	2.12
P	STP	3130	PL-O	PL49	20700100804	805	-77.38826	38.67009	1.57	1.11	0.47
P	RRD	3131	PL-O	PL49	20700100804	805	-77.38795	38.67009	51.32	34.95	16.37
P	RRD	3132	PL-O	PL49	20700100804	805	-77.38786	38.67114	2.83	1.76	1.07
P	RRD	3133	PL-O	PL49	20700100804	805	-77.38867	38.67202	6.50	3.12	3.38
P	RRD	3134	PL-O	PL49	20700100804	805	-77.38789	38.6691	1.06	0.52	0.55
P	RRD	3135	PL-O	PL49	20700100804	805	-77.38628	38.66916	4.70	2.86	1.84
P	RRD	3136	PL-O	PL49	20700100804	805	-77.38634	38.66849	2.78	1.66	1.11
P	RRD	3137	PL-O	PL49	20700100804	805	-77.3853	38.66854	8.82	5.27	3.55
P	RRD	3138	PL-O	PL49	20700100804	805	-77.38644	38.66755	2.72	2.25	0.48
P	RRD	3139	PL-O	PL49	20700100804	805	-77.38321	38.66355	6.38	4.94	1.45
P	RRD	3140	PL-O	PL49	20700100804	805	-77.38142	38.66249	8.10	6.09	2.01
P	RRD	3141	PL-O	PL49	20700100804	805	-77.38129	38.66343	0.06	0.05	0.01
P	GD	3142	PL-O	PL49	20700100804	805	-77.38663	38.66539	36.30	27.15	9.15
P	RRD	3143	PL-O	PL49	20700100804	805	-77.38666	38.66522	16.02	12.10	3.92
P	GD	3144	PL-O	PL49	20700100804	805	-77.38598	38.66541	5.20	4.08	1.12
P	GD	3145	PL-O	PL49	20700100804	805	-77.3839	38.66713	2.01	1.47	0.54
P	RRD	3146	PL-O	PL49	20700100804	805	-77.38269	38.66559	1.44	0.71	0.73
P	RRD	3147	PL-O	PL49	20700100804	805	-77.37885	38.66184	46.92	35.63	11.29
P	RRD	3148	PL-O	PL49	20700100804	805	-77.37526	38.6596	4.48	2.84	1.64
P	RRD	3149	PL-O	PL49	20700100804	805	-77.37421	38.65956	12.15	8.46	3.69
P	GD	3151	PL-O	PL49	20700100804	805	-77.38261	38.66845	20.59	13.20	7.39
P	RRD	3152	PL-O	PL49	20700100804	805	-77.38216	38.66968	15.19	11.23	3.96
P	RRD	3153	PL-O	PL49	20700100804	810	-77.3723	38.66471	12.55	9.29	3.26
P	STP	3154	PL-O	PL49	20700100804	810	-77.37295	38.66991	13.26	9.35	3.91
P	CD	3155	PL-O	PL49	20700100804	810	-77.37263	38.66962	5.14	3.88	1.26
P	RRD	3156	PL-O	PL49	20700100804	810	-77.37131	38.66154	5.73	4.29	1.44
P	RRD	3157	PL-O	PL49	20700100804	810	-77.37182	38.66294	2.18	1.63	0.55
P	RRD	3158	PL-O	PL49	20700100804	810	-77.37032	38.66265	2.43	1.09	1.34
P	STP	3161	PL-O	PL49	20700100804	810	-77.3698	38.6639	1.66	1.16	0.50
P	STP	3162	PL-O	PL49	20700100804	810	-77.36973	38.66405	10.91	8.17	2.74
P	STP	3163	PL-O	PL49	20700100804	810	-77.37021	38.66463	3.00	1.47	1.52
P	STP	3164	PL-O	PL49	20700100804	810	-77.37132	38.66607	2.66	1.82	0.85
P	RRD	3165	PL-O	PL49	20700100804	810	-77.36848	38.66623	2.34	1.94	0.40

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	3166	PL-O	PL49	20700100804	810	-77.36694	38.66658	12.88	10.58	2.30
P	RRD	3167	PL-O	PL49	20700100804	810	-77.36523	38.66826	18.08	14.66	3.41
P	RRD	3168	PL-O	PL49	20700100804	810	-77.36391	38.67001	4.44	3.55	0.89
P	RRD	3169	PL-O	PL49	20700100804	815	-77.36087	38.66384	14.58	10.15	4.43
P	STP	3170	PL-O	PL49	20700100804	815	-77.36131	38.66642	2.56	1.71	0.85
P	RRD	3171	PL-O	PL49	20700100804	815	-77.35999	38.66293	8.98	5.37	3.62
P	RRD	3172	PL-O	PL49	20700100804	815	-77.35973	38.66284	1.86	1.68	0.18
P	RRD	3177	PL-O	PL49	20700100804	820	-77.35543	38.67075	29.30	19.76	9.53
P	RRD	3178	PL-O	PL49	20700100804	820	-77.35523	38.67056	5.24	3.32	1.92
P	RRD	3179	PL-O	PL49	20700100804	810	-77.37128	38.66761	3.15	2.34	0.81
P	RRD	3180	PL-O	PL49	20700100804	820	-77.35287	38.66441	23.99	18.05	5.95
P	RRD	3181	PL-O	PL49	20700100804	820	-77.35194	38.66462	11.03	7.99	3.04
P	RRD	3182	PL-O	PL49	20700100804	820	-77.35117	38.66498	19.06	14.07	4.98
P	RRD	3183	PL-O	PL49	20700100804	820	-77.35073	38.66499	6.97	5.01	1.95
P	RRD	3184	PL-O	PL49	20700100804	820	-77.34973	38.666	2.44	1.84	0.60
P	RRD	3186	PL-O	PL49	20700100804	820	-77.34861	38.66673	1.79	1.62	0.17
P	RRD	3187	PL-O	PL49	20700100804	820	-77.34793	38.66744	1.03	0.85	0.18
P	RRD	3188	PL-O	PL49	20700100804	820	-77.34881	38.66886	0.42	0.32	0.10
P	RRD	3189	PL-O	PL49	20700100804	820	-77.35	38.66875	0.58	0.48	0.10
P	BMP	3190	PL-O	PL49	20700100804	820	-77.35046	38.66945	0.68	0.54	0.14
P	STP	3191	PL-O	PL49	20700100804	820	-77.35094	38.66977	1.31	0.76	0.55
P	RRD	3192	PL-O	PL49	20700100804	820	-77.35023	38.67078	21.92	13.52	8.40
P	RRD	3193	PL-O	PL49	20700100804	820	-77.35097	38.67107	6.69	3.20	3.49
P	RRD	3194	PL-O	PL49	20700100804	820	-77.3529	38.67191	5.81	3.02	2.80
P	STP	3195	PL-O	PL49	20700100804	820	-77.35162	38.6722	16.76	9.24	7.51
P	STP	3196	PL-O	PL49	20700100804	820	-77.34726	38.669	6.36	4.66	1.69
P	STP	3197	PL-O	PL49	20700100804	820	-77.34634	38.66734	1.12	0.84	0.28
P	RRD	3199	PL-O	PL49	20700100804	820	-77.34449	38.66677	2.35	1.79	0.56
P	STP	3200	PL-O	PL49	20700100804	820	-77.34335	38.66745	6.22	4.60	1.63
P	RRD	3201	PL-O	PL49	20700100804	820	-77.34665	38.66497	1.11	0.89	0.22
P	STP	3202	PL-O	PL49	20700100804	820	-77.34615	38.66447	2.19	1.60	0.59
P	STP	3203	PL-O	PL49	20700100804	820	-77.34585	38.66502	1.74	1.32	0.42
P	STP	3204	PL-O	PL49	20700100804	820	-77.3456	38.66423	20.74	15.48	5.26
P	STP	3205	PL-O	PL49	20700100804	820	-77.3453	38.66303	9.32	6.79	2.53
P	STP	3206	PL-O	PL49	20700100804	820	-77.34457	38.66274	21.43	15.60	5.83
P	STP	3207	PL-O	PL49	20700100804	820	-77.34441	38.66185	0.67	0.49	0.18
P	RRD	3208	PL-O	PL49	20700100804	820	-77.34441	38.6613	11.90	8.43	3.47

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	3209	PL-O	PL49	20700100804	820	-77.34475	38.66117	3.11	2.16	0.95
P	RRD	3210	PL-O	PL49	20700100804	820	-77.34368	38.66042	1.33	0.95	0.38
P	RRD	3211	PL-O	PL49	20700100804	820	-77.34357	38.65927	12.05	8.98	3.07
P	RRD	3212	PL-O	PL49	20700100804	820	-77.34387	38.65913	2.25	1.54	0.71
P	RRD	3213	PL-O	PL49	20700100804	820	-77.34273	38.66868	64.22	43.44	20.78
P	STP	3214	PL-O	PL49	20700100804	820	-77.343	38.66961	5.36	4.28	1.08
P	STP	3215	PL-O	PL49	20700100804	820	-77.34283	38.67101	13.54	10.23	3.31
P	STP	3216	PL-O	PL49	20700100804	820	-77.34311	38.67157	6.25	4.75	1.50
P	STP	3217	PL-O	PL49	20700100804	820	-77.34264	38.67231	2.32	1.67	0.65
P	STP	3218	PL-O	PL49	20700100804	825	-77.33766	38.66021	6.80	4.88	1.92
P	STP	3219	PL-O	PL47	20700100802	442	-77.3259	38.66865	10.89	7.73	3.16
P	STP	3220	PL-O	PL47	20700100802	442	-77.32555	38.66873	1.04	0.74	0.30
P	STP	3224	PL-O	PL49	20700100804	825	-77.33631	38.66074	77.85	53.11	24.73
P	BMP	3225	PL-O	PL47	20700100802	442	-77.32887	38.66764	10.30	6.19	4.11
P	RRD	3226	PL-O	PL47	20700100802	442	-77.32964	38.66991	7.84	3.07	4.77
P	RRD	3227	PL-O	PL47	20700100802	442	-77.32838	38.67128	0.44	0.35	0.09
P	RRD	3228	PL-O	PL47	20700100802	442	-77.322	38.67084	2.33	1.64	0.69
P	RRD	3229	PL-O	PL47	20700100802	442	-77.32171	38.67096	1.78	1.27	0.50
P	STP	3230	PL-O	PL47	20700100802	442	-77.32208	38.67179	1.44	0.62	0.82
P	GD	3231	PL-O	PL49	20700100804	825	-77.33716	38.65922	0.40	0.28	0.12
P	RRD	3232	PL-O	PL49	20700100804	825	-77.33659	38.65976	2.61	1.82	0.79
P	STP	3233	PL-O	PL49	20700100804	825	-77.33418	38.65982	0.49	0.34	0.15
P	RRD	3235	PL-O	PL47	20700100802	446	-77.32063	38.66252	9.13	6.50	2.63
P	RRD	3236	PL-O	PL47	20700100802	446	-77.3195	38.6629	2.82	2.03	0.79
P	GD	3237	PL-O	PL47	20700100802	446	-77.31773	38.66777	0.99	0.75	0.24
P	STP	3239	PL-O	PL47	20700100802	446	-77.31363	38.65954	4.24	1.86	2.38
P	STP	3240	PL-O	PL47	20700100802	446	-77.31521	38.65849	0.11	0.09	0.02
P	STP	3241	PL-O	PL47	20700100802	446	-77.3154	38.65986	2.16	1.30	0.87
P	STP	3242	PL-O	PL47	20700100802	446	-77.31552	38.65931	1.59	0.64	0.94
P	RRD	3243	PL-O	PL47	20700100802	446	-77.31522	38.66056	1.27	1.09	0.18
P	STP	3244	PL-O	PL47	20700100802	446	-77.31527	38.66088	2.31	1.21	1.10
P	STP	3245	PL-O	PL47	20700100802	446	-77.31506	38.66143	0.23	0.10	0.13
P	RRD	3246	PL-O	PL47	20700100802	446	-77.31472	38.66159	3.36	1.50	1.86
P	RRD	3247	PL-O	PL47	20700100802	446	-77.31503	38.66191	3.37	1.91	1.46
P	RRD	3248	PL-O	PL47	20700100802	446	-77.31445	38.66222	2.70	2.09	0.61
P	GD	3249	PL-O	PL47	20700100802	446	-77.31493	38.66306	1.90	1.39	0.51
P	RRD	3250	PL-O	PL47	20700100802	446	-77.31351	38.66388	5.81	4.15	1.66

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	3251	PL-O	PL47	20700100802	446	-77.31585	38.66524	0.90	0.60	0.31
P	RRD	3252	PL-O	PL47	20700100802	446	-77.31921	38.66249	2.83	2.02	0.81
P	RRD	3253	PL-O	PL47	20700100802	446	-77.31868	38.66271	2.17	1.16	1.01
P	GD	3254	PL-O	PL47	20700100802	446	-77.31645	38.66573	4.16	3.10	1.06
P	GD	3255	PL-O	PL47	20700100802	446	-77.31639	38.66605	1.95	1.35	0.60
P	GD	3256	PL-O	PL47	20700100802	446	-77.31707	38.66671	2.45	1.71	0.74
P	GD	3257	PL-O	PL47	20700100802	446	-77.3128	38.66678	7.10	5.03	2.07
P	RRD	3258	PL-O	PL47	20700100802	446	-77.31175	38.66498	1.23	0.96	0.27
P	GD	3259	PL-O	PL47	20700100802	446	-77.31059	38.6685	1.11	0.84	0.27
P	CD	3260	PL-O	PL47	20700100802	446	-77.31196	38.66626	0.19	0.14	0.05
P	CD	3261	PL-O	PL47	20700100802	446	-77.3118	38.66612	1.46	1.27	0.19
P	RRD	3262	PL-O	PL47	20700100802	446	-77.3115	38.66658	0.73	0.55	0.17
P	CD	3263	PL-O	PL47	20700100802	446	-77.31137	38.66637	0.04	0.04	0.00
P	STP	3264	PL-O	PL47	20700100802	446	-77.3079	38.66817	3.11	2.23	0.88
P	RRD	3265	PL-O	PL47	20700100802	446	-77.3075	38.66814	0.65	0.49	0.16
P	GD	3266	PL-O	PL47	20700100802	446	-77.30537	38.66869	4.47	3.16	1.31
P	GD	3267	PL-O	PL47	20700100802	445	-77.30187	38.67068	18.39	9.11	9.27
P	RRD	3268	PL-O	PL47	20700100802	446	-77.30283	38.66771	1.24	0.92	0.32
P	STP	3269	PL-O	PL47	20700100802	446	-77.31036	38.6597	33.13	19.76	13.38
P	RRD	3270	PL-O	PL47	20700100802	446	-77.3101	38.66038	2.11	1.26	0.85
P	RRD	3271	PL-O	PL47	20700100802	446	-77.30993	38.66095	2.41	0.90	1.50
P	STP	3272	PL-O	PL47	20700100802	446	-77.31071	38.66131	1.54	1.11	0.43
P	GD	3273	PL-O	PL47	20700100802	446	-77.30936	38.66193	2.06	1.50	0.55
P	STP	3274	PL-O	PL47	20700100802	446	-77.30925	38.66182	1.37	0.88	0.49
P	RRD	3275	PL-O	PL47	20700100802	446	-77.30915	38.66252	1.17	0.81	0.36
P	RRD	3276	PL-O	PL47	20700100802	446	-77.30848	38.66203	13.16	9.58	3.59
P	RRD	3277	PL-O	PL47	20700100802	446	-77.30925	38.66338	1.10	0.87	0.23
P	GD	3278	PL-O	PL47	20700100802	446	-77.30887	38.6632	0.72	0.54	0.19
P	GD	3279	PL-O	PL47	20700100802	446	-77.30888	38.66399	0.61	0.47	0.14
P	RRD	3280	PL-O	PL47	20700100802	446	-77.30947	38.66434	2.23	1.67	0.56
P	RRD	3281	PL-O	PL47	20700100802	446	-77.3086	38.66572	0.28	0.20	0.07
P	CD	3282	PL-O	PL47	20700100802	446	-77.30694	38.66332	1.65	1.23	0.42
P	CD	3283	PL-O	PL47	20700100802	446	-77.30672	38.6629	0.20	0.16	0.04
P	CD	3284	PL-O	PL47	20700100802	446	-77.3065	38.66306	0.61	0.49	0.12
P	RRD	3285	PL-O	PL47	20700100802	446	-77.3062	38.66274	15.93	10.61	5.32
P	GD	3286	PL-O	PL47	20700100802	446	-77.30561	38.66176	1.86	1.33	0.53
P	GD	3287	PL-O	PL47	20700100802	446	-77.30515	38.6618	36.11	20.99	15.12

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	3288	PL-O	PL47	20700100802	446	-77.30706	38.66425	3.14	2.34	0.81
P	RRD	3289	PL-O	PL47	20700100802	446	-77.30766	38.6652	0.24	0.20	0.04
P	RRD	3290	PL-O	PL47	20700100802	446	-77.30759	38.66648	2.94	2.19	0.75
P	STP	3291	PL-O	PL47	20700100802	445	-77.31156	38.67049	6.06	4.43	1.63
P	RRD	3292	PL-O	PL47	20700100802	445	-77.30924	38.67176	1.75	1.31	0.44
P	GD	3293	PL-O	PL47	20700100802	446	-77.30634	38.66803	0.19	0.16	0.04
P	GD	3296	PL-O	PL47	20700100802	444	-77.2921	38.66456	8.09	6.18	1.91
P	GD	3297	PL-O	PL47	20700100802	444	-77.29259	38.66513	2.28	1.63	0.65
P	RRD	3298	PL-O	PL47	20700100802	444	-77.29413	38.66517	0.93	0.70	0.23
P	STP	3299	PL-O	PL47	20700100802	444	-77.2947	38.663	3.90	2.93	0.97
P	RRD	3300	PL-O	PL47	20700100802	444	-77.29436	38.66323	3.68	2.49	1.19
P	STP	3302	PL-O	PL47	20700100802	444	-77.29081	38.6668	3.12	2.18	0.94
P	RRD	3303	PL-O	PL47	20700100802	444	-77.29425	38.66619	2.06	1.46	0.60
P	RRD	3304	PL-O	PL47	20700100802	444	-77.2945	38.66693	5.56	3.85	1.70
P	RRD	3305	PL-O	PL47	20700100802	444	-77.29449	38.66742	0.80	0.52	0.28
P	RRD	3306	PL-O	PL47	20700100802	444	-77.29524	38.66933	3.89	2.49	1.39
P	RRD	3307	PL-O	PL47	20700100802	444	-77.29411	38.67008	2.04	1.53	0.51
P	RRD	3308	PL-O	PL47	20700100802	444	-77.29288	38.66875	1.85	1.34	0.51
P	RRD	3312	PL-O	PL50	20700100805	905	-77.28251	38.65823	0.35	0.24	0.11
P	RRD	3313	PL-O	PL50	20700100805	905	-77.28182	38.65855	0.48	0.27	0.22
P	RRD	3320	PL-O	PL50	20700100805	905	-77.2816	38.66028	0.19	0.18	0.01
P	STP	3321	PL-O	PL50	20700100805	905	-77.27377	38.66336	2.53	2.03	0.50
P	STP	3322	PL-O	PL50	20700100805	905	-77.27419	38.66175	0.30	0.24	0.05
P	RRD	3323	PL-O	PL50	20700100805	905	-77.27668	38.66831	0.06	0.05	0.00
P	RRD	3324	PL-O	PL50	20700100805	905	-77.2765	38.66826	18.66	15.50	3.16
P	RRD	3325	PL-O	PL50	20700100805	905	-77.27641	38.66832	0.06	0.05	0.00
P	RRD	3326	PL-O	PL50	20700100805	905	-77.27335	38.66782	26.82	16.30	10.52
P	RRD	3327	PL-O	PL50	20700100805	905	-77.27324	38.66754	1.64	0.77	0.88
P	RRD	3328	PL-O	PL50	20700100805	905	-77.27361	38.66732	0.83	0.36	0.46
P	STP	3330	PL-O	PL50	20700100805	905	-77.2711	38.66776	8.85	5.40	3.45
P	STP	3331	PL-O	PL50	20700100805	905	-77.2709	38.66541	0.69	0.56	0.14
P	STP	3332	PL-O	PL50	20700100805	905	-77.27099	38.66481	3.60	2.77	0.84
P	STP	3333	PL-O	PL50	20700100805	905	-77.26981	38.66545	0.65	0.52	0.13
P	GD	3334	PL-O	PL50	20700100805	905	-77.26849	38.66539	5.95	4.22	1.73
P	STP	3335	PL-O	PL50	20700100805	905	-77.26905	38.66437	19.92	15.49	4.44
P	GD	3336	PL-O	PL50	20700100805	905	-77.26731	38.66557	0.57	0.52	0.05
P	RRD	3337	PL-O	PL48	20700100803	450	-77.26765	38.66956	4.42	2.27	2.16

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	3338	PL-O	PL48	20700100803	450	-77.26732	38.66964	0.29	0.23	0.07
P	RRD	3339	PL-O	PL48	20700100803	450	-77.26694	38.67035	1.08	0.36	0.72
P	RRD	3340	PL-O	PL48	20700100803	450	-77.26823	38.66977	3.11	1.59	1.52
P	RRD	3341	PL-O	PL48	20700100803	450	-77.26884	38.66968	6.95	3.86	3.10
P	STP	3342	PL-O	PL50	20700100805	905	-77.26729	38.66426	2.63	1.89	0.74
P	RRD	3345	PL-O	PL48	20700100803	450	-77.26546	38.66998	1.50	0.70	0.80
P	RRD	3346	PL-O	PL48	20700100803	450	-77.26662	38.67018	1.36	0.58	0.78
P	RRD	3347	PL-O	PL48	20700100803	450	-77.26625	38.67017	1.93	0.58	1.35
P	RRD	3348	PL-O	PL48	20700100803	450	-77.26527	38.67043	0.77	0.32	0.45
P	RRD	3350	PL-O	PL48	20700100803	450	-77.26265	38.6701	1.07	0.45	0.62
P	RRD	3351	PL-O	PL48	20700100803	450	-77.26222	38.67002	0.38	0.22	0.16
P	GD	3352	PL-O	PL48	20700100803	450	-77.25963	38.66876	2.63	1.84	0.79
P	GD	3353	PL-O	PL48	20700100803	450	-77.25775	38.66696	16.69	12.43	4.26
P	STP	3354	PL-O	PL48	20700100803	450	-77.25969	38.667	19.12	14.27	4.85
P	GD	3355	PL-O	PL48	20700100803	450	-77.25951	38.66703	0.56	0.44	0.12
P	STP	3356	PL-O	PL48	20700100803	450	-77.25694	38.66856	0.59	0.19	0.40
P	RRD	3357	PL-O	PL48	20700100803	450	-77.25547	38.66806	2.37	1.09	1.28
P	RRD	3358	PL-O	PL48	20700100803	450	-77.25441	38.66773	1.71	0.70	1.01
P	RRD	3359	PL-O	PL48	20700100803	450	-77.25347	38.66746	0.88	0.26	0.61
P	STP	3360	PL-O	PL48	20700100803	450	-77.25549	38.66618	1.94	1.00	0.94
P	STP	3361	PL-O	PL48	20700100803	450	-77.25253	38.66679	1.19	0.46	0.73
P	STP	3364	PL-O	PL48	20700100803	450	-77.25499	38.66501	1.40	0.76	0.64
P	STP	3365	PL-O	PL48	20700100803	450	-77.25325	38.66559	1.41	0.58	0.83
P	RRD	3366	PL-O	PL48	20700100803	450	-77.25348	38.66529	0.31	0.21	0.10
P	STP	3370	PL-O	PL50	20700100805	905	-77.2667	38.66542	11.16	8.37	2.79
P	STP	3371	PL-O	PL50	20700100805	910	-77.26507	38.66436	2.54	1.83	0.71
P	STP	3372	PL-O	PL50	20700100805	910	-77.26484	38.66397	1.70	1.22	0.48
P	RRD	3373	PL-O	PL50	20700100805	910	-77.26456	38.66327	0.62	0.44	0.18
P	STP	3374	PL-O	PL50	20700100805	910	-77.26456	38.6627	32.36	24.32	8.04
P	STP	3375	PL-O	PL50	20700100805	910	-77.26373	38.66243	6.30	4.47	1.83
P	GD	3376	PL-O	PL50	20700100805	910	-77.26306	38.66175	8.95	6.23	2.72
P	STP	3381	PL-O	PL50	20700100805	910	-77.26075	38.65969	3.67	2.78	0.89
P	STP	3382	PL-O	PL50	20700100805	910	-77.26035	38.65942	3.06	2.03	1.03
P	RRD	3383	PL-O	PL50	20700100805	910	-77.26032	38.65882	10.48	7.79	2.69
P	STP	3384	PL-O	PL50	20700100805	910	-77.25961	38.65844	17.17	11.62	5.55
P	STP	3385	PL-O	PL50	20700100805	910	-77.25981	38.65816	2.16	1.64	0.52
P	STP	3386	PL-O	PL50	20700100805	910	-77.26594	38.66448	1.27	0.98	0.28

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	3392	PL-O	PL48	20700100803	400	-77.24073	38.66589	3.42	1.86	1.56
P	STP	3398	PL-O	PL48	20700100803	400	-77.23431	38.65513	20.75	11.49	9.26
P	RRD	3399	PL-O	PL48	20700100803	400	-77.23186	38.65499	1.91	0.72	1.18
P	RRD	3403	PL-O	PL48	20700100803	400	-77.23244	38.65272	0.51	0.05	0.46
P	RRD	3404	PL-O	PL48	20700100803	400	-77.23301	38.65326	4.73	1.28	3.46
P	RRD	3405	PL-O	PL48	20700100803	400	-77.23351	38.65381	1.24	0.31	0.93
P	RRD	3406	PL-O	PL48	20700100803	400	-77.23347	38.65399	3.99	2.66	1.33
P	STP	3407	PL-O	PL48	20700100803	400	-77.23359	38.65401	1.54	0.20	1.34
P	STP	3408	PL-O	PL48	20700100803	400	-77.2338	38.65373	5.19	2.41	2.78
P	GD	3409	PL-O	PL48	20700100803	400	-77.23386	38.65355	0.67	0.54	0.13
P	GD	3410	PL-O	PL48	20700100803	400	-77.23366	38.65338	1.47	1.41	0.06
P	STP	3412	PL-O	PL48	20700100803	400	-77.23711	38.65706	1.32	0.81	0.51
P	STP	3413	PL-O	PL48	20700100803	452	-77.23866	38.65353	5.64	1.62	4.02
P	GD	3416	PL-O	PL48	20700100803	452	-77.24093	38.65193	31.20	22.37	8.83
P	STP	3425	PL-O	PL50	20700100805	915	-77.26215	38.64489	1.54	1.15	0.39
P	RRD	3427	PL-O	PL50	20700100805	910	-77.26485	38.64822	2.02	0.90	1.11
P	STP	3431	PL-O	PL50	20700100805	910	-77.26505	38.6503	0.35	0.17	0.18
P	RRD	3432	PL-O	PL50	20700100805	910	-77.26467	38.65036	1.22	0.62	0.60
P	RRD	3433	PL-O	PL50	20700100805	910	-77.26609	38.6503	0.86	0.58	0.28
P	STP	3434	PL-O	PL50	20700100805	910	-77.26543	38.65606	8.33	6.40	1.94
P	STP	3446	PL-O	PL50	20700100805	910	-77.25366	38.64964	2.12	1.73	0.39
P	GD	3447	PL-O	PL50	20700100805	915	-77.25161	38.64701	31.13	18.92	12.20
P	GD	3449	PL-O	PL50	20700100805	910	-77.25974	38.65728	6.20	4.68	1.52
P	RRD	3450	PL-O	PL50	20700100805	910	-77.25481	38.65666	19.64	14.80	4.84
P	RRD	3451	PL-O	PL50	20700100805	910	-77.25745	38.65725	5.91	4.39	1.52
P	STP	3452	PL-O	PL50	20700100805	915	-77.25945	38.64539	8.08	4.72	3.36
P	RRD	3453	PL-O	PL50	20700100805	915	-77.25822	38.64506	1.35	0.97	0.38
P	RRD	3454	PL-O	PL50	20700100805	915	-77.25674	38.64441	4.96	2.56	2.39
P	STP	3455	PL-O	PL50	20700100805	910	-77.27434	38.65247	0.29	0.11	0.18
P	RRD	3458	PL-O	PL50	20700100805	910	-77.27677	38.6518	5.28	2.19	3.09
P	RRD	3460	PL-O	PL49	20700100804	840	-77.28127	38.64714	5.41	4.21	1.20
P	RRD	3461	PL-O	PL50	20700100805	910	-77.26731	38.65129	44.37	32.33	12.04
P	STP	3462	PL-O	PL50	20700100805	910	-77.26983	38.65325	24.86	13.74	11.11
P	STP	3469	PL-O	PL49	20700100804	840	-77.29214	38.6495	15.62	4.43	11.19
P	RRD	3470	PL-O	PL49	20700100804	840	-77.29103	38.64839	1.48	0.44	1.04
P	STP	3471	PL-O	PL49	20700100804	840	-77.29161	38.64769	105.89	20.79	85.10
P	RRD	3474	PL-O	PL49	20700100804	840	-77.28713	38.64657	5.79	2.37	3.42

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	3487	PL-O	PL49	20700100804	830	-77.31613	38.64549	3.85	1.82	2.03
P	RRD	3488	PL-O	PL49	20700100804	830	-77.31741	38.64727	12.99	6.33	6.66
P	STP	3490	PL-O	PL49	20700100804	830	-77.31889	38.64617	2.33	1.43	0.90
P	GD	3491	PL-O	PL49	20700100804	830	-77.31858	38.64838	15.58	8.11	7.47
P	RRD	3501	PL-O	PL47	20700100802	446	-77.31616	38.65831	2.70	2.03	0.67
P	STP	3504	PL-O	PL49	20700100804	825	-77.3304	38.6548	24.67	16.95	7.72
P	STP	3505	PL-O	PL49	20700100804	825	-77.3322	38.65446	3.89	2.80	1.09
P	GD	3506	PL-O	PL49	20700100804	825	-77.33207	38.65406	0.60	0.44	0.16
P	STP	3507	PL-O	PL49	20700100804	825	-77.33292	38.65348	1.45	1.04	0.41
P	STP	3508	PL-O	PL49	20700100804	825	-77.33276	38.65335	0.71	0.51	0.20
P	RRD	3509	PL-O	PL49	20700100804	825	-77.33318	38.65298	16.61	12.27	4.34
P	RRD	3510	PL-O	PL49	20700100804	825	-77.33421	38.65243	1.34	0.97	0.37
P	RRD	3511	PL-O	PL49	20700100804	825	-77.33502	38.652	26.67	19.17	7.49
P	RRD	3512	PL-O	PL49	20700100804	825	-77.33453	38.6511	2.69	1.98	0.72
P	STP	3513	PL-O	PL49	20700100804	825	-77.33633	38.65067	3.10	2.32	0.79
P	STP	3514	PL-O	PL49	20700100804	825	-77.33597	38.65034	2.08	1.03	1.06
P	STP	3515	PL-O	PL49	20700100804	825	-77.33618	38.64942	0.21	0.07	0.13
P	STP	3516	PL-O	PL49	20700100804	825	-77.33604	38.64964	0.38	0.13	0.24
P	STP	3518	PL-O	PL49	20700100804	830	-77.32309	38.64852	2.31	2.09	0.22
P	RRD	3519	PL-O	PL49	20700100804	830	-77.32298	38.64822	3.66	2.63	1.03
P	GD	3520	PL-O	PL49	20700100804	830	-77.32314	38.64848	15.32	9.79	5.53
P	RRD	3521	PL-O	PL49	20700100804	830	-77.32157	38.6483	1.97	1.51	0.47
P	RRD	3522	PL-O	PL49	20700100804	830	-77.32194	38.64778	1.02	0.81	0.21
P	GD	3524	PL-O	PL49	20700100804	825	-77.33674	38.65838	0.78	0.50	0.27
P	BMP	3525	PL-O	PL49	20700100804	825	-77.33622	38.65808	24.27	21.01	3.26
P	RRD	3526	PL-O	PL49	20700100804	825	-77.33651	38.6581	3.12	2.74	0.38
P	STP	3527	PL-O	PL49	20700100804	825	-77.33595	38.64941	1.54	0.78	0.76
P	RRD	3528	PL-O	PL49	20700100804	825	-77.33408	38.64938	5.11	3.74	1.36
P	GD	3529	PL-O	PL49	20700100804	825	-77.33371	38.64985	1.22	0.84	0.38
P	RRD	3530	PL-O	PL49	20700100804	825	-77.33294	38.64979	0.62	0.42	0.20
P	GD	3533	PL-O	PL49	20700100804	825	-77.33082	38.65004	1.34	1.05	0.28
P	GD	3534	PL-O	PL49	20700100804	825	-77.3303	38.65025	5.13	4.01	1.12
P	RRD	3535	PL-O	PL49	20700100804	825	-77.34035	38.65032	2.10	1.54	0.57
P	STP	3536	PL-O	PL49	20700100804	825	-77.3398	38.6499	3.06	2.34	0.72
P	STP	3537	PL-O	PL49	20700100804	825	-77.34013	38.6507	6.30	4.67	1.63
P	STP	3538	PL-O	PL49	20700100804	825	-77.34014	38.65177	5.77	4.06	1.71
P	STP	3539	PL-O	PL49	20700100804	825	-77.3399	38.65154	0.64	0.39	0.24

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	3540	PL-O	PL49	20700100804	825	-77.33939	38.65263	5.41	3.84	1.57
P	RRD	3541	PL-O	PL49	20700100804	825	-77.34026	38.65324	0.95	0.57	0.37
P	RRD	3542	PL-O	PL49	20700100804	825	-77.34081	38.65433	1.19	1.04	0.15
P	RRD	3543	PL-O	PL49	20700100804	825	-77.3398	38.65493	4.29	3.73	0.56
P	STP	3544	PL-O	PL49	20700100804	825	-77.33949	38.65467	2.46	1.85	0.61
P	RRD	3545	PL-O	PL49	20700100804	825	-77.33971	38.65644	3.24	1.68	1.56
P	RRD	3547	PL-O	PL49	20700100804	825	-77.33927	38.65554	6.15	4.52	1.63
P	RRD	3548	PL-O	PL49	20700100804	825	-77.33734	38.64941	1.11	0.85	0.26
P	RRD	3549	PL-O	PL49	20700100804	825	-77.33797	38.64853	0.34	0.03	0.31
P	RRD	3550	PL-O	PL49	20700100804	825	-77.33869	38.6487	0.29	0.03	0.26
P	RRD	3557	PL-O	PL49	20700100804	820	-77.34404	38.64926	3.73	2.73	1.00
P	RRD	3558	PL-O	PL49	20700100804	820	-77.34595	38.65022	15.74	11.75	3.99
P	RRD	3559	PL-O	PL49	20700100804	820	-77.34777	38.6545	18.83	13.79	5.04
P	RRD	3560	PL-O	PL49	20700100804	820	-77.3468	38.65493	1.67	1.18	0.50
P	STP	3561	PL-O	PL49	20700100804	820	-77.347	38.65577	1.01	0.69	0.33
P	RRD	3562	PL-O	PL49	20700100804	820	-77.34639	38.65641	6.32	4.52	1.79
P	RRD	3563	PL-O	PL49	20700100804	820	-77.34592	38.65651	5.64	4.53	1.11
P	RRD	3564	PL-O	PL49	20700100804	820	-77.34557	38.65718	30.72	22.61	8.11
P	RRD	3565	PL-O	PL49	20700100804	820	-77.34518	38.657	2.50	1.90	0.60
P	STP	3566	PL-O	PL49	20700100804	820	-77.34447	38.65821	9.83	7.08	2.75
P	STP	3567	PL-O	PL49	20700100804	820	-77.34437	38.65793	5.56	3.59	1.97
P	STP	3568	PL-O	PL49	20700100804	815	-77.35288	38.64777	17.01	13.73	3.28
P	RRD	3569	PL-O	PL49	20700100804	815	-77.34937	38.64816	3.41	2.59	0.82
P	RRD	3570	PL-O	PL49	20700100804	815	-77.35029	38.64817	1.06	0.87	0.19
P	RRD	3571	PL-O	PL49	20700100804	815	-77.35126	38.64988	2.70	2.04	0.66
P	GD	3572	PL-O	PL49	20700100804	815	-77.35136	38.65001	2.23	1.71	0.51
P	RRD	3573	PL-O	PL49	20700100804	815	-77.3529	38.65139	4.70	4.21	0.49
P	RRD	3574	PL-O	PL49	20700100804	815	-77.35231	38.65171	6.86	6.19	0.68
P	RRD	3575	PL-O	PL49	20700100804	815	-77.35335	38.65214	4.83	3.60	1.23
P	RRD	3576	PL-O	PL49	20700100804	815	-77.3532	38.65246	4.61	3.10	1.51
P	RRD	3577	PL-O	PL49	20700100804	815	-77.35423	38.65421	0.63	0.49	0.14
P	RRD	3578	PL-O	PL49	20700100804	810	-77.37148	38.65619	7.22	5.34	1.89
P	STP	3579	PL-O	PL49	20700100804	810	-77.37113	38.65565	0.27	0.23	0.04
P	GD	3580	PL-O	PL49	20700100804	815	-77.37018	38.65458	28.54	21.67	6.87
P	RRD	3581	PL-O	PL49	20700100804	815	-77.36983	38.65311	0.15	0.12	0.03
P	STP	3582	PL-O	PL49	20700100804	815	-77.36964	38.6524	1.58	1.05	0.53
P	RRD	3583	PL-O	PL49	20700100804	815	-77.37202	38.65246	12.39	10.66	1.73

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	3584	PL-O	PL49	20700100804	815	-77.36845	38.65051	1.37	0.89	0.49
P	RRD	3585	PL-O	PL49	20700100804	815	-77.36768	38.65044	40.33	29.99	10.34
P	STP	3586	PL-O	PL49	20700100804	815	-77.36829	38.64994	1.30	0.90	0.39
P	RRD	3587	PL-O	PL49	20700100804	815	-77.37203	38.64845	21.38	16.66	4.72
P	RRD	3588	PL-O	PL49	20700100804	815	-77.37118	38.6489	3.69	2.88	0.81
P	STP	3591	PL-O	PL49	20700100804	815	-77.37164	38.64581	3.46	2.51	0.95
P	RRD	3592	PL-O	PL49	20700100804	815	-77.36744	38.64751	1.27	0.85	0.42
P	GD	3593	PL-O	PL49	20700100804	815	-77.36581	38.64724	27.92	21.88	6.04
P	STP	3594	PL-O	PL49	20700100804	815	-77.36586	38.64627	0.63	0.39	0.24
P	GD	3595	PL-O	PL49	20700100804	815	-77.36539	38.64544	5.57	3.94	1.63
P	STP	3596	PL-O	PL49	20700100804	815	-77.36188	38.64577	1.96	1.40	0.56
P	RRD	3597	PL-O	PL49	20700100804	815	-77.36089	38.64579	6.32	4.60	1.72
P	STP	3599	PL-O	PL49	20700100804	815	-77.35751	38.64796	3.98	2.08	1.90
P	RRD	3600	PL-O	PL49	20700100804	815	-77.35809	38.65026	2.56	1.90	0.66
P	RRD	3601	PL-O	PL49	20700100804	815	-77.35821	38.64962	7.12	5.21	1.91
P	RRD	3602	PL-O	PL49	20700100804	815	-77.35602	38.65446	16.92	12.87	4.05
P	RRD	3603	PL-O	PL49	20700100804	815	-77.3558	38.65443	0.45	0.37	0.08
P	RRD	3605	PL-O	PL49	20700100804	815	-77.35551	38.6552	0.50	0.34	0.15
P	STP	3607	PL-O	PL49	20700100804	815	-77.35702	38.65607	2.12	1.49	0.63
P	RRD	3611	PL-O	PL49	20700100804	815	-77.35796	38.65929	0.13	0.12	0.02
P	GD	3612	PL-O	PL49	20700100804	805	-77.38946	38.65878	2.51	1.58	0.92
P	GD	3613	PL-O	PL49	20700100804	805	-77.38813	38.65847	5.84	4.41	1.43
P	STP	3614	PL-O	PL49	20700100804	805	-77.38609	38.65951	8.03	6.29	1.75
P	GD	3616	PL-O	PL49	20700100804	805	-77.38674	38.65771	2.30	1.70	0.60
P	RRD	3617	PL-O	PL49	20700100804	805	-77.38487	38.65724	7.50	5.70	1.79
P	GD	3618	PL-O	PL49	20700100804	805	-77.38426	38.65633	26.51	19.23	7.28
P	GD	3619	PL-O	PL49	20700100804	805	-77.38353	38.65693	0.23	0.19	0.04
P	STP	3620	PL-O	PL49	20700100804	805	-77.38198	38.65638	7.96	6.18	1.77
P	STP	3621	PL-O	PL49	20700100804	805	-77.38301	38.65532	5.68	4.22	1.46
P	RRD	3622	PL-O	PL49	20700100804	805	-77.38304	38.65536	4.14	2.92	1.22
P	RRD	3623	PL-O	PL49	20700100804	805	-77.38129	38.65437	8.93	6.42	2.51
P	RRD	3624	PL-O	PL49	20700100804	805	-77.38023	38.65497	0.59	0.43	0.16
P	RRD	3625	PL-O	PL49	20700100804	805	-77.37938	38.65589	1.67	1.21	0.46
P	RRD	3626	PL-O	PL49	20700100804	805	-77.37913	38.65562	28.79	21.48	7.31
P	STP	3627	PL-O	PL49	20700100804	805	-77.37778	38.65569	2.84	2.18	0.66
P	STP	3628	PL-O	PL49	20700100804	805	-77.37935	38.65783	2.22	1.64	0.58
P	STP	3629	PL-O	PL49	20700100804	805	-77.3745	38.65515	0.33	0.26	0.07

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	3630	PL-O	PL49	20700100804	805	-77.37317	38.65381	0.51	0.39	0.11
P	STP	3633	PL-O	PL49	20700100804	805	-77.39028	38.65687	11.01	7.25	3.76
P	GD	3634	PL-O	PL49	20700100804	805	-77.39101	38.65704	4.11	3.16	0.95
P	RRD	3636	PL-P	PL51	20700110103	710	-77.39913	38.65514	17.40	12.97	4.42
P	GD	3637	PL-P	PL51	20700110103	710	-77.39665	38.65315	3.90	3.17	0.73
P	STP	3638	PL-P	PL51	20700110103	710	-77.40102	38.65467	12.64	9.08	3.56
P	GD	3639	PL-P	PL51	20700110103	710	-77.40253	38.65822	4.74	3.48	1.26
P	GD	3640	PL-P	PL51	20700110103	710	-77.40297	38.65734	2.48	1.81	0.67
P	STP	3641	PL-P	PL51	20700110103	710	-77.40438	38.65662	0.62	0.42	0.20
P	RRD	3642	PL-P	PL51	20700110103	710	-77.39993	38.64972	16.96	12.09	4.87
P	GD	3643	PL-P	PL51	20700110103	710	-77.40147	38.64748	0.03	0.03	0.00
P	RRD	3644	PL-P	PL51	20700110103	710	-77.40105	38.64764	0.05	0.05	0.00
P	STP	3645	PL-P	PL51	20700110103	710	-77.40038	38.64688	14.44	9.99	4.45
P	GD	3646	PL-P	PL51	20700110103	710	-77.40164	38.64622	5.08	3.48	1.60
P	RRD	3647	PL-P	PL51	20700110103	710	-77.40284	38.64616	0.86	0.65	0.22
P	CD	3648	PL-P	PL51	20700110103	715	-77.39426	38.6456	0.71	0.54	0.17
P	CD	3649	PL-P	PL51	20700110103	715	-77.39381	38.64541	1.29	0.99	0.31
P	STP	3650	PL-P	PL51	20700110103	715	-77.39401	38.64583	1.75	1.17	0.58
P	CD	3651	PL-P	PL51	20700110103	715	-77.39378	38.64566	1.06	0.58	0.48
P	RRD	3652	PL-P	PL51	20700110103	710	-77.40689	38.64722	2.21	1.53	0.68
P	GD	3653	PL-P	PL51	20700110103	710	-77.40589	38.64554	0.42	0.30	0.13
P	STP	3654	PL-P	PL51	20700110103	710	-77.4077	38.65423	1.72	1.13	0.59
P	GD	3656	PL-P	PL51	20700110103	710	-77.41285	38.64801	0.57	0.24	0.33
P	GD	3657	PL-P	PL51	20700110103	710	-77.41278	38.64719	0.84	0.55	0.28
P	GD	3658	PL-P	PL51	20700110103	710	-77.41251	38.647	7.19	4.95	2.24
P	GD	3659	PL-P	PL51	20700110103	710	-77.41501	38.65041	2.76	1.75	1.01
P	STP	3666	PL-P	PL51	20700110103	710	-77.4241	38.65556	0.30	0.21	0.09
P	RRD	3667	PL-P	PL51	20700110103	710	-77.424	38.65583	0.77	0.55	0.21
P	GD	3673	PL-P	PL51	20700110103	710	-77.41137	38.6516	4.26	2.74	1.51
P	RRD	3674	PL-P	PL51	20700110103	710	-77.41197	38.64878	0.39	0.22	0.17
P	GD	3675	PL-P	PL51	20700110103	710	-77.41086	38.6461	4.75	3.10	1.65
P	GD	3676	PL-P	PL51	20700110103	710	-77.40996	38.64601	4.24	3.18	1.06
P	GD	3685	PL-O	PL41	20700100801	424	-77.44781	38.65331	3.19	2.29	0.90
P	GD	3686	PL-O	PL41	20700100801	424	-77.44901	38.65332	2.34	1.60	0.74
P	GD	3687	PL-O	PL41	20700100801	424	-77.45017	38.65359	1.94	1.40	0.53
P	GD	3688	PL-O	PL41	20700100801	424	-77.44989	38.65401	5.45	4.11	1.34
P	GD	3689	PL-O	PL41	20700100801	424	-77.45073	38.6538	1.27	1.00	0.28

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	3690	PL-O	PL41	20700100801	424	-77.45203	38.65454	0.87	0.57	0.29
P	GD	3691	PL-O	PL41	20700100801	424	-77.45267	38.65488	0.24	0.19	0.06
P	GD	3692	PL-O	PL41	20700100801	424	-77.45301	38.65509	0.21	0.16	0.05
P	GD	3693	PL-O	PL41	20700100801	424	-77.45229	38.65527	0.30	0.21	0.08
P	GD	3694	PL-O	PL41	20700100801	424	-77.45252	38.65554	5.15	3.88	1.27
P	GD	3695	PL-O	PL41	20700100801	424	-77.45425	38.65501	0.75	0.51	0.23
P	GD	3698	PL-O	PL41	20700100801	424	-77.45419	38.65408	0.69	0.55	0.14
P	GD	3700	PL-O	PL41	20700100801	424	-77.45352	38.65187	3.22	2.35	0.87
P	GD	3701	PL-O	PL41	20700100801	424	-77.45328	38.65108	1.20	0.77	0.44
P	STP	3702	PL-O	PL41	20700100801	424	-77.45288	38.64966	14.07	10.79	3.28
P	STP	3703	PL-O	PL41	20700100801	424	-77.45263	38.6492	30.93	22.74	8.18
P	GD	3704	PL-O	PL41	20700100801	424	-77.45221	38.64855	0.13	0.07	0.05
P	GD	3705	PL-O	PL41	20700100801	424	-77.45217	38.6479	1.97	1.26	0.72
P	RRD	3707	PL-O	PL41	20700100801	424	-77.45998	38.65462	16.97	12.20	4.77
P	GD	3708	PL-O	PL41	20700100801	424	-77.4465	38.65759	1.70	1.20	0.50
P	GD	3709	PL-M	PL40	20700100606	330	-77.47653	38.64723	12.84	8.71	4.13
P	GD	3710	PL-M	PL40	20700100606	330	-77.46933	38.64877	7.33	5.21	2.12
P	GD	3711	PL-M	PL40	20700100606	330	-77.4715	38.65145	2.76	2.13	0.62
P	GD	3712	PL-M	PL40	20700100606	330	-77.4727	38.6521	0.78	0.62	0.16
P	GD	3713	PL-M	PL40	20700100606	330	-77.47523	38.65286	3.16	2.35	0.81
P	GD	3714	PL-M	PL40	20700100606	330	-77.47472	38.65335	0.74	0.51	0.23
P	GD	3715	PL-M	PL40	20700100606	330	-77.47494	38.65388	1.03	0.61	0.42
P	GD	3716	PL-M	PL40	20700100606	330	-77.47211	38.65288	0.56	0.36	0.20
P	GD	3717	PL-M	PL40	20700100606	330	-77.47211	38.65586	0.27	0.21	0.06
P	GD	3718	PL-M	PL40	20700100606	330	-77.47039	38.65536	0.06	0.06	0.00
P	GD	3719	PL-M	PL40	20700100606	330	-77.47171	38.6566	0.25	0.15	0.10
P	GD	3720	PL-M	PL40	20700100606	330	-77.46992	38.65615	0.31	0.19	0.12
P	GD	3721	PL-M	PL40	20700100606	330	-77.46893	38.65634	0.21	0.15	0.07
P	GD	3722	PL-M	PL40	20700100606	330	-77.46942	38.65689	0.46	0.25	0.22
P	GD	3723	PL-M	PL40	20700100606	330	-77.46855	38.64777	0.76	0.42	0.34
P	GD	3724	PL-M	PL40	20700100606	330	-77.47443	38.65751	6.71	5.22	1.49
P	GD	3725	PL-M	PL40	20700100606	330	-77.4938	38.65996	0.62	0.37	0.25
P	GD	3726	PL-M	PL40	20700100606	330	-77.49367	38.66006	0.08	0.03	0.05
P	GD	3727	PL-M	PL40	20700100606	330	-77.49373	38.65991	0.79	0.66	0.14
P	GD	3728	PL-M	PL40	20700100606	330	-77.49361	38.65999	0.13	0.12	0.01
P	GD	3729	PL-M	PL40	20700100606	330	-77.47894	38.64766	0.81	0.56	0.25
P	GD	3730	PL-M	PL40	20700100606	330	-77.48132	38.6468	1.42	1.02	0.40

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	3731	PL-M	PL40	20700100606	322	-77.5252	38.64866	5.55	4.68	0.87
P	GD	3732	PL-M	PL40	20700100606	322	-77.52521	38.64842	2.39	2.00	0.38
P	STP	3733	PL-M	PL40	20700100606	322	-77.51826	38.6493	1.12	0.99	0.12
P	RRD	3742	PL-O	PL49	20700100804	815	-77.35618	38.64508	0.70	0.53	0.16
P	GD	3744	PL-M	PL40	20700100606	328	-77.51468	38.64668	16.59	15.77	0.83
P	GD	3745	PL-O	PL41	20700100801	424	-77.44823	38.65693	3.55	2.59	0.96
P	GD	3746	PL-O	PL41	20700100801	424	-77.44681	38.65666	9.48	6.55	2.93
P	RRD	3747	PL-O	PL41	20700100801	422	-77.42192	38.66706	29.49	22.88	6.61
P	BMP	3749	PL-P	PL51	20700110103	710	-77.41317	38.65866	5.55	4.13	1.42
P	RRD	3750	PL-P	PL51	20700110103	710	-77.40763	38.64908	21.47	15.11	6.36
P	RRD	3751	PL-O	PL49	20700100804	810	-77.37241	38.67118	37.60	25.37	12.23
P	RRD	3752	PL-O	PL49	20700100804	815	-77.37428	38.64534	48.58	37.05	11.53
P	STP	3753	PL-O	PL49	20700100804	820	-77.35072	38.66928	4.93	3.56	1.37
P	RRD	3754	PL-O	PL49	20700100804	815	-77.34969	38.64538	20.16	11.73	8.44
P	RRD	3755	PL-O	PL49	20700100804	825	-77.34003	38.64847	2.68	0.65	2.03
P	RRD	3757	PL-O	PL49	20700100804	825	-77.33685	38.64882	7.33	3.71	3.62
P	GD	3760	PL-M	PL40	20700100606	330	-77.47031	38.64627	0.17	0.13	0.03
P	GD	3761	PL-M	PL40	20700100606	330	-77.46917	38.64644	0.47	0.31	0.17
P	GD	3762	PL-M	PL40	20700100606	330	-77.46864	38.64623	1.99	1.62	0.37
P	RRD	3767	PL-O	PL48	20700100803	450	-77.25452	38.66637	1.62	0.66	0.96
P	STP	3768	PL-O	PL48	20700100803	452	-77.24061	38.65287	2.94	1.37	1.57
P	STP	3771	PL-O	PL41	20700100801	424	-77.46104	38.65695	1.68	1.25	0.44
P	STP	3772	PL-O	PL41	20700100801	424	-77.46236	38.65667	0.71	0.58	0.13
P	RRD	3773	PL-O	PL41	20700100801	424	-77.46567	38.66541	0.33	0.32	0.01
P	RRD	3775	PL-O	PL49	20700100804	805	-77.38943	38.66869	4.32	3.25	1.07
P	RRD	3776	PL-O	PL49	20700100804	805	-77.39006	38.65744	3.92	2.91	1.02
P	RRD	3782	PL-P	PL52	20700110104	650	-77.31553	38.53202	97.84	70.64	27.20
P	GD	3786	PL-P	PL52	20700110104	690	-77.31476	38.53199	7.63	5.53	2.09
P	GD	3788	PL-P	PL52	20700110104	650	-77.32122	38.5362	5.74	5.03	0.71
P	STP	3792	PL-P	PL52	20700110104	645	-77.33424	38.54549	10.88	7.26	3.62
P	STP	3793	PL-P	PL52	20700110104	645	-77.33713	38.54727	3.42	3.09	0.33
P	RRD	3800	PL-P	PL52	20700110104	645	-77.35156	38.55316	3.55	1.41	2.14
P	STP	3805	PL-P	PL52	20700110104	640	-77.32585	38.55348	16.28	11.98	4.30
P	RRD	3806	PL-P	PL52	20700110104	640	-77.32431	38.55499	5.80	4.13	1.66
P	STP	3807	PL-P	PL52	20700110104	640	-77.32159	38.55947	0.05	0.03	0.02
P	GD	3808	PL-P	PL52	20700110104	640	-77.32093	38.55993	1.87	0.78	1.09
P	GD	3809	PL-P	PL52	20700110104	640	-77.32043	38.5607	1.15	0.52	0.63

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	3811	PL-P	PL52	20700110104	655	-77.31735	38.55513	17.72	12.85	4.87
P	GD	3812	PL-P	PL52	20700110104	655	-77.31566	38.55432	100.50	69.54	30.96
P	GD	3814	PL-P	PL52	20700110104	655	-77.31432	38.55509	1.58	1.15	0.44
P	STP	3815	PL-P	PL52	20700110104	655	-77.31421	38.55426	10.14	7.29	2.85
P	GD	3816	PL-P	PL52	20700110104	655	-77.31408	38.5564	0.22	0.17	0.05
P	STP	3817	PL-P	PL52	20700110104	655	-77.31006	38.55339	1.91	1.38	0.54
P	GD	3818	PL-P	PL52	20700110104	600	-77.30904	38.55207	8.62	6.23	2.39
P	STP	3820	PL-P	PL52	20700110104	680	-77.30824	38.54922	5.32	3.75	1.56
P	STP	3821	PL-P	PL52	20700110104	685	-77.30591	38.54776	1.16	0.87	0.30
P	GD	3822	PL-P	PL52	20700110104	600	-77.30551	38.5475	5.32	3.84	1.48
P	STP	3823	PL-P	PL52	20700110104	665	-77.30396	38.55835	2.33	1.48	0.85
P	RRD	3824	PL-P	PL52	20700110104	665	-77.30509	38.56031	0.99	0.63	0.37
P	GD	3825	PL-P	PL52	20700110104	665	-77.30622	38.56116	1.64	0.97	0.67
P	RRD	3826	PL-P	PL52	20700110104	600	-77.30704	38.56146	14.17	10.74	3.42
P	RRD	3827	PL-P	PL52	20700110104	665	-77.29926	38.55821	1.73	1.43	0.30
P	RRD	3828	PL-P	PL52	20700110104	665	-77.30105	38.55944	2.24	1.64	0.61
P	RRD	3829	PL-P	PL52	20700110104	665	-77.29986	38.56003	15.62	11.85	3.76
P	RRD	3830	PL-P	PL52	20700110104	665	-77.30164	38.56131	1.81	1.42	0.39
P	RRD	3832	PL-P	PL52	20700110104	670	-77.29086	38.56487	8.92	5.87	3.05
P	RRD	3833	PL-P	PL52	20700110104	665	-77.29821	38.56442	18.14	10.78	7.36
P	GD	3834	PL-P	PL52	20700110104	665	-77.29713	38.5653	5.30	3.10	2.20
P	GD	3835	PL-P	PL52	20700110104	665	-77.29552	38.56722	0.49	0.37	0.12
P	GD	3836	PL-P	PL52	20700110104	665	-77.29491	38.56787	8.54	6.46	2.08
P	RRD	3837	PL-P	PL52	20700110104	665	-77.30074	38.56401	1.48	1.08	0.40
P	STP	3838	PL-P	PL52	20700110104	665	-77.29954	38.56561	1.05	0.78	0.27
P	STP	3840	PL-P	PL52	20700110104	665	-77.29758	38.57014	1.29	0.93	0.36
P	RRD	3841	PL-P	PL52	20700110104	665	-77.29748	38.57319	0.48	0.37	0.11
P	RRD	3843	PL-P	PL52	20700110104	665	-77.30175	38.56368	2.00	1.48	0.52
P	RRD	3844	PL-P	PL52	20700110104	665	-77.30112	38.56626	0.08	0.07	0.01
P	STP	3846	PL-P	PL52	20700110104	665	-77.30235	38.5708	3.24	2.30	0.94
P	STP	3847	PL-P	PL52	20700110104	665	-77.30185	38.57076	0.94	0.64	0.30
P	STP	3848	PL-P	PL52	20700110104	665	-77.30164	38.57119	1.88	1.53	0.35
P	GD	3849	PL-P	PL52	20700110104	665	-77.2998	38.57191	0.49	0.36	0.12
P	GD	3850	PL-P	PL52	20700110104	665	-77.30319	38.57246	1.36	1.21	0.15
P	CD	3851	PL-P	PL52	20700110104	665	-77.3032	38.57338	7.32	3.82	3.51
P	RRD	3852	PL-P	PL52	20700110104	665	-77.30222	38.5734	1.05	0.79	0.26
P	CD	3853	PL-P	PL52	20700110104	665	-77.30248	38.57397	0.52	0.37	0.16

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	CD	3854	PL-P	PL52	20700110104	665	-77.30194	38.57444	3.95	2.80	1.15
P	RRD	3855	PL-P	PL52	20700110104	630	-77.30945	38.56574	0.83	0.50	0.33
P	RRD	3856	PL-P	PL52	20700110104	630	-77.30944	38.56741	28.77	23.08	5.70
P	RRD	3857	PL-P	PL52	20700110104	630	-77.31069	38.57097	16.65	12.62	4.03
P	RRD	3858	PL-P	PL52	20700110104	630	-77.30804	38.57421	17.88	10.28	7.59
P	RRD	3860	PL-P	PL52	20700110104	627	-77.33193	38.57379	5.24	3.72	1.53
P	CD	3861	PL-P	PL52	20700110104	627	-77.3313	38.57572	4.13	1.80	2.33
P	CD	3862	PL-P	PL52	20700110104	627	-77.33122	38.57599	2.07	1.02	1.05
P	RRD	3863	PL-P	PL52	20700110104	627	-77.33542	38.56939	12.18	7.11	5.07
P	CD	3864	PL-P	PL52	20700110104	627	-77.33551	38.57182	0.14	0.06	0.08
P	RRD	3865	PL-P	PL52	20700110104	627	-77.33559	38.57244	27.52	14.10	13.42
P	RRD	3866	PL-P	PL52	20700110104	627	-77.33791	38.57029	28.07	15.04	13.03
P	GD	3867	PL-P	PL52	20700110104	627	-77.34081	38.56974	1.27	0.90	0.37
P	RRD	3868	PL-P	PL52	20700110104	627	-77.3429	38.57309	8.13	6.67	1.46
P	RRD	3869	PL-P	PL52	20700110104	627	-77.344	38.58879	1.10	0.71	0.39
P	RRD	3870	PL-P	PL52	20700110104	627	-77.34448	38.58935	2.04	1.45	0.58
P	RRD	3871	PL-P	PL52	20700110104	627	-77.34196	38.58847	8.21	5.62	2.59
P	RRD	3872	PL-P	PL52	20700110104	627	-77.33693	38.58303	6.06	4.29	1.77
P	RRD	3873	PL-P	PL52	20700110104	627	-77.33556	38.58366	31.21	22.06	9.14
P	CD	3874	PL-P	PL52	20700110104	627	-77.33123	38.57655	1.43	0.93	0.50
P	CD	3875	PL-P	PL52	20700110104	627	-77.33089	38.57661	0.54	0.33	0.22
P	RRD	3881	PL-P	PL52	20700110104	630	-77.33343	38.58953	7.22	5.37	1.84
P	RRD	3882	PL-P	PL52	20700110104	630	-77.33336	38.58941	2.76	1.19	1.58
P	RRD	3883	PL-P	PL52	20700110104	630	-77.32941	38.58898	4.98	2.66	2.32
P	BMP	3885	PL-P	PL52	20700110104	630	-77.31652	38.5846	34.14	20.33	13.81
P	STP	3890	PL-P	PL52	20700110104	630	-77.31094	38.57784	0.57	0.45	0.12
P	BMP	3891	PL-P	PL52	20700110104	630	-77.31081	38.57662	20.30	10.48	9.81
P	RRD	3897	PL-P	PL52	20700110104	630	-77.31031	38.57739	66.59	36.72	29.87
P	STP	3898	PL-P	PL51	20700110103	700	-77.29228	38.58253	81.19	68.37	12.82
P	RRD	3899	PL-P	PL51	20700110103	700	-77.29027	38.58407	26.76	12.14	14.62
P	CD	3900	PL-P	PL51	20700110103	700	-77.28786	38.58578	2.90	1.93	0.97
P	GD	3901	PL-P	PL51	20700110103	700	-77.2719	38.5878	2.41	1.40	1.01
P	RRD	3904	PL-P	PL51	20700110103	700	-77.2671	38.59443	4.95	3.42	1.53
P	STP	3905	PL-P	PL51	20700110103	700	-77.26824	38.59286	6.16	4.56	1.60
P	RRD	3906	PL-O	PL49	20700100804	800	-77.25732	38.60754	32.38	16.30	16.08
P	RRD	3907	PL-O	PL49	20700100804	800	-77.25752	38.60721	1.76	0.63	1.12
P	STP	3908	PL-O	PL49	20700100804	800	-77.2594	38.61255	34.56	26.66	7.91

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	3912	PL-O	PL49	20700100804	800	-77.26401	38.61076	36.46	30.29	6.18
P	RRD	3913	PL-O	PL49	20700100804	800	-77.26434	38.6103	1.05	0.79	0.26
P	RRD	3914	PL-O	PL49	20700100804	800	-77.26603	38.61069	6.60	5.36	1.25
P	RRD	3915	PL-O	PL49	20700100804	800	-77.26705	38.61083	1.23	0.99	0.23
P	RRD	3916	PL-O	PL49	20700100804	800	-77.2627	38.60949	2.42	1.79	0.63
P	RRD	3917	PL-O	PL49	20700100804	800	-77.26213	38.60894	2.99	2.53	0.46
P	RRD	3918	PL-P	PL51	20700110103	700	-77.27228	38.59249	32.55	24.22	8.34
P	STP	3919	PL-P	PL51	20700110103	700	-77.27376	38.58949	1.19	0.69	0.50
P	RRD	3920	PL-P	PL51	20700110103	700	-77.27583	38.59233	5.90	3.64	2.26
P	STP	3921	PL-P	PL51	20700110103	700	-77.27578	38.59205	3.30	2.08	1.22
P	RRD	3922	PL-P	PL51	20700110103	700	-77.27687	38.59131	1.35	0.69	0.66
P	RRD	3923	PL-P	PL51	20700110103	700	-77.27695	38.5929	5.12	3.32	1.80
P	STP	3927	PL-O	PL49	20700100804	800	-77.27866	38.60188	16.36	12.44	3.92
P	RRD	3928	PL-P	PL51	20700110103	730	-77.28349	38.5971	31.42	23.08	8.34
P	RRD	3929	PL-P	PL51	20700110103	730	-77.28941	38.5897	18.89	10.59	8.30
P	RRD	3931	PL-P	PL51	20700110103	730	-77.29271	38.59052	6.55	3.94	2.61
P	RRD	3932	PL-P	PL51	20700110103	730	-77.29292	38.59089	0.79	0.25	0.54
P	RRD	3933	PL-P	PL51	20700110103	730	-77.29353	38.5911	0.59	0.19	0.40
P	RRD	3934	PL-P	PL51	20700110103	730	-77.29395	38.59138	3.48	1.18	2.30
P	RRD	3935	PL-P	PL51	20700110103	730	-77.29436	38.59177	0.57	0.15	0.42
P	RRD	3938	PL-P	PL51	20700110103	730	-77.29597	38.59047	94.00	55.79	38.21
P	RRD	3943	PL-P	PL51	20700110103	730	-77.29286	38.59394	48.72	24.79	23.93
P	RRD	3945	PL-P	PL51	20700110103	730	-77.29794	38.59649	44.62	27.89	16.72
P	RRD	3946	PL-P	PL51	20700110103	730	-77.28777	38.59345	97.08	60.13	36.95
P	RRD	3949	PL-P	PL51	20700110103	730	-77.30692	38.59737	0.41	0.34	0.07
P	RRD	3955	PL-P	PL51	20700110103	725	-77.31745	38.59942	5.79	2.84	2.95
P	RRD	3956	PL-P	PL52	20700110104	627	-77.33789	38.58984	2.24	1.61	0.63
P	RRD	3960	PL-P	PL52	20700110104	630	-77.33051	38.59065	9.31	5.99	3.33
P	RRD	3961	PL-P	PL52	20700110104	630	-77.32806	38.59413	3.83	2.27	1.56
P	RRD	3962	PL-P	PL52	20700110104	630	-77.32796	38.59378	2.93	1.33	1.60
P	STP	3963	PL-P	PL52	20700110104	630	-77.32946	38.59417	11.50	7.60	3.89
P	STP	3964	PL-P	PL52	20700110104	630	-77.32924	38.59425	4.08	2.32	1.76
P	RRD	3965	PL-P	PL52	20700110104	630	-77.32912	38.59531	0.92	0.60	0.32
P	GD	3966	PL-P	PL52	20700110104	630	-77.3297	38.59518	21.88	7.28	14.60
P	GD	3967	PL-P	PL51	20700110103	725	-77.32091	38.60032	108.74	71.46	37.29
P	RRD	3968	PL-P	PL51	20700110103	725	-77.32462	38.60196	21.83	15.77	6.06
P	RRD	3969	PL-P	PL51	20700110103	725	-77.32788	38.5984	2.36	1.27	1.09

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	3970	PL-P	PL51	20700110103	725	-77.32799	38.59878	5.37	3.86	1.51
P	RRD	3971	PL-P	PL51	20700110103	725	-77.32877	38.59979	1.18	0.76	0.42
P	RRD	3972	PL-P	PL51	20700110103	725	-77.32918	38.60152	2.79	1.56	1.23
P	RRD	3973	PL-P	PL51	20700110103	725	-77.32899	38.60339	11.19	7.08	4.11
P	RRD	3974	PL-P	PL51	20700110103	725	-77.33567	38.60045	30.93	14.54	16.38
P	STP	3975	PL-P	PL51	20700110103	725	-77.33434	38.60181	6.88	4.71	2.17
P	RRD	3979	PL-P	PL52	20700110104	627	-77.34264	38.5967	7.01	4.70	2.31
P	RRD	3980	PL-P	PL52	20700110104	627	-77.34405	38.59568	6.37	4.31	2.06
P	RRD	3981	PL-P	PL52	20700110104	627	-77.34441	38.59411	2.70	1.83	0.87
P	RRD	3982	PL-P	PL52	20700110104	627	-77.34502	38.59246	0.03	0.02	0.01
P	RRD	3983	PL-P	PL52	20700110104	627	-77.34464	38.59188	33.55	23.62	9.93
P	RRD	3984	PL-P	PL52	20700110104	627	-77.3452	38.59014	1.08	0.73	0.35
P	STP	3986	PL-P	PL51	20700110103	715	-77.38956	38.61649	0.68	0.46	0.22
P	RRD	3987	PL-P	PL51	20700110103	715	-77.38907	38.61629	1.16	0.78	0.37
P	STP	3988	PL-P	PL51	20700110103	715	-77.38784	38.61522	5.50	3.64	1.85
P	RRD	3989	PL-P	PL51	20700110103	715	-77.38757	38.61615	1.44	0.95	0.49
P	RRD	3990	PL-P	PL51	20700110103	715	-77.38683	38.61741	4.18	2.34	1.85
P	RRD	3991	PL-P	PL51	20700110103	715	-77.38475	38.61539	7.47	5.37	2.10
P	RRD	3992	PL-P	PL51	20700110103	715	-77.38474	38.61658	0.73	0.54	0.19
P	RRD	3993	PL-P	PL51	20700110103	715	-77.38447	38.61783	4.13	2.23	1.90
P	RRD	3994	PL-P	PL51	20700110103	715	-77.38357	38.61757	0.58	0.45	0.13
P	GD	3995	PL-P	PL51	20700110103	715	-77.38274	38.61801	1.69	1.26	0.43
P	RRD	3996	PL-P	PL51	20700110103	715	-77.38036	38.61472	4.34	2.96	1.37
P	RRD	3997	PL-P	PL51	20700110103	715	-77.38013	38.6153	1.89	1.38	0.51
P	RRD	3998	PL-P	PL51	20700110103	715	-77.37918	38.6153	2.93	1.93	1.00
P	RRD	3999	PL-P	PL51	20700110103	715	-77.37861	38.61634	1.63	0.71	0.92
P	STP	4000	PL-P	PL51	20700110103	715	-77.37766	38.61452	12.04	7.67	4.38
P	RRD	4001	PL-P	PL51	20700110103	715	-77.3776	38.61534	1.20	0.52	0.69
P	RRD	4002	PL-P	PL51	20700110103	715	-77.3775	38.61602	0.10	0.06	0.04
P	RRD	4003	PL-P	PL51	20700110103	715	-77.37723	38.61591	2.88	1.79	1.09
P	RRD	4004	PL-P	PL51	20700110103	715	-77.37469	38.61617	3.66	2.52	1.14
P	GD	4005	PL-P	PL51	20700110103	715	-77.37434	38.61492	3.19	1.80	1.39
P	GD	4007	PL-P	PL51	20700110103	720	-77.36845	38.61682	12.22	7.30	4.92
P	RRD	4008	PL-P	PL51	20700110103	720	-77.3671	38.61733	2.90	1.68	1.22
P	STP	4009	PL-P	PL51	20700110103	715	-77.37279	38.6166	0.34	0.23	0.10
P	RRD	4010	PL-P	PL51	20700110103	720	-77.36414	38.61754	4.39	2.39	1.99
P	RRD	4011	PL-P	PL51	20700110103	720	-77.36411	38.61796	1.14	0.68	0.46

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4012	PL-P	PL51	20700110103	720	-77.36311	38.61725	5.78	3.30	2.48
P	RRD	4013	PL-P	PL51	20700110103	720	-77.36009	38.61822	2.86	1.38	1.47
P	RRD	4014	PL-P	PL51	20700110103	723	-77.35943	38.61789	3.63	1.90	1.73
P	RRD	4015	PL-P	PL51	20700110103	723	-77.3593	38.61673	3.24	2.00	1.24
P	STP	4016	PL-P	PL51	20700110103	723	-77.35838	38.61602	2.89	1.81	1.08
P	STP	4017	PL-P	PL51	20700110103	723	-77.3569	38.61695	0.48	0.30	0.18
P	RRD	4018	PL-P	PL51	20700110103	723	-77.35738	38.61419	31.72	21.37	10.35
P	STP	4019	PL-P	PL51	20700110103	723	-77.35694	38.61444	4.02	1.76	2.27
P	RRD	4020	PL-P	PL51	20700110103	723	-77.35719	38.61496	1.30	0.86	0.44
P	RRD	4021	PL-P	PL51	20700110103	723	-77.35567	38.61129	32.89	15.40	17.49
P	RRD	4022	PL-P	PL51	20700110103	723	-77.35574	38.61201	2.52	1.20	1.32
P	RRD	4023	PL-P	PL51	20700110103	723	-77.35603	38.61301	4.33	1.70	2.63
P	RRD	4024	PL-P	PL51	20700110103	723	-77.35538	38.6128	1.85	0.78	1.06
P	STP	4025	PL-P	PL51	20700110103	723	-77.35352	38.61703	1.11	0.63	0.48
P	CD	4026	PL-P	PL51	20700110103	723	-77.35404	38.61675	2.30	1.61	0.69
P	CD	4027	PL-P	PL51	20700110103	723	-77.35468	38.61514	0.50	0.27	0.23
P	RRD	4028	PL-P	PL51	20700110103	723	-77.3536	38.61107	1.11	0.83	0.29
P	RRD	4029	PL-P	PL51	20700110103	723	-77.35315	38.61078	1.82	1.25	0.57
P	STP	4030	PL-P	PL51	20700110103	723	-77.35213	38.60966	16.90	12.44	4.46
P	RRD	4031	PL-P	PL51	20700110103	723	-77.3519	38.60941	14.19	10.38	3.81
P	RRD	4032	PL-P	PL51	20700110103	723	-77.35165	38.61062	4.22	3.04	1.17
P	RRD	4034	PL-P	PL51	20700110103	723	-77.34811	38.61339	0.28	0.19	0.08
P	RRD	4035	PL-P	PL51	20700110103	723	-77.34756	38.61333	4.98	3.74	1.24
P	RRD	4036	PL-P	PL51	20700110103	723	-77.34525	38.60966	1.31	0.98	0.33
P	RRD	4037	PL-P	PL51	20700110103	723	-77.34652	38.60868	4.11	3.07	1.04
P	CD	4038	PL-P	PL51	20700110103	723	-77.34612	38.60911	2.24	1.67	0.57
P	RRD	4039	PL-P	PL51	20700110103	723	-77.34415	38.60793	0.73	0.47	0.26
P	RRD	4040	PL-P	PL51	20700110103	723	-77.34357	38.60554	1.75	1.16	0.59
P	RRD	4041	PL-P	PL51	20700110103	723	-77.3433	38.60571	0.57	0.44	0.12
P	RRD	4042	PL-P	PL51	20700110103	725	-77.34244	38.60876	1.02	0.65	0.37
P	RRD	4043	PL-P	PL51	20700110103	725	-77.34106	38.60916	6.94	5.40	1.54
P	RRD	4044	PL-P	PL51	20700110103	725	-77.33966	38.6078	0.83	0.60	0.23
P	RRD	4045	PL-P	PL51	20700110103	725	-77.33942	38.60778	58.62	40.14	18.48
P	RRD	4046	PL-P	PL51	20700110103	725	-77.33982	38.61003	0.47	0.37	0.10
P	RRD	4047	PL-P	PL51	20700110103	725	-77.34012	38.6109	30.72	24.14	6.58
P	RRD	4048	PL-P	PL51	20700110103	723	-77.34363	38.61213	1.59	1.18	0.41
P	RRD	4049	PL-P	PL51	20700110103	723	-77.34422	38.61366	1.55	1.20	0.35

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4050	PL-P	PL51	20700110103	723	-77.34447	38.61458	0.10	0.08	0.02
P	RRD	4051	PL-P	PL51	20700110103	723	-77.34344	38.61482	0.44	0.30	0.14
P	RRD	4052	PL-P	PL51	20700110103	723	-77.34406	38.61619	12.89	9.30	3.59
P	STP	4053	PL-P	PL51	20700110103	723	-77.3456	38.61655	2.19	1.53	0.66
P	RRD	4054	PL-P	PL51	20700110103	723	-77.34637	38.61594	1.12	0.82	0.30
P	RRD	4055	PL-P	PL51	20700110103	723	-77.34785	38.61451	1.02	0.72	0.30
P	RRD	4056	PL-P	PL51	20700110103	723	-77.34849	38.61495	6.19	4.27	1.92
P	RRD	4057	PL-P	PL51	20700110103	723	-77.34847	38.61481	0.89	0.67	0.23
P	RRD	4058	PL-P	PL51	20700110103	723	-77.35088	38.61427	0.46	0.32	0.13
P	RRD	4059	PL-P	PL51	20700110103	723	-77.35116	38.6142	0.29	0.22	0.08
P	CD	4060	PL-P	PL51	20700110103	723	-77.3531	38.61522	1.25	0.53	0.72
P	RRD	4061	PL-P	PL51	20700110103	723	-77.35165	38.61573	8.10	5.72	2.38
P	RRD	4062	PL-P	PL51	20700110103	725	-77.33714	38.6112	14.69	11.27	3.41
P	RRD	4063	PL-P	PL51	20700110103	725	-77.33748	38.61186	3.04	2.31	0.73
P	RRD	4064	PL-P	PL51	20700110103	725	-77.33769	38.61355	10.60	7.69	2.91
P	RRD	4065	PL-P	PL51	20700110103	725	-77.33748	38.61399	1.08	0.77	0.30
P	CD	4066	PL-P	PL51	20700110103	725	-77.3375	38.61605	6.79	3.82	2.97
P	RRD	4067	PL-P	PL51	20700110103	725	-77.33286	38.61307	3.54	2.66	0.88
P	RRD	4068	PL-P	PL51	20700110103	725	-77.33257	38.6131	14.79	11.98	2.82
P	RRD	4069	PL-P	PL51	20700110103	725	-77.3326	38.614	21.41	16.37	5.04
P	RRD	4070	PL-P	PL51	20700110103	725	-77.33114	38.6124	3.39	2.69	0.70
P	RRD	4071	PL-P	PL51	20700110103	725	-77.33254	38.61176	8.01	5.64	2.37
P	GD	4073	PL-P	PL51	20700110103	725	-77.32812	38.61373	4.73	3.28	1.45
P	RRD	4074	PL-P	PL51	20700110103	725	-77.33131	38.60936	5.04	3.53	1.51
P	RRD	4075	PL-P	PL51	20700110103	725	-77.33187	38.60889	2.68	1.93	0.75
P	RRD	4076	PL-P	PL51	20700110103	725	-77.33199	38.60807	6.63	4.58	2.05
P	CD	4077	PL-P	PL51	20700110103	725	-77.33273	38.60709	0.57	0.45	0.12
P	RRD	4078	PL-P	PL51	20700110103	725	-77.3327	38.6077	2.23	1.69	0.53
P	RRD	4079	PL-P	PL51	20700110103	725	-77.33274	38.60765	0.03	0.03	0.00
P	STP	4080	PL-P	PL51	20700110103	725	-77.33085	38.60817	0.05	0.05	0.00
P	RRD	4081	PL-P	PL51	20700110103	725	-77.32937	38.60747	0.79	0.58	0.21
P	RRD	4082	PL-P	PL51	20700110103	725	-77.3297	38.60707	2.72	2.02	0.71
P	RRD	4083	PL-P	PL51	20700110103	725	-77.32951	38.60633	18.23	12.74	5.49
P	GD	4084	PL-P	PL51	20700110103	725	-77.32723	38.60847	25.18	18.28	6.89
P	RRD	4085	PL-P	PL51	20700110103	725	-77.3279	38.60839	2.64	1.94	0.70
P	RRD	4086	PL-P	PL51	20700110103	725	-77.3259	38.60735	2.85	2.04	0.81
P	RRD	4087	PL-P	PL51	20700110103	725	-77.3259	38.60501	2.58	1.14	1.44

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4088	PL-P	PL51	20700110103	725	-77.32296	38.60894	68.88	48.87	20.01
P	RRD	4089	PL-P	PL51	20700110103	725	-77.32265	38.60759	0.66	0.46	0.20
P	RRD	4090	PL-P	PL51	20700110103	725	-77.32369	38.60733	4.48	3.03	1.44
P	RRD	4091	PL-P	PL51	20700110103	725	-77.32374	38.60502	0.45	0.26	0.19
P	GD	4092	PL-P	PL51	20700110103	725	-77.32236	38.6061	0.90	0.57	0.33
P	STP	4093	PL-P	PL51	20700110103	725	-77.33588	38.60492	0.59	0.52	0.08
P	GD	4094	PL-P	PL51	20700110103	725	-77.31476	38.60782	21.48	15.48	5.99
P	RRD	4095	PL-P	PL51	20700110103	725	-77.31335	38.60865	5.18	3.28	1.90
P	RRD	4096	PL-P	PL51	20700110103	725	-77.31416	38.60964	0.44	0.31	0.13
P	RRD	4097	PL-P	PL51	20700110103	725	-77.31491	38.61167	28.08	18.41	9.67
P	RRD	4098	PL-P	PL51	20700110103	725	-77.31169	38.60867	2.11	1.77	0.34
P	RRD	4099	PL-P	PL51	20700110103	725	-77.31236	38.60984	27.72	22.80	4.92
P	STP	4101	PL-O	PL49	20700100804	850	-77.29956	38.61309	8.07	4.29	3.78
P	RRD	4102	PL-O	PL49	20700100804	850	-77.29745	38.61286	9.37	4.54	4.83
P	BMP	4108	PL-O	PL49	20700100804	850	-77.29065	38.60622	2.49	1.81	0.68
P	RRD	4109	PL-O	PL49	20700100804	850	-77.2905	38.60732	5.12	3.84	1.28
P	BMP	4111	PL-O	PL49	20700100804	850	-77.28819	38.60776	11.61	8.62	2.98
P	RRD	4112	PL-O	PL49	20700100804	850	-77.286	38.60771	2.88	1.94	0.94
P	RRD	4119	PL-O	PL49	20700100804	800	-77.2818	38.61137	21.36	12.07	9.28
P	RRD	4120	PL-O	PL49	20700100804	800	-77.27982	38.61141	21.48	11.24	10.24
P	RRD	4121	PL-O	PL49	20700100804	800	-77.28188	38.60707	3.08	2.62	0.47
P	RRD	4124	PL-O	PL49	20700100804	800	-77.2775	38.60453	4.68	3.21	1.47
P	CD	4125	PL-O	PL49	20700100804	800	-77.27548	38.60542	2.38	1.78	0.60
P	GD	4126	PL-O	PL49	20700100804	800	-77.27386	38.60525	14.50	10.52	3.97
P	GD	4127	PL-O	PL49	20700100804	800	-77.27271	38.60539	40.10	30.02	10.08
P	RRD	4131	PL-O	PL49	20700100804	800	-77.26823	38.60194	1.63	1.25	0.39
P	GD	4136	PL-O	PL50	20700100805	10	-77.24858	38.62871	7.78	5.46	2.32
P	GD	4137	PL-O	PL50	20700100805	20	-77.2486	38.62823	9.89	7.08	2.80
P	STP	4139	PL-O	PL50	20700100805	10	-77.25503	38.62391	0.44	0.09	0.35
P	STP	4143	PL-O	PL50	20700100805	10	-77.25658	38.62684	45.02	35.02	10.00
P	STP	4144	PL-O	PL50	20700100805	10	-77.25662	38.62796	1.23	0.86	0.37
P	STP	4145	PL-O	PL50	20700100805	10	-77.25693	38.62843	5.14	3.99	1.16
P	STP	4146	PL-O	PL50	20700100805	10	-77.25639	38.623	3.50	2.38	1.12
P	STP	4147	PL-O	PL50	20700100805	10	-77.25643	38.62379	7.62	5.95	1.67
P	STP	4148	PL-O	PL50	20700100805	10	-77.25642	38.62474	12.68	9.62	3.05
P	STP	4151	PL-O	PL49	20700100804	855	-77.26398	38.62262	3.32	2.56	0.75
P	STP	4152	PL-O	PL49	20700100804	855	-77.26473	38.62111	5.10	3.72	1.39

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4153	PL-O	PL49	20700100804	855	-77.26596	38.6205	0.88	0.32	0.56
P	RRD	4154	PL-O	PL49	20700100804	855	-77.26651	38.62031	1.31	0.83	0.49
P	RRD	4155	PL-O	PL49	20700100804	855	-77.2672	38.61976	1.08	0.78	0.30
P	RRD	4156	PL-O	PL49	20700100804	855	-77.26682	38.61907	13.83	9.79	4.04
P	RRD	4159	PL-O	PL49	20700100804	855	-77.26837	38.61874	1.76	0.75	1.01
P	RRD	4160	PL-O	PL49	20700100804	855	-77.26804	38.61815	1.86	0.93	0.94
P	RRD	4161	PL-O	PL49	20700100804	855	-77.26947	38.61788	5.36	2.69	2.66
P	RRD	4162	PL-O	PL49	20700100804	855	-77.27015	38.61723	2.20	1.66	0.55
P	RRD	4163	PL-O	PL49	20700100804	855	-77.27171	38.6174	17.17	9.07	8.10
P	GD	4166	PL-O	PL49	20700100804	855	-77.27525	38.61787	1.57	1.10	0.47
P	RRD	4168	PL-O	PL49	20700100804	855	-77.27631	38.62064	0.44	0.25	0.19
P	RRD	4169	PL-O	PL49	20700100804	855	-77.27649	38.62106	1.93	1.16	0.77
P	STP	4170	PL-O	PL49	20700100804	855	-77.27579	38.62207	17.10	9.69	7.41
P	STP	4171	PL-O	PL49	20700100804	855	-77.27707	38.62205	8.78	4.82	3.96
P	STP	4172	PL-O	PL49	20700100804	855	-77.27759	38.62321	1.15	0.43	0.72
P	STP	4174	PL-O	PL49	20700100804	845	-77.28146	38.62767	21.04	7.39	13.66
P	RRD	4175	PL-O	PL49	20700100804	845	-77.28088	38.62796	10.67	3.37	7.29
P	RRD	4176	PL-O	PL49	20700100804	845	-77.28105	38.62828	0.73	0.42	0.31
P	RRD	4177	PL-O	PL49	20700100804	845	-77.28131	38.6287	22.63	7.60	15.03
P	RRD	4178	PL-O	PL49	20700100804	845	-77.28185	38.62913	0.60	0.27	0.33
P	RRD	4179	PL-O	PL49	20700100804	845	-77.28262	38.62888	3.55	1.02	2.53
P	RRD	4180	PL-O	PL49	20700100804	845	-77.28323	38.62923	2.18	1.16	1.02
P	RRD	4181	PL-O	PL49	20700100804	845	-77.28329	38.62941	35.56	14.07	21.48
P	RRD	4182	PL-O	PL49	20700100804	845	-77.28316	38.6298	1.54	1.02	0.52
P	STP	4185	PL-O	PL49	20700100804	850	-77.29621	38.62878	8.57	2.35	6.22
P	GD	4187	PL-O	PL49	20700100804	835	-77.306	38.63069	9.16	6.74	2.42
P	GD	4188	PL-O	PL49	20700100804	835	-77.30623	38.62943	3.03	2.35	0.68
P	RRD	4190	PL-O	PL49	20700100804	835	-77.30547	38.6265	1.37	0.52	0.86
P	CD	4196	PL-O	PL49	20700100804	830	-77.3129	38.62543	1.09	0.69	0.40
P	CD	4198	PL-O	PL49	20700100804	830	-77.31364	38.62564	1.89	1.07	0.82
P	STP	4199	PL-O	PL49	20700100804	830	-77.31503	38.62288	3.03	1.36	1.68
P	STP	4200	PL-O	PL49	20700100804	830	-77.31469	38.62188	4.74	2.28	2.46
P	GD	4201	PL-O	PL49	20700100804	830	-77.31741	38.62225	7.72	4.60	3.12
P	STP	4202	PL-O	PL49	20700100804	830	-77.31859	38.62072	22.11	15.22	6.89
P	RRD	4203	PL-O	PL49	20700100804	830	-77.3193	38.61907	16.73	12.42	4.31
P	STP	4204	PL-O	PL49	20700100804	830	-77.31823	38.62316	4.09	3.21	0.88
P	STP	4205	PL-O	PL49	20700100804	830	-77.31652	38.62457	0.54	0.26	0.28

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	4206	PL-O	PL49	20700100804	830	-77.31787	38.62409	0.73	0.32	0.41
P	STP	4207	PL-O	PL49	20700100804	830	-77.31812	38.62407	1.13	0.88	0.25
P	RRD	4208	PL-O	PL49	20700100804	830	-77.31817	38.62531	4.65	2.16	2.49
P	GD	4209	PL-O	PL49	20700100804	830	-77.32047	38.6256	5.89	3.74	2.15
P	STP	4210	PL-O	PL49	20700100804	830	-77.31992	38.62542	0.14	0.11	0.03
P	STP	4211	PL-O	PL49	20700100804	830	-77.31523	38.62516	16.22	7.89	8.33
P	STP	4216	PL-O	PL49	20700100804	830	-77.3125	38.62953	0.09	0.09	0.00
P	STP	4217	PL-O	PL49	20700100804	830	-77.31224	38.62949	3.39	2.39	1.00
P	STP	4218	PL-O	PL49	20700100804	830	-77.31371	38.62487	4.50	2.56	1.94
P	STP	4219	PL-O	PL49	20700100804	830	-77.31838	38.62827	1.39	0.69	0.70
P	CD	4220	PL-O	PL49	20700100804	830	-77.31939	38.62876	2.47	1.18	1.29
P	STP	4221	PL-O	PL49	20700100804	830	-77.31988	38.62885	3.46	1.68	1.79
P	RRD	4222	PL-O	PL49	20700100804	830	-77.31966	38.6301	4.76	3.34	1.42
P	RRD	4223	PL-O	PL49	20700100804	835	-77.30888	38.62947	1.63	0.55	1.08
P	STP	4224	PL-O	PL49	20700100804	835	-77.30938	38.63037	0.65	0.45	0.20
P	STP	4225	PL-O	PL49	20700100804	830	-77.32041	38.62205	14.58	11.26	3.32
P	STP	4226	PL-O	PL49	20700100804	830	-77.32143	38.62115	3.99	3.05	0.93
P	STP	4227	PL-O	PL49	20700100804	830	-77.32171	38.61915	14.21	10.60	3.61
P	RRD	4228	PL-O	PL49	20700100804	830	-77.3238	38.62006	12.03	8.91	3.12
P	RRD	4229	PL-O	PL49	20700100804	830	-77.32597	38.62054	18.91	14.53	4.38
P	STP	4230	PL-O	PL49	20700100804	830	-77.32462	38.62121	1.90	1.19	0.71
P	RRD	4231	PL-O	PL49	20700100804	830	-77.32562	38.62169	5.34	3.89	1.45
P	STP	4232	PL-O	PL49	20700100804	830	-77.32571	38.62328	18.88	13.31	5.58
P	GD	4233	PL-O	PL49	20700100804	830	-77.32896	38.62166	1.84	1.28	0.56
P	STP	4234	PL-O	PL49	20700100804	830	-77.32806	38.62232	8.51	6.25	2.26
P	STP	4235	PL-O	PL49	20700100804	830	-77.33086	38.62201	6.44	5.23	1.20
P	RRD	4236	PL-O	PL49	20700100804	830	-77.33366	38.62291	0.71	0.58	0.13
P	RRD	4237	PL-O	PL49	20700100804	830	-77.3317	38.62361	0.26	0.20	0.06
P	RRD	4238	PL-O	PL49	20700100804	830	-77.3351	38.62407	0.00	0.00	0.00
P	GD	4239	PL-O	PL49	20700100804	830	-77.33503	38.62414	4.50	3.41	1.09
P	STP	4240	PL-O	PL49	20700100804	830	-77.33632	38.6238	10.06	6.02	4.04
P	RRD	4241	PL-O	PL49	20700100804	830	-77.33181	38.62511	3.64	2.69	0.95
P	GD	4243	PL-O	PL49	20700100804	830	-77.33035	38.62695	0.72	0.48	0.24
P	STP	4244	PL-O	PL49	20700100804	830	-77.32811	38.62707	5.07	3.73	1.33
P	RRD	4245	PL-O	PL49	20700100804	830	-77.32909	38.62838	0.32	0.22	0.09
P	RRD	4246	PL-O	PL49	20700100804	830	-77.32757	38.62919	0.32	0.21	0.11
P	STP	4247	PL-O	PL49	20700100804	830	-77.32664	38.629	6.54	5.11	1.43

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4248	PL-O	PL49	20700100804	830	-77.32652	38.63042	4.02	2.83	1.19
P	RRD	4249	PL-O	PL49	20700100804	830	-77.32588	38.62989	10.87	7.92	2.95
P	CD	4250	PL-O	PL49	20700100804	830	-77.33295	38.6305	0.26	0.19	0.08
P	RRD	4251	PL-O	PL49	20700100804	830	-77.33181	38.63049	5.02	4.12	0.90
P	BMP	4252	PL-O	PL49	20700100804	830	-77.33035	38.6277	13.94	10.28	3.66
P	GD	4253	PL-O	PL49	20700100804	830	-77.3304	38.62797	3.73	2.97	0.77
P	STP	4254	PL-O	PL49	20700100804	830	-77.33056	38.6303	0.29	0.22	0.07
P	STP	4255	PL-O	PL49	20700100804	830	-77.32912	38.6299	0.56	0.40	0.17
P	CD	4256	PL-O	PL49	20700100804	830	-77.33052	38.62971	0.59	0.49	0.10
P	GD	4257	PL-O	PL49	20700100804	830	-77.33496	38.6304	0.76	0.60	0.16
P	STP	4258	PL-O	PL49	20700100804	830	-77.33533	38.62986	2.05	1.51	0.54
P	STP	4259	PL-O	PL49	20700100804	830	-77.33636	38.62922	2.90	2.18	0.72
P	STP	4260	PL-O	PL49	20700100804	830	-77.33597	38.6307	3.51	2.31	1.20
P	RRD	4261	PL-P	PL51	20700110103	725	-77.3369	38.62046	7.74	6.18	1.57
P	RRD	4262	PL-P	PL51	20700110103	725	-77.33654	38.61923	4.68	2.78	1.90
P	STP	4263	PL-P	PL51	20700110103	725	-77.33648	38.61879	3.06	1.55	1.51
P	RRD	4264	PL-P	PL51	20700110103	725	-77.33655	38.61753	1.83	0.91	0.91
P	STP	4265	PL-O	PL49	20700100804	830	-77.3374	38.62929	1.35	0.95	0.41
P	STP	4266	PL-P	PL51	20700110103	725	-77.33813	38.61879	3.23	2.37	0.86
P	STP	4267	PL-P	PL51	20700110103	725	-77.33862	38.62006	13.44	8.84	4.59
P	RRD	4268	PL-O	PL49	20700100804	830	-77.33949	38.62793	49.64	34.10	15.55
P	CD	4269	PL-O	PL49	20700100804	830	-77.33883	38.62801	1.19	0.87	0.32
P	RRD	4270	PL-O	PL49	20700100804	830	-77.33961	38.62895	3.94	2.77	1.17
P	GD	4271	PL-O	PL49	20700100804	830	-77.33806	38.62884	3.15	1.48	1.67
P	RRD	4272	PL-O	PL49	20700100804	830	-77.33925	38.62986	1.74	0.83	0.91
P	STP	4273	PL-O	PL49	20700100804	830	-77.34005	38.63054	1.78	1.36	0.41
P	RRD	4274	PL-O	PL49	20700100804	830	-77.34092	38.63073	1.24	0.41	0.83
P	STP	4275	PL-O	PL49	20700100804	830	-77.34348	38.63115	1.91	1.34	0.57
P	CD	4276	PL-O	PL49	20700100804	830	-77.34167	38.63048	37.34	22.06	15.28
P	RRD	4277	PL-P	PL51	20700110103	723	-77.34631	38.62079	13.43	9.58	3.86
P	RRD	4278	PL-P	PL51	20700110103	723	-77.34581	38.62007	0.90	0.60	0.30
P	STP	4279	PL-P	PL51	20700110103	723	-77.34516	38.6188	0.58	0.39	0.19
P	RRD	4280	PL-P	PL51	20700110103	723	-77.34606	38.61839	0.08	0.08	0.01
P	STP	4281	PL-P	PL51	20700110103	723	-77.34609	38.61783	4.86	3.27	1.59
P	RRD	4282	PL-P	PL51	20700110103	723	-77.34562	38.61744	1.56	1.10	0.46
P	RRD	4283	PL-P	PL51	20700110103	723	-77.35271	38.6202	1.51	0.77	0.73
P	RRD	4284	PL-P	PL51	20700110103	723	-77.34936	38.62306	10.57	7.06	3.51

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4285	PL-P	PL51	20700110103	723	-77.35014	38.62265	1.46	1.05	0.41
P	RRD	4286	PL-P	PL51	20700110103	723	-77.35025	38.62251	3.79	2.81	0.98
P	GD	4287	PL-P	PL51	20700110103	723	-77.35085	38.6238	2.89	2.04	0.85
P	GD	4288	PL-P	PL51	20700110103	723	-77.35135	38.62438	1.61	1.12	0.49
P	RRD	4289	PL-P	PL51	20700110103	723	-77.35256	38.62477	13.92	9.51	4.41
P	GD	4290	PL-P	PL51	20700110103	723	-77.35174	38.62527	0.65	0.40	0.25
P	RRD	4292	PL-P	PL51	20700110103	723	-77.35357	38.62715	1.52	0.87	0.65
P	RRD	4295	PL-P	PL51	20700110103	723	-77.35339	38.62933	6.60	4.75	1.85
P	RRD	4296	PL-P	PL51	20700110103	723	-77.35126	38.62996	0.34	0.26	0.08
P	STP	4297	PL-P	PL51	20700110103	723	-77.3521	38.63107	1.50	1.04	0.46
P	STP	4298	PL-P	PL51	20700110103	723	-77.35294	38.63176	1.74	1.18	0.56
P	GD	4299	PL-P	PL51	20700110103	723	-77.35257	38.63235	13.49	10.36	3.13
P	STP	4300	PL-P	PL51	20700110103	723	-77.35194	38.63254	5.59	4.16	1.43
P	STP	4301	PL-P	PL51	20700110103	723	-77.35188	38.61828	0.79	0.59	0.20
P	STP	4302	PL-P	PL51	20700110103	723	-77.35245	38.61803	0.32	0.19	0.13
P	RRD	4303	PL-P	PL51	20700110103	723	-77.35432	38.62072	1.15	0.53	0.61
P	GD	4304	PL-P	PL51	20700110103	723	-77.35452	38.62067	3.19	1.91	1.28
P	RRD	4305	PL-P	PL51	20700110103	723	-77.35381	38.61912	0.75	0.29	0.46
P	RRD	4306	PL-P	PL51	20700110103	723	-77.35352	38.62167	2.59	1.82	0.77
P	GD	4307	PL-P	PL51	20700110103	723	-77.34917	38.6201	0.50	0.38	0.12
P	STP	4308	PL-P	PL51	20700110103	723	-77.34975	38.61927	2.94	2.09	0.85
P	STP	4309	PL-P	PL51	20700110103	723	-77.35097	38.61804	3.83	2.72	1.11
P	RRD	4310	PL-P	PL51	20700110103	723	-77.35617	38.6181	1.33	0.79	0.54
P	RRD	4311	PL-P	PL51	20700110103	723	-77.35518	38.61865	0.58	0.30	0.28
P	RRD	4312	PL-P	PL51	20700110103	723	-77.35512	38.61928	0.79	0.35	0.44
P	RRD	4313	PL-P	PL51	20700110103	723	-77.35584	38.61993	1.12	0.64	0.48
P	GD	4314	PL-P	PL51	20700110103	720	-77.35954	38.61924	3.42	2.04	1.39
P	RRD	4315	PL-P	PL51	20700110103	720	-77.36111	38.62133	7.60	4.71	2.90
P	GD	4316	PL-P	PL51	20700110103	720	-77.36287	38.62213	2.56	1.59	0.96
P	STP	4317	PL-P	PL51	20700110103	720	-77.36497	38.62365	15.12	8.92	6.20
P	STP	4318	PL-P	PL51	20700110103	720	-77.36374	38.6232	1.12	0.55	0.57
P	RRD	4319	PL-P	PL51	20700110103	720	-77.36333	38.62404	8.83	5.23	3.60
P	RRD	4320	PL-P	PL51	20700110103	720	-77.3632	38.62496	1.95	1.44	0.51
P	RRD	4321	PL-P	PL51	20700110103	720	-77.36265	38.62493	9.94	6.12	3.82
P	RRD	4322	PL-P	PL51	20700110103	720	-77.36495	38.62558	22.13	16.52	5.61
P	RRD	4323	PL-P	PL51	20700110103	720	-77.36497	38.62547	2.67	1.36	1.31
P	GD	4324	PL-P	PL51	20700110103	720	-77.3651	38.62621	0.48	0.27	0.22

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4325	PL-P	PL51	20700110103	720	-77.36515	38.62687	1.16	0.69	0.47
P	GD	4326	PL-P	PL51	20700110103	720	-77.36507	38.62719	0.74	0.41	0.32
P	RRD	4327	PL-P	PL51	20700110103	720	-77.36416	38.62734	12.05	8.95	3.10
P	GD	4328	PL-P	PL51	20700110103	720	-77.36494	38.62781	0.55	0.31	0.24
P	GD	4329	PL-P	PL51	20700110103	720	-77.36517	38.6282	0.68	0.34	0.35
P	BMP	4330	PL-P	PL51	20700110103	720	-77.36647	38.62854	32.51	21.93	10.58
P	RRD	4331	PL-P	PL51	20700110103	720	-77.36596	38.62983	3.78	2.62	1.16
P	RRD	4332	PL-P	PL51	20700110103	720	-77.36855	38.63041	27.31	20.40	6.91
P	RRD	4333	PL-P	PL51	20700110103	720	-77.36789	38.63078	3.74	2.86	0.89
P	RRD	4334	PL-P	PL51	20700110103	720	-77.37115	38.61855	35.01	21.96	13.06
P	RRD	4335	PL-P	PL51	20700110103	723	-77.35802	38.61805	1.02	0.46	0.56
P	RRD	4336	PL-P	PL51	20700110103	723	-77.35768	38.61849	2.03	1.27	0.76
P	RRD	4337	PL-P	PL51	20700110103	723	-77.35812	38.61935	1.92	1.22	0.70
P	RRD	4338	PL-P	PL51	20700110103	723	-77.35867	38.62045	0.54	0.38	0.16
P	GD	4339	PL-P	PL51	20700110103	723	-77.35799	38.62073	1.30	0.64	0.66
P	RRD	4340	PL-P	PL51	20700110103	723	-77.35638	38.62305	5.30	3.81	1.49
P	STP	4341	PL-P	PL51	20700110103	723	-77.35728	38.62313	0.32	0.24	0.08
P	RRD	4342	PL-P	PL51	20700110103	723	-77.35777	38.62305	5.82	4.26	1.56
P	RRD	4343	PL-P	PL51	20700110103	723	-77.35685	38.62472	10.89	8.32	2.57
P	GD	4344	PL-P	PL51	20700110103	715	-77.38477	38.62032	3.22	1.89	1.33
P	RRD	4345	PL-P	PL51	20700110103	715	-77.38638	38.62187	1.87	0.87	0.99
P	GD	4346	PL-P	PL51	20700110103	715	-77.38755	38.62027	5.26	3.38	1.88
P	RRD	4347	PL-P	PL51	20700110103	715	-77.38955	38.62238	1.57	0.80	0.77
P	STP	4348	PL-P	PL51	20700110103	715	-77.39127	38.62289	2.47	1.32	1.15
P	STP	4349	PL-P	PL51	20700110103	715	-77.39058	38.62213	5.71	3.02	2.70
P	RRD	4350	PL-P	PL51	20700110103	715	-77.3912	38.62156	2.53	1.97	0.56
P	RRD	4351	PL-P	PL51	20700110103	715	-77.39137	38.62156	1.88	0.94	0.93
P	RRD	4352	PL-P	PL51	20700110103	715	-77.3847	38.62402	1.16	0.77	0.38
P	RRD	4353	PL-P	PL51	20700110103	715	-77.38544	38.62515	42.73	31.88	10.86
P	RRD	4354	PL-P	PL51	20700110103	715	-77.38726	38.62698	4.03	2.75	1.28
P	RRD	4355	PL-P	PL51	20700110103	715	-77.38882	38.62875	2.09	1.14	0.95
P	RRD	4356	PL-P	PL51	20700110103	715	-77.38837	38.62829	1.81	1.25	0.57
P	STP	4357	PL-P	PL51	20700110103	715	-77.3893	38.62785	1.06	0.57	0.49
P	RRD	4358	PL-P	PL51	20700110103	715	-77.38731	38.62961	85.04	70.31	14.73
P	STP	4359	PL-P	PL51	20700110103	715	-77.38963	38.62583	2.70	1.35	1.35
P	STP	4360	PL-P	PL51	20700110103	715	-77.38111	38.6178	0.91	0.62	0.29
P	RRD	4361	PL-P	PL51	20700110103	715	-77.38124	38.61776	3.69	2.44	1.26

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4362	PL-P	PL51	20700110103	715	-77.37869	38.61666	0.07	0.07	0.01
P	GD	4363	PL-P	PL52	20700110104	610	-77.40006	38.61926	1.41	0.98	0.43
P	GD	4364	PL-P	PL52	20700110104	610	-77.39997	38.61947	7.04	5.26	1.78
P	STP	4367	PL-P	PL51	20700110103	715	-77.39276	38.62572	2.55	1.43	1.12
P	GD	4368	PL-P	PL51	20700110103	715	-77.39513	38.62499	1.74	1.32	0.42
P	BMP	4369	PL-P	PL51	20700110103	715	-77.39603	38.62432	9.92	7.59	2.33
P	STP	4371	PL-P	PL51	20700110103	715	-77.39292	38.62095	1.08	0.58	0.51
P	STP	4372	PL-P	PL51	20700110103	715	-77.39229	38.62086	1.41	1.06	0.35
P	STP	4373	PL-P	PL51	20700110103	715	-77.39345	38.62722	2.96	2.25	0.71
P	RRD	4374	PL-P	PL51	20700110103	715	-77.3923	38.62803	1.82	0.89	0.92
P	RRD	4375	PL-P	PL51	20700110103	715	-77.39316	38.62885	0.74	0.44	0.30
P	STP	4376	PL-P	PL51	20700110103	715	-77.39578	38.62756	3.73	2.93	0.80
P	GD	4377	PL-P	PL51	20700110103	715	-77.3933	38.62964	6.67	4.33	2.33
P	GD	4378	PL-P	PL51	20700110103	715	-77.39333	38.62971	6.88	4.57	2.31
P	GD	4379	PL-P	PL51	20700110103	715	-77.39487	38.63069	17.29	12.34	4.95
P	GD	4380	PL-P	PL51	20700110103	715	-77.39783	38.62815	0.10	0.09	0.02
P	GD	4381	PL-P	PL51	20700110103	715	-77.39981	38.62791	3.52	2.72	0.80
P	GD	4382	PL-P	PL51	20700110103	715	-77.40066	38.62883	2.17	1.78	0.39
P	GD	4383	PL-P	PL51	20700110103	715	-77.40115	38.62535	3.14	2.53	0.61
P	GD	4384	PL-P	PL51	20700110103	715	-77.40128	38.63395	18.30	13.91	4.39
P	RRD	4385	PL-P	PL51	20700110103	715	-77.39108	38.62738	1.87	1.15	0.72
P	RRD	4387	PL-P	PL52	20700110104	605	-77.44357	38.6327	0.86	0.61	0.26
P	STP	4389	PL-M	PL38	20700100604	316	-77.57408	38.64394	2.16	1.78	0.38
P	STP	4390	PL-M	PL38	20700100604	316	-77.57252	38.646	16.98	16.65	0.32
P	GD	4393	PL-M	PL40	20700100606	332	-77.48428	38.64034	3.53	2.37	1.17
P	GD	4394	PL-M	PL40	20700100606	332	-77.47991	38.64124	2.84	1.99	0.85
P	GD	4395	PL-M	PL40	20700100606	330	-77.48183	38.64552	6.28	4.71	1.56
P	GD	4397	PL-M	PL40	20700100606	330	-77.47964	38.64426	1.24	0.91	0.33
P	RRD	4399	PL-M	PL40	20700100606	332	-77.47855	38.64167	3.13	2.06	1.07
P	RRD	4400	PL-M	PL40	20700100606	330	-77.46957	38.63764	8.67	5.88	2.78
P	RRD	4401	PL-M	PL40	20700100606	330	-77.47155	38.63851	3.64	2.47	1.17
P	STP	4402	PL-P	PL52	20700110104	605	-77.46156	38.63501	2.18	1.52	0.66
P	BMP	4403	PL-P	PL52	20700110104	605	-77.45278	38.63504	11.44	8.89	2.55
P	GD	4406	PL-P	PL52	20700110104	605	-77.44196	38.63454	0.31	0.27	0.04
P	RRD	4407	PL-P	PL52	20700110104	705	-77.42709	38.6344	8.82	7.48	1.34
P	STP	4409	PL-P	PL51	20700110103	705	-77.41898	38.6338	7.46	3.88	3.57
P	GD	4411	PL-M	PL40	20700100606	318	-77.52319	38.63405	4.08	3.86	0.22

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	4412	PL-M	PL40	20700100606	318	-77.52316	38.63388	1.84	1.43	0.41
P	GD	4413	PL-M	PL40	20700100606	318	-77.52599	38.63614	4.53	4.22	0.31
P	GD	4414	PL-M	PL40	20700100606	318	-77.52646	38.63509	13.87	13.07	0.80
P	GD	4415	PL-M	PL40	20700100606	318	-77.53214	38.63404	4.40	3.97	0.42
P	GD	4416	PL-M	PL40	20700100606	320	-77.52848	38.63776	19.31	18.50	0.81
P	GD	4417	PL-M	PL40	20700100606	320	-77.53147	38.63912	7.66	6.56	1.11
P	GD	4418	PL-M	PL40	20700100606	318	-77.52356	38.63675	0.15	0.10	0.04
P	GD	4419	PL-M	PL40	20700100606	318	-77.51996	38.63343	23.79	23.08	0.71
P	GD	4420	PL-M	PL40	20700100606	320	-77.52222	38.64093	3.53	3.07	0.46
P	GD	4421	PL-M	PL40	20700100606	320	-77.52203	38.64096	8.64	8.26	0.38
P	GD	4422	PL-M	PL40	20700100606	320	-77.52207	38.64114	6.36	5.65	0.72
P	GD	4423	PL-M	PL40	20700100606	320	-77.52191	38.64116	2.91	2.42	0.49
P	GD	4424	PL-M	PL40	20700100606	318	-77.5239	38.6364	5.54	5.09	0.45
P	RRD	4425	PL-P	PL51	20700110103	710	-77.40258	38.6424	16.97	12.83	4.14
P	RRD	4427	PL-P	PL51	20700110103	715	-77.39709	38.64198	9.86	7.09	2.77
P	RRD	4428	PL-P	PL51	20700110103	715	-77.39548	38.64388	0.21	0.12	0.09
P	GD	4429	PL-P	PL51	20700110103	715	-77.39376	38.64354	3.65	2.58	1.07
P	STP	4430	PL-P	PL51	20700110103	715	-77.39951	38.63771	14.86	11.53	3.34
P	GD	4431	PL-P	PL51	20700110103	705	-77.40313	38.63703	3.18	2.43	0.75
P	GD	4432	PL-P	PL51	20700110103	705	-77.40749	38.63465	4.44	3.51	0.94
P	GD	4433	PL-P	PL51	20700110103	715	-77.39911	38.63382	0.72	0.47	0.25
P	GD	4435	PL-P	PL51	20700110103	715	-77.39899	38.63194	1.62	1.22	0.40
P	STP	4436	PL-P	PL51	20700110103	715	-77.39481	38.6322	4.39	3.21	1.19
P	GD	4437	PL-P	PL51	20700110103	715	-77.3932	38.63502	13.64	9.76	3.88
P	STP	4438	PL-P	PL51	20700110103	715	-77.39413	38.63629	4.35	3.37	0.98
P	GD	4439	PL-P	PL51	20700110103	715	-77.39165	38.63799	2.47	1.77	0.71
P	GD	4440	PL-P	PL51	20700110103	715	-77.39246	38.63908	5.86	4.24	1.62
P	STP	4442	PL-P	PL51	20700110103	715	-77.38054	38.63462	7.77	3.75	4.01
P	STP	4446	PL-P	PL51	20700110103	715	-77.3772	38.63387	12.70	8.85	3.85
P	RRD	4448	PL-O	PL49	20700100804	815	-77.37344	38.63639	7.79	4.83	2.96
P	STP	4449	PL-O	PL49	20700100804	815	-77.37321	38.63621	1.25	0.84	0.41
P	GD	4450	PL-O	PL49	20700100804	815	-77.37335	38.63654	2.36	1.70	0.66
P	RRD	4451	PL-O	PL49	20700100804	815	-77.37274	38.63632	1.56	1.10	0.47
P	STP	4452	PL-O	PL49	20700100804	815	-77.37368	38.63903	40.63	31.83	8.80
P	RRD	4453	PL-O	PL49	20700100804	815	-77.3736	38.63906	0.54	0.40	0.14
P	STP	4454	PL-O	PL49	20700100804	815	-77.37703	38.64345	0.73	0.51	0.21
P	STP	4455	PL-O	PL49	20700100804	815	-77.37554	38.64298	2.57	1.95	0.63

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4456	PL-O	PL49	20700100804	815	-77.37516	38.64338	9.54	6.84	2.69
P	RRD	4457	PL-O	PL49	20700100804	815	-77.37543	38.64251	26.44	20.71	5.73
P	RRD	4458	PL-O	PL49	20700100804	815	-77.37993	38.64458	45.68	32.22	13.46
P	STP	4459	PL-O	PL49	20700100804	815	-77.37903	38.64455	2.96	2.64	0.32
P	RRD	4460	PL-P	PL51	20700110103	715	-77.38927	38.64096	15.46	12.74	2.72
P	GD	4461	PL-P	PL51	20700110103	715	-77.38741	38.6429	1.54	1.18	0.36
P	GD	4464	PL-P	PL51	20700110103	715	-77.38867	38.63913	1.72	1.32	0.39
P	RRD	4465	PL-O	PL49	20700100804	815	-77.37123	38.64487	5.08	3.84	1.23
P	STP	4466	PL-O	PL49	20700100804	815	-77.37171	38.64506	6.13	4.51	1.61
P	RRD	4467	PL-O	PL49	20700100804	815	-77.37015	38.64513	5.70	4.42	1.28
P	RRD	4468	PL-O	PL49	20700100804	815	-77.36591	38.64492	1.81	1.25	0.55
P	STP	4469	PL-O	PL49	20700100804	815	-77.3669	38.64177	9.55	7.12	2.43
P	RRD	4470	PL-O	PL49	20700100804	815	-77.36524	38.64246	10.68	6.74	3.94
P	GD	4471	PL-O	PL49	20700100804	815	-77.36443	38.63689	8.93	5.29	3.65
P	RRD	4472	PL-O	PL49	20700100804	815	-77.36554	38.63644	6.41	4.82	1.59
P	RRD	4473	PL-O	PL49	20700100804	815	-77.36568	38.6356	8.37	6.01	2.36
P	STP	4474	PL-O	PL49	20700100804	815	-77.36256	38.63848	7.88	4.78	3.10
P	RRD	4475	PL-O	PL49	20700100804	815	-77.36222	38.63883	2.38	2.16	0.22
P	RRD	4476	PL-O	PL49	20700100804	815	-77.36225	38.63827	3.91	2.07	1.84
P	RRD	4477	PL-O	PL49	20700100804	815	-77.36036	38.63818	35.65	23.30	12.35
P	RRD	4478	PL-O	PL49	20700100804	815	-77.35964	38.6394	24.99	17.12	7.87
P	RRD	4479	PL-O	PL49	20700100804	815	-77.35682	38.64471	7.31	5.48	1.82
P	RRD	4480	PL-O	PL49	20700100804	815	-77.35678	38.64195	7.29	5.59	1.70
P	STP	4481	PL-O	PL49	20700100804	815	-77.35702	38.64158	9.14	6.82	2.32
P	GD	4482	PL-O	PL49	20700100804	815	-77.36046	38.64163	1.16	1.05	0.11
P	RRD	4483	PL-O	PL49	20700100804	815	-77.36076	38.64207	4.14	2.51	1.62
P	STP	4484	PL-O	PL49	20700100804	815	-77.37045	38.63926	18.15	13.77	4.38
P	RRD	4485	PL-O	PL49	20700100804	815	-77.37119	38.63859	2.94	2.11	0.83
P	RRD	4486	PL-O	PL49	20700100804	815	-77.37218	38.63844	0.33	0.23	0.10
P	RRD	4487	PL-O	PL49	20700100804	815	-77.37173	38.6373	3.77	2.67	1.10
P	STP	4488	PL-P	PL51	20700110103	720	-77.36842	38.63136	27.22	18.88	8.34
P	STP	4489	PL-O	PL49	20700100804	815	-77.35326	38.64376	0.73	0.54	0.19
P	RRD	4490	PL-O	PL49	20700100804	815	-77.35318	38.64325	0.40	0.29	0.11
P	GD	4491	PL-O	PL49	20700100804	815	-77.35342	38.6426	1.36	1.02	0.34
P	RRD	4492	PL-O	PL49	20700100804	815	-77.35318	38.64238	33.10	22.18	10.92
P	RRD	4493	PL-O	PL49	20700100804	830	-77.34359	38.63316	23.41	18.06	5.35
P	STP	4494	PL-O	PL49	20700100804	830	-77.34283	38.63163	1.73	0.72	1.00

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4495	PL-O	PL49	20700100804	830	-77.34369	38.63186	4.96	3.72	1.24
P	RRD	4496	PL-O	PL49	20700100804	830	-77.34407	38.63449	5.11	3.82	1.29
P	RRD	4498	PL-O	PL49	20700100804	830	-77.3418	38.63852	6.16	2.81	3.35
P	STP	4501	PL-O	PL49	20700100804	830	-77.33904	38.63868	0.14	0.09	0.05
P	RRD	4502	PL-O	PL49	20700100804	830	-77.33866	38.63916	7.61	5.50	2.11
P	RRD	4503	PL-O	PL49	20700100804	830	-77.33766	38.63937	1.48	1.03	0.46
P	RRD	4507	PL-O	PL49	20700100804	815	-77.34721	38.64467	17.77	10.65	7.13
P	RRD	4510	PL-O	PL49	20700100804	830	-77.33472	38.63539	9.41	5.17	4.24
P	RRD	4511	PL-O	PL49	20700100804	830	-77.33125	38.63472	0.83	0.59	0.23
P	RRD	4512	PL-O	PL49	20700100804	830	-77.32941	38.63511	10.18	7.24	2.94
P	STP	4513	PL-O	PL49	20700100804	830	-77.33287	38.6368	1.37	1.02	0.35
P	RRD	4514	PL-O	PL49	20700100804	830	-77.33278	38.63868	3.49	2.38	1.11
P	STP	4515	PL-O	PL49	20700100804	830	-77.33553	38.63953	6.11	3.37	2.75
P	STP	4516	PL-O	PL49	20700100804	830	-77.33844	38.6362	1.97	1.34	0.63
P	RRD	4517	PL-O	PL49	20700100804	830	-77.33792	38.63465	1.34	0.48	0.86
P	GD	4518	PL-O	PL49	20700100804	830	-77.33569	38.63151	3.68	2.56	1.12
P	RRD	4519	PL-O	PL49	20700100804	830	-77.33344	38.64253	1.28	0.85	0.43
P	GD	4520	PL-O	PL49	20700100804	830	-77.33349	38.64266	5.52	2.64	2.88
P	RRD	4521	PL-O	PL49	20700100804	830	-77.33231	38.64244	1.41	1.00	0.41
P	RRD	4522	PL-O	PL49	20700100804	830	-77.33243	38.64309	0.59	0.40	0.20
P	GD	4523	PL-O	PL49	20700100804	830	-77.3314	38.64314	21.14	9.81	11.34
P	STP	4524	PL-O	PL49	20700100804	830	-77.33378	38.6382	0.54	0.19	0.35
P	STP	4525	PL-O	PL49	20700100804	830	-77.33324	38.63862	2.37	1.15	1.22
P	RRD	4526	PL-O	PL49	20700100804	830	-77.33135	38.63978	0.58	0.45	0.14
P	STP	4527	PL-O	PL49	20700100804	830	-77.33047	38.64077	7.07	5.55	1.52
P	RRD	4528	PL-O	PL49	20700100804	830	-77.33147	38.63176	10.04	7.41	2.63
P	RRD	4529	PL-O	PL49	20700100804	830	-77.32343	38.63204	6.39	4.61	1.78
P	RRD	4530	PL-O	PL49	20700100804	830	-77.3223	38.63169	19.05	13.72	5.33
P	GD	4531	PL-O	PL49	20700100804	830	-77.32274	38.63192	0.77	0.59	0.18
P	RRD	4532	PL-O	PL49	20700100804	830	-77.32576	38.63393	4.81	3.66	1.16
P	RRD	4533	PL-O	PL49	20700100804	830	-77.32394	38.63456	0.73	0.55	0.19
P	RRD	4534	PL-O	PL49	20700100804	830	-77.32484	38.63467	0.43	0.28	0.15
P	STP	4535	PL-O	PL49	20700100804	830	-77.32461	38.63498	2.29	1.68	0.61
P	RRD	4536	PL-O	PL49	20700100804	830	-77.3253	38.63536	10.67	7.83	2.84
P	RRD	4537	PL-O	PL49	20700100804	830	-77.32528	38.63528	1.94	1.41	0.53
P	STP	4538	PL-O	PL49	20700100804	830	-77.32288	38.63103	2.33	1.58	0.76
P	RRD	4539	PL-O	PL49	20700100804	830	-77.32301	38.63954	3.98	3.03	0.95

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4540	PL-O	PL49	20700100804	830	-77.32271	38.63884	7.66	6.07	1.59
P	STP	4541	PL-O	PL49	20700100804	830	-77.31989	38.64141	0.56	0.45	0.11
P	STP	4542	PL-O	PL49	20700100804	830	-77.32127	38.64242	1.84	1.37	0.47
P	GD	4543	PL-O	PL49	20700100804	830	-77.32191	38.64247	3.01	2.32	0.70
P	STP	4544	PL-O	PL49	20700100804	830	-77.32202	38.64251	0.27	0.23	0.04
P	STP	4545	PL-O	PL49	20700100804	830	-77.32262	38.64334	10.89	7.88	3.01
P	STP	4546	PL-O	PL49	20700100804	830	-77.32179	38.64311	1.40	1.08	0.31
P	STP	4547	PL-O	PL49	20700100804	830	-77.32313	38.64307	7.13	5.59	1.54
P	GD	4548	PL-O	PL49	20700100804	830	-77.31976	38.6382	1.57	1.30	0.27
P	GD	4549	PL-O	PL49	20700100804	830	-77.3187	38.63771	0.30	0.22	0.08
P	RRD	4550	PL-O	PL49	20700100804	830	-77.31812	38.63612	1.43	0.54	0.88
P	RRD	4551	PL-O	PL49	20700100804	830	-77.31866	38.63571	5.20	3.21	1.99
P	GD	4552	PL-O	PL49	20700100804	830	-77.31835	38.63496	1.94	1.03	0.90
P	GD	4553	PL-O	PL49	20700100804	830	-77.31714	38.63395	1.86	1.14	0.71
P	RRD	4554	PL-O	PL49	20700100804	830	-77.31698	38.63389	0.14	0.12	0.02
P	RRD	4555	PL-O	PL49	20700100804	830	-77.31646	38.63281	0.55	0.23	0.32
P	RRD	4556	PL-O	PL49	20700100804	830	-77.31699	38.63272	2.81	1.41	1.40
P	RRD	4557	PL-O	PL49	20700100804	830	-77.3159	38.63185	0.66	0.25	0.41
P	RRD	4558	PL-O	PL49	20700100804	830	-77.31564	38.6312	3.95	1.90	2.05
P	RRD	4559	PL-O	PL49	20700100804	830	-77.31273	38.63156	1.82	1.44	0.38
P	STP	4560	PL-O	PL49	20700100804	830	-77.31236	38.63316	5.91	4.60	1.31
P	RRD	4561	PL-O	PL49	20700100804	830	-77.31582	38.63408	0.11	0.04	0.08
P	RRD	4562	PL-O	PL49	20700100804	830	-77.31482	38.6333	1.25	0.44	0.81
P	STP	4563	PL-O	PL49	20700100804	830	-77.31348	38.63392	0.27	0.21	0.06
P	RRD	4564	PL-O	PL49	20700100804	830	-77.31188	38.63509	3.38	2.56	0.81
P	RRD	4565	PL-O	PL49	20700100804	830	-77.31421	38.63509	0.44	0.35	0.09
P	STP	4568	PL-O	PL49	20700100804	830	-77.3126	38.63751	2.90	2.29	0.61
P	RRD	4569	PL-O	PL49	20700100804	830	-77.31372	38.63776	1.73	1.42	0.31
P	RRD	4570	PL-O	PL49	20700100804	830	-77.31415	38.63929	4.98	2.73	2.26
P	RRD	4571	PL-O	PL49	20700100804	830	-77.31381	38.63905	0.89	0.39	0.49
P	RRD	4572	PL-O	PL49	20700100804	830	-77.31334	38.63949	8.46	5.91	2.55
P	RRD	4573	PL-O	PL49	20700100804	830	-77.31618	38.63729	3.41	2.02	1.38
P	RRD	4574	PL-O	PL49	20700100804	830	-77.31626	38.63835	1.83	0.89	0.94
P	RRD	4575	PL-O	PL49	20700100804	830	-77.31554	38.6387	1.60	0.55	1.05
P	STP	4576	PL-O	PL49	20700100804	830	-77.31654	38.63991	0.98	0.63	0.35
P	STP	4578	PL-O	PL49	20700100804	830	-77.31849	38.64086	0.83	0.58	0.25
P	STP	4579	PL-O	PL49	20700100804	830	-77.31898	38.64157	0.06	0.06	0.00

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	4580	PL-O	PL49	20700100804	830	-77.3183	38.64264	0.42	0.34	0.08
P	STP	4581	PL-O	PL49	20700100804	830	-77.31721	38.64411	0.16	0.13	0.03
P	STP	4582	PL-O	PL49	20700100804	830	-77.31729	38.64376	0.28	0.20	0.08
P	RRD	4583	PL-O	PL49	20700100804	830	-77.31586	38.63968	0.37	0.16	0.22
P	RRD	4584	PL-O	PL49	20700100804	830	-77.31557	38.64036	0.03	0.03	0.00
P	RRD	4585	PL-O	PL49	20700100804	830	-77.31509	38.64022	0.15	0.06	0.09
P	STP	4586	PL-O	PL49	20700100804	830	-77.31552	38.64056	0.86	0.33	0.53
P	RRD	4587	PL-O	PL49	20700100804	830	-77.31514	38.6407	0.16	0.09	0.07
P	STP	4589	PL-O	PL49	20700100804	830	-77.31511	38.64279	1.67	1.22	0.45
P	STP	4590	PL-O	PL49	20700100804	830	-77.31474	38.64397	1.47	0.53	0.95
P	CD	4592	PL-O	PL49	20700100804	835	-77.30939	38.6311	0.78	0.38	0.39
P	STP	4593	PL-O	PL49	20700100804	835	-77.30872	38.63125	1.20	0.45	0.75
P	STP	4594	PL-O	PL49	20700100804	835	-77.30978	38.63361	1.07	0.85	0.21
P	STP	4595	PL-O	PL49	20700100804	835	-77.30932	38.63329	1.51	1.17	0.33
P	STP	4596	PL-O	PL49	20700100804	835	-77.30751	38.63272	2.40	2.08	0.32
P	STP	4597	PL-O	PL49	20700100804	835	-77.30712	38.63353	1.93	1.53	0.40
P	STP	4598	PL-O	PL49	20700100804	835	-77.30718	38.63485	0.20	0.15	0.05
P	STP	4599	PL-O	PL49	20700100804	835	-77.30653	38.63476	7.54	6.52	1.02
P	STP	4600	PL-O	PL49	20700100804	835	-77.30778	38.63567	1.10	0.82	0.28
P	STP	4601	PL-O	PL49	20700100804	835	-77.30812	38.63593	5.04	3.93	1.11
P	STP	4602	PL-O	PL49	20700100804	835	-77.30743	38.63664	18.59	14.76	3.84
P	STP	4603	PL-O	PL49	20700100804	835	-77.30855	38.63994	2.68	2.17	0.52
P	STP	4604	PL-O	PL49	20700100804	835	-77.30788	38.63964	0.23	0.19	0.04
P	STP	4605	PL-O	PL49	20700100804	835	-77.30764	38.63992	0.42	0.35	0.08
P	STP	4606	PL-O	PL49	20700100804	835	-77.30675	38.64044	0.89	0.66	0.24
P	STP	4607	PL-O	PL49	20700100804	835	-77.3078	38.64127	8.23	6.22	2.01
P	STP	4608	PL-O	PL49	20700100804	835	-77.30547	38.63906	13.76	10.73	3.03
P	STP	4609	PL-O	PL49	20700100804	835	-77.30383	38.63649	1.88	1.41	0.47
P	RRD	4610	PL-O	PL49	20700100804	835	-77.3044	38.63826	32.99	13.61	19.38
P	STP	4613	PL-O	PL49	20700100804	835	-77.30534	38.63222	26.89	20.83	6.07
P	CD	4614	PL-O	PL49	20700100804	835	-77.30586	38.63152	0.17	0.15	0.03
P	RRD	4629	PL-O	PL49	20700100804	845	-77.27913	38.63226	0.50	0.11	0.38
P	STP	4633	PL-O	PL49	20700100804	845	-77.27966	38.63459	4.47	3.35	1.13
P	RRD	4634	PL-O	PL49	20700100804	845	-77.27958	38.63871	4.12	2.98	1.14
P	CD	4635	PL-O	PL49	20700100804	845	-77.2792	38.63808	0.12	0.10	0.03
P	GD	4637	PL-O	PL49	20700100804	845	-77.27591	38.63993	18.25	13.52	4.73
P	STP	4638	PL-O	PL49	20700100804	845	-77.28017	38.64045	0.11	0.10	0.01

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	CD	4639	PL-O	PL49	20700100804	845	-77.28107	38.64098	4.32	3.33	0.99
P	STP	4640	PL-O	PL49	20700100804	845	-77.28281	38.64166	0.01	0.01	0.00
P	STP	4641	PL-O	PL49	20700100804	845	-77.28245	38.64165	42.32	31.28	11.05
P	STP	4642	PL-O	PL49	20700100804	845	-77.28538	38.64138	3.58	2.68	0.90
P	STP	4643	PL-O	PL49	20700100804	845	-77.27974	38.63268	2.43	1.49	0.93
P	RRD	4645	PL-O	PL50	20700100805	915	-77.26572	38.64071	3.31	0.66	2.65
P	RRD	4646	PL-O	PL50	20700100805	915	-77.26494	38.64044	9.32	3.45	5.87
P	STP	4648	PL-O	PL50	20700100805	915	-77.26286	38.63963	3.05	2.23	0.82
P	STP	4650	PL-O	PL50	20700100805	915	-77.26099	38.6394	3.78	3.04	0.74
P	STP	4651	PL-O	PL50	20700100805	915	-77.26047	38.63934	0.46	0.35	0.11
P	STP	4652	PL-O	PL50	20700100805	915	-77.26027	38.63997	1.73	1.31	0.42
P	STP	4653	PL-O	PL50	20700100805	915	-77.25893	38.64035	1.14	0.89	0.25
P	STP	4654	PL-O	PL50	20700100805	915	-77.25529	38.64099	18.24	13.69	4.56
P	STP	4655	PL-O	PL50	20700100805	915	-77.25317	38.64006	11.30	8.41	2.89
P	STP	4656	PL-O	PL50	20700100805	915	-77.25225	38.6408	1.31	0.95	0.36
P	STP	4657	PL-O	PL50	20700100805	915	-77.25182	38.64177	4.88	3.67	1.21
P	GD	4658	PL-O	PL50	20700100805	915	-77.25328	38.64165	2.35	1.69	0.66
P	GD	4659	PL-O	PL50	20700100805	915	-77.25603	38.64235	22.78	17.41	5.37
P	STP	4660	PL-O	PL50	20700100805	915	-77.25587	38.64286	1.20	0.95	0.26
P	STP	4661	PL-O	PL50	20700100805	915	-77.25667	38.64361	1.88	1.30	0.58
P	RRD	4664	PL-O	PL50	20700100805	10	-77.26971	38.63147	0.70	0.27	0.42
P	RRD	4665	PL-O	PL50	20700100805	10	-77.26929	38.63113	1.67	0.86	0.82
P	STP	4668	PL-O	PL50	20700100805	10	-77.26375	38.63264	5.58	4.35	1.23
P	STP	4670	PL-O	PL50	20700100805	10	-77.2642	38.63358	19.35	4.84	14.51
P	STP	4671	PL-O	PL50	20700100805	10	-77.2608	38.63357	12.11	8.97	3.14
P	STP	4672	PL-O	PL50	20700100805	10	-77.25713	38.63339	5.05	3.51	1.54
P	STP	4673	PL-O	PL50	20700100805	10	-77.25624	38.63261	0.81	0.58	0.24
P	STP	4674	PL-O	PL50	20700100805	10	-77.25629	38.63217	4.21	1.80	2.40
P	STP	4675	PL-O	PL50	20700100805	10	-77.25595	38.63214	1.49	0.60	0.90
P	STP	4676	PL-O	PL50	20700100805	10	-77.25574	38.63182	0.36	0.27	0.08
P	STP	4678	PL-O	PL50	20700100805	10	-77.25543	38.6311	0.50	0.33	0.17
P	STP	4679	PL-O	PL50	20700100805	10	-77.25548	38.63015	20.44	15.45	5.00
P	STP	4681	PL-O	PL50	20700100805	915	-77.25181	38.63686	5.47	4.03	1.43
P	STP	4682	PL-O	PL50	20700100805	915	-77.25184	38.63813	1.09	0.74	0.35
P	BMP	4683	PL-O	PL50	20700100805	915	-77.24638	38.63882	4.54	1.30	3.24
P	GD	4685	PL-P	PL51	20700110103	710	-77.40804	38.64494	0.91	0.64	0.27
P	GD	4686	PL-P	PL51	20700110103	715	-77.39263	38.64446	0.75	0.62	0.13

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	GD	4687	PL-O	PL49	20700100804	815	-77.35466	38.64486	1.96	1.39	0.56
P	STP	4688	PL-O	PL49	20700100804	830	-77.3153	38.64167	1.52	1.15	0.37
P	RRD	4689	PL-P	PL52	20700110104	605	-77.44374	38.63268	11.73	9.69	2.03
P	GD	4690	PL-O	PL49	20700100804	815	-77.37014	38.64017	5.13	3.94	1.19
P	RRD	4691	PL-O	PL49	20700100804	815	-77.37109	38.63948	2.58	2.02	0.56
P	RRD	4692	PL-O	PL49	20700100804	815	-77.37011	38.63962	0.49	0.37	0.12
P	RRD	4693	PL-O	PL49	20700100804	815	-77.36922	38.64093	6.45	4.75	1.70
P	STP	4695	PL-O	PL49	20700100804	830	-77.34175	38.63098	5.01	2.59	2.42
P	STP	4696	PL-O	PL49	20700100804	830	-77.33913	38.62946	0.89	0.48	0.41
P	RRD	4697	PL-O	PL49	20700100804	830	-77.33156	38.63591	16.17	12.04	4.14
P	STP	4698	PL-O	PL49	20700100804	830	-77.32072	38.63808	0.10	0.09	0.02
P	STP	4699	PL-O	PL49	20700100804	830	-77.32089	38.63916	0.27	0.21	0.06
P	STP	4700	PL-O	PL49	20700100804	830	-77.32069	38.63931	0.15	0.12	0.03
P	RRD	4701	PL-O	PL49	20700100804	830	-77.32022	38.63704	2.23	1.69	0.54
P	STP	4702	PL-O	PL49	20700100804	830	-77.33148	38.64286	39.30	29.45	9.84
P	RRD	4703	PL-O	PL49	20700100804	830	-77.33424	38.63107	3.39	2.43	0.96
P	STP	4704	PL-O	PL49	20700100804	830	-77.3329	38.6312	2.85	2.00	0.85
P	RRD	4705	PL-O	PL49	20700100804	830	-77.32066	38.63111	1.05	0.40	0.65
P	RRD	4706	PL-O	PL49	20700100804	830	-77.3203	38.63123	2.29	1.01	1.28
P	CD	4707	PL-O	PL49	20700100804	830	-77.3204	38.63132	7.63	5.09	2.54
P	RRD	4708	PL-O	PL49	20700100804	830	-77.31631	38.63614	0.78	0.27	0.51
P	STP	4709	PL-O	PL49	20700100804	835	-77.30766	38.63121	1.59	1.35	0.24
P	RRD	4710	PL-O	PL49	20700100804	845	-77.28376	38.63008	8.76	3.84	4.92
P	STP	4715	PL-O	PL49	20700100804	830	-77.31796	38.62417	1.24	0.81	0.43
P	GD	4716	PL-O	PL49	20700100804	830	-77.32809	38.62149	9.62	7.82	1.79
P	STP	4717	PL-P	PL51	20700110103	723	-77.35203	38.6254	33.06	23.06	9.99
P	RRD	4718	PL-P	PL51	20700110103	715	-77.38924	38.61813	5.60	3.46	2.14
P	RRD	4719	PL-P	PL51	20700110103	715	-77.38898	38.61836	0.94	0.44	0.50
P	RRD	4721	PL-O	PL49	20700100804	800	-77.25957	38.61093	11.08	6.27	4.81
P	RRD	4723	PL-O	PL49	20700100804	850	-77.29106	38.60533	21.96	13.04	8.92
P	BMP	4724	PL-P	PL51	20700110103	725	-77.32874	38.60392	1.81	1.25	0.56
P	GD	4725	PL-P	PL51	20700110103	715	-77.39378	38.61797	2.03	1.21	0.82
P	RRD	4726	PL-P	PL51	20700110103	715	-77.39251	38.61686	0.79	0.54	0.25
P	GD	4730	PL-P	PL51	20700110103	715	-77.39047	38.61799	8.32	5.79	2.53
P	RRD	4731	PL-P	PL51	20700110103	730	-77.28725	38.58936	25.22	13.80	11.42
P	BMP	4734	PL-P	PL52	20700110104	630	-77.32325	38.58725	45.61	26.27	19.34
P	RRD	4735	PL-P	PL52	20700110104	665	-77.30177	38.57451	17.72	11.24	6.49

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	RRD	4737	PL-P	PL52	20700110104	630	-77.30946	38.56584	1.03	0.73	0.30
P	CD	4738	PL-P	PL52	20700110104	627	-77.33116	38.57458	2.08	0.95	1.13
P	GD	4739	PL-P	PL52	20700110104	640	-77.32175	38.55906	2.85	1.43	1.42
P	STP	4741	PL-P	PL52	20700110104	645	-77.33938	38.55014	0.65	0.25	0.40
P	BMP	4742	PL-P	PL52	20700110104	645	-77.34007	38.55062	30.14	18.58	11.56
P	BMP	4743	PL-P	PL52	20700110104	645	-77.35277	38.55401	7.31	4.81	2.50
P	RRD	4748	PL-P	PL52	20700110104	650	-77.32452	38.54114	62.76	44.54	18.22
P	STP	4749	PL-P	PL52	20700110104	650	-77.32026	38.54011	15.41	10.91	4.50
P	RRD	4756	PL-P	PL52	20700110104	605	-77.45312	38.63187	3.35	2.30	1.05
P	GD	4757	PL-P	PL52	20700110104	605	-77.45767	38.63232	6.26	4.95	1.31
P	RRD	4758	PL-P	PL52	20700110104	665	-77.29559	38.57514	10.48	8.89	1.59
P	RRD	4760	PL-O	PL49	20700100804	830	-77.32357	38.6244	0.09	0.08	0.01
P	RRD	4761	PL-O	PL49	20700100804	830	-77.32349	38.62439	2.42	1.87	0.55
P	BMP	4762	PL-O	PL49	20700100804	850	-77.2862	38.60492	17.84	14.58	3.26
P	RRD	4763	PL-O	PL49	20700100804	800	-77.26625	38.61557	5.69	4.55	1.14
P	GD	4765	PL-P	PL51	20700110103	723	-77.35339	38.6137	0.09	0.04	0.05
P	STP	4767	PL-O	PL41	20700100801	404	-77.47364	38.67788	1.25	0.94	0.31
P	GD	4768	PL-O	PL41	20700100801	422	-77.42244	38.66542	3.09	2.40	0.69
P	STP	4779	PL-O	PL50	20700100805	10	-77.25806	38.63323	0.33	0.10	0.24
P	STP	4780	PL-O	PL50	20700100805	10	-77.25744	38.63309	0.54	0.23	0.31
P	STP	4781	PL-O	PL50	20700100805	10	-77.25729	38.63328	0.76	0.32	0.44
P	RRD	4782	PL-O	PL49	20700100804	845	-77.28014	38.62726	19.80	6.14	13.66
P	RRD	4783	PL-O	PL49	20700100804	855	-77.27436	38.62438	5.55	2.95	2.60
P	RRD	4787	PL-O	PL49	20700100804	800	-77.27928	38.61166	0.66	0.59	0.07
P	RRD	4789	PL-P	PL51	20700110103	723	-77.34628	38.60573	1.43	0.87	0.57
P	RRD	4790	PL-P	PL51	20700110103	723	-77.34578	38.60587	0.21	0.16	0.05
P	RRD	4791	PL-P	PL51	20700110103	723	-77.34551	38.60658	0.42	0.30	0.13
P	RRD	4792	PL-P	PL51	20700110103	723	-77.3453	38.60713	1.20	0.84	0.35
P	RRD	4793	PL-P	PL51	20700110103	723	-77.34618	38.60727	2.94	2.12	0.82
P	RRD	4794	PL-P	PL51	20700110103	723	-77.34533	38.60849	0.30	0.22	0.08
P	RRD	4795	PL-P	PL52	20700110104	630	-77.31356	38.59044	24.11	19.59	4.52
P	NS	4796	PL-P	PL52	20700110104	670	-77.29005	38.56649	15.13	13.11	2.02
P	RRD	4798	PL-P	PL52	20700110104	670	-77.29517	38.56168	0.86	0.67	0.19
P	GD	4799	PL-P	PL52	20700110104	630	-77.30688	38.56405	0.39	0.37	0.03
P	GD	4801	PL-P	PL52	20700110104	600	-77.31159	38.55535	6.64	4.80	1.85
P	GD	4802	PL-P	PL52	20700110104	680	-77.30869	38.55021	54.22	38.65	15.57
P	BMP	10001	PL-O	PL49	20700100804	805	-77.39197	38.67513	10.10	6.73	3.37

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	BMP	10002	PL-O	PL49	20700100804	810	-77.36479	38.67329	35.98	33.86	2.12
P	RRD	10004	PL-O	PL47	20700100802	432	-77.34351	38.68	2.90	0.79	2.11
P	RRD	10005	PL-O	PL47	20700100802	432	-77.34152	38.67856	1.74	0.97	0.77
P	RRD	10006	PL-O	PL47	20700100802	432	-77.34247	38.67984	2.73	1.33	1.39
P	GD	10008	PL-O	PL47	20700100802	445	-77.30759	38.67307	2.57	1.77	0.80
P	GD	10009	PL-O	PL47	20700100802	445	-77.305	38.67418	0.45	0.32	0.13
P	ED	10010	PL-O	PL47	20700100802	444	-77.29771	38.68173	2.98	2.16	0.82
P	GD	10012	PL-O	PL47	20700100802	440	-77.28762	38.68254	0.46	0.27	0.19
P	GD	10013	PL-O	PL47	20700100802	440	-77.28765	38.6821	1.33	0.66	0.67
P	GD	10014	PL-O	PL47	20700100802	440	-77.28955	38.6838	2.52	1.32	1.20
P	RRD	10015	PL-O	PL47	20700100802	440	-77.28909	38.68453	0.19	0.12	0.07
P	RRD	10016	PL-O	PL47	20700100802	440	-77.28693	38.68399	1.08	0.53	0.55
P	GD	10018	PL-O	PL49	20700100804	820	-77.348	38.66681	0.04	0.04	0.00
P	RRD	10021	PL-O	PL41	20700100801	424	-77.44319	38.66539	2.10	1.46	0.64
P	GD	10022	PL-M	PL40	20700100606	326	-77.48225	38.67315	4.51	4.19	0.31
P	STP	10030	PL-O	PL50	20700100805	910	-77.26875	38.65222	9.28	3.94	5.33
P	STP	10031	PL-O	PL50	20700100805	910	-77.26815	38.65194	0.14	0.11	0.03
P	GD	10039	PL-O	PL49	20700100804	845	-77.27877	38.64299	0.68	0.48	0.20
P	RRD	10044	PL-O	PL49	20700100804	815	-77.36534	38.6356	3.69	2.08	1.60
P	BMP	10045	PL-P	PL51	20700110103	715	-77.37776	38.63124	11.22	10.95	0.27
P	RRD	10047	PL-P	PL51	20700110103	715	-77.37925	38.62889	2.52	2.15	0.37
P	RRD	10048	PL-P	PL51	20700110103	715	-77.37902	38.62766	40.74	40.68	0.06
P	RRD	10049	PL-P	PL51	20700110103	715	-77.37336	38.62412	7.36	5.65	1.72
P	GD	10050	PL-P	PL51	20700110103	720	-77.36777	38.61901	8.95	7.74	1.21
P	RRD	10051	PL-P	PL51	20700110103	720	-77.36567	38.6209	3.87	3.11	0.76
P	BMP	10053	PL-O	PL49	20700100804	850	-77.28393	38.61637	39.57	30.21	9.35
P	RRD	10055	PL-O	PL49	20700100804	850	-77.28515	38.61295	27.60	17.85	9.74
P	STP	10057	PL-P	PL51	20700110103	730	-77.30276	38.60242	6.13	6.08	0.05
P	GD	10059	PL-P	PL51	20700110103	730	-77.30443	38.59882	4.66	2.59	2.06
P	RRD	10060	PL-P	PL51	20700110103	730	-77.30628	38.60018	3.37	1.65	1.72
P	BMP	10061	PL-P	PL51	20700110103	730	-77.30475	38.60075	6.24	3.38	2.86
P	GD	10062	PL-P	PL51	20700110103	730	-77.30663	38.60122	0.47	0.35	0.12
P	RRD	10063	PL-P	PL51	20700110103	730	-77.30353	38.59936	3.18	1.76	1.42
P	GD	10064	PL-P	PL51	20700110103	730	-77.30159	38.60139	28.08	19.96	8.12
P	RRD	10065	PL-P	PL51	20700110103	730	-77.30155	38.60177	3.41	2.92	0.49
P	STP	10066	PL-P	PL51	20700110103	730	-77.28358	38.59375	1.06	0.47	0.59
P	STP	10067	PL-P	PL51	20700110103	730	-77.2832	38.59318	27.23	16.57	10.66

Ownership	Origin	Outfall_ID	VAHU5	VAHU6	HUC_12	WTRSHD_ID	LONG_DD	LAT_DD	TotAcres	PervAcres	ImpAcres
P	STP	10068	PL-P	PL51	20700110103	700	-77.2801	38.59299	10.31	6.62	3.69
P	RRD	10069	PL-P	PL51	20700110103	700	-77.27975	38.59289	3.40	1.88	1.52
P	RRD	10070	PL-P	PL51	20700110103	700	-77.27828	38.59566	2.80	1.70	1.11
P	RRD	10071	PL-P	PL51	20700110103	700	-77.27769	38.59666	2.42	1.59	0.83
P	RRD	10072	PL-P	PL51	20700110103	700	-77.2776	38.59628	24.97	16.82	8.15
P	RRD	10073	PL-P	PL51	20700110103	700	-77.27907	38.59444	4.14	2.14	2.00
P	RRD	10074	PL-P	PL51	20700110103	700	-77.27376	38.58964	0.18	0.11	0.08
P	RRD	10075	PL-P	PL51	20700110103	700	-77.27308	38.5901	3.06	2.37	0.69
P	RRD	10076	PL-P	PL51	20700110103	700	-77.2732	38.5903	5.52	3.23	2.29
P	RRD	10077	PL-P	PL51	20700110103	700	-77.27303	38.59031	4.51	3.26	1.24
P	RRD	10078	PL-P	PL51	20700110103	700	-77.27174	38.58847	3.49	1.39	2.10
P	RRD	10079	PL-P	PL51	20700110103	700	-77.27019	38.59003	0.17	0.15	0.01
P	RRD	10080	PL-P	PL51	20700110103	700	-77.27009	38.59032	1.42	0.72	0.70
P	RRD	10082	PL-P	PL51	20700110103	700	-77.26996	38.59095	3.18	1.83	1.35
P	RRD	10083	PL-P	PL51	20700110103	700	-77.26923	38.59175	0.08	0.05	0.03
P	STP	10096	PL-P	PL51	20700110103	700	-77.29064	38.57794	10.98	10.65	0.33
Total									23,933.35	16,806.24	7,127.10

1) The SWM facility type, address, and latitude and longitude (in decimal degrees)			2) The total pervious and impervious areas treated			3) The date brought online (MM/YYYY)		4) The hydraulic unit code (HUC) in which the SWM facility is located		5) The name of any impaired water segments with each HUC listed on the most recent (2020/2021) Water Quality Assessment Integrated Report to which the SWM facility is located			6) Whether the SWM facility is permitted or previously maintained			7) Whether the SWM facility discharge into the jurisdiction's MSW		8) Whether a maintenance agreement exists with the jurisdiction's MSW		9) The date of last inspection by permittee				
Facility ID	Facility Type	Facility Description	ADDRESS	Subdivision	Latitude	Longitude	Total Drains Area	Pervious Drainage Area	Impervious Drainage Area	Date Inventory	VAHUC	VAHUC2	VAHUC3	VAHUC3 Name	IGSSS	Water Name Facility Discharge To?	IGSSS/2020/21 Water Quality Assessment Category	IGSSS/2020/21 Water Quality Assessment Impairment Cause?	MAINT	Maintenance Agreement	STATUS	Discharge to MSW?	SWM_AGGREEMENT	MFPC
1	SWAMP	D	6611 EKAUBER COURT	MINNEVILLE MANOR SECTION 6	37.2961	18.6243	28.49	25.53	2.96	10/2/2006	P-P	P531	Powells Creek	VAH-A248_PORW0242	Powells Creek	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
2	SWAMP	D	25162 ESTATE DRIVE	MINNEVILLE MANOR SECTION 6	37.2786	18.6226	10.94	9.76	1.18	10/2/2006	P-P	P531	Powells Creek	VAH-A248_PORW0242	Powells Creek	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
4	SWAMP	D	6338W BURNETT COURT	MINNEVILLE MANOR SECTION 6	37.2786	18.6226	10.94	9.76	1.18	10/2/2006	P-P	P531	Powells Creek	VAH-A248_PORW0242	Powells Creek	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
5	SWAMP	D	4763 WINDLETT DRIVE	BEACON HILL SECTION 2	37.2933	18.6627	17.02	16.72	0.30	10/12/2002	P-O	P547	Stanton River-Occoquan River	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
6	SWAMP	D	4763 WINDLETT DRIVE	BEACON HILL SECTION 2	37.2933	18.6627	17.02	16.72	0.30	10/12/2002	P-O	P547	Stanton River-Occoquan River	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
7	SWAMP	D	8147 RAPPELL COURT	WALTON SECTION 3	37.6223	18.6420	71.05	62.87	8.18	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
8	SWAMP	D	8147 RAPPELL COURT	WALTON SECTION 3	37.6223	18.6420	71.05	62.87	8.18	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
9	SWAMP	W	12720 ADRIN DRIVE	BRENTWOOD ACRES	37.5171	18.6174	74.89	70.06	4.83	10/12/2002	P-M	P436	Cedar Run-Slate Run	VAH-A248_PORW0242	Slate Run	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
10	SWAMP	D	8209W JAMES DRIVE	DECEMBERISTE SECTION 4	37.4605	18.6123	16.86	15.76	1.10	10/12/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
11	SWAMP	D	1885 ANTONIO DRIVE	DECEMBERISTE SECTION 4	37.2936	18.651	109.38	89.79	19.59	10/12/2002	P-P	P531	Powells Creek	VAH-A248_PORW0242	Powells Creek	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
12	SWAMP	D	11995 BURGESS COURT	CLOVERHILL ESTATES	37.5457	18.6694	7.08	6.38	0.70	10/2/2000	P-L	P333	Kettle Run	VAH-A136_MTE140	Kettle Run	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
13	SWAMP	D	11995 BURGESS COURT	CLOVERHILL ESTATES	37.5457	18.6694	7.08	6.38	0.70	10/2/2000	P-L	P333	Kettle Run	VAH-A136_MTE140	Kettle Run	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
14	SWAMP	D	13106 BELLEGAARD COURT	WOODMOUNT SECTION 7	37.5457	18.6694	7.08	6.38	0.70	10/2/2000	P-L	P333	Kettle Run	VAH-A136_MTE140	Kettle Run	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
15	SWAMP	D	13106 BELLEGAARD COURT	WOODMOUNT SECTION 7	37.5457	18.6694	7.08	6.38	0.70	10/2/2000	P-L	P333	Kettle Run	VAH-A136_MTE140	Kettle Run	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
16	SWAMP	D	9638 ANN MARIE LANE	KIMBERLY ESTATES	37.2961	18.6762	7.20	6.91	0.29	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
17	SWAMP	D	23923 SANDY CREEK DRIVE	KIMBERLY ESTATES	37.2961	18.6762	7.20	6.91	0.29	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
18	SWAMP	D	23923 SANDY CREEK DRIVE	KIMBERLY ESTATES	37.2961	18.6762	7.20	6.91	0.29	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
19	SWAMP	D	23923 SANDY CREEK DRIVE	KIMBERLY ESTATES	37.2961	18.6762	7.20	6.91	0.29	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
20	SWAMP	D	23923 SANDY CREEK DRIVE	KIMBERLY ESTATES	37.2961	18.6762	7.20	6.91	0.29	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
21	SWAMP	D	8055 BIGGIE COURT	FORKWOOD	37.4602	18.7091	22.84	21.78	1.06	10/2/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
22	SWAMP	D	10705 TOLLSMERE COURT	WOODMOUNT MANOR SECTION 2	37.4522	18.7123	61.22	62.20	0.98	10/2/2005	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
23	SWAMP	D	18459 ANDRES COURT	MINNEVILLE MANOR SECTION 6	37.2994	18.6377	36.41	37.09	0.68	10/2/2000	P-P	P531	Powells Creek	VAH-A248_PORW0242	Powells Creek	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
24	SWAMP	D	12420 HAYES GROVE ROAD	HUNTERS RIDGE ESTATES	37.4873	18.6556	18.47	8.68	9.79	10/2/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
25	SWAMP	D	6114 BUCK COURT	LAUREL RIDGE	37.4606	18.6879	46.46	46.56	0.10	10/2/2005	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
26	SWAMP	D	10264 GREYSTONE ROAD	GREYSTONE	37.6427	18.7638	6.02	6.02	0.00	10/2/2002	P-R	P568	Occoquan River-Beltway Run	VAH-A248_PORW0242	Beltway Run	5A	PCB in Fall Tissue	P	Public	Yes	Yes	Yes	YES	
27	SWAMP	D	1007 SARDONIA COURT	COLUMBY Woods	37.5194	18.6649	2.96	2.79	0.17	10/12/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
28	SWAMP	D	1007 SARDONIA COURT	COLUMBY Woods	37.5194	18.6649	2.96	2.79	0.17	10/12/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
29	SWAMP	D	1007 SARDONIA COURT	COLUMBY Woods	37.5194	18.6649	2.96	2.79	0.17	10/12/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
30	SWAMP	D	1007 SARDONIA COURT	COLUMBY Woods	37.5194	18.6649	2.96	2.79	0.17	10/12/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
31	SWAMP	D	7998 COUNSELOR ROAD	WOODMOUNT WOODS SECTION 3	37.4428	18.6634	16.09	15.15	0.94	10/12/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
32	SWAMP	D	7998 COUNSELOR ROAD	WOODMOUNT WOODS SECTION 3	37.4428	18.6634	16.09	15.15	0.94	10/12/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
33	SWAMP	D	11398 MARIE DRIVE	WOODMOUNT WOODS SECTION 3 A	37.4715	18.6634	14.38	13.13	1.25	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
34	SWAMP	D	11398 MARIE DRIVE	WOODMOUNT WOODS SECTION 3 A	37.4715	18.6634	14.38	13.13	1.25	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
35	SWAMP	D	6561 MCKENNA DRIVE	MCKENNA RIDGE	37.4522	18.7278	2.48	2.48	0.00	10/2/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
36	SWAMP	D	6561 MCKENNA DRIVE	MCKENNA RIDGE	37.4522	18.7278	2.48	2.48	0.00	10/2/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
37	SWAMP	D	6561 MCKENNA DRIVE	MCKENNA RIDGE	37.4522	18.7278	2.48	2.48	0.00	10/2/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
38	SWAMP	D	6561 MCKENNA DRIVE	MCKENNA RIDGE	37.4522	18.7278	2.48	2.48	0.00	10/2/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
39	SWAMP	D	6561 MCKENNA DRIVE	MCKENNA RIDGE	37.4522	18.7278	2.48	2.48	0.00	10/2/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
40	SWAMP	D	6561 MCKENNA DRIVE	MCKENNA RIDGE	37.4522	18.7278	2.48	2.48	0.00	10/2/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
41	SWAMP	D	6561 MCKENNA DRIVE	MCKENNA RIDGE	37.4522	18.7278	2.48	2.48	0.00	10/2/2002	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
42	SWAMP	D	17755 BRUNNEN DRIVE	TUDOR HALL ESTATES SECTION 4	37.4959	18.7207	35.08	28.21	6.87	10/2/2005	P-R	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
43	SWAMP	D	17755 BRUNNEN DRIVE	TUDOR HALL ESTATES SECTION 4	37.4959	18.7207	35.08	28.21	6.87	10/2/2005	P-R	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
44	SWAMP	D	17755 BRUNNEN DRIVE	TUDOR HALL ESTATES SECTION 4	37.4959	18.7207	35.08	28.21	6.87	10/2/2005	P-R	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
45	SWAMP	D	17755 BRUNNEN DRIVE	TUDOR HALL ESTATES SECTION 4	37.4959	18.7207	35.08	28.21	6.87	10/2/2005	P-R	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
46	SWAMP	D	17755 BRUNNEN DRIVE	TUDOR HALL ESTATES SECTION 4	37.4959	18.7207	35.08	28.21	6.87	10/2/2005	P-R	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
47	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74	1.34	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
48	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74	1.34	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
49	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74	1.34	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
50	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74	1.34	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
51	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74	1.34	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
52	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74	1.34	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
53	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74	1.34	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
54	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74	1.34	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
55	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74	1.34	10/2/2004	P-O	P545	Occoquan River-Lake Jackson	VAH-A248_PORW0242	Occoquan River	4A	Exhaurish coli	P	Public	Yes	Yes	Yes	YES	
56	SWAMP	D	13394 ARNOLD WAY	NEARWOOD SECTION 2 B	37.8304	18.6246	9.08	7.74																

Activity ID	Facility Type	Facility Description	ADDRESS	Subdivision	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inspected	VARIUS	VARIUS	VARIUS Name	SDMS	Water Reuse Facility	2003/2006 Water Quality Assessment Category	2003/2006 Water Quality Assessment	2003/2006 Water Quality Assessment Improvement Cause?	MSBT	Maintenance Agreement Type	STATUS	Discharge to MS4?	SDMS ASSESSMENT	NOTES
812	SWAMP	D	1300 BARNHART DRIVE	DORNING COUNTRY SWAMP POND# 2016	-77.044	38.891	0.55	0.55	0.0	2/27/2008	PL	PL	Little Bull Run	VNR-A228_BR03208	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
813	SWAMP	D	4135 MARION COURT	DORNING COUNTRY SWAMP POND# 2016	-77.056	38.882	0.81	0.79	0.0	2/26/2008	PL	PL	Quarantine Bay	VNR-A228_BR03208	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
814	SWAMP	D	15862 ARDEN FARM LANE	EFFINGHAM PARK	-77.520	38.926	11.30	12.14	0.77	2/27/2008	PL	PL	Cedar Run-Side Run	VNR-A228_CR03242	Cedar Run	4A	Excluded		Public	P	Yes	N	Yes	F128
815	SWAMP	D	16455 EMU COURT	EFFINGHAM PARK	-77.527	38.911	0.41	0.41	0.0	2/27/2008	PL	PL	Cedar Run-Side Run	VNR-A228_CR03242	Cedar Run	4A	Excluded		Public	P	Yes	N	Yes	F128
816	SWAMP	W	9151 MOUNTAIN DRIVE	MANFREDI TRACT SECTION 1	-77.489	38.711	12.27	7.41	4.86	3/20/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
817	SWAMP	D	16455 EMU COURT	PARK CREEK SECTION 20 ADDITION	-77.526	38.916	0.46	0.46	0.0	2/27/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
818	SWAMP	W	8728 TAYLOR COURT	INTERDEPENDENCE SECTION 1	-77.524	38.701	21.83	15.35	12.27	4/17/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
819	SWAMP	D	14302 TRETTES RIDGE RD	AIRBURY PROPERTIES	-77.482	38.789	0.87	0.87	0.0	2/27/2008	PL	PL	Cedar Run-Side Run	VNR-A228_CR03242	Cedar Run	4A	Excluded		Public	P	Yes	N	Yes	F128
820	SWAMP	D	14302 TRETTES RIDGE RD	EFFINGHAM PARK	-77.521	38.898	8.62	8.26	0.34	2/27/2008	PL	PL	Cedar Run-Side Run	VNR-A228_CR03242	Cedar Run	4A	Excluded		Public	P	Yes	N	Yes	F128
821	SWAMP	D	14302 TRETTES RIDGE RD	EFFINGHAM PARK	-77.522	38.906	0.81	0.81	0.0	2/27/2008	PL	PL	Quarantine Bay	VNR-A228_BR03208	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
822	SWAMP	D	5523 BARK CHAPEL DRIVE	PENDANT SECTION 18	-77.652	38.824	28.25	29.11	5.14	6/28/2008	PL	PL	Little Bull Run	VNR-A228_CA03242	Catholic Creek	5D	Beneficial Macroinvertebrates Assessments, Excluded		Public	P	Yes	N	Yes	F128
823	SWAMP	D	5523 BARK CHAPEL DRIVE	PENDANT SECTION 18	-77.652	38.824	28.25	29.11	5.14	6/28/2008	PL	PL	Little Bull Run	VNR-A228_CA03242	Catholic Creek	5D	Beneficial Macroinvertebrates Assessments, Excluded		Public	P	Yes	N	Yes	F128
824	SWAMP	D	6737 EMANUEL DRIVE	CATHERWOOD SECTION 2	-77.619	38.713	27.87	28.15	14.27	7/16/2008	PL	PL	Little Bull Run	VNR-A228_BR03208	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
825	SWAMP	D	11000 LORRINE DRIVE	CEDAR CREEK ESTATES	-77.610	38.792	0.86	0.86	0.0	2/27/2008	PL	PL	Quarantine Bay	VNR-A228_BR03208	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
826	SWAMP	D	11884 JUSTICE DRIVE COURT	JUSTICE DRIVE	-77.493	38.697	23.61	19.26	13.8	8/25/2008	PL	PL	Quarantine Bay-Lake Jackson	VNR-A228_CR03242	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
827	SWAMP	D	15862 ARDEN FARM COURT	CAROLINA TRACT	-77.527	38.917	16.84	16.81	8.29	8/20/2008	PL	PL	Powell Creek	VNR-A228_POW0342	Powell Creek	4A	Excluded		Public	P	Yes	N	Yes	F128
828	SWAMP	D	15862 ARDEN FARM COURT	CAROLINA TRACT	-77.528	38.923	2.86	2.86	1.47	8/20/2008	PL	PL	Quarantine Bay	VNR-A228_BR03208	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
829	SWAMP	D	7609 NORTHINGTON DRIVE	PENDANT SECTION 22	-77.652	38.793	11.95	9.47	2.48	9/2/2008	PL	PL	Brook Run-Catletts Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
830	SWAMP	D	12005 WINDMILL DRIVE	PENDANT SECTION 22	-77.656	38.831	29.70	29.70	14.9	8/18/2008	PL	PL	Little Bull Run	VNR-A228_BR03208	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
831	SWAMP	D	12421 INVERWOOD DRIVE	CHERRYWOOD SECTION 2	-77.685	38.954	38.05	24.18	14.98	9/18/2008	PL	PL	Little Bull Run	VNR-A228_BR03208	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
832	SWAMP	D	12996 PINEVAL DRIVE	OMEGA ESTATES	-77.623	38.668	3.06	3.06	1.58	9/23/2008	PL	PL	Quarantine Bay-Cedar Run	VNR-A228_CR03242	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
833	SWAMP	D	12996 PINEVAL DRIVE	OMEGA ESTATES	-77.623	38.668	3.06	3.06	1.58	9/23/2008	PL	PL	Quarantine Bay-Cedar Run	VNR-A228_CR03242	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
834	SWAMP	D	5005 EVERMAN COURT	MALDEN CHASE	-77.551	38.692	11.23	11.58	1.85	9/20/2008	PL	PL	Quarantine Bay-Lake Jackson	VNR-A228_CR03242	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
835	SWAMP	D	5005 EVERMAN COURT	MALDEN CHASE	-77.551	38.692	11.23	11.58	1.85	9/20/2008	PL	PL	Quarantine Bay-Lake Jackson	VNR-A228_CR03242	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
836	SWAMP	D	4914 CHERRYWOOD COURT	AGEE SUBDIVISION	-77.484	38.793	8.61	7.56	2.27	3/31/2008	PL	PL	Quarantine Bay	VNR-A228_BR03208	Quarantine Bay	4A	Excluded		Public	P	Yes	N	Yes	F128
837	SWAMP	D	5524 CARROLLAN COURT	WESTMOUNT LANDLOT 1	-77.611	38.831	14.05	9.21	4.82	10/6/2008	PL	PL	Little Bull Run	VNR-A228_BR03208	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
838	SWAMP	D	5524 CARROLLAN COURT	WESTMOUNT LANDLOT 1	-77.611	38.831	14.05	9.21	4.82	10/6/2008	PL	PL	Little Bull Run	VNR-A228_BR03208	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
839	SWAMP	D	5905 WATKINS BRIDGE CIRCLE	DOMINION VALLEY COUNTRY CLUB SECTION 24	-77.557	38.842	293.71	288.58	145.2	10/15/2008	PL	PL	Little Bull Run	VNR-A228_BR03208	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
840	SWAMP	W	1710 BARK SUCKER PLACE	ASHLEY RIDGE	-77.568	38.758	71.93	55.89	10.0	10/11/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
841	SWAMP	D	1920 MARK TRAIL COURT	CROSSMAN CREEK	-77.622	38.764	27.66	27.66	8.24	10/18/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
842	SWAMP	T	1301 CEDAR CREEK DRIVE	COURTNEY ROAD SEPARATION AREA SECTION 1	-77.618	38.726	6.53	6.30	3.23	2/27/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
843	SWAMP	D	3036 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.805	0.46	0.46	0.0	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
844	SWAMP	D	1001 TAYLOR DRIVE	BREARLIFT - TAYLOR DRIVE & EVERMAN	-77.560	38.793	160.71	204.13	105.29	11/27/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
845	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.805	0.46	0.46	0.0	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
846	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.797	1.61	0.79	0.2	11/15/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	N	Yes	N	Yes	F128
847	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.806	0.46	0.46	0.0	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
848	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.799	1.61	0.79	0.2	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	N	Yes	N	Yes	F128
849	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.806	0.46	0.46	0.0	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
850	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.799	1.61	0.79	0.2	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	N	Yes	N	Yes	F128
851	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.806	0.46	0.46	0.0	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
852	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.799	1.61	0.79	0.2	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	N	Yes	N	Yes	F128
853	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.806	0.46	0.46	0.0	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
854	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.799	1.61	0.79	0.2	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	N	Yes	N	Yes	F128
855	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.806	0.46	0.46	0.0	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
856	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.799	1.61	0.79	0.2	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	N	Yes	N	Yes	F128
857	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.806	0.46	0.46	0.0	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
858	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.799	1.61	0.79	0.2	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	N	Yes	N	Yes	F128
859	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.806	0.46	0.46	0.0	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	P	Yes	N	Yes	F128
860	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.799	1.61	0.79	0.2	11/21/2008	PL	PL	Brook Run-Rosby Branch	VNR-A228_BR03240	Brook Run	4A	Excluded		Public	N	Yes	N	Yes	F128
861	SWAMP	D	10308 WINDMILL DRIVE	CONTRACTORS STORAGE & SERVICE	-77.598	38.806	0.46	0.46	0.0	11/21/2008	PL	PL												

Facility ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Gens)	Impervious Drainage Area (Acres)	Date Inventory	VARIABLE	VARIABLE	VARIABLE Name	GISID	Water Name Facility	3004/3005/6 Water Quality Assessment Category	3004/3005/6 Water Quality Assessment	3004/3005/6 Water Quality Assessment Improvement Case?	MSBT	Maintenance Agreement	STATUS	Discharge to MSW	QMS ASSESSMENT	NOTES
916	SWAMP/BMP	874 SHERWOOD DR	STACY BOGE	771391	38.739	81.8	0.0	0.0	7.8	12/27/2014	P-0	P-0	Nashua Creek	VARIABLE	Discharge To	4A	Exhaustion	Yes	Y	Yes	N	Y	Y	Y
917	BMP	1 8665 BEAUBIEN DRIVE	CAMP GENEVIEVE (DANAMIA) SECTION 1	775895	38.79	0.87	0.57	0.50	12.9/2014	P-1	P-1	Bradford Run-Celtic/Bran	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
918	BMP	8 8665 BEAUBIEN DRIVE	CAMP GENEVIEVE (DANAMIA) SECTION 1	775899	38.793	1.21	0.84	0.87	12.9/2014	P-1	P-1	Bradford Run-Celtic/Bran	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
919	SWAMP/BMP	1 8665 BEAUBIEN DRIVE	CAMP GENEVIEVE (DANAMIA) SECTION 1	775897	38.793	0.87	0.57	0.50	12.9/2014	P-1	P-1	Bradford Run-Celtic/Bran	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
920	SWAMP	100 LEONARD TORREY WAY	LAKE TERRACE SECTION 2	773708	38.621	23.76	15.88	7.87	16/2015	P-0	P-1	Powells Creek	VARIABLE	Powells Creek	5A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
921	BMP	2000 WINDERMERE ROAD	LAKE TERRACE SECTION 2	773708	38.621	24.62	16.64	9.74	16/2015	P-0	P-1	Powells Creek	VARIABLE	Powells Creek	5A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
922	SWAMP/BMP	D 3050 BACURIN STREET	PORT FORTINO SECTION 1	773007	38.604	21.28	12.75	8.52	12/2015	P-0	P-0	Nashua Creek	VARIABLE	Nashua Creek	5D	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
923	SWAMP/BMP	D 3107 FINNEY ANNE LAKE	PORTFOLIO HOSPITAL	772265	38.691	14.66	12.25	6.41	5/24/2015	P-0	P-0	Nashua Creek	VARIABLE	Nashua Creek	5D	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
924	BMP	1 1441 WOODLAWN LAKE	DOMINION VALLEY CENTER (DANAMIA) SECTION 1	773732	38.702	14.89	14.49	14.49	12/2015	P-0	P-0	Bradford Run-Celtic/Bran	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
925	BMP	1 1441 WOODLAWN LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773656	38.724	2.31	1.56	1.79	6/24/2015	P-0	P-0	Bradford Run-Celtic/Bran	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
926	BMP	1 1441 WOODLAWN LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773682	38.724	1.81	1.45	1.29	6/24/2015	P-0	P-0	Bradford Run-Celtic/Bran	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
927	SWAMP/BMP	D 30545 BERRY OAKHURST COURT	PARKWAY WEST PHASE 3	774592	38.713	15.80	12.80	10.1	9/11/2015	P-0	P-1	Outcrop Run-Lake Jackson	VARIABLE	Outcrop Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
928	SWAMP/BMP	D 1141 WOODLAWN LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773682	38.724	1.81	1.45	1.29	6/24/2015	P-0	P-0	Bradford Run-Celtic/Bran	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
929	SWAMP/BMP	W 12765 SILENT MANOR DRIVE	SKY PROPERTY	773377	38.788	10.88	10.88	7.26	11/2/2015	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
930	BMP	1 1260 GLEN FOREST COURT	FOREST GLEN	773933	38.742	0.90	0.67	0.62	12/2015	P-0	P-0	Nashua Creek	VARIABLE	Nashua Creek	5D	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
931	SWAMP/BMP	U 14825 FOREST COURT	FOREST GLEN	773933	38.742	0.90	0.67	0.62	12/2015	P-0	P-0	Nashua Creek	VARIABLE	Nashua Creek	5D	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
932	SWAMP/BMP	D 14825 FOREST COURT	DOMINION VALLEY CENTER SECTION 8	773931	38.691	89.82	67.77	24.96	12/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	5A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
933	SWAMP	U 3078 FOREST SECTION 1 U.S.	LAKE RIDGE SECTION 1 U.S.	773907	38.707	12.07	9.07	8.06	12/2016	P-0	P-0	Nashua Creek	VARIABLE	Nashua Creek	5D	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
934	SWAMP/BMP	D 13485 MINNEAPOLIS ROAD	SHAWNEE ROAD	773826	38.693	0.17	0.17	0.00	12/2016	P-0	P-0	Wheaton River-Downs River	VARIABLE	Wheaton River	5A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
935	SWAMP/BMP	D 13485 MINNEAPOLIS ROAD	CAMP GENEVIEVE (DANAMIA) SECTION 1	773824	38.715	0.17	0.17	0.00	12/2016	P-0	P-0	Wheaton River-Downs River	VARIABLE	Wheaton River	5A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
936	SWAMP	13148 SHAPPIRE BERRY RACE	HOTEL HILL CROSSING RECREATION CENTER	773428	38.796	14.08	10.30	3.57	<None>	P-1	P-1	Powells Creek	VARIABLE	Powells Creek	5A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
937	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
938	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
939	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
940	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
941	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
942	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
943	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
944	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
945	SWAMP/BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
946	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
947	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
948	BMP	U 14825 FOREST ROAD	GANEVILLES COMMUNITY LIBRARY	773828	38.693	0.00	0.00	0.00	5/14/2016	P-0	P-0	Little Hill Run	VARIABLE	Little Hill Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
949	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	TURNING LEAF ESTATES	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
950	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
951	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
952	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
953	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
954	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
955	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
956	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
957	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
958	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
959	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
960	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
961	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
962	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
963	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
964	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/2016	P-1	P-1	Bradford Run-Rocky Branch	VARIABLE	Bradford Run	4A	Exhaustion	Yes	Y	Yes	Yes	N	Y	Y	Y
965	SWAMP/BMP	D 8097 AUTUMN CLOVEY LAKE	CAMP GENEVIEVE (DANAMIA) SECTION 1	773556	38.792	6.91	4.49	2.42	6/13/201															

Facility ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inventory	VARIABLE	VARIABLE	VARIABLE Name	COUSE	Water Name Facility	300A/300B/300C Assessment Category	300A/300B/300C Water Quality Assessment Category	300A/300B/300C Water Quality Assessment Improvement Cause?	MSBT	Maintenance Agreement Type	STATUS	Discharge to MSBT	300A/300B/300C	MSBT
1081	CWWP/BWP	3910 OLD BRIDGE ROAD	THE BRIDGE ELEMENTARY SCHOOL	77-307	18-811	81.76	0.00	0.00	0.00	4/21/2006	P-0	P-07	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			
1082	CWWP	8122 BETHLEHEM ROAD	DATA LABORATORY SERVICE	77-395	18-735	0.49	0.32	0.18	0.20	2/20/2005	P-1	P-34	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes		6/12/2009	
1083	CWWP	8002 CENTRE ROAD	DIRECTECH HOME NURSING CENTER	77-620	18-780	26.77	22.26	0.00	0.00	3/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace	C	Private	Yes			12/12/2017	
1084	CWWP	8002 CENTRE ROAD	DIRECTECH HOME NURSING CENTER	77-620	18-780	26.77	22.26	0.00	0.00	3/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace	C	Private	Yes			12/12/2017	
1085	CWWP	U	8451 WOODBRIDGE WAY	PER BOYS WOODBRIDGE	77-261	18-649	1.87	1.31	2.66	4/21/2006	P-0	P-30	Potomac River Occasion Bay	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			7/15
1086	CWWP	U	2731A BELLEVUE ROAD	GRANT CHAIRS RESTAURANT & BANQUET HALL	77-348	18-651	0.00	0.00	0.00	3/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			7/15
1087	CWWP	W	8122 BETHLEHEM ROAD	DATA LABORATORY SERVICE	77-348	18-722	0.35	0.22	0.13	2/20/2005	P-1	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			6/12/2009
1088	CWWP	W	VERMONT CHAIRS GOLF COURSE GRASSING PLAN	VERMONT CHAIRS GOLF COURSE GRASSING PLAN	77-425	18-726	54.95	38.88	10.27	2/21/2006	P-1	P-32	Brass Run Catletts Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			6/12/2009
1089	CWWP	W	7754 VERMONT CHAIRS DRIVE	VERMONT CHAIRS GOLF COURSE GRASSING PLAN	77-425	18-721	1.29	0.77	1.29	2/21/2006	P-1	P-32	Brass Run Catletts Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			6/12/2009
1090	CWWP/BWP	U	7754 VERMONT CHAIRS DRIVE	VERMONT CHAIRS GOLF COURSE GRASSING PLAN	77-616	18-791	13.57	13.50	0.00	4/21/2006	P-1	P-32	Brass Run Catletts Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			6/12/2009
1091	CWWP/BWP	U	11300 BELLEVUE ROAD	VERMONT CHAIRS GOLF COURSE GRASSING PLAN	77-616	18-792	1.36	1.36	0.00	4/21/2006	P-1	P-32	Brass Run Catletts Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			6/12/2009
1092	CWWP/BWP	U	7800 CELIUM DRIVE	VERMONT CHAIRS GOLF COURSE GRASSING PLAN	77-583	18-783	0.15	0.15	0.00	4/21/2006	P-1	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			4/24/2019
1093	CWWP/BWP	U	7754 VERMONT CHAIRS DRIVE	VERMONT CHAIRS GOLF COURSE GRASSING PLAN	77-616	18-791	1.36	1.36	0.00	4/21/2006	P-1	P-32	Brass Run Catletts Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			12/12/2017
1095	CWWP/BWP	U	7800 CELIUM DRIVE	VERMONT CHAIRS GOLF COURSE GRASSING PLAN	77-586	18-793	19.76	18.08	35.78	4/21/2006	P-1	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			4/24/2019
1096	CWWP/BWP	U	8000 MAPLEWOOD DRIVE	MANASSAS CHURCH PYTHONIAN	77-609	18-778	4.40	1.81	0.00	4/21/2006	P-0	P-36	Lower Bull Run	VMA-A198_BM03240	Brass Run	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace	C	Private	Yes				6/12/2009
1097	CWWP/BWP	U	8000 MAPLEWOOD DRIVE	MANASSAS CHURCH PYTHONIAN	77-610	18-781	21.74	1.81	0.00	4/21/2006	P-0	P-36	Lower Bull Run	VMA-A198_BM03240	Brass Run	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace	C	Private	Yes				12/12/2017
1098	CWWP	U	13313 TOUCHSTONE CIRCLE	THE GLEN SECTION C	77-338	18-751	0.36	0.12	0.00	2/20/2005	P-0	P-37	Issuan River Occasion Bay	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			4/12/2008
1099	CWWP/BWP	U	3400 BELLEVUE ROAD	POSTOFFICE FOOD SERVICE WAREHOUSE	77-309	18-647	21.00	18.00	13.11	3/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			12/12/2017
1100	CWWP/BWP	U	3000 MICHIGAN STREET	LIGHTHOUSE BLDG ELEMENTARY SCHOOL	77-893	18-841	16.88	12.09	8.79	3/21/2006	P-0	P-36	Neubach Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			4/21/2016
1101	CWWP	U	3400 BELLEVUE ROAD	POSTOFFICE FOOD SERVICE WAREHOUSE	77-309	18-647	21.00	18.00	13.11	3/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			12/12/2017
1102	CWWP/BWP	U	7700 PROGRESS COURT	PROGRESS BUSINESS CENTER LOT 2A	77-304	18-798	2.37	0.77	2.01	2/20/2005	P-1	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			8/27/2018
1103	CWWP/BWP	D	3400 BELLEVUE ROAD	POTOMAC MALL AUTO WASH AND CAR CENTER	77-309	18-647	21.00	18.00	13.11	3/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			7/15
1104	CWWP/BWP	D	3400 BELLEVUE ROAD	POTOMAC MALL AUTO WASH AND CAR CENTER	77-309	18-647	21.00	18.00	13.11	3/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			7/15
1105	CWWP	U	3400 BELLEVUE ROAD	POTOMAC MALL AUTO WASH AND CAR CENTER	77-309	18-647	21.00	18.00	13.11	3/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			7/15
1106	CWWP	U	34411 SMOYTHOWN DRIVE	POTOMAC MALL EXCON	77-309	18-631	0.07	0.08	0.00	4/21/2006	P-0	P-36	Neubach Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			12/12/2017
1107	CWWP/BWP	U	4700 LOCUST SHADE DRIVE	TOPIC & POTOMAC HILLS	77-283	18-828	11.25	8.48	8.48	4/21/2006	P-0	P-36	Neubach Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			7/15
1108	CWWP	U	4700 LOCUST SHADE DRIVE	LOCUST SHADE GOLF FACILITY	77-387	18-549	31.81	30.22	1.59	10/21/2006	P-0	P-32	Quantico Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/23/2009
1109	CWWP	W	4700 LOCUST SHADE DRIVE	LOCUST SHADE GOLF FACILITY	77-388	18-549	2.13	2.46	0.07	10/21/2006	P-0	P-32	Quantico Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/23/2009
1110	CWWP	W	4700 LOCUST SHADE DRIVE	LOCUST SHADE GOLF FACILITY	77-389	18-549	2.66	2.66	0.00	10/21/2006	P-0	P-32	Quantico Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/23/2009
1111	CWWP	W	4700 LOCUST SHADE DRIVE	LOCUST SHADE GOLF FACILITY	77-392	18-549	10.33	3.37	0.00	10/21/2006	P-0	P-32	Chowanock Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/23/2009
1112	CWWP	W	4700 LOCUST SHADE DRIVE	LOCUST SHADE GOLF FACILITY	77-389	18-549	29.87	29.87	0.00	10/21/2006	P-0	P-32	Chowanock Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/23/2009
1113	CWWP	W	4700 LOCUST SHADE DRIVE	LOCUST SHADE GOLF FACILITY	77-391	18-543	11.38	11.38	0.00	10/21/2006	P-0	P-32	Chowanock Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/23/2009
1114	CWWP	W	4700 LOCUST SHADE DRIVE	LOCUST SHADE GOLF FACILITY	77-393	18-548	9.48	9.48	0.00	10/21/2006	P-0	P-32	Chowanock Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/23/2009
1115	CWWP	U	8000 SULLY ROAD	FALLEN TREE #200-2006	77-524	18-747	2.54	2.50	1.00	10/21/2006	P-0	P-36	Middle Bull Run	VMA-A198_BM03240	Bull Run	5A	PCB in Fall Trace	No	C	Private	Yes			7/15
1116	CWWP	U	30108 BELLEVUE ROAD	MCDONALD'S RESTAURANT BALLS BROOK ROAD	77-687	18-808	0.00	0.00	0.00	10/21/2006	P-0	P-36	Middle Bull Run	VMA-A198_BM03240	Bull Run	5A	PCB in Fall Trace	No	C	Private	Yes			7/15
1117	CWWP/BWP	U	8511 BARRETT DRIVE	SEVENTH DAY ADVENTIST CHURCH	77-687	18-729	0.00	0.00	0.00	10/21/2006	P-0	P-36	Middle Bull Run	VMA-A198_BM03240	Bull Run	5A	PCB in Fall Trace	No	C	Private	Yes			7/15
1118	CWWP/BWP	U	3400 BELLEVUE ROAD	SEVENTH DAY ADVENTIST CHURCH	77-687	18-729	0.00	0.00	0.00	10/21/2006	P-0	P-36	Middle Bull Run	VMA-A198_BM03240	Bull Run	5A	PCB in Fall Trace	No	C	Private	Yes			7/15
1119	CWWP	U	11890 NEWWOOD PLAZA	MOBIL OIL & PRINCE WILLIAM COMMONS P1 SEC 1	77-339	18-825	1.13	0.85	1.00	4/21/2006	P-0	P-36	Neubach Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			7/15
1120	CWWP/BWP	U	3011 BELLEVUE ROAD	NEWPORT ELEMENTARY SCHOOL	77-339	18-825	1.13	0.85	1.00	4/21/2006	P-0	P-36	Neubach Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			7/15
1121	CWWP/BWP	U	3011 BELLEVUE ROAD	NEWPORT ELEMENTARY SCHOOL	77-337	18-825	1.49	1.28	2.28	3/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/28/2009
1122	CWWP	U	3830 BRANTY ROAD	THANGUO SELF STORAGE	77-327	18-705	24.92	12.70	1.38	10/21/2006	P-0	P-32	Quantico Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/28/2009
1123	CWWP	U	3830 BRANTY ROAD	P & B RESTAURANT	77-327	18-707	0.00	0.00	0.00	4/21/2006	P-0	P-36	Quantico Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			5/28/2009
1124	CWWP/BWP	W	13316 FREESTONE WAY	HERITAGE HOME REGION 2 SECTION 3 SWM P1	77-809	18-816	0.00	0.00	0.00	3/20/2005	P-0	P-36	Little Bull Run	VMA-A198_BM03240	Bull Run	4A	Exhorted only	No	C	Private	Yes			6/29/2019
1125	CWWP/BWP	U	2322 PROGRESS COURT	THE GLEN SECTION C	77-309	18-645	0.00	0.00	0.00	4/21/2006	P-0	P-36	Brass Run Rocky Branch	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			7/15
1126	CWWP	U	10304 DOWNWOOD DRIVE	PKW EASTERN REGIONAL SERVICE CENTER	77-285	18-808	18.66	8.87	8.80	2/21/2006	P-0	P-36	Neubach Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			6/12/2009
1127	CWWP	W	10304 DOWNWOOD DRIVE	PKW EASTERN REGIONAL SERVICE CENTER	77-286	18-808	18.66	8.87	8.80	2/21/2006	P-0	P-36	Neubach Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			6/12/2009
1128	CWWP/BWP	U	1400 BELLEVUE ROAD	MINNESOTA PUBLIC POWER & LIGHTING	77-389	18-735	19.38	12.46	8.98	2/21/2006	P-0	P-36	Neubach Creek	VMA-A198_BM03240	Brass Run	4A	Exhorted only	No	C	Private	Yes			6/12/2009
1129	CWWP/BWP																							

Activity ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inspected	VARIABLES	VARIABLES	VARIABLES Name	COUSE	Water Name Facility Discharge To	300A/300B/300C Assessment Category	300A/300B/300C Water Quality Assessment Category	300A/300B/300C Water Quality Assessment Improvement Cause?	MSBT	Maintenance Agreement Type	STATUS	Discharge to MSBT	300A/300B/300C	ROPC	
1468	CAMP	1468 THURSAND ROAD	177161	NET US AIRNORTH CRESTON CT NATIONAL STA	-87.891	38.792	0.76	0.76	0.76	2/1/2004	P,0	P,0	Nashua Creek											PT15	
1469	CAMP/RMP	COMMON AREA	275329	CRESTWOOD PROFESSIONAL CENTER SECTION 3	-87.899	38.792	0.99	0.99	0.79	2/2/2004	P,0	P,0	Middle Bull Run	VAN-A226_BH01246	Bull Run	SA	PCB in Fish Tissue								
1470	CAMP/RMP	8000 SOUTH DRIVE	277601	BROWNWOOD	-87.898	38.773	3.18	0.92	2.86	2/1/2004	P,0	P,0	Middle Bull Run	VAN-A226_BH01246	Bull Run	SA	PCB in Fish Tissue								8/26/2016
1471	CAMP	8000 SOUTH DRIVE	277601	BROWNWOOD	-87.898	38.773	3.18	0.92	2.86	2/1/2004	P,0	P,0	Middle Bull Run	VAN-A226_BH01246	Bull Run	SA	PCB in Fish Tissue								8/26/2016
1472	CAMP/RMP	8000 SOUTH DRIVE	277601	BROWNWOOD	-87.898	38.773	3.18	0.92	2.86	2/1/2004	P,0	P,0	Middle Bull Run	VAN-A226_BH01246	Bull Run	SA	PCB in Fish Tissue								8/26/2016
1473	CAMP	1500 WINDY HILL ROAD	277601	FIRE DEPARTMENT OF GOOD CHURCH ADDITION	-87.897	38.645	0.06	0.06	0.06	2/2/2004	P,0	P,0	Nashua Creek												8/26/2016
1474	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1475	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1476	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1477	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1478	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1479	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1480	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1481	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1482	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1483	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1484	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1485	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1486	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1487	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1488	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1489	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1490	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1491	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1492	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1493	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1494	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1495	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1496	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1497	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1498	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1499	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1500	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1501	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1502	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1503	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1504	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1505	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1506	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1507	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1508	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1509	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1510	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1511	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1512	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1513	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1514	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1515	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1516	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1517	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1518	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1519	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1520	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1521	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1522	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1.87	0.13	4/1/2004	P,0	P,0	Nashua Creek												
1523	CAMP	1500 WINDY HILL ROAD	277601	GARFIELD HIGH SCHOOL	-87.897	38.643	6.00	1																	


Activity ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inspected	VARIABLES	VARIABLES	VARIABLES Name	GISID	Water Name Facility	300A/300B/300C Water Quality Assessment Category	300A/300B/300C Water Quality Assessment	300A/300B/300C Water Quality Assessment Improvement Cause?	MSBFT	Maintenance Agreement Type	STATUS	Discharge to MSBFT	300A/300B/300C	RSPTC
1708	CRWP	1198 HORNET ROAD	ADDITION TO TOWN & COUNTY B&H RANCH		77-2441	28.8097	0.00	0.00	0.00	9/27/2014	P,0	P,0	Deanna Run-Deanna Run		Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	
1711	CRWP/BMP	1141 WILSON ROAD	VERONA MEADOWS HOE LOT 44 N TO N		77-5339	28.8997	4.92	0.82	4.10	10/23/2011	P,L	P,L	Deanna Run-Rodney Branch	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1712	CRWP/BMP	1451 BEL AIR ROAD	WILSONVILLE PARKWAY		77-2920	28.8425	114.84	72.04	80.70	10/22/2011	P,L	P,L	Palmetto Run-Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1713	CRWP/BMP	12344 FORESTDALE DRIVE	WILSONVILLE FOREST PHASE 2 APARTMENTS		77-2124	28.9130	1.80	0.19	1.61	9/27/2014	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1714	CRWP/BMP	12900 BULLDOG FORD DRIVE	WILSONVILLE PARKING LOT EXPANSION		77-5796	28.8709	6.73	1.31	5.42	10/27/2011	P,L	P,L	Deanna Run-Rodney Branch	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1715	CRWP/BMP	11200 FORESTDALE DRIVE	WILSON PARKWAY PARKING LOT EXPANSION		77-2920	28.8997	1.86	0.26	1.60	9/27/2014	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1716	CRWP	UJ 8000 SUGAR ROAD	WALMART STORE #3257-01 AT MANASSAS MALL		77-5029	28.7711	0.00	0.00	0.00	1/27/2012	P,R	P,R	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1717	CRWP	UJ 8000 SUGAR ROAD	WALMART STORE #3257-01 AT MANASSAS MALL		77-5029	28.7711	0.00	0.00	0.00	1/27/2012	P,R	P,R	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1718	CRWP	UJ 8000 SUGAR ROAD	WALMART STORE #3257-01 AT MANASSAS MALL		77-5066	28.7709	3.89	0.31	3.58	1/27/2012	P,R	P,R	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1719	CRWP	UJ 8000 SUGAR ROAD	WALMART STORE #3257-01 AT MANASSAS MALL		77-5029	28.7709	0.00	0.00	0.00	1/27/2012	P,R	P,R	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1720	CRWP/BMP	UJ 8000 SUGAR ROAD	WALMART STORE #3257-01 AT MANASSAS MALL		77-5066	28.7709	0.46	0.02	0.45	1/27/2012	P,R	P,R	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1721	CRWP/BMP	UJ 8000 SUGAR ROAD	WALMART STORE #3257-01 AT MANASSAS MALL		77-5029	28.7709	0.00	0.00	0.00	1/27/2012	P,R	P,R	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1722	CRWP/BMP	UJ 8000 SUGAR ROAD	WALMART STORE #3257-01 AT MANASSAS MALL		77-5066	28.7709	0.47	0.04	0.43	1/27/2012	P,R	P,R	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1723	CRWP/BMP	UJ 8000 SUGAR ROAD	WALMART STORE #3257-01 AT MANASSAS MALL		77-5066	28.7709	0.47	0.04	0.43	1/27/2012	P,R	P,R	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1724	CRWP/BMP	UJ 8000 SUGAR ROAD	WALMART STORE #3257-01 AT MANASSAS MALL		77-5066	28.7709	0.47	0.04	0.43	1/27/2012	P,R	P,R	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1725	CRWP/BMP	WJ 15461 FOREST DRIVE	THE VILLAGES AT BIRTON LUXURY BLACKBURN POINT		77-38	28.6117	23.17	11.37	10.00	2/10/2012	P,0	P,0	Nashua Creek	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1726	CRWP/BMP	D 4009 BURNETT FARM DRIVE	PALE VALLEY COUNTRY		77-8899	28.9709	7.16	4.52	2.64	6/18/2012	P,R	P,R	Little Run	VAN-A19E-CAN6100	Cathlamet Creek	5D	Baritic/Macroinvertebrate Assessments, Exhorted only		C	Private	Yes	Yes	N	5/28/2019
1727	CRWP/BMP	WJ 16311 BURNETT FARM DRIVE	PALE VALLEY COUNTRY		77-8899	28.9709	7.16	4.52	2.64	6/18/2012	P,R	P,R	Deanna Run	VAN-A19E-CAN6100	Cathlamet Creek	5D	Baritic/Macroinvertebrate Assessments, Exhorted only		C	Private	Yes	Yes	N	5/28/2019
1728	CRWP	UJ 14310 CROSSING PLACE	SPRINGHILLS SUITES INDUSTRIAL MALLS		77-2096	28.8547	0.40	0.77	0.63	6/14/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-MAN10104	Manassas Creek	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1729	CRWP	UJ 14310 CROSSING PLACE	SPRINGHILLS SUITES INDUSTRIAL MALLS		77-2096	28.8547	0.47	0.89	0.77	6/14/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-MAN10104	Manassas Creek	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1730	CRWP/BMP	WJ 16311 BURNETT FARM DRIVE	ALEXANDRIA TECHNOLOGY CENTER PHASE IIIILLIAM		77-5153	28.7941	24.48	19.22	5.26	6/22/2012	P,L	P,L	Deanna Run-Rodney Branch	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1731	CRWP	UJ 12605 SMOYTHORNTON ROAD	CLUB BRIDGE COMMERCIAL CENTER		77-3359	28.8997	0.11	0.08	0.04	6/22/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-HOU0142	Houma Run	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1732	CRWP	UJ 12605 SMOYTHORNTON ROAD	CLUB BRIDGE COMMERCIAL CENTER		77-3358	28.8991	0.40	0.27	0.13	6/22/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-HOU0142	Houma Run	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1733	CRWP	UJ 12605 SMOYTHORNTON ROAD	CLUB BRIDGE COMMERCIAL CENTER		77-3359	28.8991	0.26	0.11	0.15	6/22/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-HOU0142	Houma Run	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1734	CRWP	UJ 12605 SMOYTHORNTON ROAD	CLUB BRIDGE COMMERCIAL CENTER		77-3359	28.8991	0.26	0.11	0.15	6/22/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-HOU0142	Houma Run	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1735	CRWP/BMP	UJ 14227 EPPERSON DAVIS HIGHWAY	LUTHERNE TOWNSHIP REVISIONS		77-2842	28.6446	5.29	0.86	4.43	7/24/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-HOU0142	Houma Run	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1736	CRWP/BMP	UJ 14227 EPPERSON DAVIS HIGHWAY	LUTHERNE TOWNSHIP REVISIONS		77-2842	28.6446	5.29	0.86	4.43	7/24/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-HOU0142	Houma Run	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1737	CRWP	UJ 14227 EPPERSON DAVIS HIGHWAY	LUTHERNE TOWNSHIP REVISIONS		77-2842	28.6446	2.87	1.52	0.55	7/24/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-HOU0142	Houma Run	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1738	CRWP	D 14227 EPPERSON DAVIS HIGHWAY	LUTHERNE TOWNSHIP REVISIONS		77-2842	28.6443	1.59	0.22	1.36	7/24/2012	P,0	P,0	Palmetto Run-Deanna Run	VAN-A19E-HOU0142	Houma Run	5A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1739	CRWP/BMP	D 10224 BERRY LAMBERT BOULEVARD	ARIZONA BUSINESS CENTER PHASE 1 & 4		77-6565	28.7527	11.57	6.56	5.01	6/22/2012	P,L	P,L	Deanna Run-Rodney Branch	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1740	CRWP/BMP	D 14811 SULLIVAN DRIVE	ALL SANTI'S CHURCH		77-2963	28.8243	30.81	20.08	9.73	6/29/2012	P,0	P,0	Nashua Creek	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1741	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-3948	28.7948	1.75	1.24	0.51	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1742	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1743	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1744	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1745	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1746	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1747	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1748	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1749	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1750	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1751	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1752	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1753	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1754	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1755	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0.83	1.01	6/13/2012	P,L	P,L	Deanna Run	VAN-A19E-BM12040	Deanna Run	4A	Exhorted only		C	Private	Yes	Yes	N	6/22/2019
1756	CRWP/BMP	UJ 8705 VERONA AVENUE	EVERGREEN TRAIL		77-4401	28.7948	1.84	0																




Standard Operating Procedure

Department of Public Works

Environmental Services Division

Title:	Watershed Management Branch Service Requests Procedure
Number:	3.045.1
Subject:	Adopted Procedure for Service Requests
Cross Reference:	APWA Management Practice(s) <u>6.6, 6.10, 6.11, 6.12, 6.13 & 7.13</u>
Date Issued:	July 20, 2010
Date Revised:	November 1, 2018
Date Last Reviewed:	April 23, 2014
Signature of Issuer:	 _____ Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	November 1, 2018



	SOP Title: Watershed Management Branch Service Requests Procedure	SOP No.: 3.045.1
	Effective Date: 10/05/2018	Supersedes Policy Dated: 04/23/2014

A. Purpose

This Standard Operating Procedure (SOP) provides the procedure within Environmental Services to receive, respond, and record action on verbal and/or written complaints, inquiries and requests for service.

B. Applicability

This SOP applies to all Watershed Management Branch employees within the Environmental Services Division of Public Works.

C. Specifics

a. Requests for Services

- i. All requests for service are recorded in electronic databases depending on scope and nature of request. The Energov database system is used to record requests for drainage assistance, site inspection related issues, and information requests. The Timmons database is used to track requests related to stormwater management (SWM) ponds and suspected illicit discharge inspections. This applies to phone, fax, walk-in and internet requests. It also applies to emergency alerts and emergency telephone reports that occur outside of Emergency Operations Center (EOC) activations. During EOC activations, all emergency transmissions are electronically logged and monitored.
- ii. Staff is assigned to respond to requests or provide service as needed. See the flow chart in Attachment A for each service request.
- iii. Staff follows up with the service requestor as needed.
- iv. A permanent record is maintained in the electronic databases. Log books are maintained for three years.

b. The Implementation Process Flow Chart

A process flow chart (Attachment A) has been developed to illustrate how the service request process is implemented within the Watershed Management Branch of the Environmental Services Division. In general, the service requests pertain to one of the following issues:

Issue 1: Site/Subdivision Plans

Issue 2: As-Built Plan related services

Issue 3: Approval of accessory structures & fences in SWM easement, and land disturbing activity >2,500 sf

Issue 4: Stormwater drainage related requests

Issue 5: Property flooding


Issue 6: Lot grading related services

Issue 7: Site Inspection related services

Issue 8: Stormwater Management Pond inspection and maintenance.

Issue 9: Waiver related services



	SOP Title: Watershed Management Branch Service Requests Procedure	SOP No.: 3.045.1
	Effective Date: 10/05/2018	Supersedes Policy Dated: 04/23/2014

c. **Emergency Telephone Access**

The Watershed Management Branch of Environmental Services has designated inspectors for specific areas in the community. The Plan Reviewer and Site Inspection map is shown in Attachment B. The after-hours phone message directs citizens to call 911 if there is a drainage or flooding emergency. If the citizen has a non-emergency request, the citizen is directed to leave a voicemail with their contact information and the nature of their request.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

E. Administration

The administration of this SOP shall be the responsibility of the Environmental Services Division Chief and Branch Chiefs.

Attachments

Attachment A: Flow chart-Environmental Services Division, Watershed Management Branch Service Requests.

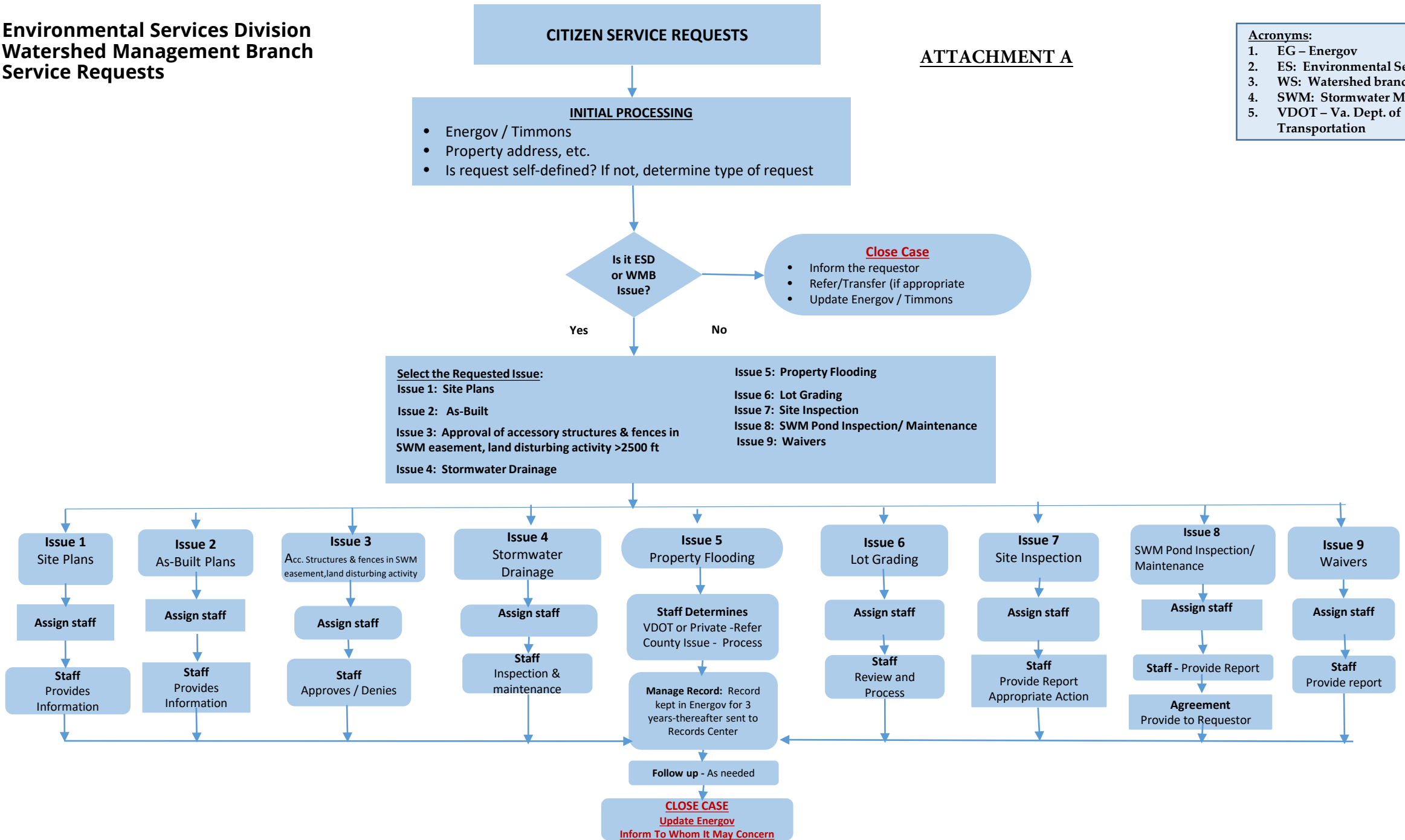
Attachment B: Watershed Management Plan Reviewer and Site Inspection map



**Environmental Services Division
Watershed Management Branch
Service Requests**

ATTACHMENT A

- Acronyms:**
1. EG – Energov
 2. ES: Environmental Services
 3. WS: Watershed branch
 4. SWM: Stormwater Management
 5. VDOT – Va. Dept. of Transportation

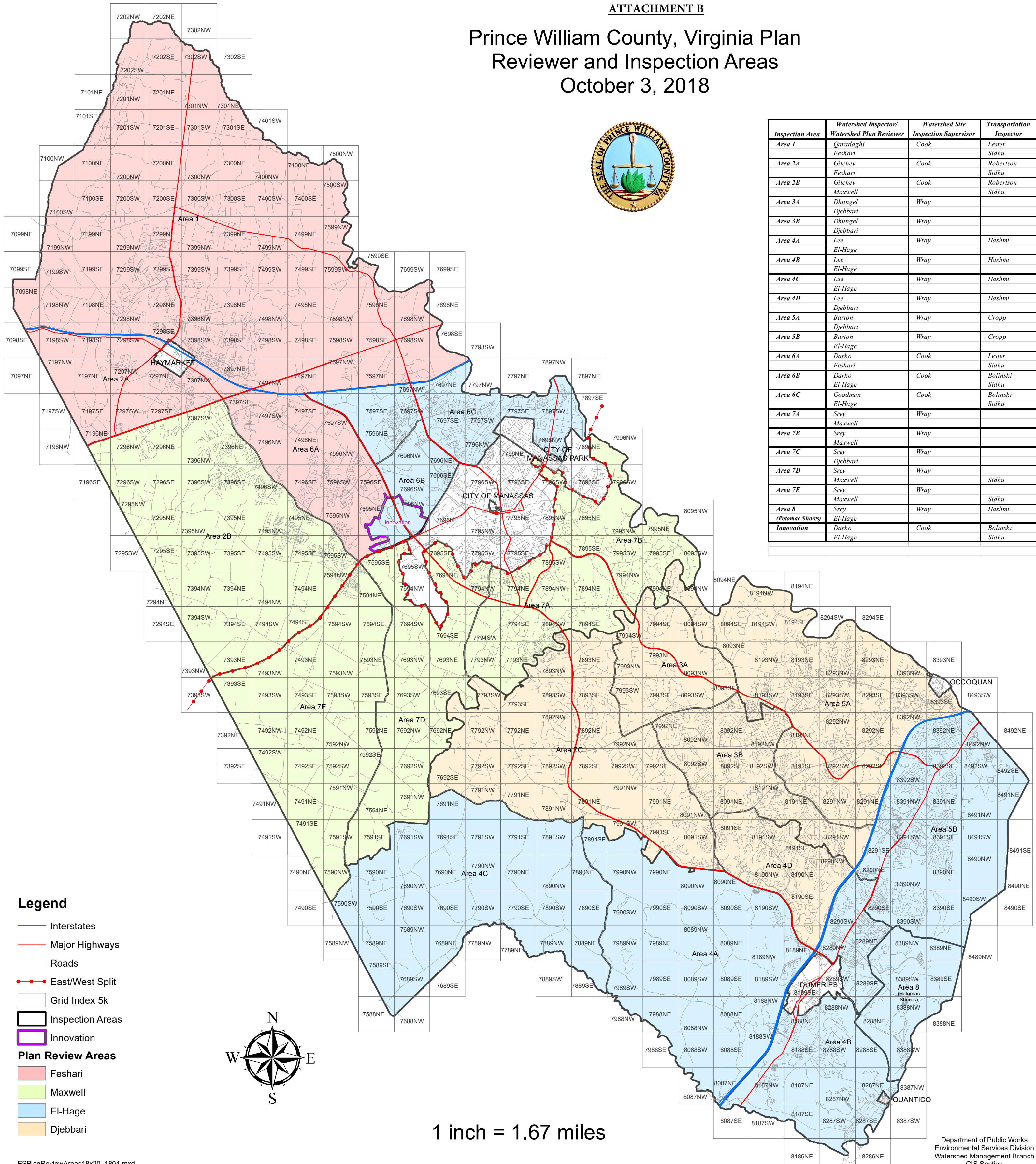


Prince William County, Virginia Plan Reviewer and Inspection Areas

October 3, 2018

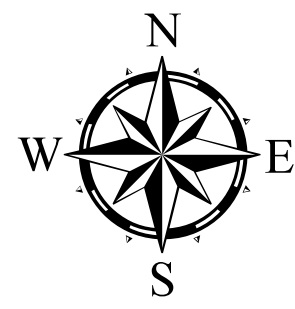


Inspection Area	Watershed Inspector/ Watershed Plan Reviewer	Watershed Site Inspection Supervisor	Transportation Inspector
Area 1	Qaradaghi Feshari	Cook	Lester Sidhu
Area 2A	Gitchev Feshari	Cook	Robertson Sidhu
Area 2B	Gitchev Maxwell	Cook	Robertson Sidhu
Area 3A	Dhungal Djebbari	Wray	
Area 3B	Dhungal Djebbari	Wray	
Area 4A	Lee El-Hage	Wray	Hashmi
Area 4B	Lee El-Hage	Wray	Hashmi
Area 4C	Lee El-Hage	Wray	Hashmi
Area 4D	Lee Djebbari	Wray	Hashmi
Area 5A	Barton Djebbari	Wray	Cropp
Area 5B	Barton El-Hage	Wray	Cropp
Area 6A	Darko Feshari	Cook	Lester Sidhu
Area 6B	Darko El-Hage	Cook	Bolinski Sidhu
Area 6C	Goodman El-Hage	Cook	Bolinski Sidhu
Area 7A	Srey Maxwell	Wray	
Area 7B	Srey Maxwell	Wray	
Area 7C	Srey Djebbari	Wray	
Area 7D	Srey Maxwell	Wray	Sidhu
Area 7E	Srey Maxwell	Wray	Sidhu
Area 8 (Potomac Shores)	Srey El-Hage	Wray	Hashmi
Innovation	Darko El-Hage	Cook	Bolinski Sidhu



Legend

- Interstates
- Major Highways
- Roads
- East/West Split
- Grid Index 5k
- Inspection Areas
- Innovation
- Plan Review Areas**
- Feshari
- Maxwell
- El-Hage
- Djebbari




1 inch = 1.67 miles




Standard Operating Procedure

Department of Public Works

Environmental Services Division

Title:	Publicly-Maintained SWM/BMP Facilities Inspection and Maintenance
Number:	3.047.1
Subject:	Stormwater Drainage Facility, Infrastructure and Inspection and Maintenance Procedures
Cross Reference:	APWA Management Practice(s) <u>26.16 & 26.17</u>
Date Issued:	December 19, 2011
Date Revised:	November 1, 2018
Date Last Reviewed:	June 1, 2015
Signature of Issuer:	 _____ Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	November 1, 2018



	SOP Title: Publicly Maintained SWM/BMP Facilities Inspection and Maintenance	SOP No.: 3.047.1
	Effective Date: 11/01/2018	Supersedes Policy Dated: 06/01/2015

A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to establish procedures within Environmental Services Division to “periodically or complaint based” inspect and maintain publicly maintained Storm Drainage Systems, Best Management Practices (BMP) facilities and Storm Water Management (SWM) facilities (pipes, drainage structures, manholes, drainage ditches, and grass/stone or concrete swales etc.) located within an easement dedicated for the purpose of storm drainage.

B. Applicability

This SOP applies to all employees within the Environmental Services Division of Public Works.

C. Specifics


The County maintained SWM/BMP facilities are inspected under two scenarios:

1. General inspections performed approximately once per year.
2. When requested by an impacted property owner. A property owner’s request is tracked as a complaint (RDRP or SWM) case in the EnerGov™, a county maintained database.

Scenario 1 – General Inspection

1. SWM/BMP facilities are selected for each day of inspection.
2. The field inspection results are entered onto an Inspection Check List Form utilizing a SWM Inspection electronic application (on iPads), with the scope of maintenance noted therein. Digital photos are taken.
3. When maintenance is required, the inspection notes are documented and the photos attached in the SWM case in EnerGov™.
4. If no deficiencies are found during the inspection, the inspection results are entered in SWM Inspection App.
5. If deficiency is found, a brief description and approximate location of the problem is noted, photos attached, and the case is assigned to the maintenance crew via EnerGov™.
6. The maintenance crew chief receives the assignment(s) via ‘Task List’ in EnerGov™ and an email from the Drainage Services Coordinator. The list is reviewed, priority assigned based on severity of the problem, the site inspected, and scope of needed resources (material, equipment, labor and time to complete the job) assessed. The availability of the site access is also explored. If needed, permission to access the problem area through the respective property owner’s (or their neighbor’s) property is requested.
7. After completion of the maintenance, the maintenance case is identified as “Completed” in EnerGov™ by the maintenance crew chief.
8. The following inspection information is tracked for inclusion into the yearly MS4 report: facility number, facility type, inspection date, HUC code, and type of maintenance needed.



	SOP Title: Publicly Maintained SWM/BMP Facilities Inspection and Maintenance	SOP No.: 3.047.1
	Effective Date: 11/01/2018	Supersedes Policy Dated: 06/01/2015

Scenario 2 - When requested by an impacted property owner

1. A property owner’s request is tracked as a complaint (SWM) case in EnerGov™.
2. The drainage system is identified on County Mapper and a location map printed.
3. The drainage facilities are inspected and photos taken.
4. The inspection notes are documented and the photos attached in the SWM case in EnerGov™.
5. If no problem found - no action is noted, and the case is closed.
6. If problem found - brief description and approximate location of the problem is noted. The case is then assigned to the maintenance crew via EnerGov™.
7. The maintenance crew chief receives the assignment(s) via ‘Task List’ in EnerGov™ and an email from the Drainage Services Coordinator. The list is reviewed, priority assigned based on severity of the problem, the site inspected, and scope of needed resources (material, equipment, labor and time to complete the job) assessed. The availability of the site access is also explored. If needed, permission to access the problem area through the respective property owner’s (or their neighbor’s) property is requested.
8. After completion of the maintenance, the SWM case is identified as “project completed” in EnerGov™ by the maintenance crew chief.
9. The complainant and other interested parties are notified of the completed project.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

E. Administration

The administration of this SOP shall be the responsibility of the Environmental Services Division Chief and Watershed Management Branch Chief.






Standard Operating Procedure

Department of Public Works

Environmental Services Division

Title:	Privately Maintained SWM/BMP Facilities Inspection and Maintenance
Number:	3.047.2
Subject:	SW Drainage Facility, Infrastructure and BMP (Privately Maintained) Inspection & Maintenance.
Cross Reference:	APWA Management Practice(s) <u>26.16 & 26.17</u>
Date Issued:	December 19, 2011
Date Revised:	November 1, 2018
Date Last Reviewed:	June 1, 2015
Signature of Issuer:	<u>Marc T. Aveni</u> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	November 1, 2018



	SOP Title: Privately Maintained SWM/BMP Facilities Inspection and Maintenance	SOP No.: 3.047.2
	Effective Date: 11/01/2018	Supersedes Policy Dated: 06/01/2015

A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to establish procedures within the Environmental Services Division to randomly inspect privately-maintained Storm Water Management (SWM) and Best Management Practices (BMP) facilities (pipes, drainage structures, manholes, drainage ditches, and grass/stone or concrete swales etc.) within easements dedicated for the purpose of storm drainage or stormwater management.

B. Applicability

This SOP applies to all Environmental Services Division employees.

C. Specifics

The privately maintained SWM/BMP facilities are inspected at a minimum of once every five years.

1. The SWM/BMP facility is selected.
2. The SWM/BMP file is reviewed for appropriate documentation such as location map, as-built plans, plats, deeds and maintenance agreements.
3. The field inspection results are entered onto an Inspection Check List Form in the SWM Inspection Application (on iPad) and the scope of maintenance noted therein. Photos are attached to the inspection app.
4. If no deficiencies found - no action is noted and property owner is notified by letter.
5. If deficiencies found – property owner is notified by letter of all deficiencies and requested to perform needed repairs within 60 days.
6. The following inspection information is tracked for inclusion into the yearly MS4 report: facility number, facility type, inspection date, HUC code, and type of maintenance needed.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

E. Administration

The administration of this SOP shall be the responsibility of the Environmental Services Division Chief and Branch Chiefs.






Standard Operating Procedure

Department of Public Works

Environmental Services Division

Title:	Stormwater Facility Infrastructure Inventory Procedures
Number:	3.047.3
Subject:	Inventory of SWM Facility, BMP Facility and Storm Drainage Infrastructure
Cross Reference:	APWA Management Practice (s) <u>26.8 & 26.9</u>
Date Issued:	December 19, 2011
Date Revised:	November 1, 2018
Date Last Reviewed:	June 27, 2015
Signature of Issuer:	<u>Marc T. Aveni</u> Marc T. Aveni, Environmental Services Division Chief
Applicability:	Environmental Services Division
Effective Date:	November 1, 2018



	SOP Title: Stormwater Facility Infrastructure Inventory Procedures	SOP No.: 3.047.3
	Effective Date: 11/01/2018	Supersedes Policy Dated: 06/17/2015

A. Purpose

The purpose of this Standard Operating Procedure (SOP) is to establish procedures within the Environmental Services Division to maintain and update an inventory of Storm Water Management (SWM) and Best Management Practice (BMP) facilities, and Storm Drainage Infrastructure (Conveyance - pipes, drainage structures, manholes, drainage ditches, and grass, concrete or stone swales within storm water easement).

B. Applicability

This SOP applies to all the employees within the Watershed Management Branch, Environmental Services Division of Public Works.


C. SWM/BMP Facilities and Storm Drainage Infrastructure Inventory

1. The Geographic Information System (GIS) inventory of the facilities and the drainage infrastructure is created and maintained by the Watershed Management Branch.
2. Development plans are required to show all storm drainage infrastructures.
3. Upon completion of a land development project, the area site inspector from the Branch submits a copy of the approved as-built plan to the GIS section of the Branch.
4. The as-built plan information (plan number, name of the plan/subdivision, and the date received) is logged in by the GIS section. The as-built drainage infrastructure and SWM/BMP facilities are entered into the GIS storm drain inventory within 30 days.
5. The as-built plan and associated plats are scanned and an electronic copy/file is created. It is placed in the County's Electronic Data Management System (EDMS).
6. The following information is retrieved from the plans and digitized:

Storm Drain Information

- Location
- Easement width and length
- Pipe sizes
- Invert elevations
- Structure type
- Specific outfall information including (if provided):
 1. Size
 2. Subdivision name
 3. Drainage area




	SOP Title: Stormwater Facility Infrastructure Inventory Procedures	SOP No.: 3.047.3
	Effective Date: 11/01/2018	Supersedes Policy Dated: 06/17/2015

4. Year built
5. Land use
6. Hydrologic unit code (HUC)
7. Latitude/longitude)

SWM/BMP Facility Information

- Facility type
 - Location
 - Subdivision/site name
 - HUC of receiving stream
 - Total areas treated by the BMP
 - Year built
 - Land use
 - Latitude/longitude
 - Maintenance notes
 - Maintenance agreements
 - Easement boundaries
 - Pipe or ditch sizes
 - Drainage structure profiles
 - Invert elevations
 - Control structure details
 - Performance bond
7. All SWM/BMP facilities are assigned a specific County identification number.
 8. Hard-copy files are created for all SWM/BMP facilities that are part of the as-built plans.
The files include:
 - GIS inventory sheet
 - County Mapper printout of the parcel(s) with owner information included
 - Copy of final inspection signoff
 - Site plan cover sheet
 - Vicinity map
 - Detail drawing(s) of the facilities
 - Profile drawing(s)
 - Plan view
 - Easement information on the plat
 - Bond estimate
 - SWM fact sheet
 - Maintenance notes
 - Copy of the Storm water Management Agreement if applicable
 - Type of BMP



	SOP Title: Stormwater Facility Infrastructure Inventory Procedures	SOP No.: 3.047.3
	Effective Date: 11/01/2018	Supersedes Policy Dated: 06/17/2015

- State HUC
- Acres treated
- Water body to which the facility is discharging into.

An electronic file/folder for each stormwater management facility is placed on the shared PW (Public Works) folder. The folders are accessed through Ridge 1 → PW → Environmental Services → Watershed Management → Drainage & Stormwater Management → SWM Ponds → General SWM Inspection, and choose County or Commercial Facility folder based on facility number. Hard-copy files are sent to the Stormwater Management Pond Site Inspectors.

9. County Mapper is updated to show the updates on SWM/BMP facilities and the storm drainage infrastructure.
10. An EnerGov™ case is created for each new SWM/BMP facility.
11. Storm drain maps are printed periodically and provided to the storm drainage inspection crew for their inspection tasks.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

E. Administration

The administration of this SOP shall be the responsibility of the Environmental Services Division Chief and Branch Chiefs.





Bioretention Inspection Form

Prince William County Department of Public Works

Inspector:			Inspection Date:		
Site Name:		Facility Characteristics:			
Site Address:		Facility Type (Check One)		Facility Design Level (Circle One)	
Facility Number:		Bioretention Basin		Level 1	Level 2
GPIN:		Rain Garden/Micro Bio		Level 1	Level 2
Coordinates:		Urban Bioretention		Level 1	Level 2
VAHUC 12 Name:		VAHUC 6 Name:			
Date BMP Placed in Service:		Is this a privately maintained facility? (Y/N):			
Date of last BMP Inspection:		Does this facility have a maintenance agreement? (Y/N):			
As-Built Plans available (Y/N):		Is the facility On-line or Off-Line?:			

BMP Inspection Elements

General Items

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the site accessible?			
Is the facility free of all encroachments?			
Does the BMP conform to the As-Built Plans?			
Is the facility clear of all trash and debris?			
Are all areas free of mosquito habitats?			
Other:			

Bioretention Surface Area

Pretreatment Present (Y/N):	Type (Pretreatment Cell, Grass Filter Strip, Gravel Diaphragm, Gravel Flow Spreader, Other):		
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the pretreatment area free of all deficiencies?			
Are all energy dissipators free of erosion?			
Are all energy dissipators free of displaced riprap?			
Is the surface area free of sediment accumulation that would affect the storage volume?			
Is the surface area free of excessive vegetation?			
Is the surface area free of trash and debris?			
Is the surface area free of all erosion and bare spots?			
Is the surface area free of unauthorized plantings?			
Are there adequate plantings, and do they conform with the planting plan?			
Is the mulch cover acceptable?			
Is the surface area free of any signs of short circuiting?			
Is the surface area free of all encroachments?			
Are side slopes adequately stabilized and free of erosion?			
Other:			

Riser / Control Structure

Riser / Control Structure Present (Y/N):	Type:		
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the structure trash rack present and fully functional?			
Is the structure free of spalling, cracking, and deterioration?			

Riser / Control Structure (Continued)			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the structure (external) free of sediment and debris?			
Is the structure (internal) free of sediment and debris?			
Is all woody vegetation clear within 10' of structure?			
Are all areas around the control structure free of erosion?			
Is control structure access and step condition acceptable?			
Other:			

Principal Spillway Pipe (PSP) / Underdrain			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the PSP clear of all blockages?			
Is the PSP in good structural condition?			
Is the PSP free of any signs of pipe misalignment or separation?			
Is the PSP free of joint failure or seepage into the conduit?			
Is the PSP free of exposed rebar?			
Is the underdrain free of all blockages and clogging?			
Is the underdrain free of any separation or misalignment at its terminus?			
Does the facility dewater between storm events?			
Other:			

Observation Wells			
Are observation wells present (Y/N):	Well Total:		Well Caps Present (Y/N):
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are observation wells accessible?			
Are observation wells free of overgrown vegetation?			
Are observation wells free of all blockages?			
Are well caps fully functional and free of any cracks or breaks?			
Are observation wells free of standing water?			
Other:			

Outfall			
Outfall type (Endwall, Wingwall, Pipe End, Flared, Manhole, Inlet, Other):			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the bioretention outfall in good structural condition?			
Is the endwall /pipe end / inlet acceptable?			
Is the outfall free of all signs of misalignment or separation?			
Is the outfall free of signs of undermining or erosion?			
Is woody vegetation clear within 10' of outfall area?			
Is the outfall clear of all blockages?			
Is the outfall clear of excess sediment and debris?			
Is the outfall clear of any displaced rip rap?			

Outfall (Continued)				
BMP ELEMENT DESCRIPTION		(YES) (NO) (N/A)	PHOTO	NOTES
Is the area downstream of the outfall free of overgrown vegetation?				
Does the outfall downstream show sufficient stabilization?				
Other:				
Dam / Berm				
BMP ELEMENT DESCRIPTION		(YES) (NO) (N/A)	PHOTO	NOTES
Is the dam/berm stabilized with adequate vegetation?				
Is the dam/berm free of all erosion?				
Is the dam/berm free of woody vegetation?				
Is the dam free of unauthorized plantings?				
Is the dam free of animal burrows and rodent activity?				
Is the emergency spillway constructed to the As-Built Plan?				
Is the emergency spillway in good condition?				
Is the emergency spillway free of all signs of erosion?				
Is the emergency spillway clear of woody vegetation?				
Is the emergency spillway clear of all blockages?				
Other:				
Inflows				
Inflow Type (Piped / Overland):		Pipe Total:	Pipe Size(s):	Pipe Type(s):
BMP ELEMENT DESCRIPTION		(YES) (NO) (N/A)	PHOTO	NOTES
Are inflows/pipe(s) clear of all blockages?				
Are inflows/pipe(s) in good structural condition?				
Are pipe endwalls/ends in good structural condition?				
Are pipes free of misalignment or separation?				
Is woody vegetation clear within 5' of pipe end?				
Is the pipe end clear of overgrown vegetation?				
Are inflows/pipes free of sediment accumulation?				
Other:				
Inspector Comments:				

Bioretention / Infiltration Systems Inspection Form

Prince William County Department of Public Works

Inspector:			Inspection Date:			
Site Name:			Facility Characteristics:			
Site Address:			Facility Type (Circle One)	Design Level	Facility Type	Design Level
Facility Number:			GPIN:		Bioretention Basin	Level 1 / 2
Coordinates:			Rain Garden/Micro Bio	Level 1 / 2	Infiltration Trench	Level 1 / 2
VAHUC 12 Name:			VAHUC 6 Name:		Urban Bioretention	Level 1 / 2
Date BMP Placed in Service:					Infiltration Basin	Level 1 / 2
Date of last BMP Inspection:					Is this a privately maintained facility? (Y/N):	
As-Built Plans available (Y/N):					Does this facility have a maintenance agreement? (Y/N):	
					Is the facility On-line or Off-Line?:	

BMP Inspection Elements

General Items

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the site accessible?			
Is the facility free of all encroachments?			
Does the BMP conform to the As-Built Plans?			
Is the facility clear of all trash and debris?			
Are all areas free of mosquito habitats?			
Other:			

Surface Area

Pretreatment Facility Present (Y/N):		Type (Sediment Forebay, Plunge Pool, Stone Diaphragm, Grass filter strip, Other):		
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES	
Is the pretreatment area free of all deficiencies?				
Are all energy dissipators free of erosion?				
Are all energy dissipators free of displaced riprap?				
Is the surface area free of sediment accumulation that would affect the storage volume?				
Is the surface area free of excessive vegetation?				
Is the surface area free of trash and debris?				
Is the surface area free of all erosion and bare spots?				
Is the surface area free of unauthorized plantings?				
Are there adequate plantings, and do they conform with the plan?				
Is the mulch cover acceptable?				
Is the gravel/grass condition acceptable?				
Is the surface area free of exposed filter fabric?				
Is the surface area free of any signs of short circuiting?				
Is the surface area free of all encroachments?				
Are side slopes adequately stabilized and free of erosion?				
Other:				

Riser / Control Structure

Riser / Control Structure Present (Y/N):		Type:		
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES	
Is the structure trash rack present and fully functional?				
Is the structure free of spalling, cracking, and deterioration?				

Riser / Control Structure (Continued)

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the structure (external) free of sediment and debris?			
Is the structure (internal) free of sediment and debris?			
Is all woody vegetation clear within 10' of structure?			
Are all areas around the control structure free of erosion?			
Is control structure access and step condition acceptable?			
Is the weir wall in good condition?			
Other:			

Underdrain

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the underdrain free of all blockages and clogging?			
Is the underdrain in good structural condition?			
Is the underdrain free of any separation or misalignment at its terminus?			
Does the facility dewater between storm events?			
Other:			

Observation Wells

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are observation wells accessible?			
Are observation wells free of overgrown vegetation?			
Are observation wells free of all blockages?			
Are well caps fully functional and free of any cracks or breaks?			
Are observation wells free of standing water?			
Other:			

Outfall

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the outfall in good structural condition?			
Is the outfall free of all signs of misalignment or separation?			
Is the outfall free of signs of undermining or erosion?			
Is woody vegetation clear within 10' of outfall area?			
Is the outfall clear of all blockages?			
Is the outfall clear of excess sediment and debris?			
Is the outfall clear of any displaced rip rap?			
Is the area downstream of the outfall free of overgrown vegetation?			
Does the outfall downstream show sufficient stabilization?			
Other:			

Dam / Berm

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the dam/berm stabilized with adequate vegetation?			
Is the dam/berm free of all erosion?			



Infiltration Systems Inspection Form

Prince William County Department of Public Works

Inspector:		Inspection Date:				
Site Name:			Facility Characteristics:			
Site Address:			Facility Type (Check One)		Facility Design Level (Circle One)	
Facility Number:	GPIN:		Infiltration Trench		Level 1 Level 2 Not Applicable	
Coordinates:			Infiltration Basin		Level 1 Level 2 Not Applicable	
VAHUC 12 Name:	VAHUC 6 Name:		Micro-infiltration		Level 1 Level 2 Not Applicable	
Date BMP Placed in Service:			Is this a privately maintained facility? (Y/N):			
Date of last BMP Inspection:			Does this facility have a maintenance agreement? (Y/N):			
As-Built Plans available (Y/N):			Is the facility On-line or Off-Line?:			

BMP Inspection Elements

General Items

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the site accessible?			
Is the facility free of all encroachments?			
Does the BMP conform to the As-Built Plans?			
Is the facility clear of all trash and debris?			
Are all areas free of mosquito habitats?			
Other:			

Trench Surface Area

Pretreatment Facility Present (Y/N):	Type (Sediment Forebay, Plunge Pool, Stone Diaphragm, Grass filter strip, Other):		
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the pretreatment area free of all deficiencies?			
Are all energy dissipators free of erosion?			
Are all energy dissipators free of displaced riprap?			
Is the surface area free of sediment accumulation that would affect the storage volume?			
Is the surface area free of excessive vegetation?			
Is the surface area free of trash and debris?			
Is the surface area free of all erosion and bare spots?			
Is the surface area free of unauthorized plantings?			
Are there adequate plantings, and do they conform with the plan?			
Is the gravel/grass condition acceptable?			
Is the surface area free of exposed filter fabric?			
Is the surface area free of any signs of short circuiting?			
Is the surface area free of all encroachments?			
Are side slopes adequately stabilized and free of erosion?			
Other:			

Riser / Control Structure

Riser / Control Structure Present (Y/N):	Type:		
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the structure trash rack present and fully functional?			
Is the structure free of spalling, cracking, and deterioration?			

Riser / Control Structure (Continued)

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the structure (external) free of sediment and debris?			
Is the structure (internal) free of sediment and debris?			
Is all woody vegetation clear within 10' of structure?			
Are all areas around the control structure free of erosion?			
Is control structure access and step condition acceptable?			
Is the weir wall in good condition?			
Other:			

Underdrain

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the underdrain free of all blockages and clogging?			
Is the underdrain in good structural condition?			
Is the underdrain free of any separation or misalignment at its terminus?			
Does the facility dewater between storm events?			
Other:			

Observation Wells

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are observation wells accessible?			
Are observation wells free of overgrown vegetation?			
Are observation wells free of all blockages?			
Are well caps fully functional and free of any cracks or breaks?			
Are observation wells free of standing water?			
Other:			

Outfall

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the trench outfall in good structural condition?			
Is the outfall free of all signs of misalignment or separation?			
Is the outfall free of signs of undermining or erosion?			
Is woody vegetation clear within 10' of outfall area?			
Is the outfall clear of all blockages?			
Is the outfall clear of excess sediment and debris?			
Is the outfall clear of any displaced rip rap?			
Is the area downstream of the outfall free of overgrown vegetation?			
Does the outfall downstream show sufficient stabilization?			
Other:			

Dam / Berm				
BMP ELEMENT DESCRIPTION		(YES) (NO) (N/A)	PHOTO	NOTES
Is the dam/berm stabilized with adequate vegetation?				
Is the dam/berm free of all erosion?				
Is the dam/berm free of woody vegetation?				
Is the dam free of unauthorized plantings?				
Is the dam free of animal burrows and rodent activity?				
Is the emergency spillway constructed to the As-Built Plan?				
The emergency spillway is in good condition?				
Is the emergency spillway free of all signs of erosion?				
Is the emergency spillway clear of woody vegetation?				
Is the emergency spillway clear of all blockages?				
Other:				
Inflow pipes				
Inflow Type (Piped / Overland):	Pipe Total:	Pipe Size(s):		Pipe Type(s):
BMP ELEMENT DESCRIPTION		(YES) (NO) (N/A)	PHOTO	NOTES
Are inflows/pipe(s) clear of all blockages?				
Are inflows/pipe(s) in good structural condition?				
Are pipe endwalls/ends in good structural condition?				
Are pipes free of misalignment or separation?				
Is woody vegetation clear within 5' of pipe end?				
Is the pipe end clear of overgrown vegetation?				
Are inflows/pipes free of sediment accumulation?				
Other:				
Inspector Comments:				

Permeable Pavers / Porous Asphalt Inspection Form

Prince William County Department of Public Works

Inspector:				Inspection Date:				
Site Name:				Facility Characteristics:				
Site Address:				Facility Type (Check One)		Facility Design Level (Circle One)		
Facility Number:		GPIN:		Interlocking Pavers		Level 1	Level 2	Not Applicable
Coordinates:				Porous Asphalt		Level 1	Level 2	Not Applicable
VAHUC 12 Name:		VAHUC 6 Name:		Porous Concrete		Level 1	Level 2	Not Applicable
Date BMP Placed in Service:				Is this a privately maintained facility? (Y/N):				
Date of last BMP Inspection:				Does this facility have a maintenance agreement? (Y/N):				
As-Built Plans available (Y/N):				Is the facility On-line or Off-Line?:				

BMP Inspection Elements

General Items

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the site accessible?			
Is the facility free of all encroachments?			
Is the facility free of all trees and shrubs within 5 feet of the pavement surface?			
Does the BMP conform to the As-Built Plans?			
Is the facility clear of all trash and debris?			
Are all areas free of mosquito habitats?			
Other:			

Pavement Surface (Non-structural)

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the pavement surface free of material stockpiles (salt, sand, gravel)?			
Is the pavement surface free of visible blockages?			
Is the pavement surface free of sediment accumulation?			
Is the pavement surface free of excess staining?			
Is the pavement surface free of overgrown vegetation?			
Is the pavement surface free of ponding water 24 hours after a rain event?			
Are areas free of erosion and/or bare soil in grid paver areas ?			
Other:			

Pavement Surface (Structural)

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the pavement surface free of cracking?			
Is the pavement surface free of slumping?			
Is the pavement surface free of any tree roots?			
Are pavers free of cracks and breaks?			
Other:			

Observation Wells and Cleanouts

Observation Wells and/or Cleanouts Present (Y/N):			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are observation wells accessible?			
Are observation wells functional and in good condition?			



Proprietary BMP Inspection Form

Prince William County Department of Public Works

Inspector:		Inspection Date:
Site Name:	Facility Characteristics:	
Site Address:	Facility Type:	
Facility Number:	GPIN:	Facility Manufacturer:
Coordinates:	Is this a privately maintained facility? (Y/N):	
VAHUC 12 Name:	VAHUC 6 Name:	Does this facility have a maintenance agreement? (Y/N):
Date BMP Placed in Service:	Is the facility On-line or Off-Line?:	
Date of last BMP Inspection:	Notes:	
As-Built Plans available (Y/N):		

BMP Inspection Elements

General Items

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the site accessible?			
Is the facility free of all encroachments?			
Does the BMP conform to the As-Built Plans?			
Is the facility clear of all trash and debris?			
Are all areas free of mosquito habitats?			
Other:			

Pre-Treatment Facility (If Applicable)

Pretreatment Facility Present (Y/N):	Type:		
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the pretreatment area free of excessive erosion?			
Is the pretreatment area free of sediment accumulation?			
Is the pretreatment area free of excessive vegetation?			
Is the pretreatment area free of trash and debris?			
Does the pretreatment area conform to As-Built Plans?			
Other:			

Control Structure

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Can the control chamber be accessed?			
Are all flow controls (weir walls, bypass pipes, etc.) in good condition?			
Are all trash racks present and fully functional?			
Is the control structure free of spalling and cracking?			
Is the control structure free of sediment and debris?			
Is all woody vegetation clear within 10' of structure?			
Are all areas around the control free of erosion?			
Are low flow orifices free of sediment, debris, and trash?			
Is control structure access and step condition acceptable?			
Other:			

Water Quality Components (Chambers, Filter Cartridge Bays, Oil-Grit Separators, etc.)

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are all water quality components free of structural deterioration?			
Are all water quality components free of oily sheens and staining?			
Are all water quality components free of excessive sediment, trash and debris?			
Are all water quality components present and conform with the As-built plans?			
Are all filter cartridges present?			
Are filter cartridges in good condition?			
Other:			

Outfall / Outfall Chamber

BMP ELEMENT DESCRIPTION			(YES) (NO) (N/A)	PHOTO	NOTES
Outfall type (Chamber, Inlet, Manhole, Other):			Dewatering Drain Present (Y/N);		
Can the outfall/outfall chamber be accessed?					
Is the outfall/outfall chamber in good structural condition?					
Is the underdrain free of all signs of misalignment or separation?					
Is the underdrain free of all blockages?					
Is the dewatering drain free of all damage?					
Is the outfall free of signs of undermining or erosion?					
Is woody vegetation clear within 10' of outfall area?					
Is the outfall clear of all blockages?					
Is the outfall clear of excess sediment and debris?					
Is the outfall clear of any displaced rip rap?					
Is the outfall pipe clear of all blockages?					
Is the outfall pipe in good structural condition?					
Is the outfall pipe free of any signs of pipe misalignment or separation?					
Is the outfall pipe free of joint failure or seepage into the conduit?					
Is the outfall pipe free of exposed rebar?					
Other:					

Inflows

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are inflows/pipe(s) clear of all blockages?			
Are inflows/pipe(s) in good structural condition?			
Are pipe endwalls/ends in good structural condition?			
Are pipes free of misalignment or separation?			
Is woody vegetation clear within 5' of pipe end?			
Is the pipe end clear of overgrown vegetation?			

Inflows (Continued)

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are inflows/pipes free of sediment accumulation?			
Are all inflow grates in place?			
Other:			

Inspector Comments:



Sand Filter Inspection Form

Prince William County Department of Public Works

Inspector:				Inspection Date:				
Site Name:				Facility Characteristics:				
Site Address:				Facility Type (Check One)		Facility Design Level (Circle One)		
Facility Number:		GPIN:		Surface Filter		Level 1	Level 2	Not Applicable
Coordinates:				Austin Sand Filter		Level 1	Level 2	Not Applicable
VAHUC 12 Name:		VAHUC 6 Name:		Delaware Sand Filter		Level 1	Level 2	Not Applicable
Date BMP Placed in Service:				Is this a privately maintained facility? (Y/N):				
Date of last BMP Inspection:				Does this facility have a maintenance agreement? (Y/N):				
As-Built Plans available (Y/N):				Is the facility On-line or Off-Line?:				

BMP Inspection Elements

General Items

Filtering Practices Type (Surface or Underground):			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the site accessible?			
Is the facility free of all encroachments?			
Does the BMP conform to the As-Built Plans?			
Is the facility clear of all trash and debris?			
Are all areas free of mosquito habitats?			
Other:			

Pre-Treatment Facility (If Applicable)

Pretreatment Facility Present (Y/N):		Type (Sediment Forebay, Vegetated Buffer Area, Grass Filter Strip, Grass Channel, Other):	
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the pretreatment area free of excessive erosion?			
Is the pretreatment area free of sediment accumulation?			
Is the pretreatment area free of excessive vegetation?			
Is the pretreatment area free of trash and debris?			
Does the pretreatment area conform to As-Built Plans?			
Other:			

Control Structure / Sediment Chamber

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Can the control chamber be accessed?			
Can the sediment chamber be accessed?			
Are all flow controls (weir walls, bypass pipes, etc.) in good condition?			
Is the control/sediment chamber free of trash and debris?			
Is the sediment chamber free of excessive sediment accumulation?			
Is the sediment chamber free of blockages that impact the wet pool?			
Is the control chamber free of excess sediment?			
Are chambers free of structural deficiencies?			
Is access and step condition acceptable?			
Other:			

Filter Chamber / Filtering Area			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Can the filter chamber be accessed?			
Is the chamber free of structural deficiencies?			
Are all flow controls (weir walls, bypass pipes, etc.) in good condition?			
Are all trash racks free of debris?			
Is the chamber free of sediment, debris, and trash accumulation?			
Is the filter media in good condition?			
Is the filter media free of ponding?			
Is the filter media free of oil and staining?			
Other:			
Observation Wells			
Are observation wells present (Y/N):		Well Total:	Well Caps Present (Y/N):
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are observation wells accessible?			
Are observation wells free of overgrown vegetation?			
Are observation wells free of all blockages?			
Are well caps fully functional and free of any cracks or breaks?			
Are observation wells free of standing water?			
Other:			
Outfall / Outfall Chamber			
Outfall type (Chamber, Inlet, Manhole, Other):		Dewatering Drain Present (Y/N):	
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Can the outfall/outfall chamber be accessed?			
Is the outfall/outfall chamber in good structural condition?			
Is the underdrain free of all signs of misalignment or separation?			
Is the underdrain free of all blockages?			
Is the dewatering drain free of all damage?			
Is the outfall free of signs of undermining or erosion?			
Is woody vegetation clear within 10' of outfall area?			
Is the outfall clear of all blockages?			
Is the outfall clear of excess sediment and debris?			
Is the outfall clear of any displaced rip rap?			
Is the outfall pipe clear of all blockages?			
Is the outfall pipe in good structural condition?			
Is the outfall pipe free of any signs of pipe misalignment or separation?			
Is the outfall pipe free of joint failure or seepage into the conduit?			
Is the outfall pipe free of exposed rebar?			
Other:			

Inflows				
Inflow Type (Piped / Overland):	Pipe / Grate Total:	Pipe Size(s):		Pipe / Grate Type(s):
BMP ELEMENT DESCRIPTION		(YES) (NO) (N/A)	PHOTO	NOTES
Are inflows/pipe(s) clear of all blockages?				
Are inflows/pipe(s) in good structural condition?				
Are pipe endwalls/ends in good structural condition?				
Are pipes free of misalignment or separation?				
Is woody vegetation clear within 5' of pipe end?				
Is the pipe end clear of overgrown vegetation?				
Are inflows/pipes free of sediment accumulation?				
Are all inflow grates in place?				
Other:				
Inspector Comments:				



Tree Box Filter Inspection Form

Prince William County Department of Public Works

Inspector:		Inspection Date:	
Site Name:		Facility Characteristics:	
Site Address:		Facility Type (Check One)	Manufacturer
Facility Number:	GPIN:	Single Tree Box Filter	
Coordinates:		Dual Tree Box Filter	
VAHUC 12 Name:	VAHUC 6 Name:	Other	
Date BMP Placed in Service:		Tree Box Filter Length&Width:	L(ft): W(ft):
Date of last BMP Inspection:		Is this a privately maintained facility? (Y/N):	
As-Built Plans available (Y/N):		Does this facility have a maintenance agreement? (Y/N):	

BMP Inspection Elements

General Items

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the Tree Box Filter accessible?			
Is the facility free of all encroachments?			
Does the BMP conform to the As-Built Plans?			
Is the facility clear of all trash and debris?			
Are all areas free of mosquito habitats?			
Other:			

Inlet Inflow / Filter Box Throat

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the throat free of sediment accumulation?			
Is the throat free of trash and debris?			
Is the throat free of large aggregate?			
Is the concrete apron free of any spalling, cracking, or deterioration?			
Other:			

Filter Box Structure

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the filter box free of any spalling, cracking, or structural deterioration?			
Is the tree frame and grate present?			
Is the tree frame and grate free of all structural deficiencies?			
Is the tree frame and grate free of all obstructions?			
Is the inlet galvanized angle nosing present and in good condition?			
Is the cleanout/observation well cover present?			
Is the observation well free of standing water?			
Are all areas around the filter box structure free of erosion?			
Other:			

Filter Bed

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the filter bed free of trash, debris and sediment?			
Is the mulch layer adequate?			

Filter Bed (Continued)

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the filter bed free of erosion?			
Other:			

Plant Condition

Plant Type (Tree, Shrub):

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the plant present?			
Is the plant alive?			
Is the plant healthy and damage free?			
Is the plant trimmed and not overgrown?			
Other:			

Underdrain and Outfall

Outfall Type (Inlet or Manhole):

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the outfall in good structural condition?			
Is the outfall free of all blockages, sediment, and debris?			
Is the underdrain in good condition?			
Is the underdrain free of any separation or pipe misalignment?			
Is the underdrain free of any pipe blockages?			
Other:			

Inspector Comments:



Wet / Dry / Extended Detention Pond Inspection Form

Prince William County Department of Public Works

Inspector:				Inspection Date:				
Site Name:				Facility Characteristics:				
Site Address:				Facility Type (Check One)		Facility Design Level (Circle One)		
Facility Number:		GPIN:		Wet Pond		Level 1	Level 2	Not Applicable
Coordinates:				Dry Pond		Level 1	Level 2	Not Applicable
VAHUC 12 Name:		VAHUC 6 Name:		Extended Det. Pond		Level 1	Level 2	Not Applicable
Date BMP Placed in Service:				Is this a privately maintained facility? (Y/N):				
Date of last BMP Inspection:				Does this facility have a maintenance agreement? (Y/N):				
As-Built Plans available (Y/N):				Is the facility On-line or Off-Line?:				

BMP Inspection Elements

General Items

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the site accessible?			
Are safety/warning signs posted?			
Is safety fence in good condition?			
Is safety fence locked?			
Is the facility free of all encroachments?			
Does the BMP conform to the As-Built Plans?			
Is the facility clear of all trash and debris?			
Are all areas free of mosquito habitats?			
Other:			

Pre-Treatment Facility (If Applicable)

Pretreatment Facility Present (Y/N):		Type (Sediment Forebay, Vegetated Buffer Area, Grass Filter Strip, Grass Channel, Other):			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES		
Is the pretreatment area free of excessive erosion?					
Is the pretreatment area free of sediment accumulation?					
Is the pretreatment area free of excessive vegetation?					
Is the pretreatment area free of trash and debris?					
Does the pretreatment area conform to As-Built Plans?					
Other:					

Riser Structure

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the trash rack present and fully functional?			
Is the riser structure free of spalling and cracking?			
Is the riser structure (external) free of sediment and debris?			
Is the riser structure (internal) free of sediment and debris?			
Is all woody vegetation clear within 10' of structure?			
Are all areas around the riser free of erosion?			
Is the low flow orifice trash rack present?			

Riser Structure (Continued)			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Low flow orifice free of sediment, debris, and trash?			
Is the PSP free of all evidence of joint failure?			
Is riser access and step condition acceptable?			
Is the draw down valve in working condition?			
Other:			
Principal Spillway Pipe (PSP)			
Pipe Size:	Pipe Total:	PSP Type:	
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the PSP clear of all blockages?			
Is the PSP in good structural condition?			
Is the PSP free of any signs of pipe misalignment or separation?			
Is the PSP free of joint failure or seepage into the conduit?			
Is the PSP free of exposed rebar?			
Other:			
Outfall			
Outfall type (Endwall, Wingwall, Pipe End, Flared):			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the pond outfall in good structural condition?			
Is the endwall /pipe end acceptable?			
Is the outfall free of all signs of misalignment or separation?			
Is the outfall free of signs of undermining or erosion?			
Is woody vegetation clear within 10' of outfall area?			
Is the outfall clear of all blockages?			
Is the outfall clear of excess sediment and debris?			
Is the outfall clear of any displaced rip rap?			
Is the area downstream of the outfall free of overgrown vegetation?			
Does the outfall downstream show sufficient stabilization?			
Other:			
Dam / Berm			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the dam/berm stabilized with adequate vegetation?			
Is the dam/berm free of any signs of seepage?			
Is the dam/berm free of all erosion?			
Is the dam/berm free of woody vegetation?			
Is the dam free of unauthorized plantings?			
Is the dam free of animal burrows and rodent activity?			

Dam / Berm (Continued)			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the emergency spillway constructed to the As-Built?			
Is the emergency spillway in good condition?			
Is the emergency spillway free of all signs of erosion?			
Is the emergency spillway clear of woody vegetation?			
Is the emergency spillway clear of all blockages?			
Other:			
Impoundment Area			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are side slopes and benches stabilized and free of erosion?			
Is the impoundment area clear of sediment that would affect storage volume?			
Is the water level adequate for this type of facility?			
Adequate vegetation is present for this type of facility?			
Is the impoundment area free of trash and debris?			
Is the impoundment area free of encroachments?			
Other:			
Pond floor			
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the pond floor free of sediment, trash, or debris accumulation?			
Is the pond floor free of erosion and/or trenching?			
Is the pond floor free of encroachments?			
Are low flow ditches stable and structurally sound?			
Other:			
Inflow pipes			
Pipe Total:	Pipe Size(s):	Pipe Type(s):	
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are pipe(s) clear of all blockages?			
Are pipe(s) in good structural condition?			
Are pipe endwalls/ends in good structural condition?			
Are pipes free of misalignment or separation?			
Is woody vegetation clear within 5' of pipe end?			
Is the pipe end clear of overgrown vegetation?			
Are pipes free of sediment accumulation?			
Other:			
Inspector Comments:			



Wet / Dry Swale Inspection Form

Prince William County Department of Public Works

Inspector:			Inspection Date:		
Site Name:			Facility Characteristics:		
Site Address:			Facility Type (Check One)		Facility Design Level (Circle One)
Facility Number:	GPIN:		Dry Swale		Level 1 Level 2 Not Applicable
Coordinates:			Wet Swale		Level 1 Level 2 Not Applicable
VAHUC 12 Name:	VAHUC 6 Name:		Grassed Swale		Level 1 Level 2 Not Applicable
Date BMP Placed in Service:			Is this a privately maintained facility? (Y/N):		
Date of last BMP Inspection:			Does this facility have a maintenance agreement? (Y/N):		
As-Built Plans available (Y/N):			Is the facility On-line or Off-Line?:		

BMP Inspection Elements

General Items

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the site accessible?			
Is the facility free of all encroachments?			
Does the BMP conform to the As-Built Plans?			
Is the facility clear of all trash and debris?			
Are all areas free of mosquito habitats?			
Other:			

Swale Surface Area

Pretreatment Present (Y/N):	Type (Pretreatment Cell, Grass Filter Strip, Gravel Diaphragm, Gravel Flow Spreader, Other):		
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the pretreatment area free of all structural deficiencies?			
Is pretreatment area free of erosion?			
Is pretreatment area free of sediment and debris?			
Is the swale surface area free of sediment accumulation that would affect the storage volume?			
Is the surface area free of excessive vegetation?			
Is the surface area free of trash and debris?			
Is the surface area free of all erosion, bare spots, and exposed soil?			
Is the surface area free of unauthorized plantings?			
Are there adequate plantings, and do they conform with the planting plan?			
Is the swale free of all signs of channelization?			
Are side slopes adequately stabilized and free of erosion?			
Other:			

Riser / Control Structure

Riser / Control Structure Present (Y/N):	Type:		
BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the structure trash rack present and fully functional?			
Is the structure free of spalling, cracking, and deterioration?			
Is the structure (external) free of sediment and debris?			
Is the structure (internal) free of sediment and debris?			
Is all woody vegetation clear within 10' of structure?			

Riser / Control Structure (Continued)

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are all areas around the control structure free of erosion?			
Is control structure access and step condition acceptable?			
Is the weir wall in good condition?			
Other:			

Underdrain

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Is the underdrain free of all blockages and clogging?			
Is the underdrain in good structural condition?			
Is the underdrain free of any separation or misalignment at its terminus?			
Does the facility dewater between storm events?			
Other:			

Observation Wells

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are observation wells present (Y/N):		Well Total:	Well Caps Present (Y/N):
Are observation wells accessible?			
Are observation wells free of overgrown vegetation?			
Are observation wells free of all blockages?			
Are well caps fully functional and free of any cracks or breaks?			
Are observation wells free of standing water?			
Other:			

Outfall

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Outfall type (Endwall, Wingwall, Pipe End, Flared, Manhole, Inlet, Other):			
Is the outfall in good structural condition?			
Is the endwall /pipe end / inlet acceptable?			
Is the outfall free of all signs of misalignment or separation?			
Is the outfall free of signs of undermining or erosion?			
Is woody vegetation clear within 10' of outfall area?			
Is the outfall clear of all blockages?			
Is the outfall clear of excess sediment and debris?			
Is the outfall clear of any displaced rip rap?			
Is the area downstream of the outfall free of overgrown vegetation?			
Does the outfall downstream show sufficient stabilization?			
Other:			

Check Dams

BMP ELEMENT DESCRIPTION	(YES) (NO) (N/A)	PHOTO	NOTES
Are check dams present (Y/N):		Check Dam Total:	Check dams missing from Plan Specifications (Y/N):
Are all check dams functioning properly?			
Are all check dams free of sediment accumulation, trash, and debris behind the check dam?			

Appendix 10: County Facilities



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09/13/2017

**Subject: ILLICIT DISCHARGE
ELIMINATION AND MS4
PERMIT COMPLIANCE**

No:
25-RSK-400-030

Supersedes:
N/A

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100 INTRODUCTION

Pursuant to the federal Clean Water Act, 33 U.S.C. § 1251, *et seq.*, the Virginia Stormwater Management Act, Va. Code § 62.1-44.15:24, *et seq.*, and Prince William County Code of Ordinances Chapter 23.2 and regulations adopted pursuant thereto, Prince William County is authorized to discharge in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in state permit No. VA0088595.

100.1 PURPOSE

This policy establishes methods for controlling the discharge of pollutants from the municipal separate storm sewer system (MS4) into state waters, in compliance with requirements of Virginia Stormwater Management Program permit issued to Prince William County government (PWC).

100.2 SCOPE

The following written illicit discharge policy has been established for all County locations and applies to any potential discharge or pollutant which could be generated during the normal course of business.

100.3 AUTHORIZATION

This policy is authorized by the County Executive.


100.4 APPLICABILITY

This policy applies to all County agencies/departments including those with Independent Boards, with the exception of the Prince William County Schools and Prince William County Service Authority.

100.5 RESPONSIBILITY

Agency/Department Directors or designees shall:

- Ensure department specific standard operating procedures (SOPs) are developed, implemented and maintained for activities impacted by this policy.
- Ensure all MS4 SOPs are internally approved by the Department of Public Works, Environmental Services Division.
- Ensure all applicable policies, procedures and internal SOPs are available to impacted agencies and personnel responsible for monitoring and ensuring compliance.

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- Assign roles and responsibilities as applicable, for all policies, procedures and SOPs under the “control” or “ownership” of his/her individual agency/department,
- Ensure all training requirements are met.
- Report any noncompliance issues including any spill or discharge.

Department of Public Works, Environmental Services Division shall:


- Provide support to departments and agencies in the implementation of this policy.
- Submit annual reports and any other formal communications that reference MS4 activities to regulatory bodies.
- Disseminate information, updates, and responsibilities to departments and agencies concerning compliance with permit requirements.
- Approve department specific SOPs pertaining to MS4 compliance.
- In conjunction with Risk Management periodically inspect high-risk facilities.
- Respond to specific departmental compliance inquiries and provide technical knowledge.
- Notify impacted departments of annual reporting requirements

Risk Management shall:

- Ensure that all departments are aware of and comply with this policy through inspection and program audits.
- Provide technical assistance to departments and agencies for all aspects of this policy when requested.
- Assist agencies and departments in facilitating pertinent training.
- Notify Environmental Services of any reported noncompliance issues at County facilities including fuel spills and illicit discharges, along with any follow up actions taken.

Employees shall:

- Comply with this policy and SOPs set forth by department management.
- Attend all required training.
- Inform supervisor of spills and discharges.

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100.6 EXCEPTIONS

Exceptions to this policy must be approved in writing by the County Executive or designee.

100.7 DEFINITIONS

Allowable Discharge - any direct or indirect discharge that is authorized by the MS4 permit.

Contractor - an individual or company, including a subcontractor, hired by PWC government to perform services within PWC.

Clean Water Act (CWA)- the federal Clean Water Act (33 U.S.C. §1251 et seq.) and any subsequent amendments thereto

Discharge - allowable liquid, gas, or other substances that enter a storm drainage system.


Hazardous Material Personnel- County personnel responsible for responding to incidents related to hazardous materials.

Illicit Discharge- any direct or indirect non-stormwater discharge into the storm drain system not authorized by the MS4 permit.

Illicit Connections- either of the following: (1) any drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the storm drain system including but not limited to any conveyances which allow any non-stormwater discharge including sewage, process waste water, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains to sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved, by the County or, (2) any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by the County.

MS4 (Municipal Separate Storm Sewer System) - a conveyance or system of conveyances, otherwise known as a municipal separate storm sewer system or "MS4" including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains, designed or used for collecting and conveying stormwater.

MS4 Permit- a permit issued to Prince William County that authorizes the discharge of stormwater from all existing and new municipal separate stormsewer point source discharges to surface waters of the State and includes a comprehensive planning process involving public participation and intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the CWA and regulations, and this article and its

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attendant regulations, using management practices, control techniques, and system, design, and engineering methods, and such other provisions that are appropriate.

Pollutant – anything which causes or contributes to pollution. This may include but is not limited to: paints, chemicals, soap, wash water, oil, automotive fluids, non-hazardous liquid and solid wastes, yard wastes, garbage, pesticides, herbicides, fertilizers, hazardous substances and wastes, animal wastes, dissolved and particulate metals, leaves and yard clippings, and particulates such as soil, sand and salt.

Potable Water- water that is deemed safe to drink or to use for food preparation, without risk of health problems.

Spill Prevention Control and Countermeasure (SPCC) Plan - a federally required and defined plan for facilities storing over 1,320 gallons of oil (fuel) cumulatively at a site including tanks, generators, and drums of oil (fuel).


Standard Operating Procedure (SOP) – SOPs are those policies/procedures related only to the internal operations of an agency/department, division or other sub-unit thereof. SOPs are not communicated or meant to provide direction to any external agency/department. Other names for SOPs include, but are not limited to: general orders, desk manuals, procedures, field guides, process flowcharts, and checklists, etc.

Storm Drainage System- facilities by which stormwater is collected and/or conveyed including but not limited to any roads with drainage systems, streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detentions basins, natural and human made or altered drainage channels, reservoirs, and other drainage structures.

Storm Water – precipitation that is discharged across the land surface of through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

Policy – Policies are directives for the conduct of County business affairs and are often in support of higher level of authority dictates such as County Code or Ordinance; Board of County Supervisor Resolutions, County Executive Order, the County’s Strategic Plan, compliance with federal laws and standards, the Code of Virginia or other regulatory agency as defined by law or contract.

Procedure – Procedures are the steps required to ensure policies are followed. Procedures are more detailed in nature and communicate operational requirements to internal and external staff for a specific transaction or a business cycle.

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100.8 KEY RISK FACTORS

1. Policies, procedures and internal SOPs are inconsistent or not properly documented, approved and disseminated.
2. Policies, procedures and internal SOPs are not reviewed and updated on a systematic basis.
3. Departments and agencies may overlook responsibilities and fail to report permit violations or annual reporting requirements.

200 ILLICID DISCHARGE ELIMINATION AND MS4 PERMIT COMPLIANCE POLICY

200.1 ILLICIT DISCHARGES

No County employee, visitor, contractor, department, or agency shall cause or allow discharges into the PWC storm drainage system which are not composed entirely of stormwater, except for the allowed discharges listed below in Section 200.2. Prohibited discharges include, but are not limited to: paints, chemicals, soap, wash water, oil, automotive fluids, non-hazardous liquid and solid wastes, yard wastes, garbage, pesticides, herbicides, fertilizers, hazardous substances and wastes, animal wastes, dissolved and particulate metals, leaves and yard clippings, and particulates such as soil, sand and salt.


200.2 ALLOWABLE DISCHARGES

Allowable discharges are identified in the MS4 permit and include, but are not limited to the following:

- Landscape irrigation (sprinklers) and other potable water discharges
- Air conditioning condensation
- Fire-fighting emergency activities
- Other unforeseen activities that Environmental Services deems as allowable under the permit

200.3 ILLICIT CONNECTIONS

The construction, use, maintenance, or continued existence of illicit connections to the storm drain system is prohibited. This expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

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200.4 GOOD HOUSEKEEPING REQUIREMENTS

200.4.1 VEHICLE AND EQUIPMENT WASHING AND MAINTAINANCE

County vehicles shall be washed at a commercial car wash facility whenever possible. For oversize or specialty equipment and vehicles that require specialty cleaning, washing must be done in a way that prevents runoff water from entering storm drains. This includes:

- Using waterless washing products or a phosphate-free, pH neutral soap, and
- Washing on a grassy area or gravel, where all runoff water infiltrates the ground, or
- Capturing all runoff so no discharge occurs

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.2 VEHICLE AND EQUIPMENT FUELING

All fuel tanks, generators, and fueling stations at Prince William County facilities must have a spill response kit that is labeled, visible to users, and stocked at all times.

County personnel must remain at the pump during vehicle and equipment fueling. Should a spill occur or be discovered, personnel must respond by:

- utilizing a clean-up kit,
- notifying the County's fuel vendor via self-dial phones posted at Garfield and Western District fueling stations, and/or
- dialing 911 for significant or hazardous spills


For spills of all sizes, a [spill report](#) form must be completed following protocol found in section 200.6.

All spent cleanup supplies must be properly disposed. Risk Management can assist departments in making arrangements.

200.4.3 OUTDOOR STORAGE OF EQUIPMENT AND MATERIALS

Outdoor storage of equipment and materials not in regular use should be temporary and kept to a minimum. When storing equipment and materials outdoors, the following conditions must be met:

- Store materials and equipment as far away from storm drains and water bodies as feasible
- Cover and protect materials stored outside from rainfall and wind dispersal
- Keep outdoor storage containers in good condition
- Conduct regular inspections of storage areas

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Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.4 OUTDOOR STORAGE OF CHEMICALS

Outdoor storage of chemicals should be temporary and kept to a minimum. When storing chemicals outside, the following conditions must be met:


- Store chemicals as far away from storm drains and water bodies as feasible
- Seal storage containers and ensure they are impervious to rainfall
- Keep outdoor storage containers properly labeled and in good condition
- Store containers so they are not in direct contact with the ground
- Store containers in a way that prevents damage from vehicle and equipment impacts, wind damage, or any other external force
- Conduct regular inspections of storage areas

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.5 ROAD, STREET, AND PARKING LOT DEICING/MAINTENANCE

Deicing and other maintenance activities performed in roads, streets, and parking lots must be done in a way to minimize discharge. When performing these activities, the following conditions must be met:

- Deicing
 - Store and transfer de/anti-icing materials on an impervious containment pad or an equivalent containment area and/or under cover
 - Do not use deicing agents containing urea, or other forms of nitrogen or phosphorus
 - Avoid applying chemical deicing agents when the temperature is less than 15°F
 - Use the lowest application rate of deicing chemicals possible to loosen snow and ice for further removal by shovel or plow
- Maintenance
 - Use an approved vendor for parking lot sweeping services and, per the contract requirements, confirm the collected debris is:
 - removed from the property within 4 hours of collection (no stockpiling),
 - kept out of storm drains, and

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- properly disposed of at an approved site

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.6 PESTICIDE, HERBICIDE, FERTILIZER APPLICATION, STORAGE, TRANSPORT AND DISPOSAL

Application, storage, transport, and disposal of any pesticide, herbicide, and fertilizer products must be done in a manner that minimizes the impact to the environment to the greatest extent practicable. When performing these activities, the following conditions must be met:

Application

- Apply materials on an as needed basis only
- Do not exceed application rates defined on packaging
- Utilize only properly trained or certified personnel to perform applications of these chemicals

Storage

- Store all pesticide, herbicides and fertilizer indoors or under covered areas, with proper labeling on both the containers and the storage structure
- Conduct regular inspections of storage areas

Transport

- Secure materials during transport to prevent spills and/or utilize secondary containment
- Equip vehicles that transport liquid products with a spill kit


Disposal

- Dispose of expired and unwanted materials through a qualified, contracted County vendor
- Maintain records of material disposal indefinitely

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.7 FIRE-FIGHTING TRAINING

Fire-fighting training activities must be performed in a manner that minimizes the impact to the environment to the greatest extent practicable. When performing these activities, the following conditions must be met:

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- Direct water flows to grass or gravel areas or contain the water onsite and allow it to evaporate and infiltrate
- Block off all potentially affected storm drain inlets and direct or pump water to sanitary sewer or grass or gravel infiltration area

Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.4.8 FUEL TANKS, GENERATORS AND OTHER OIL/FUEL STORAGE


All oil (including cooking oil) and fuel containers must be maintained and utilized in a manner that prevents leaks, spills and discharges. All drums, tanks, generators or other outdoor oil/fuel storage containers must comply with the following:

- With the exception of cooking oil storage, ensure secondary containment is utilized, either through container design or added structure
- Properly label equipment and containers and ensure they are free of drips, leaks, and film, and that the ground/pavement around it is, too
- Ensure filling and dispensing by vendors is done in accordance with County policy and that any spill is reported in accordance with 200.6 of this policy
- Inspect equipment and containers regularly and ensure any needed repairs are made in a timely manner
- Place a spill response kit near the equipment or container and ensure it is labeled, stocked, and visible to others at all times

200.4.9 SWIMMING POOL DE-CHLORINATION

During daily back-washing operations and annual flushing, steps must be taken to minimize the level of chlorine in discharge water to the greatest extent practicable. This can be achieved by:

- Direct water flows to grass or gravel areas or contain the water onsite and allow it to evaporate and infiltrate
- For annual flushing, de-chlorinate the water either chemically with appropriate products, or naturally through a 10-day retention period with no chlorine addition prior to release
- Verify chlorine and pH levels prior to release during annual flushing, with pH levels falling between 6.0 and 8.0 and free chlorine levels of 0.01 mg/l or less
- Release discharge from annual flushing at a controlled rate, as slowly as reasonably feasible

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Should site-specific issues prevent all of the above conditions from being met, a SOP approved by Public Works Environmental Services is required to be adopted and posted at the site.

200.5 TRAINING

200.5.1 GENERAL TRAINING

The following personnel must receive stormwater training biennially (every two years):

- Field personnel
- Personnel responsible for road, street, and parking lot maintenance
- Personnel working in and around recreation, public works, and maintenance facilities
- County plan reviewers, inspectors, emergency response employees, and construction site operators
- Any additional personnel deemed necessary by the permit

Training must include, at a minimum: MS4 requirements, recognition and reporting of illicit discharges, and good housekeeping and pollution prevention practices.

200.5.2 PESTICIDE AND HERBICIDE APPLICATION TRAINING

Employees and contractors who apply pesticides and herbicides must be properly trained or certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia).

200.5.3 EROSION AND SEDIMENT CONTROL TRAINING


County plan reviewers, inspectors, program administrators, and construction site operators must be trained and obtain appropriate certifications as required under Virginia Erosion and Sediment Control Law and attendant regulations.

200.5.4 SPILL RESPONSE TRAINING

All County personnel with responsibilities for complying with a facility's Spill Prevention Control and Countermeasure Plan (SPCC) must receive annual spill response training.

All Department of Fire & Rescue uniformed personnel must be trained to the level of Hazardous Materials First Responder Operations as required by OSHA standards (29 CFR 1910.120(q)(6)(ii). Annual refresher training is required and must, at a minimum, meet requirements of OSHA Standards (29 CFR 1910.120(q)(8)(ii).

The Department of Fire and Rescue's Hazardous Materials Response Team must consist of at least 10% of the Uniform personnel that are trained to the Hazardous Materials Technician

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Level (29 CFR 1910.120(q)(6)(iii)). Annual refresher training is required and must meet the requirements of OSHA Standards (29 CFR 1910.120(q)(8)(ii)).

200.6 NOTIFICATION OF SPILLS AND/OR ILLICIT DISCHARGES

If an illicit discharge is observed or created, departments are responsible for immediately reporting the incident to PWC Hazardous Material Personnel by calling 911 or non-emergency number at (703) 792-6700. Details such as location of the incident and description of the discharge should be conveyed. Secondary notification should be made to Environmental Services and Risk Management via the [Spill Report Form](#) located on the Risk Management intranet home page.

200.7 RECORD KEEPING/ ANNUAL REPORTING

Public Works Environmental Services will notify all impacted departments of annual reporting requirements in the first quarter of each fiscal year. Within the first 30 days following the close of that fiscal year, Departments will provide Environmental Services all required data, reports, and other deliverables assigned to them at the start of the year. Should a new or revised requirement be imposed, Environmental Services will notify impacted departments within 30 days.

200.8 SWPPP

Facilities that have been identified as high priority through the MS4 permitting process will be notified by Environmental Services and required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP). Departments are responsible for complying with all SWPPP requirements including good housekeeping, record keeping, training, and inspections.

200.9 OVERSIGHT

Risk Management and Environmental Services will audit records and inspect facilities for compliance with the MS4 permit on an annual basis. Results of audits and inspections will be reported to department management and executive management.

FLEET MANAGEMENT TOOL AND EQUIPMENT INVENTORY:

The Motorized Equipment Shop Superintendent and/or their designee will be responsible for maintaining an inventory of the tools and equipment that belong to the County. The tool inventory will be updated periodically, and the equipment inventory will be updated when a new piece of equipment is added or replaced to the inventory. Both inventory lists are kept by the Motorized Equipment Shop Superintendent.

VEHICLE AND EQUIPMENT INVENTORY:

The Service Contract Administrator is responsible for assigning unit ID numbers to new vehicles and equipment. The numbers will run in a consecutive order as defined in the management information system (MIS). All of this information any other pertinent information related to the vehicle history will be recorded in Infor EAM10. The inventory will be able to be sorted by class, numerical sequence, and department unit.

PARTS INVENTORY:

The parts inventory in Fleet Management Information System will track the stocked parts and where they are issued and to what vehicle. This system will track stock levels, turnover frequency, costs, and returns. When a part has a core charge we submit a copy of the invoice along with the core to the vendor for a credit. This also supports the warranty of installed parts.

FLUID INVENTORY:

All fluid inventory levels will be checked on a weekly basis to ensure that an adequate amount is stored on site. If an item is depleted, the parts staff will place the order for the appropriate fluid quantity. When the quantity is delivered, the parts department will verify the quantity and enter the amount in Infor EAM10. The following fluids will be tracked and inventoried:

- | | |
|-------------|------------------------------|
| Anti-freeze | Automatic transmission fluid |
| DEF Fluid | Gear Lube |
| Grease | Hydraulic fluid |
| Motor Oil | Washer fluid |

All fluid quantities will be issued to a work order based on the need per vehicle and will be billed to the customer. All fluid quantity will be placed on the work order before it is closed. Fluid levels will be monitored and inventoried at the end of the fiscal year when the parts department is audited and inventoried.

PERSONAL VEHICLE SERVICE/REPAIR ON COUNTY PROPERTY

There must be a minimum of two Fleet Management employees present at all times when personal vehicles or equipment is being serviced at Fleet shops, grounds, and sites. Vehicles must be owned by Fleet Management employees or their immediate family. It is not permissible for Fleet Management employees to service Non-County owned or maintained vehicles during Fleet Management's operation between the hours of 7:00am – 5:00pm, Monday through Friday. Furthermore, Fleet Management employees who are on personal leave cannot complete services at the Fleet Management Facility between the hours of 7:00am – 5:00pm, Monday through Friday. An employee may work on a vehicle during their scheduled breaks as long as it does not exceed the amount of time normally allotted for the scheduled break. Fleet employees are responsible for the conduct, behavior, and safety of any guests in the shop areas during Personal Vehicle Service/Repair. At no time are children or guests under the age of 18 permitted in shops. The presence of any guest must be preapproved by Fleet Division Chief.

FUEL

(APWA 18.24)

Reference the EPA guidelines for storage tank procedures can be found on the following link: <http://www.epa.gov/oust/pubs/om-manual-1107.pdf>

COUNTY OWNED FUEL SITES

- Central District Police Station / Above Ground / 12,000 gal tank / UNL Gasoline / Davis Ford Rd / Woodbridge
- Garfield Police / Underground / 2 x 4,000 gal tank / UNL Gasoline / Jefferson Davis HWY Woodbridge
- Garfield Police / Underground / 4,000 gal tank / Diesel / Jefferson Davis HWY Woodbridge
- Western District / Above Ground / 10,000 gal tank / UNL Gasoline / Freedom Blvd, Manassas
- Western District / Above Ground / 10,000 gal tank / Diesel / Freedom Blvd, Manassas

FUEL SITE MANAGEMENT:

Fleet Management is responsible for maintaining the County owned above and underground storage tanks at the three County vehicle fueling sites. Fleet Management contracts with Quarles to manage the maintenance of County owned fuel sites. Fleet Management performs weekly inspections of the fuel site operations and will report any defects to Quarles immediately. Listed below is the Scope of Service from the contract with Quarles that outlines their responsibilities. The contract expires 08/31/2020.

CONTRACTOR RESPONSIBILITIES:

Contractor shall provide all necessary labor, supervision, tools, parts, materials, transportation and resources as may be required to provide both diesel and gasoline fuels to include delivery on an “automatic fill” and on an “as-needed” basis into above and below ground storage tanks based on firm fixed cost differential rates plus current Oil Price Information Service (herein referred to as OPIS) pricing at; PWC owned sites and contractor owned or operated sites, retail locations, wet hosing locations throughout Prince William County; hourly repair rates for on-site fuel equipment repairs at PWC sites and fixed pricing for storage tank cleaning services, in accordance with the specifications and terms and conditions stated herein. In addition, the Contractor shall submit a Transition Plan and Supporting Network Description with their proposal, transition plans shall not exceed 60 days in length.

FUEL OWNERSHIP:

Fuel in the tank belongs to the fuel vendor until it is pumped through the dispenser meter.

REPAIR SERVICES:

Upon execution of the contract, Contractor shall provide repair services in order to keep the site(s) operational on a twenty-four (24) hour daily basis. This would include but is not limited to site controllers, fuel island terminals, monitoring devices, tanks, pumps, lines, dispensers, hoses, nozzles, card readers, modems, cables, wires, etc.

TANK MAINTENANCE:

PWC is responsible for coordination of maintenance and repairs of tanks owned by PWC.

VIRGINIA STATE CORPORATION COMMISSION COMPLIANCE:

A form verifying compliance with this Virginia State Corporation Commission regulation is included with this solicitation and must be completed prior to the awarding of a contract. Failure of the awardee to submit this information may result in a contract being awarded to an alternate vendor who is in compliance with this requirement.

GUARANTEED DELIVERIES:

PWC refueling sites will be guaranteed deliveries to the extent that they are a top priority for the Contractor. During any fuel shortages, natural disasters, inclement weather, or for any other reasons which fuel may become a national or local delivery problem, the Contractor agrees to deliver to these PWC sites prior to servicing other customers to include Contractor owned stations.

SPILLAGE:

The Contractor shall be responsible for complying with all federal, state and local environmental regulations relating to transportation, handling, storage, spillage and any other aspect of providing services, as applicable.

The Contractor shall be responsible for the spill containment, and prompt, thorough clean-up of all spillage caused by the Contractor, in accordance with Environmental Protection Agency (EPA), Virginia Department of Environmental Quality (DEQ), and Occupational Safety and Health Administration (OSHA) specifications. The Contractor shall assume any and all liability for the cost of the cleanup and any additional incurred fee associated with the spill due to Federal, State or local regulations.

FUEL SYSTEM ALARMS:

PWC Fleet Department Point of Contact, Fleet Services Contract Administrator, shall be notified immediately at 703-792-8793, of any tank monitoring system alarms at PWC fuel sites, this includes but is not limited to; low fuel leak detection and high water alarms.

TRACKING QUARLES FUEL TRANSACTIONS:

Daily transactions made at the Quarles sites are uploaded into the Prince William County database nightly. Once the information has been uploaded into Fleet Management Information System, it is used to create usage and billing reports.

PREVENTIVE MAINTENANCE AND REPAIR PROGRAM QUALITY CONTROLS:

The mechanic will be responsible for the following items:

1. Other items are corrected as found. Check with Shop Supervisor prior to beginning extensive repairs (generally a \$2000 cutoff)
2. Work orders are properly filled out to indicate the work performed, and notes as to future work or other comments as necessary
3. Proper oil change and calibration intervals are checked and verified with the oil change stickers and calibration records

QUALITY CONTROL REPORTS:

Every vehicle that is worked on must be road tested upon the completion of the work. High use vehicles are scheduled for Oil, Lube, Tire Rotation, and 127 point Inspection by an outside vendor. When PMs are performed by an outside vendor such as Fleet Pro, vendor will send an exception list to Fleet that flags any vehicle exhibiting severity code 3 or greater for immediate grounding for Fleet to examine and repair.

MEMO of PM (Sample Letter)

DATE: August 29th 2018

TO: All Fleet Users:

FROM: Tim Childers
Motorized Equipment Shop Supervisor

RE: PREVENTATIVE MAINTENANCE/STATE INSPECTION - **SEPTEMBER**

Please let me know if there are any individuals that need to be added or removed from this monthly notification.

The County vehicles listed in the attached document are due for preventive maintenance checks, which may also include a State inspection, during the month of **SEPTEMBER 2018**

The Preventive Maintenance (PM) check constitutes more than just routine service. A description of what each PM entails is included in the body of the email. Each vehicle is thoroughly examined, and mechanical problems which are discovered are repaired. Consequently, the downtime for PM services may vary from one vehicle to the next depending on what problems are found, acquisition of specialized parts, or work backlogs.

Please call Fleet's Shop at 792-5930 to make an appointment for your vehicle. All appointments should be made no later than the 5th working day of the month.

Our location is: 14809 Dumfries Rd, Manassas, VA 20112. We are open Monday – Friday 7:00am – 5:00pm.

Please have your Fleet Coordinator call to discuss any vehicle concerns.

Thank you for your cooperation.

S1-PM CHECK LIST (With State Inspection)

1. Service transmission every 20,000 miles or 2 years, change transfer case grease on 4X4
2. Pull all wheels and check brakes and related parts
3. Check front end for worn and damaged parts and alignment
4. Check exhaust for leaks, mounting, and condition
5. Check all motor and transmission mounts
6. Check air pressure in all tires (include spare)
7. Tune up: replace fuel filter, replace and gap spark plugs at 50,000 miles or as needed, replace air filter as needed
8. Clean and inspect battery, and cable ends
9. Check all fluid levels: engine oil, transmission, rear end, power steering, brake coolant, and windshield wash
10. Check all belts and hoses, adjust or replace as needed
11. Calibrate police vehicles
12. Check all lights and clean lens on red and blue lights
13. Check body for damage and for proper decals and vehicle numbers on front and rear
14. Check trunk for spare tire, jack lug wrench, first aid kit, and fire extinguisher
15. Perform emission test and issue state inspection sticker
16. ROAD TEST
17. Make all necessary repairs before placing vehicle on ready line

MEDIC UNITS

1. Check compartment doors for loose screws and lube
2. Check lights and switches in compartment
3. Check dump operation
4. Replace air compressor air filter
5. Check kingpins for wear and grease
6. During the Fall/Winter months, install the Automatic Chain System.
7. During the Spring/Summer months, remove the Automatic Chain System.

SHOP ENVIRONMENT CARE POLICIES

Fleet Management Division provides a list of standard environmental policies to all Fleet Management Division employees. These policies are located in the Division Chief's office, and they are posted on the bulletin board in both the Administration and Shop buildings. Training will be conducted at least annually for all Fleet Management Division employees to ensure protection of the environment.

These Policies include:

1. Spill Prevention, Control, and Countermeasures (SPCC)
2. Storm Water Pollution Prevention Plan (SWPPP)
3. Illicit Discharge Elimination (IDDE)
4. Municipal Separate Storm Sewer System (MS4)
5. Managing and Disposing of Chemicals (Public Works SOP 1.004.10)

RECYCLING AND WASTE MATERIALS HANDLING POLICY

(APWA 18.18)

RECYCLING AND WASTE DISPOSAL:

All waste materials including scrap metal, used oil and antifreeze, used fuel filters, used fluorescent bulbs, used tires, used catalytic converters, battery cores, wheel weights, and any other materials that can be recycled must be disposed of using the following procedures.

1. All materials will be prepared for recycling according to environmental guidelines as stated by EPA and DEQ.
2. All materials will be placed in the proper storage location for recycling pick-up.
3. All materials will be weighed, recorded, and disposed of accordingly:
 - Scrap Metal** – weighed at the landfill scales by a landfill employee
 - Oil and Antifreeze** – recycle tanks are emptied and disposed properly by a third party vendor contracted by the County.
 - Oil and Fuel Filters** – Used filters are drained and crushed by the mechanic that removed them from the vehicle/equipment. Drained filter is stored in 55 gallon drums for oil filters or fuel filters, respectively, that are removed by a contracted third party vendor to properly dispose.
 - Fluorescent bulbs** – stored in cardboard boxes and the amount recycled is estimated by contracted disposal vendor.
 - Tires** – stored in the tire trailer, weighed on the landfill scales, and emptied by a Fleet

employee. Fleet receives a monthly bill from the Solid Waste Division for taking the tires. Tires are covered to prevent rainwater accumulation which adds disposal weight and is a habitat for disease vectors.

Catalytic Converters – tracked by each individual converter and disposed of with the scrap metal or core exchange.

Battery cores – stored in the battery core container and core disposal record is receipted on an invoice by Interstate Battery.

Wheel Weights – stored in the wheel weight container, the disposal weight is receipted on an invoice by Interstate Battery.

4. All receipts will be turned in to the Accounting Assistant II (AAII). The AA III will collect the data in the spreadsheet, and file the receipts.
5. All reports are compiled by the AA II. 2017 results are shown below.

43,400 pounds of tires recycled
3,127 gallons of oil recycled to heat shop
2,000 used fuel filters
3,260 used oil filters
83,400 pounds of scrap metal recycled
463 gallons of engine coolant recycled

Recognized as VADEQ Exemplary Environmental Enterprise (E3) since 2008




EMPLOYEE UNIFORM POLICY

Fleet Management will provide a standard uniform to all Fleet employees that work on the shop floor, in the parts room, in the heavy equipment shop, and the direct supervisors of the employees listed above. The uniform pieces and manner of wear must comply with Department of Public Works SOP 1.003.8. Fleet Management uses a uniform rental service to provide and launder uniforms to the employees listed above. Listed below are the items issued by the uniform company.

Standard Issued Items

- 11 Long Sleeve Shirts
- 11 Short Sleeve Shirts
- 11 Pants
- 2 Jackets

Risk Management Vehicle operation and Maintenance:

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	Prince William County, Virginia		Effective Date: 9/1/1987
	Subject: VEHICLE & EQUIPMENT OPERATION & MAINTENANCE	Section Number: 1101	Supersedes Policy Dated: 4/1/1980
<p><u>GENERAL</u></p> <p>Only employees specifically authorized and who possess a valid driver's license and a County vehicle eligibility certificate shall operate County-owned motor vehicles or personal vehicles on County business. The safe operation of cars, trucks, and other special motorized equipment is the responsibility of the employee to whom the vehicle or equipment is assigned or owned.</p> <p>Drivers shall know and obey all State and local vehicle laws applicable to the operation of their vehicle. The driver shall drive at safe speeds no greater than those permitted by the law. Traffic, road and weather conditions shall be given full consideration in determining the safe speed within the legal limit at which the vehicle will be operated. Unauthorized persons shall not be permitted to drive, operate, or ride in or on a County owned vehicle. Employees are required to wear safety belts at all times while operating or riding in a County vehicle or any other vehicle when engaging in County business. In addition, all passengers riding in County-owned vehicles equipped with safety belts are required to use them. Any employee who sustains an injury due to violation of this rule may lose his rights to collect benefits under the Virginia Workers' Compensation Act. Exceptions to this rule include emergency rescue personnel, who by the nature of their work, may be unable to comply with this rule, i.e., offering care and assistance to injured people while enroute to a hospital.</p> <p>Personally owned motorcycles shall not be used by employees for business-related matters. Noncompliance with this provision may disqualify an employee from benefits under the Workers' Compensation Act.</p> <p><u>INSPECTION OF EQUIPMENT</u></p> <p>No employee is expected to drive an unsafe motor vehicle. Before operating a car or truck, the driver shall determine that the vehicle is in a safe operating condition. The operator should check to insure the brakes are working properly before the vehicle is used.</p> <p>The driver shall inspect windshield wipers frequently to see that they are in good operating condition and that windows and windshield give sufficient visibility for safe operation of the vehicle.</p> <p>Tires shall be kept properly inflated and in good condition at all times.</p> <p>The driver shall report promptly any defects to Motor Pool or Fleet Management which may have developed during the day. Any unsafe equipment or conditions which affect the safety shall be repaired immediately at the County Fleet Management shop or by other arrangements made with the approval of the supervisor.</p> <p><u>EXHAUST GAS</u></p> <p>No motor vehicle shall be operated in any garage or an enclosed area with inadequate ventilation, except to drive in and out and then as little as practical. The motor shall not be warmed up or test operated inside a garage unless the exhaust gas is carried directly to outside atmosphere, or doors and windows are open so that adequate ventilation exists.</p>			



RISK MANAGEMENT MANUAL

Prince William County, Virginia

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Effective Date:
9/1/1987

Subject:
VEHICLE & EQUIPMENT
OPERATION & MAINTENANCE

Section Number:
1101

Supercedes Policy Dated:
4/1/1980

CARS AND TRUCK OPERATION

1. The driver of a vehicle shall be courteous toward other operators and pedestrians. Vehicles shall be operated in a safe manner and the right of way will be yielded to pedestrians and other vehicles when failure to do so might endanger life or property.
2. The operator of a motor vehicle shall clearly signal his intention of turning, passing or stopping. Communication is essential to defensive driving, therefore, hand signals shall be used in absence of, or in addition to mechanical signals whenever practicable.
3. The driver shall stay a sufficient distance behind while following another vehicle. Speed shall be reduced on corners and curves so that the vehicle can be brought to a safe stop within the range of vision.
4. Drivers shall reduce speed and approach intersections with caution. Yield right of way as necessary to prevent an accident.
5. Avoid locking wheels when applying brakes. Such practice may cause skidding and excessive wear on tires. Reduce speed and proceed with caution when roadway is wet or covered with ice or snow.
6. Drivers shall exercise added caution when driving through residential and school zones, overtaking children on bicycles or roller skates or skate boards, etc., and when passing playgrounds.

In all cases the pedestrian has the right of way in cross walks. Courtesy in this respect is very important in safety and good public relations.
7. The driver must be satisfied that all employees are safely in the car or truck with safety belts fastened before starting out. Employees must ride on seats or area provided with all parts of body inside of car or truck. Employee shall not attempt to get on or off a moving vehicle.
8. All ignition systems shall be turned off and no smoking permitted while refueling equipment.
9. When proceeding down grade, the clutch shall not be disengaged. Trucks, when heavily loaded, shall be in a lower gear on steep grades.
10. All licensed County vehicles shall be equipped with a safety kit comprised of an Emergency First Aid Kit, a 2 ½ lb. ABC dry chemical fire extinguisher and road flares. It shall be the responsibility of each Department Head to ensure that the vehicles have this equipment and that all employees are trained in the location and use of these items.



RISK MANAGEMENT MANUAL

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Subject:
**VEHICLE & EQUIPMENT
OPERATION & MAINTENANCE**

Section Number:
1101

Supersedes Policy Dated:
4/1/1980

BACKING

1. The vehicle shall be positioned to avoid the necessity of backing whenever possible. Extreme caution shall be exercised when backing a vehicle to avoid injury to persons and prevent property damage. Whenever possible, another person should be stationed at the rear of a truck to assist the driver in backing the truck safely.

When backing a vehicle the operator shall:

- a. Keep a constant lookout and carefully check any blind areas.
- b. Back slowly. Watch both sides, but do not depend entirely on mirrors.

EARTH MOVING EQUIPMENT

A variety of motorized, mechanical equipment such as a hole digger, back hoe, trencher, earth boring machine, tamper, and dump truck are classified as earth moving equipment.

1. Employees shall be properly instructed and fully familiar with the operating characteristics, the operating controls and the functions of each control before using any earth moving equipment. Instructions shall be given with the engine off or at idle.
2. All equipment shall be kept in good repair and operating condition. No employee shall work with equipment which is unsafe to use, and it shall be so tagged until the necessary repair has been done.

A routine service inspection shall be done each day before commencing work. Additional information and instruction will be found in the equipment operators manual.

3. All adjustments, repairs, cleaning, lubrication, and refueling shall be done with the engine turned off. No equipment shall be operated from any position other than the operator's position. Caution shall be used when operating such equipment near buildings, structures or congested areas. No machine shall be abused with overload, excessive speed or other misuse.
4. Employees shall not take any unsafe position near equipment in operation. No persons shall be permitted under loads handled by power shovels, derricks or hoists.
5. Safety belts shall be provided and used on all equipment as required by federal and state regulations.



RISK MANAGEMENT MANUAL

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Section Number:
1101

Supersedes Policy Dated:
4/1/1980

INDUSTRIAL TRUCKS – FORK LIFTS (Refer to RM Section # 1104 Powered Industrial Trucks)

1. Industrial trucks (fork lifts) shall be operated only by authorized employees, qualified and trained in their use.
2. Brakes and controls shall be tested prior to use. Equipment with faulty brakes or mechanical or electrical defects shall not be operated. Needed repair work shall be reported immediately.
3. Equipment shall always be operated at a safe speed for existing conditions. Clearances in all directions shall always be checked, particularly over head clearances.
4. When picking up a load, forks shall be set squarely and as far as possible under the load. Loads shall not be raised or lowered while traveling. Loaded or empty, forks shall be carried as low as possible, but high enough to clear uneven surfaces.
5. The operator shall always face in the direction of travel. On inclines, all types of loaded lift trucks shall be driven with the load on the up grade side of the driver, whether ascending or descending.
6. Sudden stops which might spill the load shall be avoided.
7. Equipment with internal combustion engines shall not be operated in enclosed areas for prolonged periods of time so as not to exceed allowable levels of carbon monoxide. Keep areas well ventilated when necessary to work inside storerooms.
8. No one shall be allowed to ride the trucks, fork lift or other equipment other than the operator, except when seats are provided for this purpose.

Risk Management Vehicle operation and Maintenance:

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	Prince William County, Virginia		Effective Date: 9/1/1987
	Subject: VEHICLE & EQUIPMENT OPERATION & MAINTENANCE	Section Number: 1101	Supercedes Policy Dated: 4/1/1980
<p><u>GENERAL</u></p> <p>Only employees specifically authorized and who possess a valid driver's license and a County vehicle eligibility certificate shall operate County-owned motor vehicles or personal vehicles on County business. The safe operation of cars, trucks, and other special motorized equipment is the responsibility of the employee to whom the vehicle or equipment is assigned or owned.</p> <p>Drivers shall know and obey all State and local vehicle laws applicable to the operation of their vehicle. The driver shall drive at safe speeds no greater than those permitted by the law. Traffic, road and weather conditions shall be given full consideration in determining the safe speed within the legal limit at which the vehicle will be operated. Unauthorized persons shall not be permitted to drive, operate, or ride in or on a County owned vehicle. Employees are required to wear safety belts at all times while operating or riding in a County vehicle or any other vehicle when engaging in County business. In addition, all passengers riding in County-owned vehicles equipped with safety belts are required to use them. Any employee who sustains an injury due to violation of this rule may lose his rights to collect benefits under the Virginia Workers' Compensation Act. Exceptions to this rule include emergency rescue personnel, who by the nature of their work, may be unable to comply with this rule, i.e., offering care and assistance to injured people while enroute to a hospital.</p> <p>Personally owned motorcycles shall not be used by employees for business-related matters. Noncompliance with this provision may disqualify an employee from benefits under the Workers' Compensation Act.</p> <p><u>INSPECTION OF EQUIPMENT</u></p> <p>No employee is expected to drive an unsafe motor vehicle. Before operating a car or truck, the driver shall determine that the vehicle is in a safe operating condition. The operator should check to insure the brakes are working properly before the vehicle is used.</p> <p>The driver shall inspect windshield wipers frequently to see that they are in good operating condition and that windows and windshield give sufficient visibility for safe operation of the vehicle.</p> <p>Tires shall be kept properly inflated and in good condition at all times.</p> <p>The driver shall report promptly any defects to Motor Pool or Fleet Management which may have developed during the day. Any unsafe equipment or conditions which affect the safety shall be repaired immediately at the County Fleet Management shop or by other arrangements made with the approval of the supervisor.</p> <p><u>EXHAUST GAS</u></p> <p>No motor vehicle shall be operated in any garage or an enclosed area with inadequate ventilation, except to drive in and out and then as little as practical. The motor shall not be warmed up or test operated inside a garage unless the exhaust gas is carried directly to outside atmosphere, or doors and windows are open so that adequate ventilation exists.</p>			



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OPERATION & MAINTENANCE**

Section Number:
1101

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CARS AND TRUCK OPERATION

1. The driver of a vehicle shall be courteous toward other operators and pedestrians. Vehicles shall be operated in a safe manner and the right of way will be yielded to pedestrians and other vehicles when failure to do so might endanger life or property.
2. The operator of a motor vehicle shall clearly signal his intention of turning, passing or stopping. Communication is essential to defensive driving, therefore, hand signals shall be used in absence of, or in addition to mechanical signals whenever practicable.
3. The driver shall stay a sufficient distance behind while following another vehicle. Speed shall be reduced on corners and curves so that the vehicle can be brought to a safe stop within the range of vision.
4. Drivers shall reduce speed and approach intersections with caution. Yield right of way as necessary to prevent an accident.
5. Avoid locking wheels when applying brakes. Such practice may cause skidding and excessive wear on tires. Reduce speed and proceed with caution when roadway is wet or covered with ice or snow.
6. Drivers shall exercise added caution when driving through residential and school zones, overtaking children on bicycles or roller skates or skate boards, etc., and when passing playgrounds.

In all cases the pedestrian has the right of way in cross walks. Courtesy in this respect is very important in safety and good public relations.
7. The driver must be satisfied that all employees are safely in the car or truck with safety belts fastened before starting out. Employees must ride on seats or area provided with all parts of body inside of car or truck. Employee shall not attempt to get on or off a moving vehicle.
8. All ignition systems shall be turned off and no smoking permitted while refueling equipment.
9. When proceeding down grade, the clutch shall not be disengaged. Trucks, when heavily loaded, shall be in a lower gear on steep grades.
10. All licensed County vehicles shall be equipped with a safety kit comprised of an Emergency First Aid Kit, a 2 ½ lb. ABC dry chemical fire extinguisher and road flares. It shall be the responsibility of each Department Head to ensure that the vehicles have this equipment and that all employees are trained in the location and use of these items.



RISK MANAGEMENT MANUAL

Prince William County, Virginia

Page No: 3 of 4

Effective Date:
9/1/1987

Subject:
**VEHICLE & EQUIPMENT
OPERATION & MAINTENANCE**

Section Number:
1101

Supersedes Policy Dated:
4/1/1980

BACKING

1. The vehicle shall be positioned to avoid the necessity of backing whenever possible. Extreme caution shall be exercised when backing a vehicle to avoid injury to persons and prevent property damage. Whenever possible, another person should be stationed at the rear of a truck to assist the driver in backing the truck safely.

When backing a vehicle the operator shall:

- a. Keep a constant lookout and carefully check any blind areas.
- b. Back slowly. Watch both sides, but do not depend entirely on mirrors.

EARTH MOVING EQUIPMENT

A variety of motorized, mechanical equipment such as a hole digger, back hoe, trencher, earth boring machine, tamper, and dump truck are classified as earth moving equipment.

1. Employees shall be properly instructed and fully familiar with the operating characteristics, the operating controls and the functions of each control before using any earth moving equipment. Instructions shall be given with the engine off or at idle.
2. All equipment shall be kept in good repair and operating condition. No employee shall work with equipment which is unsafe to use, and it shall be so tagged until the necessary repair has been done.

A routine service inspection shall be done each day before commencing work. Additional information and instruction will be found in the equipment operators manual.

3. All adjustments, repairs, cleaning, lubrication, and refueling shall be done with the engine turned off. No equipment shall be operated from any position other than the operator's position. Caution shall be used when operating such equipment near buildings, structures or congested areas. No machine shall be abused with overload, excessive speed or other misuse.
4. Employees shall not take any unsafe position near equipment in operation. No persons shall be permitted under loads handled by power shovels, derricks or hoists.
5. Safety belts shall be provided and used on all equipment as required by federal and state regulations.



RISK MANAGEMENT MANUAL

Prince William County, Virginia

Page No: 4 of 4

Effective Date:
9/1/1987

Subject: **VEHICLE & EQUIPMENT
OPERATION & MAINTENANCE**

Section Number:
1101

Supersedes Policy Dated:
4/1/1980

INDUSTRIAL TRUCKS – FORK LIFTS (Refer to RM Section # 1104 Powered Industrial Trucks)

1. Industrial trucks (fork lifts) shall be operated only by authorized employees, qualified and trained in their use.
2. Brakes and controls shall be tested prior to use. Equipment with faulty brakes or mechanical or electrical defects shall not be operated. Needed repair work shall be reported immediately.
3. Equipment shall always be operated at a safe speed for existing conditions. Clearances in all directions shall always be checked, particularly over head clearances.
4. When picking up a load, forks shall be set squarely and as far as possible under the load. Loads shall not be raised or lowered while traveling. Loaded or empty, forks shall be carried as low as possible, but high enough to clear uneven surfaces.
5. The operator shall always face in the direction of travel. On inclines, all types of loaded lift trucks shall be driven with the load on the up grade side of the driver, whether ascending or descending.
6. Sudden stops which might spill the load shall be avoided.
7. Equipment with internal combustion engines shall not be operated in enclosed areas for prolonged periods of time so as not to exceed allowable levels of carbon monoxide. Keep areas well ventilated when necessary to work inside storerooms.
8. No one shall be allowed to ride the trucks, fork lift or other equipment other than the operator, except when seats are provided for this purpose.

Appendix 11: Public Education

FY19 Memorandum of Understanding
Between
Department of Public Works, Environmental Services Division, Watershed Management
Branch and the
Prince William Soil and Water Conservation District

This Memorandum of Understanding is made and entered into this 30th day of June, 2018 by and between the Prince William County Department of Public Works (Public Works) and the Prince William Soil and Water Conservation District (Conservation District).

Whereas, Public Works and Conservation District share the common objective of helping to bring about the conservation and wise use of land, water, and related resources for the health and well-being of the residents of Prince William County; and

Whereas, Public Works is required to meet federal and state mandates related to the Chesapeake Bay Preservation Act Ordinance and the resulting Chesapeake Bay Total Maximum Daily Load (Bay TMDL) reduction efforts; and

Whereas, the Conservation District can provide assistance by working with the local agricultural community and implementing best management practices (BMP's) on agricultural land with a new focus on fulfilling nutrient reductions from agricultural lands as mandated by Bay TMDL requirements;

Now therefore, we enter into this memorandum of understanding.


Public Works agrees to:

1. Provide funding for the Conservation District to serve the agricultural community and help the County meet mandates and obligations as stated in mutually agreeable performance targets (see attachment A),
2. Disperse this funding in four equal installments due at the beginning of each quarter upon receipt of invoice from the District,
3. Give guidance on the work and priorities to be completed by the District on behalf of Prince William County,
4. Meet quarterly with the Conservation District to ensure continuous communications and improvements to help both entities fulfill their goals and mandates,
5. Review and amend this Memorandum of Understanding as needed to reflect changing community priorities and needs each year.

The Conservation District agrees to:

1. Conduct outreach to agricultural landowners and land users,
2. Provide for and coordinate cooperating agencies in the delivery of technical soil and water quality conservation planning assistance to users of agricultural lands,
3. Develop additional Soil and Water Quality Conservation Plans within the agricultural community to fulfill nutrient reductions required by Bay TMDL standards,
4. Select and expand BMP's to address erosion control, nutrient management and pesticide management best suited to the farm's land use,
5. Maintain records and track implementation of agricultural best management practices in the format required for the Virginia Assessment Scenario Tool (VAST) and Bay TMDL,
6. Maintain and continue to enhance a GIS record to depict agricultural land and land where Soil and Water Quality Conservation Plans have been implemented,
7. Conduct floatables monitoring on a quarterly basis at selected sites. Information will be included in the quarterly reports.
8. Administer the Virginia Conservation Assistance Program (VCAP) in Prince William County and Report BMP installations from this program in the quarterly report.
9. Conduct adult educational programs on watershed function and non-point source (NPS) pollution prevention to citizens of Prince William County. Data on the number of participants in such programs shall be included in the quarterly report.
10. Administer the Adopt A Stream cleanup program for Prince William County and report associated data in the quarterly report.
11. Provide written quarterly accomplishment reports to Public Works within three weeks of the end of each quarter.
12. Report progress on performance targets listed in Attachment A on a quarterly basis.


It is understood that this memorandum shall remain in effect unless both undersigned parties agree to changes. Changes will be made in writing and a new memorandum approved. The associated performance targets and compensation as outlined in Attachment A should be revisited and renewed annually at a meeting of both undersigned parties. It is understood that this memorandum can be terminated at any time by either undersigned party with 90 days written notice provided to the other party.



Board Chairman
Prince William Soil and Water Conservation District

8/5/2018

Date



Director
Department of Public Works

8/20/18

Date

Attachment A

Performance Targets for FY19

Activity	FY17 Target
Nutrient Reductions (from BMPs and Planning <ul style="list-style-type: none">• Nitrogen (lbs/acre/year)• Phosphorus (lbs/acre/year)	7,500 500
Soil & Water Quality Conservation <ul style="list-style-type: none">• Plans (# of plans)• Citizen Technical Assistance (# of cases)	60 150
Adopt A Stream (AAS) <ul style="list-style-type: none">• Miles of Adopted Stream Cleaned• AAS pounds of trash collected	40 25,000
Adult Centered Education about Streams (# of participants)	350
Floatables Monitoring Program <ul style="list-style-type: none">• Quarterly Monitoring (# of sites)	5
VCAP Program (# of BMPs installed)	2

Compensation for FY19

An annual compensation of \$242,009 shall be distributed in four equal installments of \$60,502.25 due at the beginning of each quarter upon receipt of invoice provided to the Department of Public Works. Compensation shall be paid for the services to be provided in the upcoming quarter.

Clean Water Program:

Goals:

Improve water Quality within Prince William County through public outreach initiatives

Meet and exceed public outreach requirements outlined in the County's MS-4 Permit

Improve public awareness of water quality and environmental issues

Objectives:

Develop and Maintain Public Outreach Material for Citizens

Develop and Maintain Public Outreach Material for Businesses

Develop and Maintain Public Outreach Material for Municipal Facilities

Partner with local and state non-profit organizations for Illicit Discharge outreach

Program Aspects:

- Citizen Outreach
 - o Pet Waste
 - o Yard Maintenance
 - o Car Washing
 - o Pools
 - o General Discharges
 - o Good Housekeeping – How to improve your house's environmental impact
- Business Outreach
 - o Deicing Material Storage at Shopping Centers
 - o Restaurants
 - o Aggregate Materials
 - o Commercial Car Washing
 - o Landscaping
 - o Mobile Carpet Cleaners
 - o Mobile Pet Groomers
 - o Food Trucks
 - o Good Housekeeping
- Municipal Outreach
 - o Training Program
 - o Stormwater Assessment
 - o EMS

Program Elements:

Brochures

TV and commercials

Posters

Handouts

Questions/Complications:

Distribution and supply

Combining/making a comprehensive outreach package

Acceptance by community members

Major focus on shopping centers

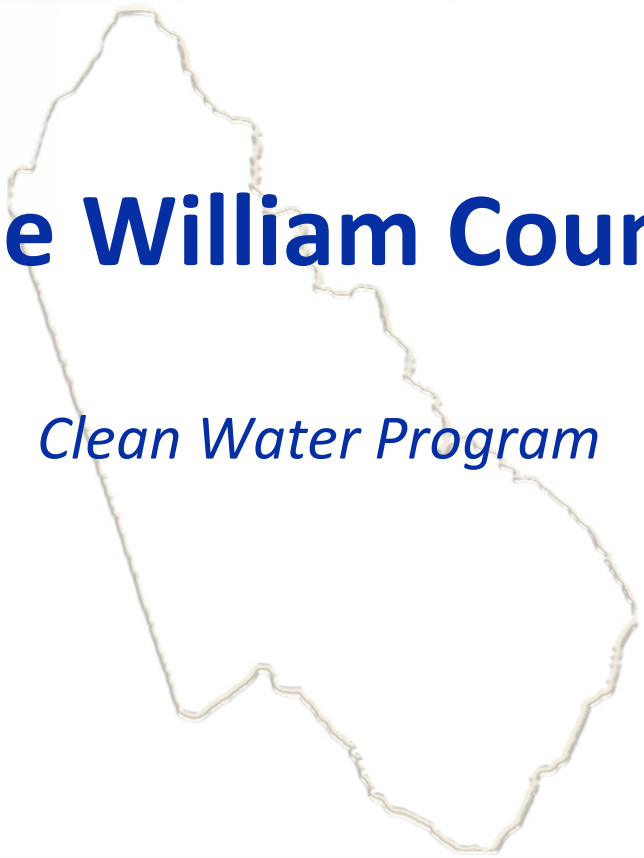


Prince William County Government
Board of County Supervisors



Prince William County

Clean Water Program



What is the PWC Clean Water Program?



A comprehensive public outreach program dedicated to reducing the impact of stormwater on County Rivers/Streams and the Chesapeake Bay



Regulatory Drivers



MS-4 Section II.B.2.j) Public Participation



Homeowners



- Leaf Management
- Pool Management
- Pet Waste (including Horses)
- Nutrient Management
- Car Washing/Maintenance
- Household Hazardous Wastes
- General Litter
- Septic Systems?



Commercial Businesses



■ Auto Related Industries

◆ Fluids/maintenance BMPS

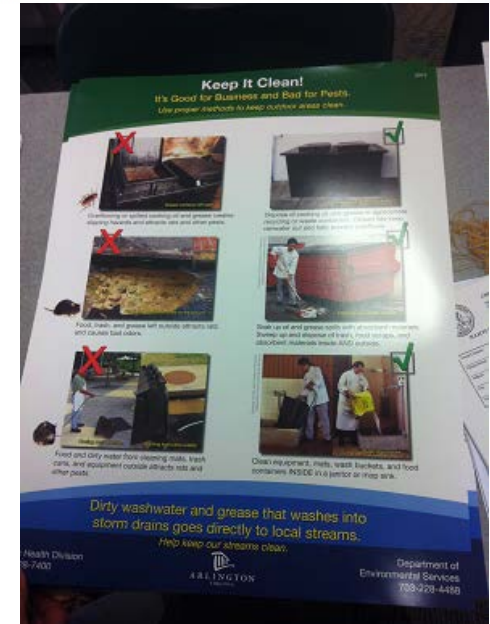
■ Restaurants

◆ Grease, cleaning BMPs, Waste Management

■ Pond Maintenance

■ Industrial (VPDES) applicable Facilities

■ Marinas (Boat Washing/maintenance/fueling)



Source: Arlington Virginia



Possible Stakeholders/Partnerships



■ Environmental Services

- ◆ outreach and planning

■ Landfill

- ◆ Recycling

■ School Board

- ◆ Outreach and volunteer work

■ Parks & Rec

- ◆ Pet waste stations

■ Neighborhood Services

- ◆ Outreach Illicit Discharge Detection

■ KPWB

- ◆ Litter Surveys

■ PWC soil and water

■ Conservation alliance

■ Cooperative Extensions

■ Environmental Groups within PWC

■ Homeowner Associations

- ◆ Outreach



Resources



■ Buzz Videos

■ Posters

◆ Municipal Buildings/Library/Local Businesses

■ Brochures

■ Outreach Events

■ Schools

■ Social Media

■ Pet Waste Stations

More best management practices ...

• Pet Care

Pet waste washes from yards and paved areas. It is a major source of bacteria and excessive nutrients in local waters. Pet waste can contribute up to 50% of the total bacteria in a stream. Please pick up and flush pet wastes down the toilet or place pet wastes in the trash.

• Car Maintenance

Ensure your car is not leaking oil or fluids. Visit repair shops that properly dispose of oil and wastes.

Properly dispose of used oil and batteries. Learn more at: www.pwcv.gov/trashandrecycling

• Septic System Maintenance

A leaking septic system can release nutrients and pathogens into near by waters. Inspect and pump your septic system every three years.

• Household hazardous waste disposal

Properly dispose of items in designated locations, and never flush HW. Slow the drain or toilet. For more information visit: www.pwcv.gov/trashandrecycling

• Manage your lawn and landscape

Use fertilizers and pesticides sparingly (don't use within 15 to 20 feet of a stream) or Follow nutrient management plan. For more information visit: <http://www.aic.vt.edu/>

Don't allow grass clippings and leaves to enter the storm drain/sink this can add nutrients and organic matter to streams

Sweep across fertilizer and pesticides off of impervious surfaces and onto lawn

Landscape with low maintenance and native plants — use less turf

Leave grass height between 3 and no higher than 12"

Install practices such as rain barrels, permeable pavement, rain gardens and vegetated filter strips that have less impact

Resources and Who to Call

Solid Waste Division at 703-792-4670

- Recycle motor oil, anti-freeze and car batteries
- Household Hazardous Wastes
- Electronics Recycling
- Yard Waste Composting



Virginia Cooperative Extension at 703-792-6285

- Nutrient Management Planning

Environmental Health Department at 703-792-6310

- Well and Septic Maintenance

Fire & Rescue at 703-792-6360 or after hours public safety communications at 703-792-6500

- Hazardous Waste Spills
- Emergency situations — call 9-1-1

Keep Prince William Beautiful at 571-285-3772

- Litter Control, Prevention and Clean Ups
- Heavily littered areas in a specific spot

Prince William County

Watershed Management
Department of Public Works
5 County Complex Court, Suite 170
Prince William, VA 22192
703-792-7070
illicitdischarge@pwcv.gov
www.pwcv.gov/publicworks



Prince William County

Help Stop Pollutants from Entering Our Streams

Illicit Discharge Detection and Elimination Program

Protecting the health, safety and welfare of the public, environment, and infrastructure by controlling pollution entering our local waterways and the Chesapeake Bay.



Measuring Program Impact



- Instances of Illicit Discharge
 - ◆ Commercial Sector
 - ◆ Industrial Reports
- Reports of Illicit Discharge
- Water Quality Monitoring Data
- Litter Surveys
- Citizen Feedback



Program Needs – MS-4



■ Full time environmental Outreach Position

- ◆ Attend Outreach Events
- ◆ Conduct outreach to businesses and homeowners
- ◆ Work with existing staff to create and distribute material
 - Brochures
 - Videos
- ◆ Coordinate Outreach Efforts
 - Charity Car Wash Program
 - Voluntary Stormwater Management
 - Local TMDL Initiatives



Program Needs – MS-4 (Cont.)



- Coordination With other Agencies on MS-4 related initiatives
 - ◆ Solid Waste – Recycling and Trash reduction
 - ◆ Main Point of Contact to Community Partners



Program Needs – Non MS-4



- Other Responsibilities can include
 - ◆ Web Development
 - ◆ News and press briefings on Stream Restoration projects
 - ◆ Coordinate



Appendix 12: Training

Appendix 13: Water Quality Screening Programs



Illicit Discharge Identification and Elimination Program Manual FY2017

Prince William County Public Works
Environmental Services Division

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I. Introduction



Through environmental permitting the Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (DEQ) require Prince William County to identify and prohibit any individual non-storm water discharges that are contributing significant amounts of pollutants to the Municipal Separate Storm Sewer System or MS4. The Illicit Discharge Detection and Elimination (IDDE) Program Manual will describe the methodologies to meet the requirements of the MS4 permit and to protect local water quality, the Potomac River, and the Chesapeake Bay.

The Prince William County IDDE program includes Dry Weather, Industrial/High Risk, and General Discharge Monitoring. Representative outfalls are selected for screening through desktop and Geographic Information System (GIS) analysis. Once selected, outfalls are inspected according to a schedule developed relative to the probability of discharge impact. If a discharge is identified, follow-up activities to eliminate illicit discharges will be prioritized based on magnitude and nature of the suspected discharge and sensitivity of receiving waters. Priorities and schedules have been established to visit representative outfalls at least once in the permit term (5 years).


In accordance with the MS4 permit, the illicit discharge shall be eliminated as expeditiously as possible and where it can't be removed within 30 days, then various actions can be taken. The discharge can be eliminated through issuing violation summons according to County ordinance, through violation of County zoning ordinances (if applicable), notice of the Fire Marshalls Office (Hazmat incidents), or through notifying the Virginia Department of Environmental Quality, Northern Virginia Regional Office.

II. Standard Operating Procedures

a. Dry Weather Monitoring

	<p style="text-align: center;">Standard Operating Procedure</p> <p style="text-align: center;">Department of Public Works</p> <p style="text-align: center;"><u>Environmental Services</u> <u>Division</u></p>
<p style="text-align: right;">Title:</p>	<p>Dry Weather Monitoring Program</p>
<p style="text-align: right;">Number:</p>	<p>3.047.6</p>
<p style="text-align: right;">Subject:</p>	<p>Identification and Removal of Unauthorized Non-Stormwater Discharges to the County's MS4.</p>
<p style="text-align: right;">Cross Reference:</p>	<p>APWA Management Practice (s) _____</p>
<p style="text-align: right;">Date Issued:</p>	<p>June 9, 2015</p>
<p style="text-align: right;">Date Revised:</p>	<p>June 9, 2015</p>
<p style="text-align: right;">Date Last Reviewed:</p>	<p></p>
<p style="text-align: right;">Signature of Issuer:</p>	<p> Marc T. Aveni, Environmental Services Division Chief</p>
<p style="text-align: right;">Applicability:</p>	<p>Environmental Services Division</p>
<p style="text-align: right;">Effective Date:</p>	<p>June 9, 2015</p>



	SOP Title: Dry Weather Monitoring Program	SOP No.:3.047.6
	Effective Date: 06/09/2015	Supersedes Policy Dated: N/A

A. Purpose

The purpose of this standard operating procedure is to describe the methods for the detection and elimination of all unauthorized, non-storm discharges to the County’s Municipal Separate Storm Sewer System (MS4).

B. Applicability

This SOP applies to all storm sewer infrastructures in Prince William County’s MS4 through the authority established by the County’s MS4 permit, applicable County ordinances, the Virginia Department of Environmental Quality (DEQ), and United States Environmental Protection Agency (USEPA).

C. Policy Details


1. Pre-Inspection

- Site visits will be conducted by County Water Quality inspectors according to a prioritized list of stormwater outfalls to check for dry weather flows (See flow chart in Attachment A). The prioritized list will be determined by the following criteria:
 - i. List of sites requiring further investigation
 - ii. Age and density of development
 - iii. Outfalls representing the general land uses of the county
 - iv. High risk businesses such as gas stations, service centers, and shopping centers
 - v. Presence of environmentally sensitive elements
 - vi. Citizen complaints received on illicit discharges

2. Outfall Site Inspection

- A period of at least 48 hours of dry antecedent conditions should exist prior to a site visit. Upon arriving at the site, an outfall inspection workflow will be completed with guidance from an electronic or paper outfall inspection form. The outfall inspection form directs the inspector through the identification and characterization of stormwater outfall conditions. If flow is observed in the outfall and indicators of illicit discharge are found, then a sample will be taken.
- The sample will be analyzed for water temperature, pH, specific conductance, detergents, chlorine, copper, phenol, fluoride, potassium, ammonia, nitrite and nitrate as determined by the inspector. An illicit discharge exists if one of the parameters exceeds the screening levels or the inspector determines there is an obvious visual pollutant discharge from the outfall.
- If a more in depth analysis is needed, an outside laboratory with more thorough testing capabilities shall be used.



	SOP Title: Dry Weather Monitoring Program	SOP No.:3.047.6
	Effective Date: 06/09/2015	Supersedes Policy Dated: N/A

3. Track down

- If an illicit or unlawful discharge is suspected to have occurred, as referenced by County Ordinance 23.2-4.1, a “track down” to identify the source of flow will be conducted. At this time a Trackdown Report and EnerGov Code Case will be created, violations will be tracked by case number and referenced in all documentation. If the source of discharge is not located, the site will be re-inspected within 48 hours for reoccurrence of the illicit discharge. If no illicit discharge is found during re-inspection, an outfall inspection form is to be completed and the outfall is to be listed for periodic re-inspection. Field and desktop research will be conducted until a responsible party is identified. Corrective action will be discussed with the responsible party if possible.

4. Enforcement

- If warranted, a Notice of Violation will be issued/mailed by the issuing inspector stating the activity must cease or be operated in a manner that will avoid the discharge of the pollutant to the storm water system within 30 days of notice. Any mitigation efforts should also be outlined and completed by the assigned date. If the discharge is not ceased, or discharge effects not mitigated, within the allotted time the most effective method of elimination/enforcement will be taken. These actions include:
 - i. Issuing a Summons and installing fines per County Ordinance through coordination with the Prince William County Attorney’s Office
 - ii. Enforcement of other applicable county ordinances through partnering County agencies (Zoning, Neighborhood Services, Fire Marshalls office)
 - iii. Contact with the Department of Environmental Quality

5. Documentation

- A detailed discharge report will be completed for each instance where trackdown is needed, with the outfall inspection form describing steps taken during the discovery of the discharge, track down, and follow-up/enforcement.
- The EnerGov System will be used to organize all Trackdown and Violations.

D. Authority

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

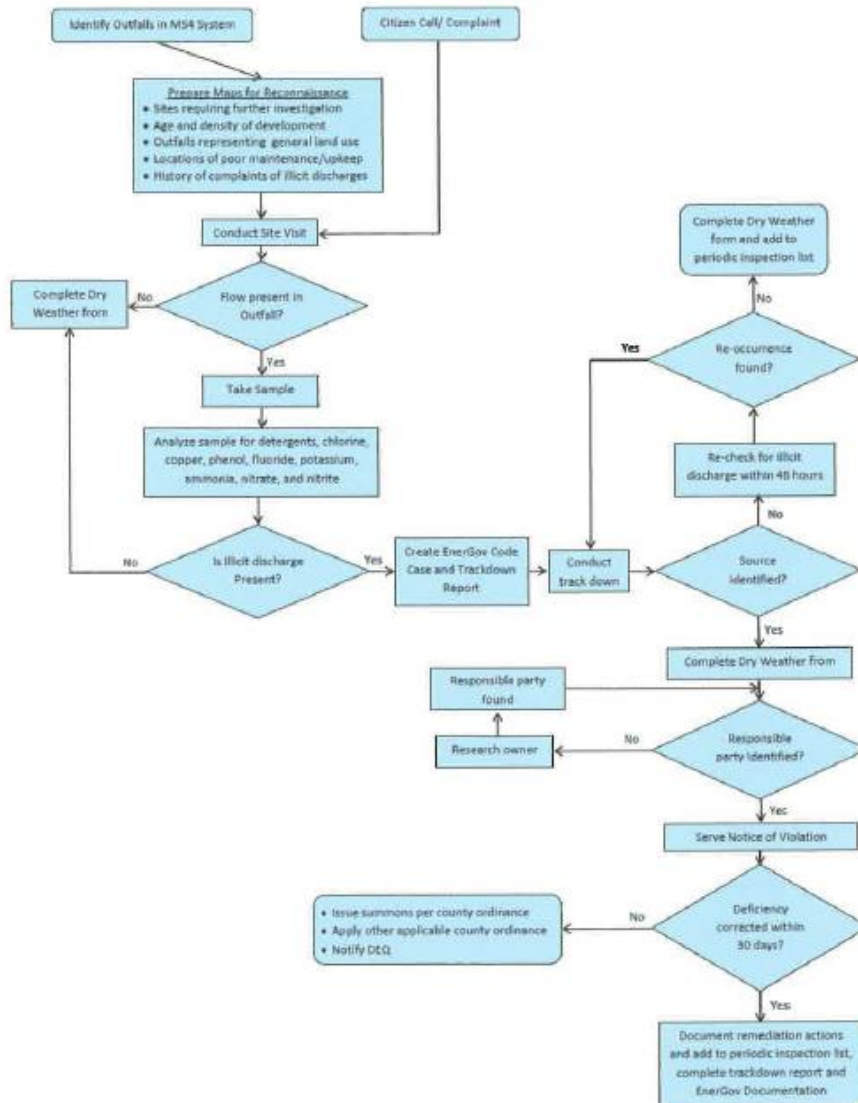
E. Administration

The administration of this SOP shall be the responsibility of the Environmental Services Division Chief and Watershed Management Branch Chief.


Attachments: Attachment A: Dry Weather Monitoring Process Flowchart



Attachment A




b. Industrial and High Risk Monitoring

	<p align="center">Standard Operating Procedure</p> <p align="center">Department of Public Works</p> <p align="center"><u>Environmental Services</u></p> <p align="center"><u>Division</u></p>
<p>Title:</p>	<p>Industrial and High Risk Runoff Facilities Inspection Program</p>
<p>Number:</p>	<p>3.047.5</p>
<p>Subject:</p>	<p>Identification and Monitoring of all industrial and high Risk Runoff Facilities that Discharge into Prince William County's Municipal Separate Storm Sewer System (MS4)</p>
<p>Cross Reference:</p>	<p>APWA Management Practice (s) _____</p>
<p>Date Issued:</p>	<p>April 1, 2015</p>
<p>Date Revised:</p>	<p></p>
<p>Date Last Reviewed:</p>	<p></p>
<p>Signature of Issuer:</p>	<p><i>Marc T. Aveni</i></p> <hr/> <p>Marc T. Aveni, Environmental Services Division Chief</p>
<p>Applicability:</p>	<p>Environmental Services Division</p>
<p>Effective Date:</p>	<p>April 1, 2015</p>

Prince William County Department of Public Works


5 County Complex Court, Suite 260, Prince William, Virginia 22192 | 703-792-6820 | www.pwcgov.org/publicworks



	SOP Title: Industrial and High Risk Runoff Facilities Inspection Program	SOP No.: 3.047.5
	Effective Date: 04/01/2015	Supersedes Policy Dated: N/A

- A. Purpose**
The purpose of this standard operating procedure is to describe the procedures involved in the management, identification, and monitoring of industrial and high risk runoff facilities that discharge into the County's Municipal Separate Storm Sewer System (MS4).
- B. Applicability**
This SOP applies to the inspection of all industrial and high risk facilities that discharge into MS4. This includes all state-permitted Virginia Pollutant Discharge Elimination System (VPDES) and "No Exposure" facilities.
- C. Specifics of the SOP**
1. Pre-Inspection
 - a. A list of all known industrial and high risk runoff facilities that discharge into Prince William County's MS4 will be maintained and updated as needed. The list will include any industrial or commercial stormwater discharges not covered under the Virginia state water control law that are determined to be contributing to significant pollutant loading to MS-4.
 - b. A Prioritized schedule to inspect outfalls pertaining to all VPDES permitted facilities that discharge into County's MS4 will be developed and maintained. Prioritization may be based on historical discharges, history of citizen complaint, industrial category, location to nearby sensitive areas, or other method.
 - c. Prior to facility inspection, pre-inspection desktop analysis of the site will occur. This includes an assessment of the outfall and storm system, access to the applicable facility components (outfalls discharging to the County's MS4) through County easements, the status of facility permits and monitoring reports (if applicable), and general information pertaining to industrial activities at the facility.
 2. Facility Site Inspection
 - a. If County easements do not allow for required access to facility components, a letter requesting access to facility stormwater discharge locations will be sent. Upon allowance of access a site inspection will occur, if access is not granted, DEQ will be notified for compliance inspection of the facility.
 - b. Outfall locations will be tested for flow. If flow exists samples of the flow will be taken and tested for excess levels of detergents, chlorine, copper, phenol, fluoride, potassium, ammonia, nitrate, and nitrite. If excess sediment or analytes are found to be present, significant pollution discharge is determined to occur and post inspection procedures will commence.



	SOP Title: Industrial and High Risk Runoff Facilities Inspection Program	SOP No.: 3.047.5
	Effective Date: 04/01/2015	Supersedes Policy Dated: N/A

3. Post-Inspection

- a. If significant pollutant discharge is determined to occur, VPDES permitted Facilities will be directed to DEQ for compliance review through a notification letter to appropriate department staff. Upon inspection of the facility an Industrial Inspection Form will be completed and documentation of the discharge will occur. The facility will be listed for periodic inspection to confirm removal of the discharge.
- b. Non-VPDES Permitted Facilities determined to be discharging significant pollutant loads to the MS4 will be directed to DEQ to obtain proper permits. Upon inspection of the facility an Industrial Inspection Form will be completed and documentation of the discharge will occur.
- c. Facilities which do not meet requirements for stormwater permitting will be listed for prioritized inspection and monitored periodically. These facilities can include major automotive facilities such as repair shops, body shops, auto dealers, car rental dealers, and service stations Recommendations will be made to facility to insure compliance and improve storm water pollution prevention controls if needed.

4. High Priority County Municipal Facilities will be identified throughout the County. A stormwater pollution prevention plan will be developed for these facilities if necessary.

D. **Authority**

The approving authority for this SOP is the Environmental Services Division Chief. Any changes to or deviations from this SOP must be approved by the Environmental Services Division Chief.

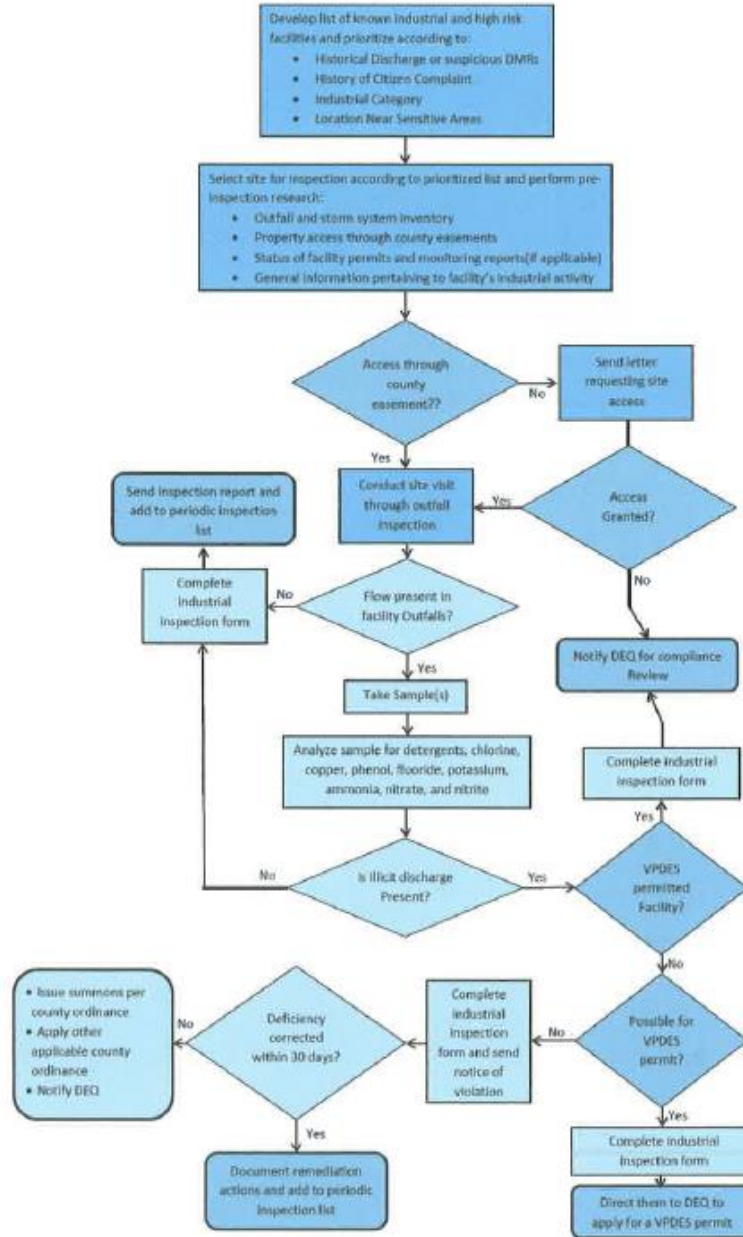
E. **Administration**

The administration of this SOP shall be the responsibility of the Environmental Services Division Chief and Branch Chiefs.

Attachments: Attachment A – Industrial and High Risk Storm Water Runoff Flowchart.



Attachment A



Prince William County Department of Public Works

5 County Complex Court, Suite 260, Prince William, Virginia 22192 | 703-792-6820 | www.pwcgov.org/publicworks



III. DWM Inspection Quick Reference Guide

The Dry Weather Monitoring Inspection Quick Reference Guide outlines and summarizes the Field Inspection Staff procedures for a standard DWM inspection. This section provides a quick overview for reference to what is expanded on in detail within this manual.

- 1) Pre-Inspection
 - a. Check iPad Application for assigned outfall locations for the specific inspection date.
 - b. Plan appropriate routing to most efficiently reach monitoring location
 - c. Insure field equipment has been properly calibrated. If calibration is needed follow steps outlined in Section [IV.3.b](#) of this document.
 - d. Insure all field equipment is accounted for before embarking on field inspections. A list of needed field equipment is located in Section [IV.3.a](#).
- 2) Inspection
 - a. Arrive onsite and confirm correct outfall is located for inspection
 - b. Determine safe access to outfall and position for inspection
 - c. Complete outfall inspection form on mobile application (Section [V.1.a](#))
 - d. Gather and analyze water quality samples as needed (section [V.1.b.i](#))
 - e. Assess illicit discharge potential
- 3) Post-Inspection
 - a. If no illicit discharge is present
 - i. Submit inspections, move to next inspection
 - ii. Add inspection report to appropriate folder (Section [VI.3.c.i](#))
 - b. If illicit discharge is unknown
 - i. Commence Trackdown (Section [VI.1.a](#))
 - ii. Identify source of flow
 - iii. Create folder for discharge in appropriate folder
 - iv. Create trackdown report (Section [VI.1.a](#))
 - v. Assess illicit discharge potential and see (a) or (c) depending on status
 - c. If illicit discharge is present
 - i. Commence trackdown (Section [VI.1.a](#))
 - ii. Identify source of flow
 - iii. Identify responsible party
 - iv. Issue Notice of Violation (Section [VI.3.b](#))
 - v. Create folder for violation in appropriate folder
 - vi. Create NOV packet ([Appendix C](#))
 1. NOV
 2. Trackdown Report
 3. Inspection Report
 4. Other information
 - vii. Create EnerGov Code Case for Violation (Section [VI.3.c.ii](#))
 - viii. Consult County Attorney or other County Agency for enforcement

IV. Pre-Inspection

Pre-inspection procedures encompass all activities necessary before field inspection begins. This includes the methods for selecting and assigning outfalls to inspect, field equipment preparation, and other desktop analysis.

1. Hotspot analysis

Pre-inspection procedures begin by selecting areas within the County are most likely to produce illicit discharge activity. This is accomplished through a probability based hotspot analysis. This analysis takes into account various metrics to produce a risk analysis based assessment of where discharges are likely occur in Prince William County. Probabilities of discharge are applied to the County's ADC grid for the purpose of scheduling inspections in an efficient method. This allows inspectors to focus on larger areas where discharges may occur rather than individual outfalls that may be scattered throughout different parts of the County.

Introduction

As a requirement for meeting guidelines mandated by the USEPA (Part 1.B.2.I)1) of Permit No VA0088595), Prince William County must identify and inventory "areas of concern" or areas predisposed to illicit discharges within its Municipal Separate Storm Sewer system (MS4). These "areas of concern" include: areas such as car washes, car dealerships, pet kennels, and restaurants; sites with previously occurring illicit discharges; areas of older development; areas representing the general land use of the county; sites with a history of citizen complaint; and areas located near environmentally sensitive features. Previously the County identified areas for dry weather monitoring by using a schedule of grids and a subjective assessment of areas of interest. In an attempt to generate a more quantitative assessment of illicit discharge "hot spots" around the County, a GIS based risk assessment was developed.

Variables

GIS layers

- County Municipal boundaries and ADC Index
- Land Use
- Residential Development
- County MS-4 service area and regulated outfalls
- VPDES Permitted Facilities
- High Risk Land Use Facilities
- Sanitary Sewer Cross Points
- Impervious Area
- County Outfall locations (outfalls >15in)

- County Streams
- Raster based County imagery

Data

- Previous discharges according to land use
- History of citizen complaint according to land use

Procedures

Data Collection

Data layers were collected from the County GIS system via database linkage within version 10.3 of ArcGIS, with the exception of the 303(d) listed impaired streams data, which was acquired through the DEQ website.

Initial Layer Synthesis and Input

In order to complete the hotspot analysis, data layers must be modified to yield the information needed. First, use codes were assessed for various land uses of interest and used to select a subset of parcels which could be determined as “high risk” land uses. A “use probability” was applied to each land use, which characterizes a land use’s probability for a discharge to occur, and potential severity of that discharge should it occur. This “use probability” is initially applied subjectively, but will be further defined as more data from the IDDE program is gathered and can be re-input into the model. Figure 1 displays the location of various land uses of interest of Prince William County.

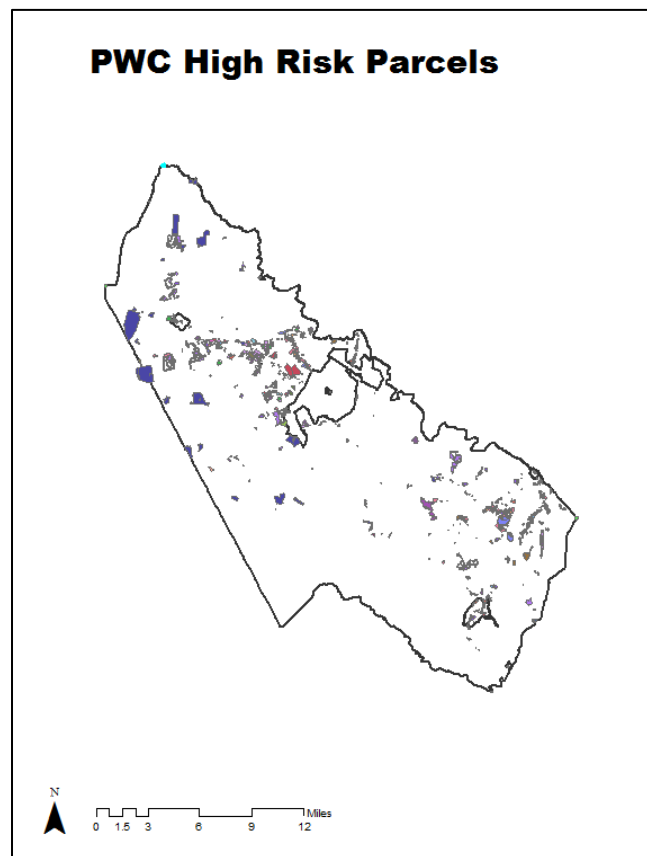


Figure 1: High Risk Parcels hotspot identification map

The impact value is a number from 1 to 5 characterizing each land use according to the potential of illicit discharge occurrence (determined from historical discharge data, low probability denotes low risk) and potential discharge severity (an assumption of the possible damage that may occur from a discharge). A list of land uses, use codes, and the initial scores given to the land uses can be seen below in Table 1.

Table 1: Impact values for Land Use hotspot identification

Use code	Use description	Use Probability
191	Technology Services	1
229	Other Utilities	1
349	Food Stores	1
140	Research and Testing	2
156	Wholesale Warehousing (Condo)	2
224	Sewage	2
343	Convenience Store	2
831	Golf Course	2
832	Golf Course	2
112	Industrial Conglomeration	3
151	Mini Warehousing	3
216	Auto Parking	3
311	Small Shopping Center	3
312	Shopping Center	3
313	Shopping Center	3
314	Large Mall	3
315	Large Mall	3
317	Shopping Center	3
318	Shopping Center	3
320	Building Materials	3
351	Restaurant	3
352	Restaurant	3
353	Restaurant	3
354	Restaurant	3
361	Motor Vehicle Sales	3
520	Barber/laundry/cleaners/etc	3
590	Barber/laundry/cleaners/etc	3
841	Swimming Pool	3
851	Marina	3
910	Agricultural Resources	3
911	Agricultural Resources	3
930	Agricultural Resources	3
121	Durable Manufacturing	4
126	Durable Manufacturing (Condo)	4

131	NonDurable Manufacturing	4
150	Wholesale Warehousing	4
160	Industrial Service Garage	4
190	Other Industrial	4
211	Railroad	4
212	Rail Rapid Transit	4
213	Bus	4
214	Motor Freight Transportation	4
219	Other Transportation	4
225	Solid Waste Disposal	4
344	Convienience Store with Gas	4
362	Gas and Service Station	4
363	Gas Station	4
369	Other Automotive	4
540	Other Repair	4
973	Storage Yard	4
366	Service Station	5
530	Motor Vehicle Repair	5

The same process was used for VPDES general stormwater discharge permit holders within the County. VPDES permitted facilities were identified using data obtained from DEQ. A determination on which VPDES permittees discharged into the County's MS-4 system was made, and a score (discharge probability) was assigned to each facility according to its assumed probability to discharge pollutants.

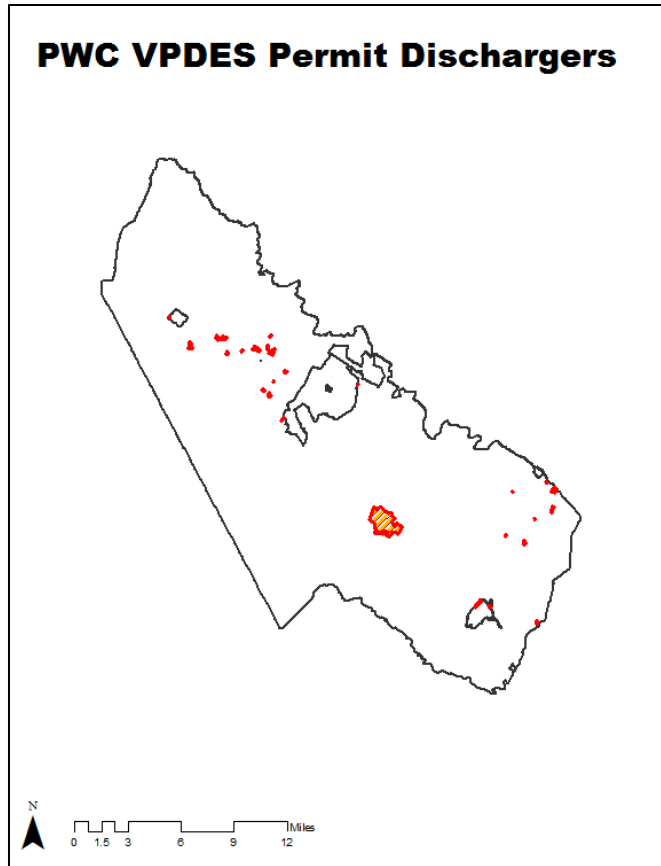


Figure 22: VPDES permitted facilities hotspot identification map

Table 2: Impact values for VPDES hotspot identification

NAME	Permit_No	Score
PWCBOCS	VAR051078	0
CHASE DAVID D	VAG830458	1
GENERAL DYNAMICS LAND SYSTEMS INC	VAR051293	1
OVERNITE TRANSPORTATION CO	VAR051030	1
US FOODSERVICE INC	VAR051117	1
OLD DOMINION FREIGHT LINE INC	VAR051476	1
REMODELERS CREDIT CORP	VAR051996	2
PWC	VAR051477	2
FURR FLOYD H AND BARBARA J	VAG750237	2
SUPPORT TERMINALS OPERATING PTNSHP	VAR051039	2
7905 LC	VAR052008	2
W M TINDER INC	VAR052074	2
EVERED INC	VAR052190	3
POTOMAC & RAPPAHANNOCK TRANSPORTATION E	VAR051886	3
LAND VENTURE ONE L C	VAR051295	3
DALRYMPLE REALTY CORPORATION	VAG110100	3

THIRD GENERATION L P	VAR051085	3
KRAUSS RICHARD L TR	VAR050983	3
NEWBILL HOLDINGS LLC	VAR051639	3
ARCHIE HENRY E SR & ANNIE WILLIAMS	VAR052115	3
BURBAGE J E JR E M BURBAGE	VAR051939	3
VENABLE JEAN S	VAR052243	3
HOFFMASTERS MARINA INC	VAR051183	3
SLURRY PAVERS INC	VAR051911	3
DAVIS TEDDY R JR HELEN M ETAL	VAR052014	3
ENNSTONE INC	VAG110111	4
COSNER MEDFORD R	VAR051009	4
VIRGINIA CONCRETE CO INC	VAG110083	4
DALRYMPLE REALTY CORP	VAR051949	4
JULIUS BRANSCOME INC	VAR050908	4
JONES SAMUEL M ESTATE	VAR051298	4
CONCRETE PIPE AND PRODUCTS CO INC OF	VAG110313	4
ARBAN CAROSI INC	VAG110068	4
HARD ROCK CONCRETE LLC	VAG110067	4
SUPERIOR PROPERTIES INC	VAR051992	4
SUPERIOR PAVING CORP	VAR050901	4
POTOMAC LANDFILL INC	VAR051073	5

Since the point of discharge is the ultimate target of the analysis, outfalls greater than 15 inches were identified through Prince William County. Applicable outfalls were identified and isolated using the feature selection tool and processed into an individual layer. The greater the density of outfalls within an area the larger the chance of a discharge occurring. Outfalls associated with VPDES and High Risk facilities were also determined by creating a buffer around VPDES and High Risk parcels, and capturing all outfalls within the buffer. Outfalls were given a uniform impact value and factor in during the overall hotspot analysis (Standard outfall = 10, VPDES outfall = 30, High Risk Outfall = 30). Figure 3 displays the location of outfalls within the county.

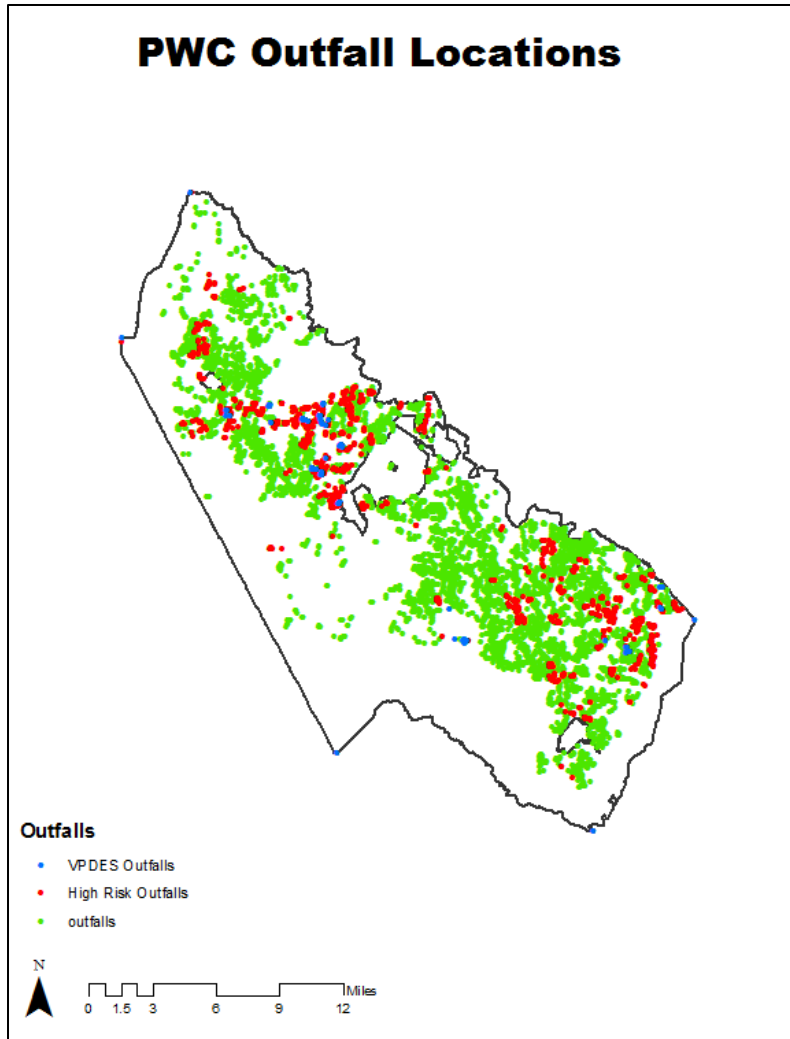


Figure 3: Location of outfalls within Prince William County

To address the potential impact of illicit discharge on environmentally sensitive areas, a streams and water body layer was included in the analysis (Figure 3). Major streams and rivers were isolated from man-made ditches and conveyances within the layer. These streams were given a uniform impact value. The area of stream within a region influences the potential discharge probability score by quantifying the amount of environmentally sensitive features in an area. Streams listed on the EPA 303(d) list of impaired water bodies have a greater potential of impact from illicit discharges and are therefore given an additional weight in model outputs.

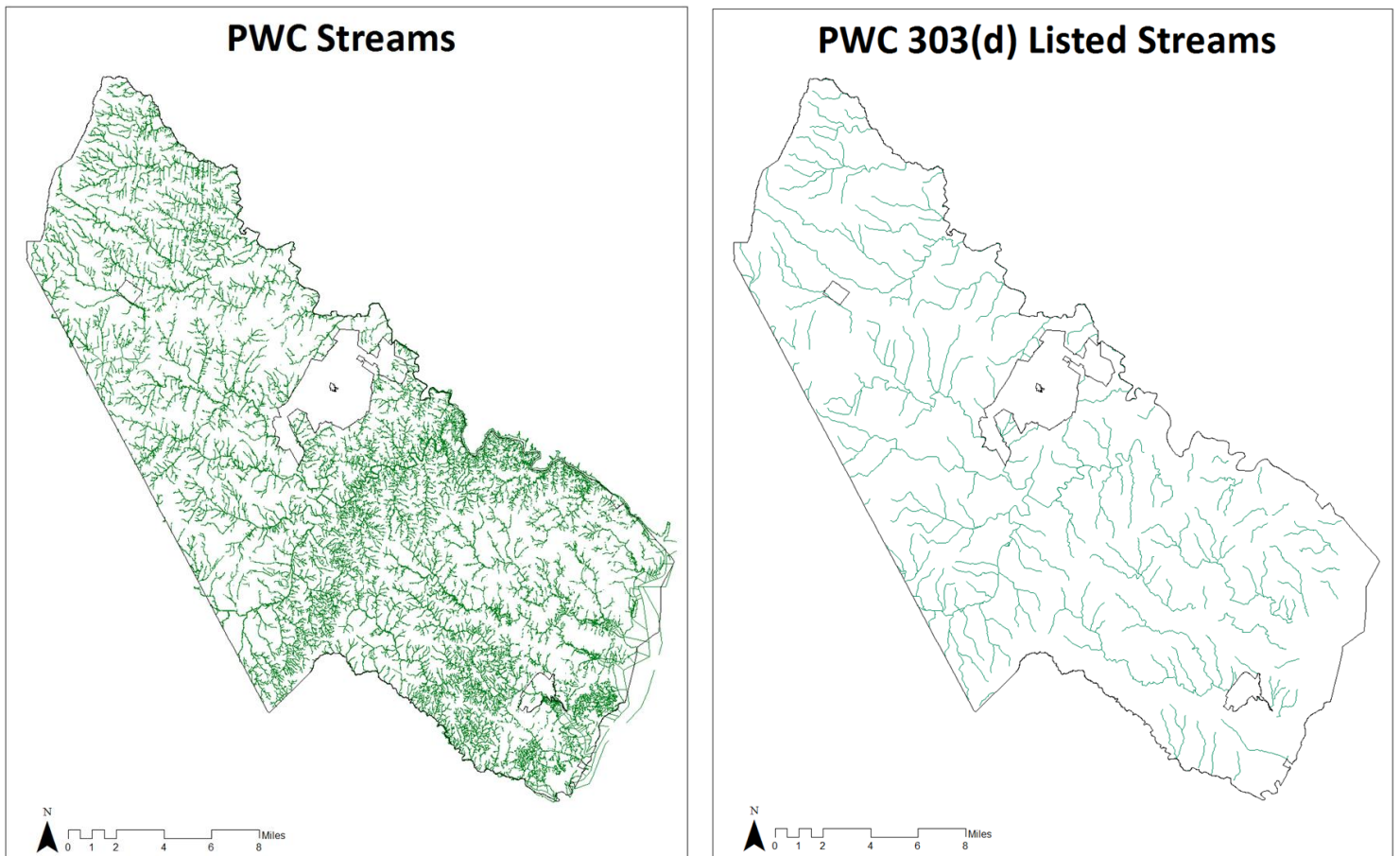


Figure 4: Streams and impaired streams within Prince William County's jurisdictional area

Next an assessment of potential areas for cross connections between the storm sewer and sanitary sewer system was performed. Areas where the storm and sanitary sewer system overlap create potential for cross contamination due to leaking sanitary sewer infrastructure. This analysis was accomplished by overlaying the storm and sanitary sewer layers using GIS, and isolating the locations where they overlap. These locations were turned into point features and assigned a uniform potential discharge probability score (20). This analysis is displayed below in Figure 5.

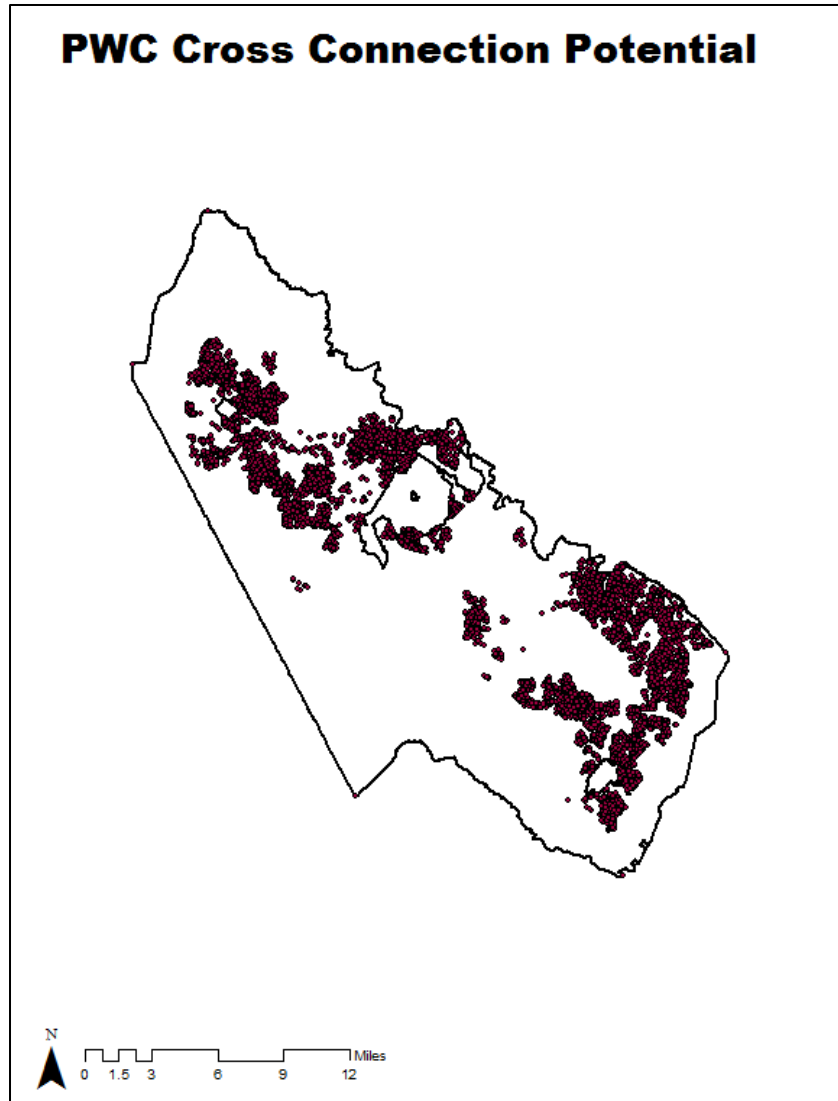


Figure 5: Location of potential cross connection sites within Prince William County

Often, areas with a higher percentage of impervious surfaces tend to contribute greater to pollutant loads. To account for this, a layer depicting impervious surface within the County was incorporated in the model. Impervious surface area is assigned a discharge score of 1. A low score was selected because the large areas covered by impervious surface can cause large impacts to model outputs. A score which balances the impact of impervious surface on pollutant output without weighing too much into model outcomes was desired. Figure 6 below shows impervious area within the County.

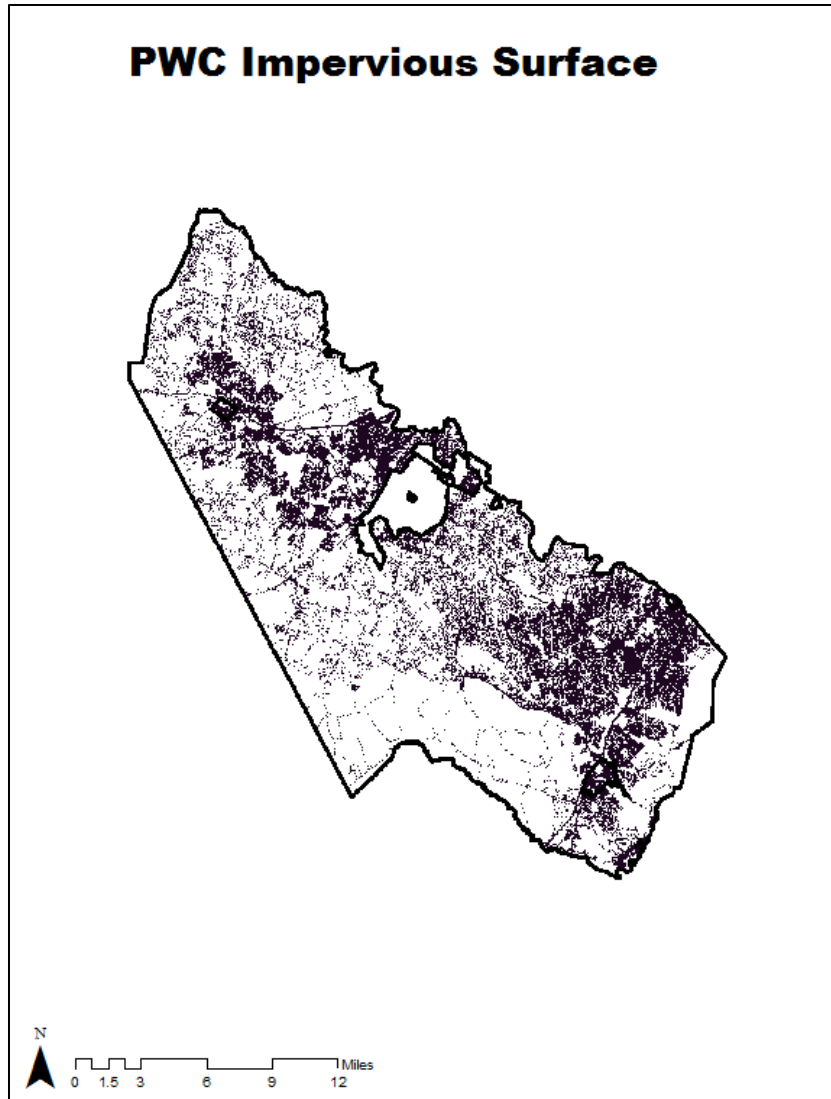


Figure 6: Impervious surface in Prince William County

Lastly, discharges from residential areas had to be accounted for. Although commercial and industrial areas were well represented in the hotspot analysis, residential areas within the County were lacking sufficient input into the model. Using a layer depicting the residential development in the County, these areas were isolated and assigned a discharge score of 1. This gives residential areas a proportioned impact on hotspot scores.

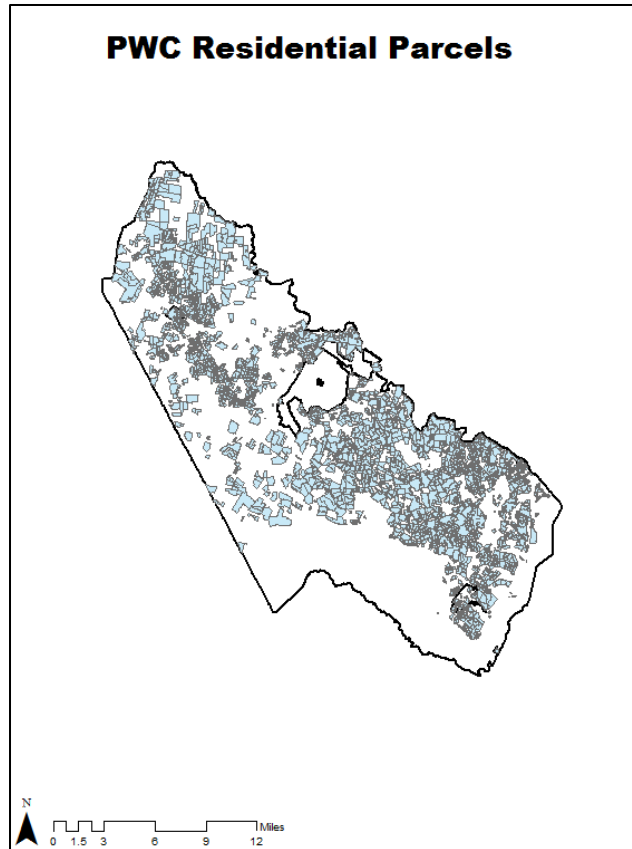


Figure 7: Impervious surface in Prince William County

Hotspot Analysis

Once the layers were manipulated to yield the desired data they had to be combined to produce the final hotspot analysis. Layers were converted from a polygon, line, or point to a raster format to allow for easier compatibility of the various data layers. The Raster format represents data in small cells, allowing for a point by point analysis of each location on the map. It facilitates the ability for data with different layer types (i.e. polygon, line, point) to be combined simply, since they are not compatible otherwise due to differences in shape, size, and location. Areas within a layer where empty space exists cause discontinuity when trying to combine them into the overall analysis. To remedy this, the Reclassify Raster tool was used. This tool removes the “Nodata” classification automatically applied to empty spots in the layer during the raster conversion, allowing a numerical value to be assigned in its place (0). Without this step, only the overlapping areas of data in each layer would be included in the analysis and an incomplete assessment of discharge probability would result.

Each layer was combined for hotspot analysis using the Raster Calculator tool. This tool performs simple mathematical operations at the cellular level, to combine the data into an overall assessment of County hotspots. The tool essentially adds together each included layer combining the discharge probability scores from each cell. Figure 8 below shows a simple representation of this process.

Data is then transposed to the ADC index and watershed maps of the County through simple Spatial Statistics tool. The Spatial Statistics tool performs a basic statistical analysis on raster cells within a specified polygon. For the purpose of this study

the mean and sum of probabilities within both the ADC index areas and sub-watersheds of the County were assessed.

Analysis using Mean vs. Area (Average) Score

There are various ways to interoperate the data output from the model. A score had to be generated for each ADC Index number and watershed in order to effectively assess and utilize model outputs; however, this presented a problem as to what mathematical method of assessment should be used. The ArcGIS model is generated to output values for the mean, median, minimum, maximum, and sum of each individual ADC index area and watershed. As stated before, for the purpose of this analysis, only the sum and mean probability of discharge are of interest. The sum is the result of all cells within the identified area added together, while the mean is the average cell value within the area. For a watershed scale analysis, the mean probability of discharge must be used. This is because the area of each watershed differs, leaving the sum of the probabilities of each watershed highly dependent on its size. Larger watersheds will accommodate more cells leading to a larger overall probability of discharge. The ADC index, on the other hand has a uniform area removing the effect of size on the output. This allows for the sum of probabilities to be used, which gives a better overall assessment of the characteristics within that area.

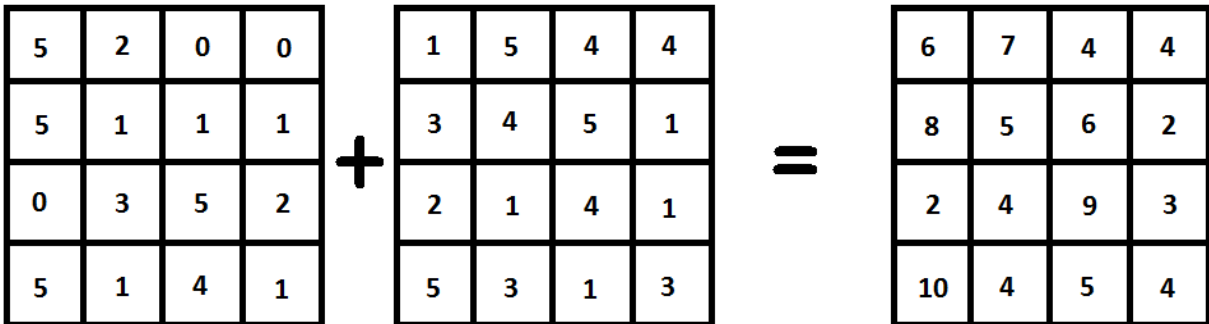


Figure 8: Raster Calculator Example

Isolation of Hotspots and Identification of Outfalls of interest

The first step in using hotspot analysis to identify outfalls for field inspection is to select the ADC index number with the highest probability of discharge is selected from the generated list. The ADC index was chosen as a basis for field analysis for a few reasons: it is easy to navigate to, being the basis for street map navigation; it encompasses a relatively small area, typically containing 8-10 outfalls per Index which is a good size for a day’s field assessment; and, it can be combined easily to into a larger area allowing for an broader perspective on illicit discharge trends. Assessing discharges on a watershed scale would incorporate too large of an area and would not be suitable for a quality comparison between areas of the County. Once an index number is selected, then an index area map is generated showing all outfalls, storm sewer system, roads, and land uses of interest. Each map is created using ArcGIS tools to zoom to the applicable map

location (ADC Index number), and to highlight all applicable features. From this map, a list of all outfalls and their size can be created. This map, with outfall information, can then be used as a field guide for the outfall monitoring.

Model Calibration

Model calibration is an important step in model development. Model outputs must be adjusted to more closely portray actual conditions. Since the raster layers used to sum severities in the model skew the data by giving more weight to larger polygons, point-sized items like outfalls must be given a larger value to compensate and allow ADC areas to more closely reflect the desired weight proportion between inputs. The value given to outfalls was adjusted so that their impact on model outputs was more representative of actual conditions.

Originally, some areas of the map contained a high probability of discharge, despite being located in more rural areas. This was found to be due to an increased proportion of streams meandering throughout the grid. In order to correct this, a balance was struck between the impact value given to streams, and their actual impact on real-world conditions. Similarly, rural areas were triggering high probabilities of discharge due to the age of parcel development despite not having substantial storm sewer systems. To remedy this, the residential and commercial layers were given a larger score to better reflect in-situ conditions.

The model will continue to be adjusted as more data becomes available pertaining to discharges within the County. Data will be used to validate and or adjust assumptions made in this version of the model.

Results and Conclusions

The results of the analysis showed areas with the greatest probability of discharge within Prince William County were consistent with previous field observations and expectations. The Route 1 corridor, Bull Run commercial area, and Potomac Mills Mall all generated high probabilities of discharge. Residential areas had a fairly constant probability of discharge. The highest probability of discharge was located around the specified land uses of interest including shopping centers and auto-related industrial areas. Rural areas with little to no storm sewer system recorded the lowest probability of discharge, as would be expected. A detailed map displaying parcel-based discharge probability was created using the methods described below (see figure 9). The land uses of interest are distinctly represented in red describing the highest discharge potential. Residential areas shown primarily in yellow present a moderate discharge potential. Rural areas are mostly indicated in blue, describing a low discharge potential which are most likely out of the scope for dry weather discharge monitoring. Outfall locations and numbers are not factored in this analysis.

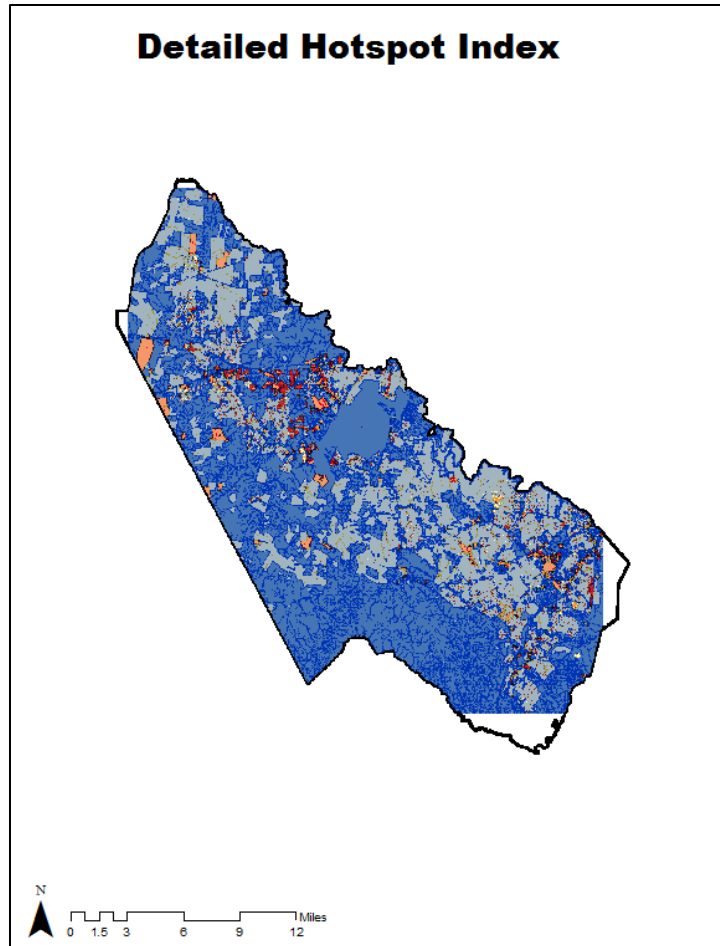


Figure 9: Detailed Discharge Probability

Previously a hotspot analysis was performed on a watershed scale. However, a watershed approach to discharge monitoring tends to skew the data, since discharge probabilities are averaged over the entire watershed making smaller pockets with high discharge; therefore, the ADC index method was determined to be the best.

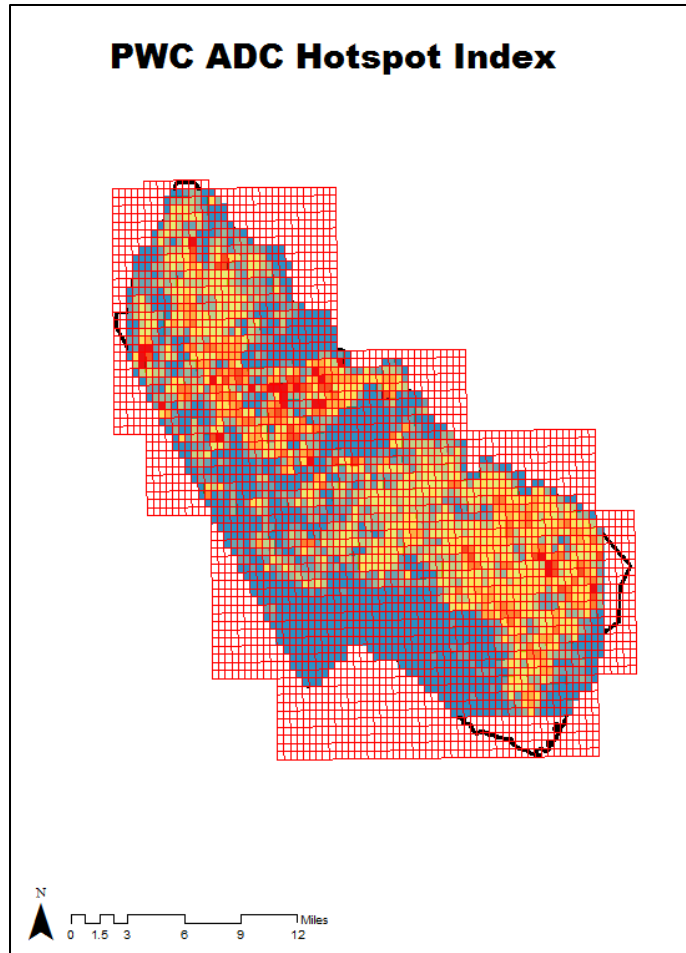


Figure 10: ADC index probability of discharge

The ADC index hotspot map, shown above (figure 10), is used for the inspection scheduling and field analysis of outfalls. As indicated in the parcel and watershed level assessments, County hotspots exist along the Route 1 corridor, Bull Run commercial area, and Town of Haymarket. Unlike the parcel and watershed level assessments, the ADC hotspot map provides a more thorough analysis of where the most probable locations for illicit discharge might actually be present. Table 3, shown below, displays the 50 ADC index areas with the highest probability of discharge. Sorted from highest to lowest, the table serves as the basis for the scheduling of dry weather outfall monitoring in the County.

Table2: Sample Sum and mean probability of discharge scores by ADC index number

ADC_ID	MEAN	SUM
5992-C8	34916	56459172
5990-K5	34175	54919225
5756-G7	31523	51130306
5756-H7	30976	50243072
5991-A6	28771	46896730
5756-G3	27086	43879320
5992-C7	25886	42427154

5992-D7	24576	39641088
6110-G2	24456	39349704
5756-J7	24228	39322044
5757-A2	24170	39227910
5992-A6	23838	39189672
5991-A7	23096	37461712
5992-B6	22846	36782060
5991-A5	22637	36694577
5756-H4	22435	36322265
5992-G9	21579	35605350
5992-H8	21376	35270400
5756-K7	20886	33918864
5874-H7	20478	33542964
5638-G10	20215	33132385
5756-H5	20055	32609430
5756-K6	19838	32097884
5755-C4	19460	31914400
5872-C1	18951	30814326
5992-D8	18811	30624308
5874-J7	18896	30592624
5992-H7	18536	29842960
5756-H8	18295	29839145
5991-G7	18524	29675448
5756-J5	18332	29624512
5992-K10	17877	29211018
5990-C9	17834	29087254
5991-F7	17543	29033665
5992-E10	17820	28921860
5872-H10	17359	28746504
5756-G10	17724	28624260
5756-J6	17357	28222482
5991-B7	17339	28193214
5754-F5	17186	28167854
5756-C10	17250	28031250
5638-H10	17069	27839539
5756-G8	17085	27677700
5992-K6	16869	27597684
5755-E4	16728	27233184
5872-D1	16318	26777838
6110-E3	16210	26762710
5757-H6	16567	26623169
5991-K1	16215	26527740

Future Development of Model

The model will be updated as more detailed discharge information is gathered through the county monitoring program. In addition, updated data layers pertaining to the storm sewer system, outfalls, impaired stream listings, age of development, county land use, and parcel location will continually be introduced to the model. If more specific data on the age of storm sewer infrastructure becomes available, this will also be included in the model. Also, when the extent of the County's MS4 system is identified, model data will be adjusted accordingly. Finally, methods to incorporate the history of complaints and poorly maintained commercial areas will be evaluated and incorporated, if possible, into the assessment. All steps to increase the accuracy of the hotspot analysis will be evaluated for the model on an annual basis, and the model outputs will be re-assessed. An evaluation of the accuracy of the hotspot analysis, as well as verification of model outputs will be conducted on an annual basis.

2. Outfall Inspection Scheduling and Assignment

Outfalls are scheduled and assigned according to the probability a discharge may occur and the probability that discharge may cause harm to the environment. Outfalls can also be assigned through a citizen complaint/report. The Hotspot identification model arranges the areas within the County most likely responsible for Illicit Discharges by ADC index Grid. This prioritized list of ADC grids is updated yearly with an update of the Hotspot ID model, and is re-set to include the entire County at the beginning of every permit cycle.

a. Scheduling Dry Weather Outfall Inspections

Outfall inspections are scheduled according to a prioritized list of ADC grid zones. The grid zone list is exported from the GIS Hotspot model to an excel spreadsheet. This list is kept in the Dry Weather Monitoring folder located on the W: drive in the appropriately named folder for the current fiscal year (W:\Environmental Services\Watershed Management\PWC IDDE\FY 20XX\DWM). The spreadsheet will be set up according to the following template:

Table 1: ADC Zone Prioritized List Template

ADC Grid	Score (Sum)	Status	Date Completed
5992-C8	5638	Complete	4/9/2015
5990-K5	5635	Scheduled	-

The ADC grid column indicates the ADC grid area; the score column is derived from the hotspot model (the sum of the discharge probabilities) and is how the ADC grid areas are prioritized; the status is the current condition of the outfall inspections within that grid, and is assigned as follows:

- Complete – All outfall inspections completed within ADC grid
- In Progress – Outfalls still being inspected within Grid

Scheduled – Outfalls assigned to Inspector but have not yet been completed
 N/A – No outfalls or PWC urban storm sewer system is located within ADC grid

The date the ADC grid outfalls have been inspected is indicated in the Date Completed Column. This list is to be updated daily when outfall inspections occur, or after completing required inspections within an ADC zone.

b. Scheduling High Risk VPDES Permitted Facility Outfall Inspections

The County maintains a list of VPDES outfalls. This list is updated quarterly according to additions/subtractions in permits issued by DEQ within Prince William County’s MS-4 service area. Similar to the ADC zone inspection schedule for Dry Weather Monitoring, this list is maintained on the County’s W: drive (W:\Environmental Services\Watershed Management\PWC IDDE\FY 20XX\Industrial and High Risk). The format for this list is as follows:

ID	Outfall size	Drainage area	Address	Type	City	Zip	Permit Number	Facility	GPIN	ADC Zone
46178	15	0	DAWSON BEACH	RD	WOODBIDGE	22191	VAG110068	Arban and Carosi Incorporated	8492-03-8636	5992-H7
46176	15	0	DAWSON BEACH	RD	WOODBIDGE	22191	VAG110068	Arban and Carosi Incorporated	8492-03-8636	5992-H7
46172	15	0	DAWSON BEACH	RD	WOODBIDGE	22191	VAG110068	Arban and Carosi Incorporated	8492-03-8636	5992-H7

Outfalls are scheduled to be monitored at a higher frequency, once per year, then those without VPDES permits. Outfalls with higher probability of discharge will be prioritized in monitoring efforts. Similarly, the County maintains a list of high risk dischargers. Outfalls of high risk facilities are to be monitored at least once during the permit cycle, this is due to the much greater volume of high risk outfalls than VPDES permitted facilities.

c. Inspections Due to Reported Discharges

Often complaints of discharges are received by phone or email by citizens or County staff, or through staff window screening exercises (random inspections of the County from daily transport activities). These discharges should be assigned to inspectors as quickly as possible in order to catch potential discharge sources. Reported discharges should be documented in an excel database located in the W:\Environmental Services\Watershed Management\PWC IDDE\FY 20XX\Discharges. An inspection report shall be created for each reported discharge, and kept in a folder designated for each report. This folder should document inspection and follow-up activities including any NOV’s Issued. Folders will be named for the location of the discharge.

d. Assigning Outfalls to Inspectors (Web applications)

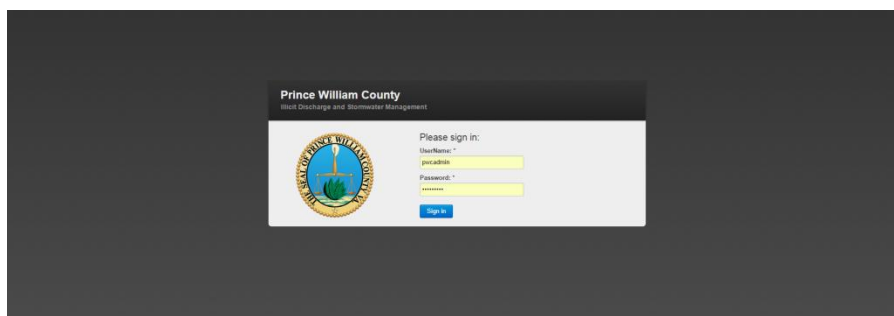
Prince William County manages its IDDE program through a mobile and web based application. This application is designed to provide consistency and streamline the Dry Weather Monitoring program. The Mobile IDDE Application allows the assignment of inspections to field staff from a desktop based website. The site also allows for adding and removing inspectors, reviewing inspections made in the field in real time, and printing/exporting Dry Weather Monitoring reports.

i. Adding inspectors

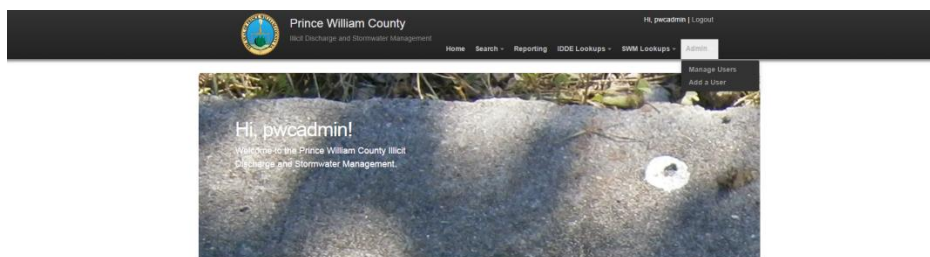
In order to assign inspectors outfalls for inspection, the user (inspector) must be added to the system. This is accomplished through the web based portion of the application. The ability to manage inspectors within the program is limited to Admin Users. The following steps detail the process for adding and removing inspectors:

Adding Inspectors:

- 1) Log into the PWC IDDE Website at <https://pwcstormwaterapp.timmons.com>.



- 2) Locate the far right dropdown menu item labeled **Admin** and select **Add a User** from the dropdown menu.



- 3) Enter the new user's information in the provided form and select **Add User**.

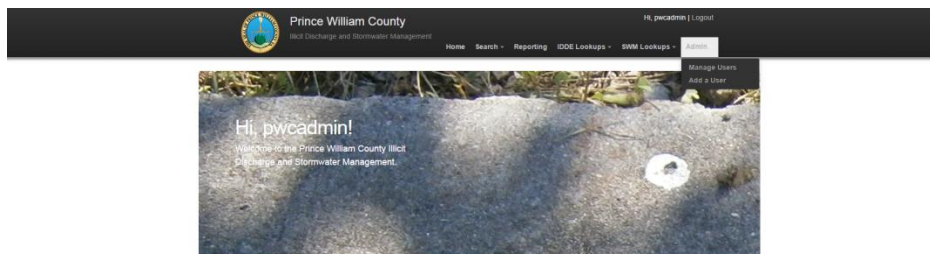
User names should be established as the users PWC ID (format abc#####a) with (abc) consisting of the user’s initials, and (#####) consisting of the last four digits of the user’s phone number. The password will be set by the administrator to the request of the new user being added. Changes to passwords can only be administered by system admins. Admin roles will only be applied to program supervisors and Public Works management staff.

Removing & Editing Inspector Information:

- 1) Log into the PWC IDDE Website at <https://pwcstormwaterapp.timmons.com>.



- 2) Locate the far right dropdown menu item labeled **Admin** and select **Manage Users** from the dropdown menu.



- 3) This brings up a list of registered users; from here you can edit existing users or deactivate users no longer needed to be in the system. Only users performing inspections and relevant program managers and administrators should be listed as

active. To deactivate an account, simply click the red **X** in the row containing the user to be deactivated.

The screenshot shows the Prince William County IDDE application interface. At the top, there is a navigation bar with the county logo and the text "Prince William County" and "IDDE Discharge and Stormwater Management". Below the navigation bar, there is a search bar and a list of menu items: Home, Search, Reporting, IDDE Lookups, PPM Lookups, and Admin. The main content area displays a table of users with the following columns: Username, Name, Email, Active, Created Date, Details, Edit, Deactivate, and Activate. The table contains five rows of user data.

Username	Name	Email	Active	Created Date	Details	Edit	Deactivate	Activate
peadmin	Admin	amy.zech@timmons.com	True	4/6/2015				
Rjocz4797	Robert Jocz	rjocz@pwcgov.org	True	4/7/2015				
tech1	First Tech	amy.zech@timmons.com	True	4/6/2015				
tech2	Second Tech	amy.zech@timmons.com	True	4/6/2015				
tech3	Third Tech	amy.zech@timmons.com	True	4/6/2015				

- 4) To edit a user’s information, such as instances where a user’s email, admin status, name, phone number, or password needs to be changed, click the edit icon in the column containing the user to be edited. This brings up the Edit User Screen

The screenshot shows the "Edit user:Rjocz4797" screen. The form contains the following fields: Name (Robert Jocz), Role (IDDEAdmin), Email (rjocz@pwcgov.org), and Phone (703-792-4797). There are also buttons for "Change Password", "Cancel", and "Commit changes".

From this screen, any needed changes can be made. Once edits are completed, select the **Commit Changes** icon. Edits are then saved and the app returns to the Manage Users page. If a password change is desired, select the **Change Password** icon and enter new password information. Select the **Commit Changes** icon to save the new password information to return to the Manage Users page.

ii. Assigning Inspections

Outfall inspections are assigned according to ADC grids prioritized by the hotspot analysis described in section IV.1. The IDDE application allows for the assignment of a single outfall, or a set of outfalls within a selected ADC grid. Routine inspections are assigned by grid, while individual complaints, follow-up inspections, and special inquiries are assigned by individual outfall. The following steps detail the process for assigning inspections:

Assigning Outfalls by ADC Grid:

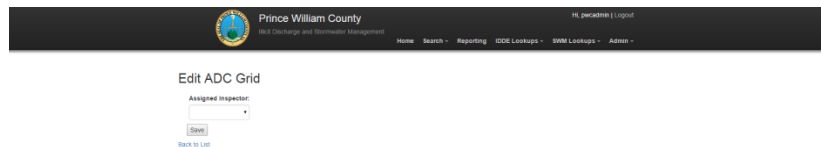
- 1) Log into the PWC IDDE Website at <https://pwcstormwaterapp.timmons.com>.
- 2) On the home screen locate the **Search** icon and select **ADC Grids** from the dropdown menu.



- 3) The ADC Grids page displays all the grid numbers from within the County. The Search Menu on the right of the ADC grids page allows the user to search for the ADC grid map page number, and to search for what grids have been assigned to which inspectors. To assign a grid to an inspector, first identify the next grid to be inspected according to the spreadsheet described in section IV.2.a (W:\Environmental Services\Watershed Management\PWC IDDE\FY 20XX\DWM). Use the **Search** bar on the left of the page to search for the appropriate ADC grid map page and identify the correct grid. To add an inspector to the grid select the edit icon located in the column of the targeted ADC grid number.

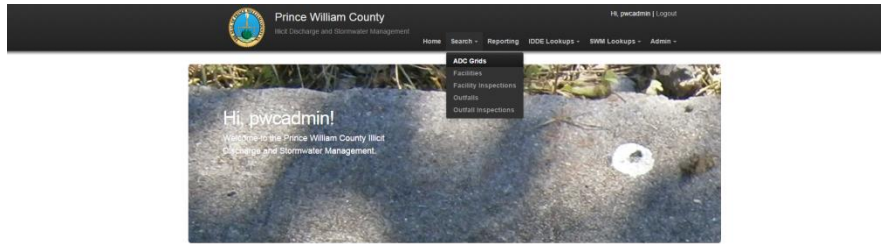
ADC Grid	Map Page Number	Block	Column	Row	Assigned Inspector	Edit	Details
5396-A10	5396	A10	A	10			
5396-B10	5396	B10	B	10			
5396-C10	5396	C10	C	10			
5396-D10	5396	D10	D	10			
5396-E10	5396	E10	E	10			
5396-F10	5396	F10	F	10			
5396-G10	5396	G10	G	10			
5396-H10	5396	H10	H	10			
5396-J10	5396	J10	J	10			
5396-K10	5396	K10	K	10			
5517-F1	5517	F1	F	1			
5517-F2	5517	F2	F	2			

- 4) Select the desired inspector in the **Assigned Inspector** dropdown menu to assign all of the outfalls within that grid to a specific inspector. Once an inspector is selected, select the **Save** icon to complete the assignment.



Assigning Individual Outfalls:

- 1) Log into the PWC IDDE Website at <https://pwcstormwaterapp.timmons.com>.
- 2) On the home screen locate the **Search** icon and select **Outfalls** from the dropdown menu.



- 3) The Outfalls page allows the user to search for specific outfalls by ADC grid, Assigned inspector, Outfall ID, or for outfalls that have been flagged for notice. To assign an outfall to an inspector, search for the desired outfall by its Outfall ID. Once the outfall has been located, select the **Edit** icon in the column of the desired outfall.

The **Edit** Outfall page shows all information pertaining to a particular outfall. These items can be edited by admin staff if needed. To assign an outfall to an inspector, select the appropriate inspector from the dropdown menu in the **Assigned Inspector** tab. When completed, select the **Save** icon at the bottom of the page to save the information, and then the **Return to List** icon to return to the Outfalls page.

3. IDDE Equipment

The condition and type of equipment used in field inspections is crucial for maintaining consistent and accurate results. Proper calibration, storage, and upkeep, are also important aspects of ensuring field measurements hold up to standards required for enforcement of County stormwater regulation.

a. List of Equipment

The following is a list and basic description of equipment used for IDDE monitoring. Equipment falls into two types, field equipment and lab analysis equipment. Field equipment is used during field inspections, and should be taken out for all field inspections. Lab analysis equipment is used for water quality analysis, and can be used either in the field or in the office.

Field Equipment:



-Field Bag: Transports field equipment



-YSI Professional plus Multimeter: Measures in field water quality parameters
Temperature, pH, Conductivity, and DO



-Scoop: Allows for the capture of low flows



-**Measuring tape:** Allows for measurement of flow depth and Outfall diameter



-**Flashlight:** Used for viewing flow conditions in low light areas (inside the storm sewers)



-**Manhole Hook:** Aids in opening manholes for inspection



-IPad: Runs the IDDE Mobile Application, guides field and follow up inspections



-250mL Sample Bottles: Used for collecting and storing field samples



-Pole Scoop: Used for taking samples in hard to reach places

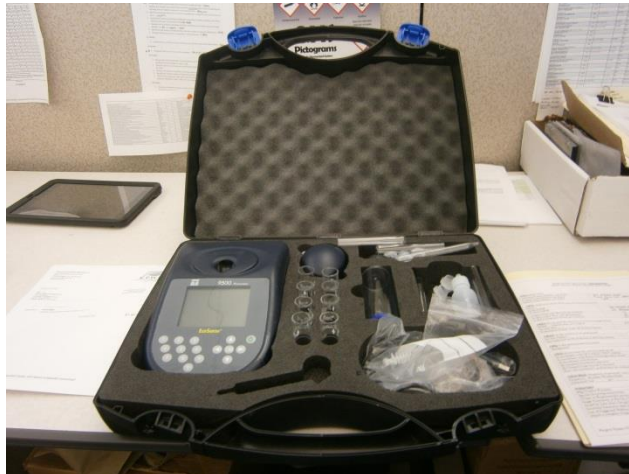


-Cooler: To hold samples until analysis can be done on the sample



Lab Analysis Equipment:

-YSI 9500 Photometer kit: Performs basic water quality tests for exceedance of water quality parameters.



-Chemtronics Detergents Test Kit: Tests for concentration of detergents in stormwater



-PWCSA Water Quality Analysis Kit: Used for more extensive water quality tests through the PWCSA.



b. Equipment Calibration

Proper calibration of equipment is crucial to validation of field results. The frequency of calibration is dependent on the equipment being used. The equipment requiring calibrations are the YSI Multimeter, YSI 9500 Photometer, and Chemtronics Detergent test kit. Below are the calibration timelines for each instrument:

YSI Multimeter: Once per week

YSI 9500 Photometer: Per use

Chemtronics Detergent test: Per Use

Instructions for calibration of each instrument are included in the equipment manuals located in [Appendix A](#) of this document. Calibration forms are to be filled out with each calibration of the YSI Multimeter and are to be kept after the calibration instructions in [Appendix A](#) of the Main Program Manual to be kept at the desk of the IDDE Program Chief Inspector. No calibration forms are needed for the calibration of the YSI Photometer and Chemtronics Detergent test as calibration performed as part of the testing process.

Instruments and fluids used in the calibration of field equipment are to be kept in the locked drawer of the IDDE Program Managers office at 5 County Complex Court suite 170, Woodbridge VA, 22192. Instructions for ordering new supplies are described in section IV.3.d. of this document.

c. Equipment Maintenance, purchasing, and Storage

The proper maintenance and storage of equipment is important to maintain its lifespan and accuracy. Proper storage also reduces the possibility of theft and damage. All

equipment will be stored in the locked drawers of either the IDDE Program Manager, or Chief Inspectors office at 5 County Complex Court suite 170, Woodbridge VA, 22192. Maintenance activities are to be performed as instructed in the instrument manuals located in [Appendix A](#) of this document.

The ordering of new equipment or supplies is authorized through the IDDE Program Manager. Purchasing should be consistent with all department procedures and guidelines.

An inventory of all IDDE equipment, calibration, and testing materials is updated quarterly and maintained in an excel spreadsheet located in the IDDE W: drive folder (W:\Environmental Services\Watershed Management\PWC IDDE)

d. Databases

All files and inspections should be stored in appropriate databases. There are two databases associated with the IDDE program. The DWM database stores all inspection data created using the DWM IDDE mobile application and is accessible using the DWM IDDE website. This server is hosted by a County Consultant, and is maintained through a service fee. The second database is the IDDE folder on the W: drive located on Prince William County's server (W:\Environmental Services\Watershed Management\PWC IDDE). This database is to include all documents/forms/reports as outlined in this document. The folder is organized by fiscal year and by type of IDDE activity (DWM, industrial, and General Discharges): DWM, includes all activities under the Dry Weather Monitoring program, Industrial, which includes all activities involved in inspecting Industrial Stormwater VPDES permitted and High Risk facilities, and General Discharges, includes all discharges reported to or observed by IDDE staff not through Dry weather monitoring. Discharges will also include reports from the Fire Marshall's office.

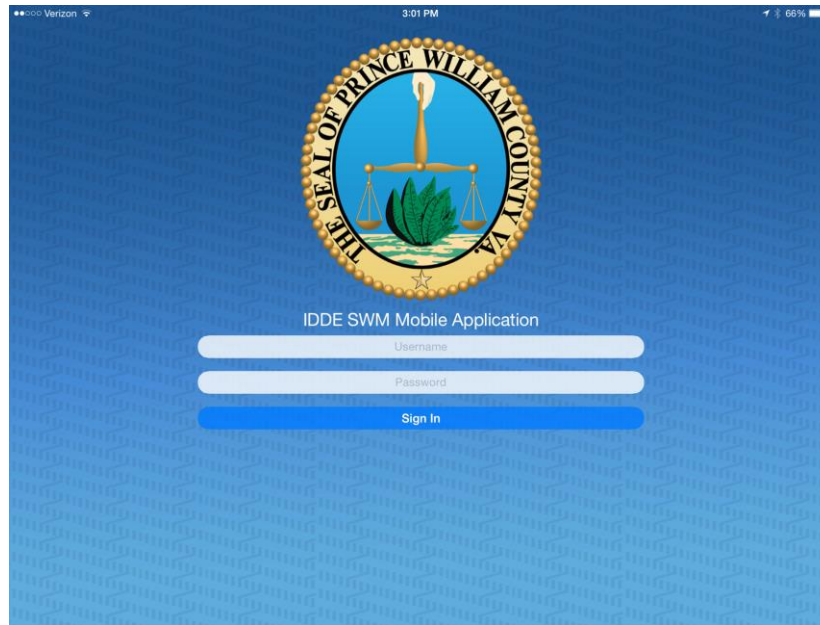
V. Inspection

1. DWM Field Inspection Procedures

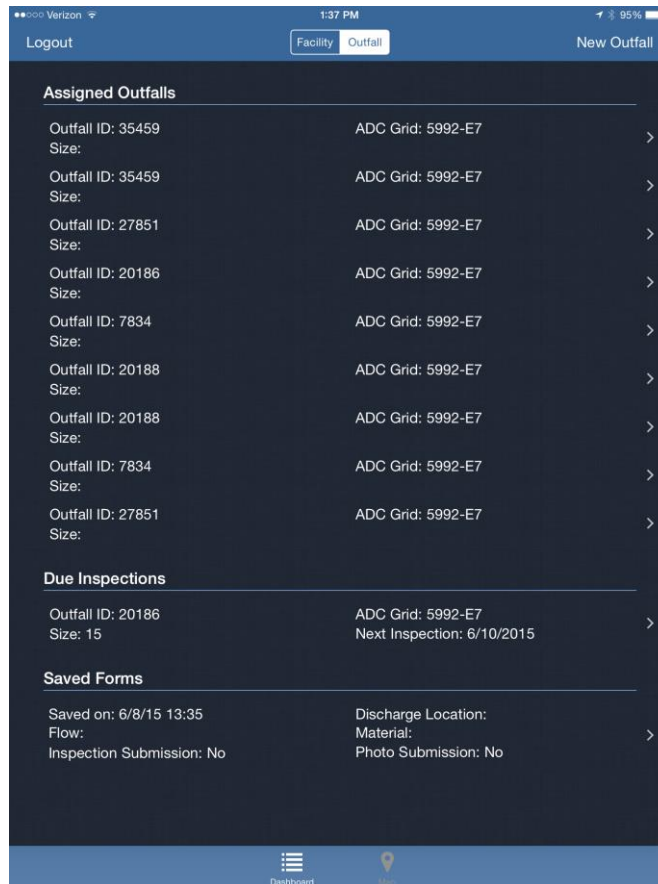
Following the completion of pre-inspection procedures and arriving at a site for inspection, the subsequent procedures are to be followed for Dry Weather Monitoring Inspections. Inspection procedures are important for consistency and accuracy of inspections. Field procedures are to be followed for every Dry Weather Monitoring inspection. Inconsistencies during inspections from standard procedures established in this document should be documented as part of the inspection. Instances where standardized procedures are not followed should only occur in extenuating circumstances. Field inspections are guided by the IDDE iPad Application and are described in the following paragraphs:

a. Basic Inspection Procedures – IPAD Application

The outfall inspection schedule is determined through the hotspot analysis procedures defined in section IV.1 of this manual. The first step when performing an inspection is to sign on to the Mobile IDDE Inspection Application. This is completed by using the ID and password assigned to the inspector as described in the *Assigning Outfall Inspections* ([section IV.2.c.ii](#)) above. Inspectors sign into the application using the sign in page shown below:



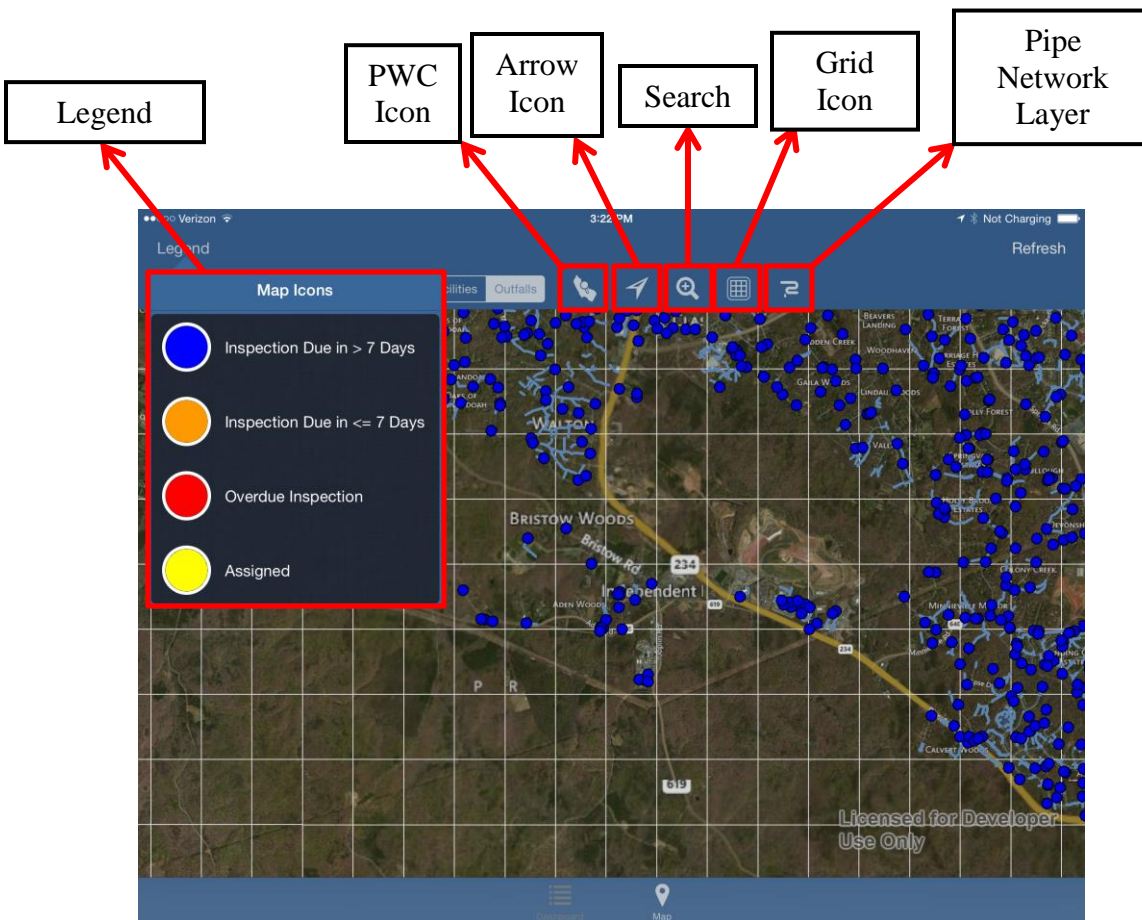
Once signed in, the application lists an inspectors assigned inspections, followed by inspections that have previously occurred that are due for re-inspection, and finally inspections that have forms that could not be submitted and have been saved to the application for later submission, this is typically due to lack of internet connection.



Shown above is the main inspection screen. Items in this window are detailed as follows:

- **Logout** – Logs the user out of the application, returns to sign in screen
- **New Outfall** – Allows user to add an outfall not currently in the inventory (See Section ____)
- **Facility** – Displays assigned BMP facility inspections
- **Outfall** – Displays assigned outfall inspections
- **Assigned Inspections** – Inspections assigned to be completed by user
- **Due Inspections** – inspections due for re-inspection by user
- **Saved Forms** – Saved inspection forms, to be submitted when connection to server is returned
- **Dashboard** – lists inspections due by user
- **Map** – displays map of outfall and BMP features nearby user’s location, allows for inspections to be completed by manually selecting features (See Section ____)

An inspector can initiate an inspection two ways. By selecting an outfall from the list of assigned, due, or saved inspections by pressing on the desired outfall for inspection from the main inspection screen, or by selecting an outfall from the map screen as described below.

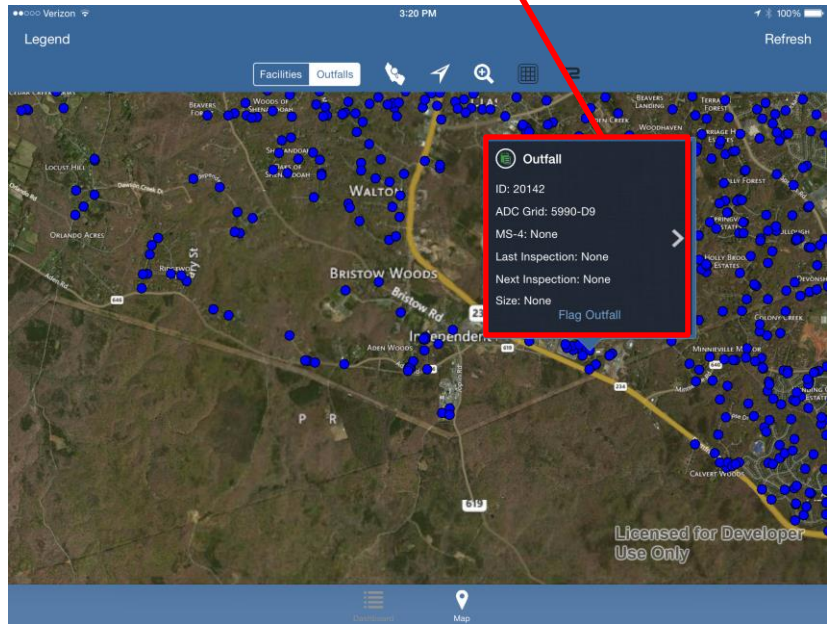


Outfalls are color coordinated in accordance to their inspection status. As the legend in the figure above explains, outfalls with inspection due in greater than 7 days, or do not have inspections assigned are blue; inspections that are due within 7 days are orange; inspections that are overdue are in red; and outfalls that have inspections assigned to an inspector are yellow. The map page also contains a unique set of icons. These are described below

- **Legend** – Displays a description of map icons
- **Outfalls** – filters map to show only assigned facilities for inspection
- **Facilities** – Filters map to show only assigned facilities for inspection
- **Refresh** – Updates map to include most recent inspection status
- **PWC Icon**– Zooms map out to county level
- **Arrow Icon** – Zooms map into current location
- **Grid Icon** – Displays ADC grid lines
- **Search** – Zoom map to specific outfall/feature
- **Pipe Network layer** – Toggles map to display stormsewer pipe network

Selecting an outfall by pressing on the outfall icon prompts the display of a new window. This window provides quick information on the outfall such as; outfall ID, ADC grid number, MS-4 operator, Last inspection date, next inspection date (if assigned), and the size of the outfall. This helps inspectors identify the correct outfall for inspection in the field. An inspection can then be initiated by clicking on the arrow on the left hand side of the outfall information box.

Outfall Quick View Menu



The first step when starting an inspection is verifying the correct outfall is being inspected. This can be done by comparing the inspector’s location and the location of the outfall as designated on the map. Using the arrow key on the map page zooms into the inspector’s current location. Once selecting the outfall from the map page, the outfalls size can be used to identify the correct outfall for inspection. Further verification can occur once the inspection has been started.

To initiate an inspection click on either the desired outfall name in the dashboard screen, or select the arrow from the outfall information box for the appropriate outfall in the map page.

Inspection Menu

String Input

Slide Icon

Scroll Input

Discard	Menu	Save	Outfall Information
	Outfall Information		SITE (NOT VERIFIED)
	Outfall Inspection		Outfall ID: 51309
	Flowing Physical Indicators		ADC Grid: 6227-G3
	Non-Flowing Physical Indicators		WATERSHED
	Illicit Discharge Potential		Watershed: QUANTICO CREEK
	Outfall History		HUC Code: PL52
	Photos		MS-4 Operator select item
	Submit Inspection		Percent Pervious Surface <input type="text"/>
	Submit Photos		Percent Impervious Surface <input type="checkbox"/>
			TMDL
			Drainage Area (Acres)
			OUTFALL
			Material select item
			Shape Description select item
			Grouping select item

The figure above displays the basic inspection form. On the left side of the page in the dark blue box is the inspection menu. This guides how the inspection is to take place, allows the submission of the inspection, and facilitates navigation through the inspection. On the top of the inspection menu are the “Discard” and “Save” icons. “Discard” exits the inspection without saving information, “Save” causes the app to save the form as is, for later submission. Selecting both these options returns the user to the dashboard screen. There are three distinct input methods for data used in the app:

- **Scroll Input** - activated by clicking on “select item” icon, scrolling through the options with the inspectors finger, highlighting the desired item, then clicking on the field description to enter;
- **Slide Icons** - simple yes/no inputs, and are activated by clicking on the radial icon. Sliding the icon left indicates NO, and to the right indicates YES;
- **String Inputs** – blank spaces where words or numbers are entered. Clicking on the space prompts the IPADs keyboard to appear and allows the user to enter the applicable inspection information. Selecting “enter” on the keyboard enters the information into the form.

The inspection has 7 major pages associated with it, each with its own unique purpose. The inspection form is guided by the application and is based off of the EPA recommended Outfall reconnaissance Inventory (ORI) form. The inspection pages are as follows:

- **Outfall information** – Displays basic outfall information. Important for verification of outfall inspections. This information is confirmed during the first inspection of the outfall, and is locked so that only admin staff can change information after initial inspection.

Menu Item	Field/Value	Input Method
Outfall Information	SITE (NOT VERIFIED)	Text
Outfall Inspection	Outfall ID: 51309	Text
Outfall Inspection	ADC Grid: 6227-G3	Text
Flowing Physical Indicators	WATERSHED	Section Header
Non-Flowing Physical Indicators	Watershed: QUANTICO CREEK	Text
Illicit Discharge Potential	HUC Code: PL52	Text
Outfall History	MS-4 Operator	select item
Photos	Percent Pervious Surface	Text
Submit Inspection	Percent Impervious Surface	Text
Submit Photos	TMDL	Toggle
	Drainage Area (Acres)	Text
	OUTFALL	Section Header
	Material	select item
	Shape Description	select item
	Grouping	select item

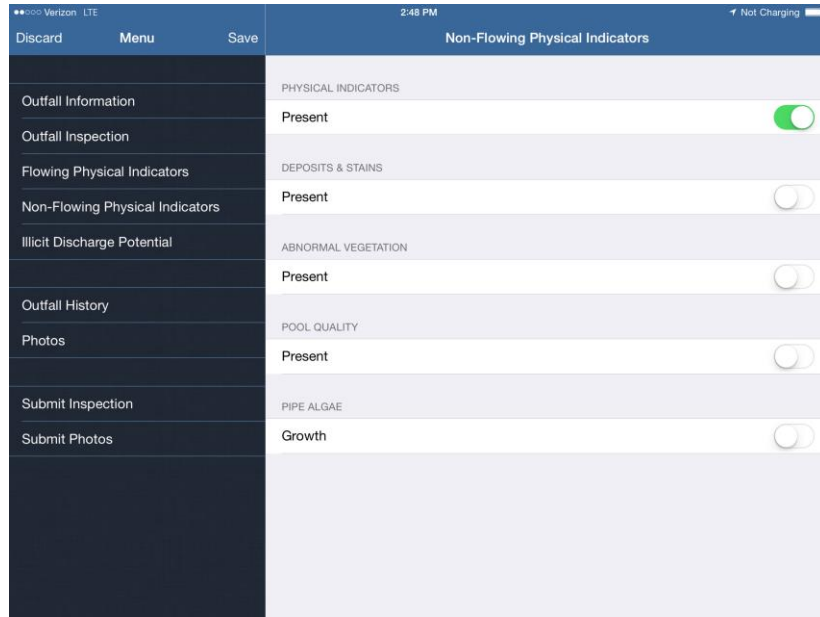
- Outfall Inspection** – Displays basic inspection to inspection outfall information. This includes weather information, outfall conditions and structure, land use, high risk designation, and dry weather flow conditions. This page determines how the outfall inspection is to proceed. Depending on whether flow is found, the app may or may not allow access to other sections of the inspection form.

Menu Item	Form Field / Value
Outfall Information	Date & Time: 6/15/15 14:31
Outfall Inspection	Completed By: pwcadmin
Flowing Physical Indicators	Retest of Outfall: <input type="checkbox"/>
Non-Flowing Physical Indicators	RAINFALL
Illicit Discharge Potential	Rain in the Last 24 Hours: select item
	Rain in the Last 48 Hours: select item
Outfall History	OUTFALL CONDITIONS
Photos	Discharge Location: select item
Submit Inspection	Discharge Condition: select item
Submit Photos	Headwall Condition: select item
	Maintenance Required: <input type="checkbox"/>
	Flow Present: select item

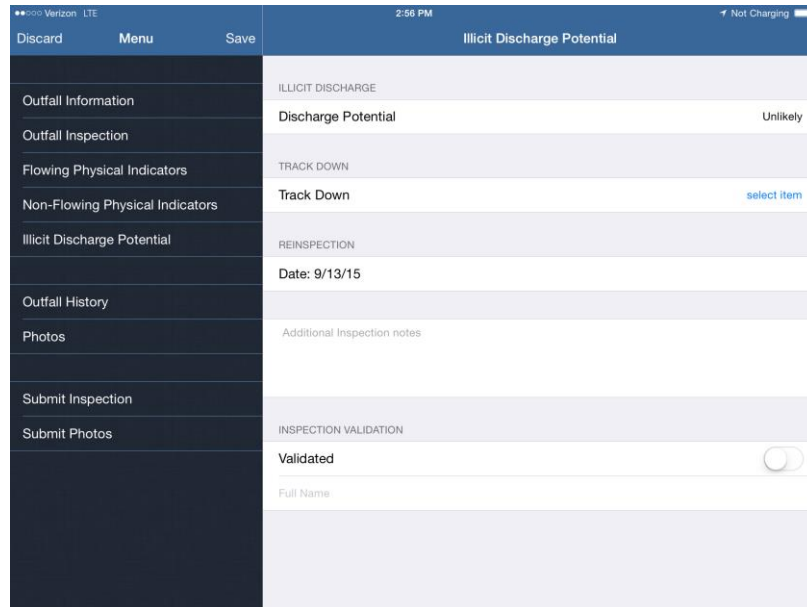
- Flowing Physical Indicators** – Displays inspection information of flowing outfalls. This page is only active when flow is found discharging from an outfall. Basic water quality parameters taken in the field by the YSI Multimeter can be entered here, as well as the sample number for samples taken for further water quality analysis (Section V.1.b.ii). Descriptions of flowing indicators are entered here as well, such as odor, color, turbidity, and floatables.

Menu Item	Form Field / Value
Outfall Information	FLOW
Outfall Inspection	Depth (inches)
Flowing Physical Indicators	QUANTITATIVE CHARACTERISTICS
Non-Flowing Physical Indicators	pH (pH units)
Illicit Discharge Potential	Specific Conductivity (µS/cm)
	Water Temperature (F)
Outfall History	Sample Number
Photos	ODOR
Submit Inspection	Present: <input type="checkbox"/>
Submit Photos	COLOR
	Present: <input type="checkbox"/>
	TURBIDITY
	Present: <input type="checkbox"/>
	FLOATABLES

- **Non-Flowing Physical indicators** – Provides information on the status of the indicators related to the outfall pipe itself. Information can be provided for both flowing and non-flowing outfalls. Information is entered here about deposits or stains, plunge pool vegetation, plunge pool quality, and the presence of algae.



- **Illicit Discharge Potential** – This page displays information pertaining to the overall status of the inspection including illicit discharge potential, trackdown status, and re-inspection date. Also in this section, inspectors verify that all information provided in the inspection form is correct. Notes specific to the inspection can be entered here as well. The discharge potential and date of re-inspection are automatically calculated according to information filled out within the inspection. Although the discharge potential is automatically filled by the app, it can still be edited by the inspector to indicate the best possible judgement. Validation is accomplished by entering the full name of the inspector, and sliding the validation confirmation field.



- **Outfall History** – Displays information from previous inspections of the outfall currently being inspected.
- **Photos** – Allows the attachment of photos to the inspection. Photos are taken by first selecting the Photos menu item, selecting the (+) in the upper right hand corner of the screen, pointing the lens at the object the photo is being taken of and pushing the icon to take the photo. A user can then choose to retake or use the photo by selecting the desired action at the bottom of the screen. Using the photo brings up a prompt to add comments to the photo. Once adding comments select done. This adds the photo to the inspection. Users can then return to the menu screen to complete the inspection. Up to 4 photos can be taken. These should be used to select an overall photo of the outfall, and any damage/maintenance issues with the outfall.

Once all applicable information is entered into the form the inspection must be submitted. Due to the potentially large amount of data necessary to upload photos, this is completed in two steps. To submit an inspection a connection to the internet is needed. This is accomplished either through a WIFI connection, or through the IPADs mobile network connection. If access to the web is not available, the inspection form should be saved using the “Save” icon in the upper right of the inspection menu. This saves a copy of the form and displays it on the main inspection page under “Saved Forms”. Once an internet connection is re-established, the form can be selected from the main screen by clicking on the inspection, and submitted as described above. Forms should be submitted ASAP upon the re-establishment of an internet connection.

In addition, sometimes the inspection assignment process identifies objects that aren't outfalls. These include features like culverts or pond outlets. Culverts and pond outlets should be noted in the inspection form. Inspection forms should be filled out to the minimum possible extent (size, shape, type, operator, land use, discharge potential

(unlikely), trackdown (complete), and validate inspection). These outfalls will then be removed from the system by deactivating them using the desktop application. This workaround is planned to be remedied in the future through more definitive outfall analysis and the update of the outfall layer.

Descriptions of inspection form components including descriptions of user inputs can be seen in the glossary of terms (Appendix B) of this document.

b. Sampling Procedures

The following procedures are to be followed when taking a sample for further analysis. Sampling procedures and tips are based off of the EPA's NPDES Storm Water Sampling Guidance Document. Samples are obtained using a simple Grab sample method. A grab sample is a discrete, individual sample. Analysis of grab samples character the quality of a discharge at the given time of the discharge and is well suited for determining contents of a Dry Weather Discharge.

i. Capturing Sample

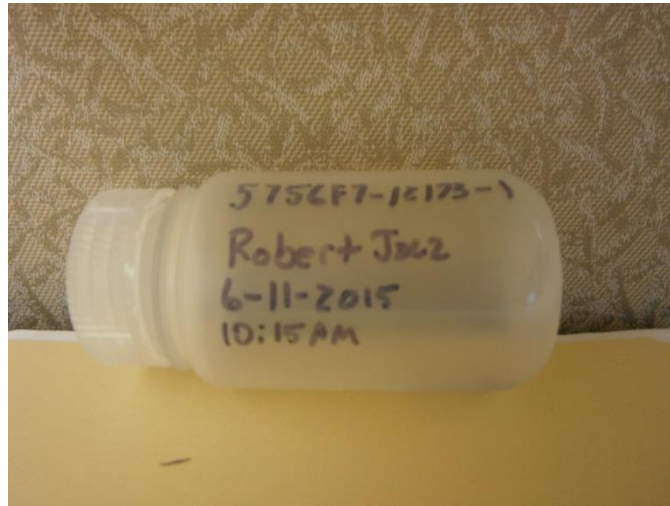
- Grab samples with the stormwater entering directly into bottles rather than by transferring the samples from a container that may not be clean. Again, transferring the sample from another container is not an option for samples under any circumstances.
- When holding the sample bottle, keep your hands away from the opening in order to prevent contaminating the sample.
- Always hold the bottle with its opening facing upstream (into the flow of water) so that the water enters directly into the bottle and does not first flow over the bottle or your hands.
- Sample where the water has a moderate flow and, if possible, some turbulence, so that the stormwater discharge will be well-mixed and the sample will be representative. Sampling in still water should be avoided.
- Sample from a central portion of the stormwater flow, avoiding touching the bottom of channels or pipes so as not to stir up solid particles.
- Do not rinse or overfill the bottles. Fill the bottle to about ½ inch of the top (not quite full).
- As soon as the sample is collected, cap the bottle and label it. It is important that the bottles are labeled correctly (labeling and documentation procedures are described in the following section). Place the samples in a picnic cooler partially filled with ice. Plan to maintain ice in the picnic cooler until they are ready for testing.

ii. Documentation

Samples are to be labeled and documented according to the following convention. This is to ensure the proper chain of command is followed and samples are properly associated with their outfall inspection. As described in [Section V.1.a](#) when encountering a flowing outfall for which a sample must be taken for further analysis, make sure to enter the sample number in the application. Sample numbers are determined as follows:

ADCmappage-Outfallnumber-samplenumber

For example, if a sample is taken at map location 5756-F6, at outfall 12173, and it is the first sample taken from this outfall, the sample number is 5756F7-12173-1. This number should be identical to that noted in the inspection form completed in the mobile application. Below this the date and time the sample is taken, and the inspector who took the sample should also be noted. See the image below for an example of how samples should be noted.



Samples should be labeled in black permanent marker. Samples to be sent to an outside laboratory should be labeled according to the laboratory's instructions, and all appropriate transfer of custody forms should be completed. Instructions for labeling samples for lab analysis are included in the lab kit.

iii. Field Sample Analysis

Using the County's YSI Professional Plus Multimeter dry weather discharges can be analyzed for a few basic water quality parameters quickly in the field. These parameters are temperature, PH, and conductivity. Measurements are to be taken when flow is found from an outfall under dry weather conditions and are entered into the inspection form on the IDDE mobile application (see section [V.1.a](#)). Methods for capturing samples using the YSI Multimeter should be consistent with grab sample tips in section [V.1.b.i](#). Procedures for measurement of samples and equipment operation can be viewed in the YSI Multimeter manual located in Appendix A of this document.

iv. Additional Analysis

Basic analyte analysis can be performed by Prince William County using its YSI 9500 photometer sampling equipment. Samples should be transported to the Environmental Services office in accordance with sampling procedures in order to perform additional analysis on samples using the YSI photometer. If it is necessary to perform a more complex/accurate analysis of a sample an outside laboratory can be used. More information on sample testing and analysis can be seen in section [VI.2](#).

c. Special Circumstances

Often the capturing of a sample presents a unique set of circumstances. These circumstances may include areas which are hard to reach, areas which are submerged with standing water, or areas with low flow.

- **Submerged Outfall** – Submerged outfalls are often found during inspections. The preferred option for sampling submerged outfalls is moving up system to the closest un-submerged manhole and capturing the flow sample from there. If this option is not available, a sample should be taken from the pool closest to the outfall invert as possible. In either case, the sample location should be properly documented in the inspection notes on the Illicit Discharge Potential page of the IDDE Inspection Mobile Application, and a photo of the sample location should be included in the inspection.
- **Difficult to reach** – In circumstances where an outfall may be difficult to reach, either due to excessive vegetation, odd angle, steep slope, etc., *the primary consideration should be the inspector's safety*. To aid in sampling hard to reach outfalls a number of strategies can be implemented; a pole scoop can be used to reach outfall discharges from a safe location; a sampling cup can be attached to string to gather samples from above outfalls; or, like in the case of submerged flow a sample point within the upstream storm sewer network should be used.
- **Low Flow** – In low flow conditions, inspectors should use the scoop tool. Lay the scoop tool upstream to flow and allow discharge to fill scoop, transferring captured sample to an appropriate sample bottle. Make sure to avoid the capture of sediment and other particles.

In addition, sometimes the inspection assignment process identifies objects that aren't outfalls. These include features like culverts or pond outlets. Culverts and pond outlets should be noted in the inspection form. Inspection forms should be filled out to the minimum possible extent (size, shape, type, operator, land use, discharge potential (unlikely), trackdown (complete), and validate inspection). These outfalls will then be removed from the system by deactivating them using the desktop application. This workaround is planned to be remedied in the future through more definitive outfall analysis and the update of the outfall layer.

2. Inspecting VPDES Permitted and High Risk facility Outfalls

Outfalls of Virginia Pollutant Discharge Elimination System (VPDES) permitted facilities within the County are required to be monitored to ensure these facilities are conforming to requirements of their VPDES General Stormwater Discharge Permit.

Outfalls of VPDES permitted and high risk facilities are included in the hotspot analysis, and have a special focus in Dry Weather Monitoring procedures. VPDES permitted outfalls are to be inspected semi-annually and High Risk outfalls are to be inspected on a yearly basis. High Risk outfalls are identified in the IDDE mobile application by selecting the “High Risk” radial icon in the outfall inspection page. These outfall inspections can be isolated during dry weather monitoring data analysis through the desktop application. A list of VPDES and High Risk outfalls can be seen on the W: drive (W:\Environmental Services\Watershed Management\PWC IDDE\FY 2016\DWM). Letters are to be mailed by certified mail to both the DEQ Northern Virginia Regional office and the high risk/industrial facility. A folder should be created in the PWC industrial VPDES folder on the W: drive (W:\Environmental Services\Watershed Management\PWC IDDE\FY 2016\Industrial VPDES\Site Investigation Reports) compiling any evidence dealing with the referral to DEQ. Evidence of 3 consecutive significant discharges (discharges classified as Illicit under the Dry Weather Monitoring program), 2 consecutive instances of non-reported DMR’s, or facilities determined by the program administrator to pose a significant environmental risk to the County’s storm sewer or regulated waters are to be reported to DEQ for compliance review.

In the event a high risk outfall or other Dry Weather Monitoring activity leads to a determination that a facility should require a VPDES permit or a facility where a VPDES permit is currently held is not performing to standards set by their permit, the facility is to be referred to DEQ for compliance review. This is accomplished by sending a letter to the appropriate DEQ Northern Virginia Regional office staff member. The letter for compliance review for both current and potential VPDES permit holders is included below.



Thomas Bruun
Director

COUNTY OF PRINCE WILLIAM

5 County Complex Court, Suite 170
Prince William, Virginia 22192-5308
(703) 792-7070 Metro 631-1703 FAX: (703) 792-6297

DEPARTMENT OF
PUBLIC WORKS

Environmental
Services Division

[Click here to enter a date.](#)

Ms. Susan Mackert
Regional Industrial Stormwater Coordinator
Virginia Department of Environmental Quality
Northern Regional Office
13901 Crown Court
Woodbridge, VA 22193

Reference: Facility Name
Facility Address

Dear Ms. Mackert:

In accordance with Part I. B. h. 5. of Prince William County's Municipal Separate Storm Sewer System (MS4) permit (No: VA0088595), "the permittee shall refer the following facilities to the Department of Environmental Quality, Northern Regional Office, for DEQ compliance review under the Virginia Water Control Law:

- a. Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit.
- b. Facilities and operations identified under 40 CFR §122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.
- c. Any VPDES-permitted facility where there is evidence of substantial pollutant loadings to the MS4 as determined by continued or regular exceedence of effluent limitations or benchmarks.
- d. Facilities that do not submit signed copies of DMRs to the permittee as required under a VPDES-issued permit. "

The above referenced facility appears to require a compliance review by DEQ in accordance with part(s) (x) from the above list. (Explain the findings of the inspection and why it requires referral to DEQ).

An Equal Opportunity Employer

Please report any findings or conclusions regarding this facility to the following address:

Robert Jocz, Environmental Engineer
Prince William County Department of Public Works, Watershed Management Branch
Environmental Services Division
5 County Complex Court, Suite 170
Prince William, VA 22035-0052

We appreciate your cooperation in this matter. Please contact Robert Jocz at 703-792-4797 or Rjocz@pwcegov.org with any questions or concerns you may have regarding the above request.

Sincerely,

Madan Mohan
Watershed Management Branch Chief

cc: Robert Jocz, Environmental Engineer, Watershed Management Branch, Environmental Services Division

An Equal Opportunity Employer

3. Inspecting General Discharges

Discharges are often reported to Prince William County by citizens and County Employees. Because reported discharges are not discovered at the site of an outfall, they do not include typical information included in a Dry Weather Monitoring inspection and are thus not tracked by the IDDE mobile application (at this time). A separate database is used to collect data on these discharges, and organize follow-up actions.

When discharges are reported to the County, they are entered into an excel spreadsheet located on the W: Drive (W:\Environmental Services\Watershed Management\PWC IDDE\FY 2016\Discharges). The format for the spreadsheet is as follows:

Location Description	Related Name/Company	Address	Description of Discharge	Reporter	Contact Info	County Employee (Y/N)	Date initially Visited	Status/Outage	Disposition
Residential Neighborhood	N/A	14421 Chandlers Circle	White paint found on storm drop inlet, painting company seen washing brush into SD	Devine Paul	dpaul334@outlook.net	N		Paint was found on storm drain. Report was written and filed, reported company responsible and no further action. Citizen will relocate on 10/25 and sign in consent on page of discharge continues to occur.	Case Closed
Residential Neighborhood	N/A	N/A, Dominion Valley	Seemingly pool discharge onto property by adjacent homeowner	Mr. Lewis	703 877 1300	N	Not Visited	Mr. Lewis expressed that his neighbor was dumping chlorinated water onto his property. It was determined that the water was not entering the storm drain system and therefore was not an illegal discharge issue. Mr. Lewis was directed towards Neighborhood Services for assistance and was referred to call for noticed the pool discharges entering a storm sewer in the future. City assistance is withheld in non-landmark situations, require owner address water seeping from area was a non-common occurrence. No MS4 implications due to lack of storm sewer system. Mr. Thomas Peterson was called by telephone on 9/27/15 and directed towards neighborhood services for further assistance.	Case Closed
Commerce Store	N/A	13406 Moore Dr	Oil/water in ditches	Misty and Thomas Peterson	703-793-7764	N		Substance coming from nearby business, possibly grease cutting release washing/being dumped into stream. No MS4 implications due to lack of storm sewer system.	Case Closed
Stream	N/A	14811 Farm Creek Drive	White substance in stream, white sediment white, substance found at nearby dumpster	Valerie Harkman	vharkman@pwc.org	Y		Large amount of debris in stream, largely related. No MS4 implications due to lack of storm sewer system.	Case Closed
Stream	N/A	13138 Jefferson Davis Highway	Small debris and mulch dumped into stream, concrete and bricks	Valerie Harkman	vharkman@pwc.org	Y		MS4 implications due to lack of storm sewer system.	Case Closed

Each reported discharge should have a folder; this folder includes a discharge report, any possible NOV's issued, and any other information pertaining to the discharge (water quality results, photos, maps). The discharge report should follow the format displayed later in the document in section VI.a. The trackdown report format is included in the general discharges folder. Follow-up inspections will occur according to a set schedule outlined within the trackdown report, and according to County Ordinance.

VI. Post Inspection

Post inspection procedures outline the identification, documentation, and follow-up of field inspections, including potential enforcement options. Post inspection procedures are based on inspection results and can follow several different workflow paths. Documentation of trackdown and enforcement efforts is crucial to maintaining a consistent and effective program.

1. Trackdown and Follow-up Inspections

This section details methods for tracking down and documenting potential illicit discharges, and the scheduling of follow-up inspections.

a. Trackdown

Every instance where flow is found exiting at an outfall a trackdown must take place. Trackdown is the process taken to determine the source of discharges from MS-4 outfalls. There are many methods that can be used to perform an outfall trackdown, these include: Manhole node analysis – following the storm sewer system, manhole by manhole, isolating the flow pathway until the source is found; Dye testing – Using EPA approved dye to determine un-authorized connections to the storm sewer system; CCT – the use of camera robots to TV the storm sewer pipe to determine un-authorized connections; Water Quality Testing – as described previously, the use of in-house or contracted laboratories

to isolate pollutants within the discharge to help narrow down potential sources. Trackdown methods can be used in combination with each other in order to determine the source of the discharge. Trackdowns are to start at the outfall or discharge point and follow the storm sewer network to the source of the discharge. If the pollutant is identified at the point of entrance to the storm sewer system (such as a drop inlet), no trackdown is necessary and the discharge should be documented appropriately according to the situation.

Every trackdown should be documented using the standard trackdown report. This report describes the procedures used during the trackdown, the circumstances which triggered the trackdown, and the follow-up actions associated with the trackdown. The trackdown report guides the inspector through the trackdown process and is included below:

Trackdown Report

Name of inspector
Outfall of Discharge (if applicable)
Address of Discharge (Street)
Address of Discharge (City, State, Zip)

(if a reported discharge)
Name of Complainant
Address of Complainant
Email or phone number

[Click here to enter a date.](#)

Introduction-
Where is the discharge coming from? (Outfall, Ditch, leaking vehicle, etc.)
Why was trackdown initiated? (Dry weather monitoring? Citizen Complaint?)
What is the nature of the discharge? (Describe the flow conditions)
Include picture of discharge below:

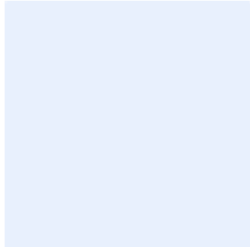


Figure 1: Photo of Discharge.

Trackdown -
Describe procedures used in trackdown (Identified by discharge source, Manhole node analysis, etc.)
Include map of trackdown path, and photos of trackdown below:

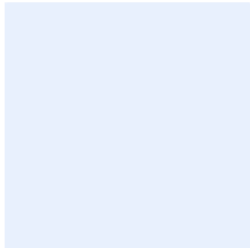


Figure 2: Map of Trackdown Path

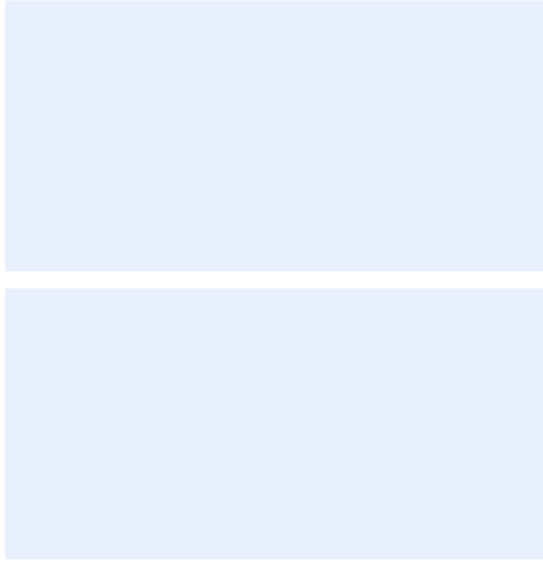


Figure 3: Trackdown Photos

Conclusions and Follow-up-

What are the conclusions of the trackdown? (Groundwater flow? Illicit discharge?)

What follow-up procedures were taken? (Other agencies contacted (DEQ, NS, FMO?, warning issued?)

Was responsible party identified? (Include information (name, GPIN, Business name, address, Etc.)

Was NOV issued? (If yes....include NOV number, EnerGov Case Number)

if responsible party was identified:

What is the mitigation plan and follow-up procedures/schedule?

Include: Inspection Report (if initiated by Dry Weather Monitoring)

Any additional lab testing results

NOV if issued

Trackdown reports are to be stored in a designated folder located on the :W Drive (W:\Environmental Services\Watershed Management\PWC IDDE\FY 2016\DWM\Trackdown Reports). This folder should include the trackdown report, inspection report, any NOVs, communications with stakeholders (if applicable: to include responsible parties, County Attorneys, other County agencies, or state/federal agencies), and any follow-up inspection reports related to the discharge. An example trackdown report can be seen in Appendix C.

b. Follow-up Inspections

Follow-up inspections are managed by the IDDE mobile application. The date of a follow-up inspection is determined by the inputs to the inspection form, and is automatically assigned to the inspector who performed the initial inspection. Follow-up inspections can also be assigned independently by an application admin. The mobile application uses a set of algorithms dependent on parameters entered into the inspection form to determine outfall re-inspections.

Follow-up inspections for reported discharges are determined according to the County Ordinance, and are documented in the discharge report. All follow-up inspections should be documented in the General Discharges Excel spreadsheet.

2. Water Quality Testing

Often, if the source of a discharge is unclear or composition of a discharge is unknown, water quality analysis may take place to determine the nature of the discharge. Water quality analysis should occur in the following scenarios:

- 1) If the source of a discharge is unknown and needs to be located or isolated. Water quality analysis can help identify the source of a discharge by characterizing its pollutant contents. This can help aid inspectors in identifying discharge sources.
- 2) Upon identifying the source of a discharge, but it is unclear of its pollution contents. Water quality analysis should be used to determine if a discharge is to be considered “Illicit”. If water quality parameters exceed pollutant limits (table below), then it is designated as illicit and enforcement procedures should be initiated.

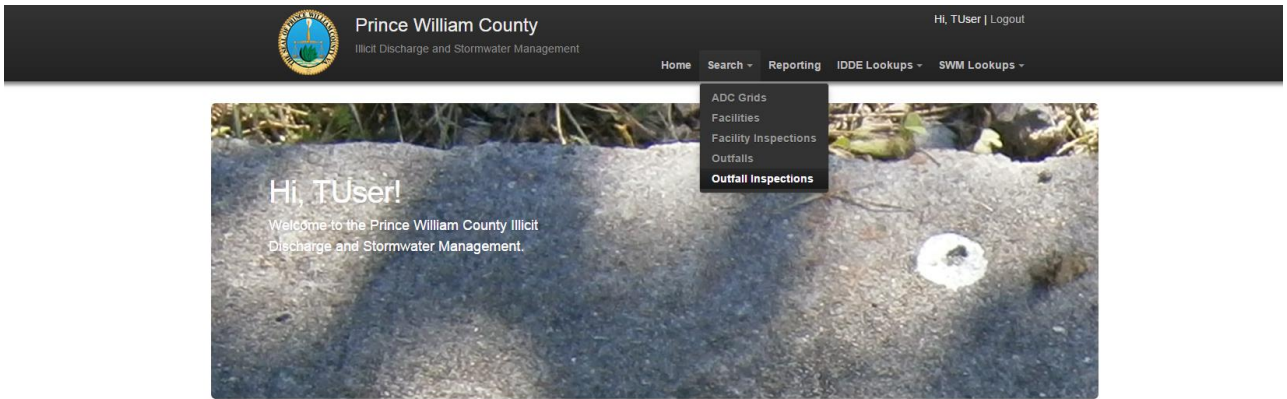
A discharge is determined to be potentially illicit in nature if it violates one or more of the following water quality parameters.

Parameter	Exceedance Limit
Temperature	N/A
pH	<6 or >9
Conductivity	> 1000 μ S/cm
Detergents	> 0.25 mg/L
Chlorine	> 0.04 mg/L
Copper	> 2.5 μ g/L
Phenol	> 0.4 mg/L
Fluoride	> 0.2 mg/L
Potassium	> 20 mg/L
Ammonia	> 20 mg/L
Nitrite	NO ₂ = >1 mg/L, N > 0.68 mg/L
Nitrate	NO ₃ = >10 mg/L, N > 0.68 mg/L

Credit: Prem Poudel

To document WQ parameters, information on testing can be entered into the inspection form using the desktop version of the IDDE application. Inspectors have limited access to edit inspection data but can enter water quality parameters measured in the field or office. This extends to only outfalls they have inspected. This allows for water quality information to be entered after tests are performed in the lab or office, while protecting the integrity of the inspection performed in the field. This process is described below.

- 1) After logging in, select **Outfall Inspections** from the **Search** dropdown menu.



- 2) Select the Edit Icon on the outfall inspection where water quality parameters need to be entered.

Inspection Date	Followup Date	Outfall ID	Inspected By	Retest	High Risk	Maintenance Required	Flow Present	Quantitative Characteristic Entered	Non Flow Related Physical Indicators Present	Illicit Discharge Potential	Track Down Status	Edit	Details	Summary Export
7/29/2015	7/31/2015	17126	pwadmin	False	False	False	No	False	True	Suspect	Inconclusive			Export
7/29/2015		22132	pwadmin	False	False	False	No	False	False	Unlikely	Not Necessary			Export
8/4/2015	8/6/2015	6812	pwadmin	False	False	False	Yes	False	True	Suspect	Inconclusive			Export
7/28/2015	7/30/2015	22132	pwadmin	False	True	False	No	False	False	Unlikely	Not Necessary			Export

- 3) Values for water quality parameters can be entered in this page. It is not required to enter all water quality parameters displayed on this page, only the parameters that were completed during water quality testing.

Edit Outfall Inspection


Quantitative Characteristic Entered


Sample Number: *


Water Temperature (F): *

pH (pH units): *

Specific Conductivity (uS/cm): *

Detergents (mg/L): 

Chlorine (mg/L): 

Copper (mg/L): 

4) When finished, scroll to the bottom of the page and select the **Save** icon.

Eventually, the County will develop a library of base concentrations of pollutants in groundwater. This study will occur for different watersheds throughout Prince William County, and will give the program a more specific and specialized set of parameters to base limits of exceedance from. Current exceedance limits were determined through literary research (credit: Prem Poudel).

3. Enforcement

This section outlines the methods and documentation for enforcement of the County’s stormwater regulations. There are many methods to prevent and mitigate illicit discharges to the County’s MS-4 system. Using the correct pathway to enforcement and mitigation is important to ensure the health of Prince William County’s waterbodies.

a. County Stormwater Ordinance

Sec. 23.2-4.1. - Unlawful discharge to the stormwater system and waters of the County

- (a) It shall be a violation of this article for any person to discharge:
- (1) Any wastes, trash, garbage, or any matter causing or aiding pollution on any property in the County in any manner so as to allow such to be washed into any stormwater system by storm or floodwater.
 - (2) Any grass clippings, mulch, or yard waste, animal carcasses and other wastes into the stormwater system, or do any injury to the stormwater system or in any manner pollute the stormwater system.
 - (3) Any discharge of gasoline, oil waste, antifreeze, or other automotive, motor or equipment fluids into the stormwater system.

- (4) Any commercial, industrial, or manufacturing entity to discharge process water, wash water, or unpermitted discharge into any stormwater system.
 - (5) Any person to throw, place, or deposit, or cause to be thrown, placed or deposited, in any gutter, ditch, storm drain or other drainage area in the County, anything that impedes or interferes with the free flow of stormwater therein.
 - (6) Chlorinated swimming pool water without dissipating chlorine.
- (b) Subject to the provisions of subsection (c) below, the following activities shall not be unlawful discharges:
- (1) Discharges pursuant to a VPDES or NPDES permit;
 - (2) Discharges resulting from firefighting activities;
 - (3) Water line flushing;
 - (4) Landscape irrigation;
 - (5) Diverted stream flows or rising groundwater;
 - (6) Infiltration of uncontaminated groundwater;
 - (7) Pumping of uncontaminated groundwater;
 - (8) Discharges from potable water sources, foundation drains, irrigation water, springs, water from crawl spaces or footing drains;
 - (9) Air conditioning condensation;
 - (10) Lawn watering;
 - (11) Residential car washing;
 - (12) De-chlorinated swimming pool discharges; and
 - (13) Public street washing.

(Ord. 03-87, 9-16-03)

Sec. 23.2-4.2. - Inspecting and monitoring stormwater discharge.

The director shall have the authority to inspect and monitor discharges and sources of potential discharge to the storm sewer system to ensure compliance with this article, including the authority to enter upon private property to inspect or monitor such discharges or sources of potential discharge. The director shall also have the authority to initiate enforcement actions in accordance with section 23.2-4.3.

(Ord. 03-87, 9-16-03)

Sec. 23.2-4.3. - Notice to correct violations.

If any activity listed in subsection 23.2-4.1(b) of this chapter is found by the director to be a source of pollutants to waters of the United States, the director shall serve a written notice on the party responsible for the activity which orders that the activity be ceased or conducted in a manner that will avoid the discharge of pollutants to the

stormwater system. The notice shall state the date by which the activity shall cease or be conducted without pollution. Failure to comply with any such order within the time stated in the notice shall constitute a violation.

For any violations of this chapter, the owner must comply with the director's orders within the time specified in the notice. Failure to comply with such order shall constitute a violation of this chapter. In addition to any penalty imposed for each violation, a judge hearing the case may direct the person responsible to remediate or correct, and each day's default in such remediation or correction shall constitute a violation of and a separate offense under this section.

(Ord. 03-87, 9-16-03)

Sec. 23.2-4.4. - Penalties for violations of article.

- (a) Any person who knowingly violates any provision of this article shall be guilty of a Class 1 misdemeanor. Each day that such violation is committed, and each day that such violation is permitted to remain uncorrected shall constitute a separate offense.
- (b) Any person who otherwise violates any provision of this article shall be subject to civil penalty between \$250.00 and \$1,000.00 for each day that the violation continues. The court assessing such civil penalty may order the penalty to be paid into the treasury of the county and designated for the purpose of minimizing, preventing, managing or mitigating pollution of the waters of the county.
- (c) Any person who violates any provision of this article shall be responsible for testing, containing cleaning up, abating, removing and disposing of any substance unlawfully discharged into the storm sewer system or into waters of the county, or, if the director determines that correction of the violation can best be accomplished by the county, shall be liable to the county for all costs of testing, containment, cleanup, abatement, removal and disposal of any substance unlawfully discharged into the storm sewer system or into waters of the county.

(Ord. 03-87, 9-16-03)

b. Issuing Notice of Violation

Notices of Violation are issued when an offender violates County Ordinance 23.2-4.1. The Notice of Violation (NOV) form displayed below, describes to the violator the violation that occurred, any mitigation plan determined by Prince William County, and the timeframe that mitigation must occur. The NOV form also notes the business or person who violated the County Stormwater Ordinance, as well as their mailing address, date and time the violation was discovered, and the violators email and phone address. NOV's are numbered according to the fiscal year, and the number of violation issued for that year. For example, if the violation was the 4th NOV issued in Fiscal Year 2015, then the violation number would be 4-2015.



Thomas Bruun
Director

COUNTY OF PRINCE WILLIAM
5 County Complex Court, Suite 170
Prince William, Virginia 22192-5308
(703) 792-7070 Metro 631-1703
FAX: (703) 792-6297

NOV# _____

**DEPARTMENT OF
PUBLIC WORKS**

Environmental
Services Division

VIOLATION NOTICE

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

NAME OR BUSINESS: _____ PHONE: _____

ADDRESS: _____ EMAIL: _____

DATE OF INSPECTION: _____ TIME: _____

ADDITIONAL INFO:

Inspection of the above mentioned site has been made and an illicit discharge was identified. If the identified violations are not voluntarily corrected by the allotted date, this office will issue a summons to appear before the General District Court. You have the right to appeal this violation.

Code Section	Deficiency

CORRECTIVE ACTION PLAN:

These deficiencies must be corrected within _____ days from the receipt of this notice.

Violation Notice and Discharge Report Mailed on _____

Violation Notice and Discharge Report Hand Delivered on _____

Watershed Compliance Inspector Signature

NOV's are to be reviewed by the County Attorney's Office when applicable. An NOV should be issued for each instance of discharge. Notice of Violations are mailed by certified mail, or handed to the responsible party along with a copy of the discharge report, a copy of the County ordinance (if not already issued), any inspection reports (if

applicable), and a spill cleanup recommendation fact sheet (if applicable). An example NOV packet can be viewed in Appendix C.

c. Documentation

Documentation is important ensure validity for reporting when enforcing violations and during audits of the IDDE program. Documents should be maintained according to the following sections.

i. Online document storage

Documents related to the IDDE program are to be stored in two locations. On the County's shared server, the W: Drive, and on the Timmons Group Server hosted for Prince William County to hold the IDDE mobile inspection data. Data is located on the W: Drive is as follows:

W:\Environmental Services\Watershed Management\PWC IDDE

-All Data and documents associated with IDDE Program. This folder should be separated by fiscal year.

W:\Environmental Services\Watershed Management\PWC IDDE\FY 20XX

-All data collected under the fiscal year for the IDDE program should be stored in this folder.

-Within this folder is the General Discharge, DWM, Industrial, and IDDE documents folder.

ii. County Enterprise system – EnerGov

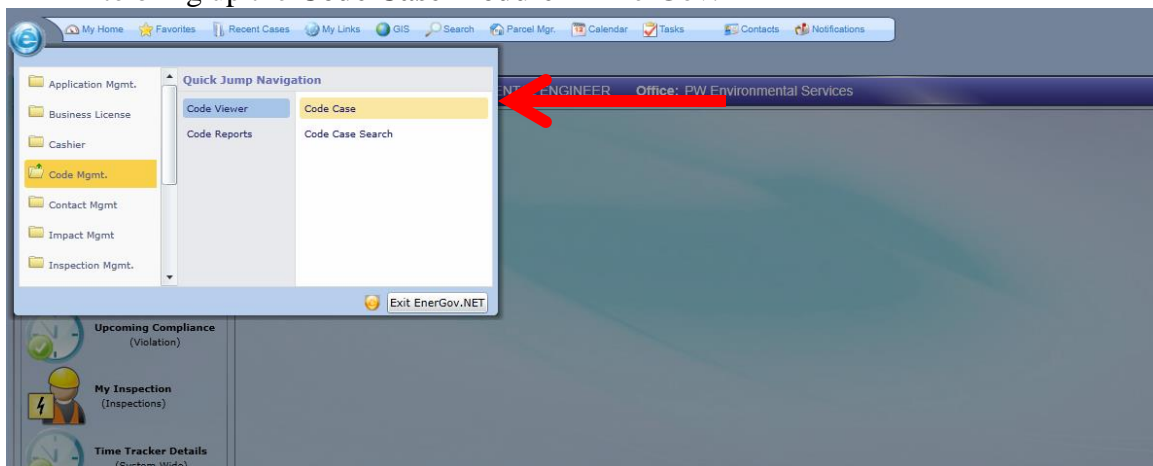
EnerGov, Prince William County's enterprise management system, is used as an official record of County business. For most processes in the IDDE program, use of EnerGov is replaced by the IDDE Mobile Application and associated databases. This is due to the fact the EnerGov system was not designed to handle data in the way that it is necessary for IDDE monitoring; however, some information must be included in the EnerGov system for record keeping. This is only the case when a NOV is issued. The issuance of an NOV must trigger the creation of a Code Case in the EnerGov system. This tracks the implementation of the NOV in the County's official record. When a Code Case is created, it is linked to the IDDE mobile application by inputting the Code Case number in the applicable inspection. Inspection forms, trackdown reports, NOVs, and other applicable documentation are included in the Code Case by adding the documents to the code case in the appropriate location. Code Cases are handled in the EnerGov system as follows:

- 1) Sign into the EnerGov System with your assigned login and password.

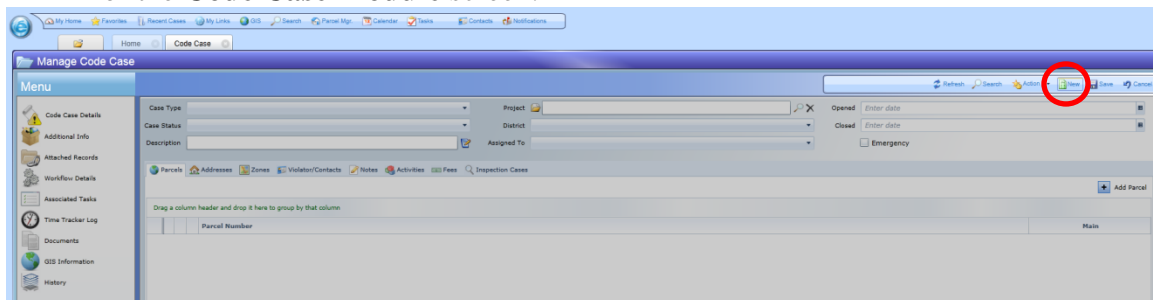
2) From the main screen select the EnerGov “e” in the top left of the screen.



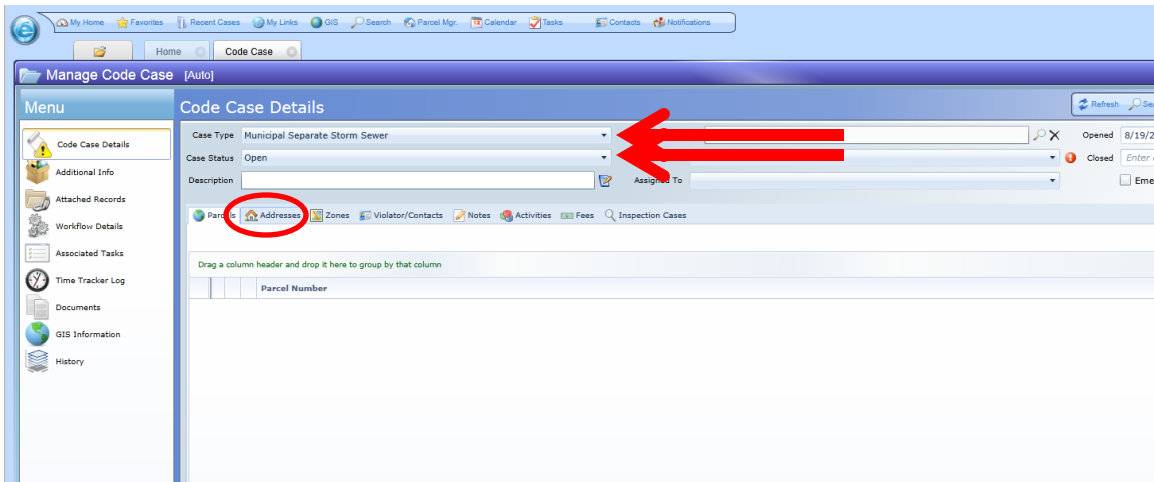
3) In the drop down menu, select **Code Mgmt.**, then **Code Viewer**, then **Code Case** to bring up the **Code Case Module** in EnerGov.



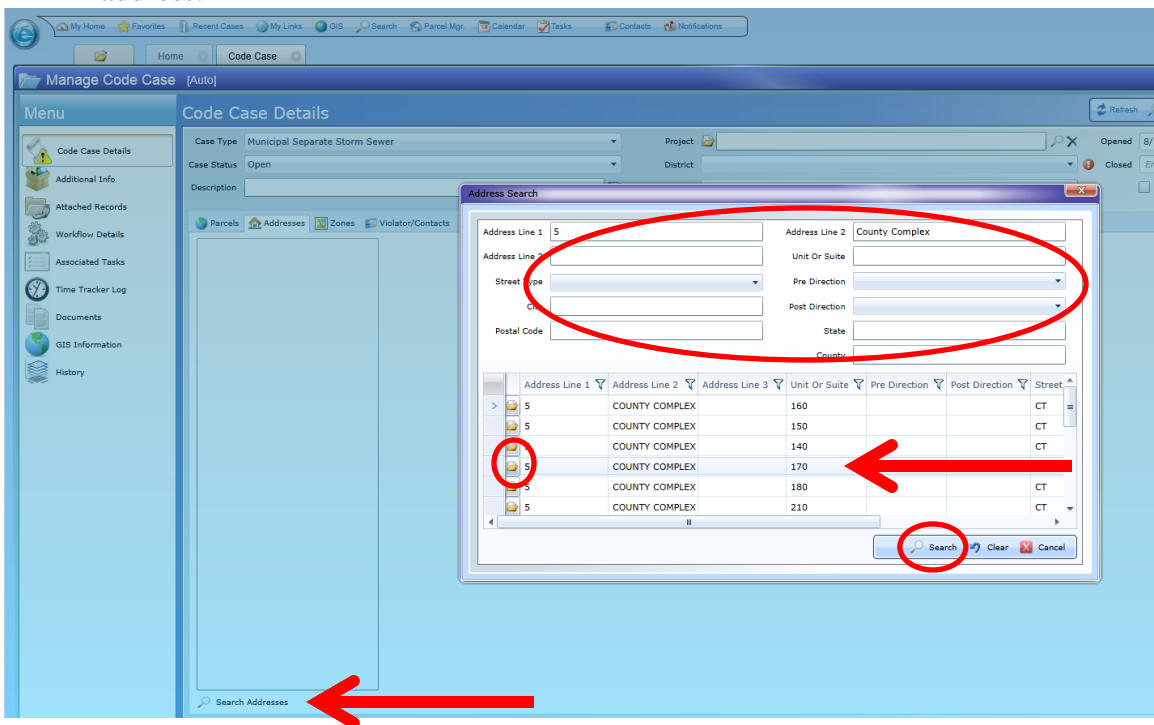
4) Since a new Code Case is being created. Select new in the upper right hand corner of the **Code Case Module** screen.



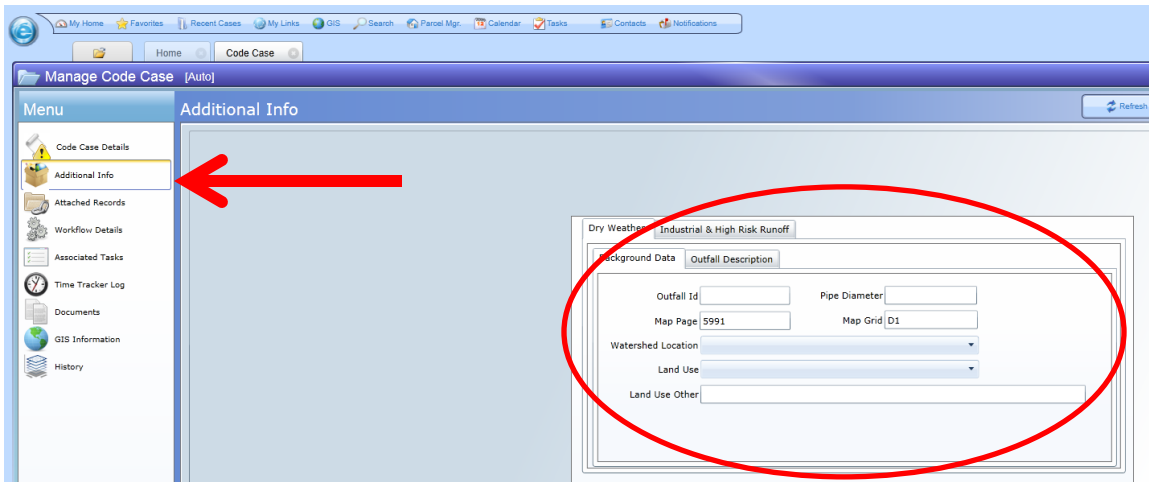
5) Enter information for the **Code Case Type** (Municipal Separate Storm Sewer) and **Case Status** (open, or closed with description of why). Then click on the **Addresses tab**.



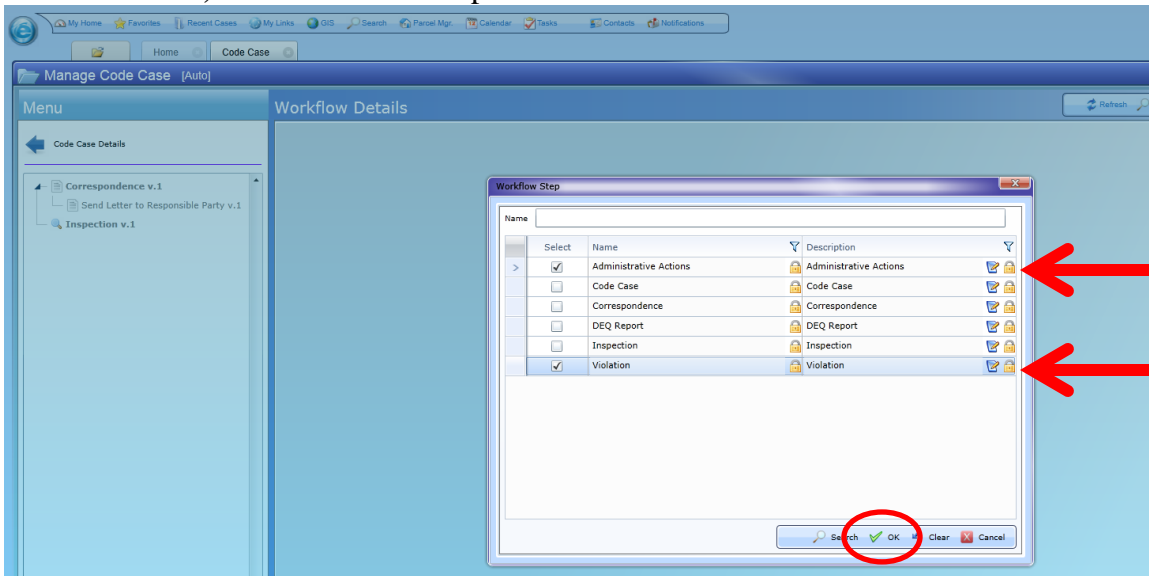
- 6) In the lower left hand corner select search addresses, and enter the appropriate address information for the person/business the NOV was issued to. Select search and apply the address to the **Code Case** by selecting the folder icon next to the address.



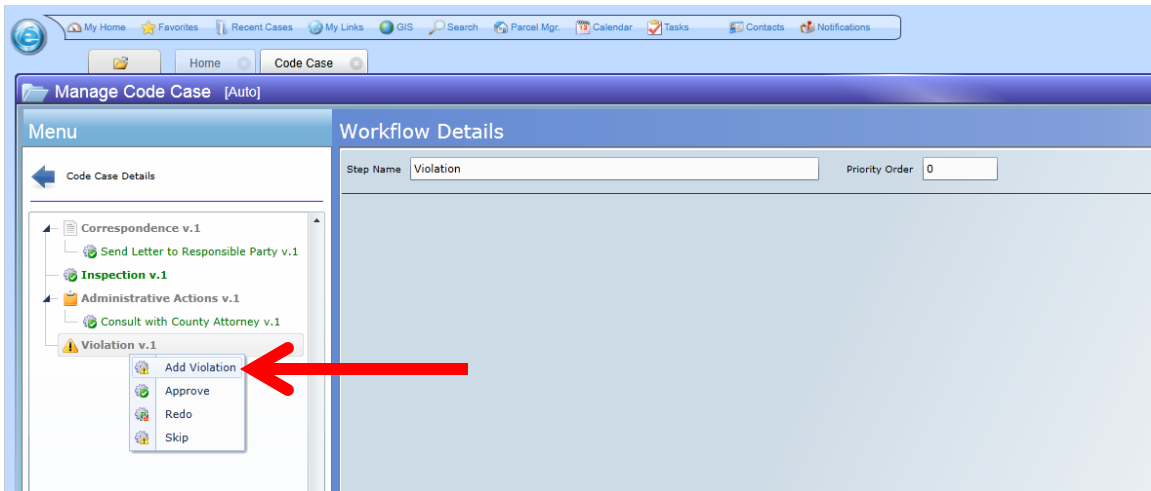
- 7) Fix any errors indicated by the system, and then save the code case by selecting **Save** in the upper left hand corner. Select the **Additional Info** tab on the left hand menu and fill out all information on the outfall where the discharge was identified. If Dry Weather Monitoring was not used to determine the discharge, leave this section blank.



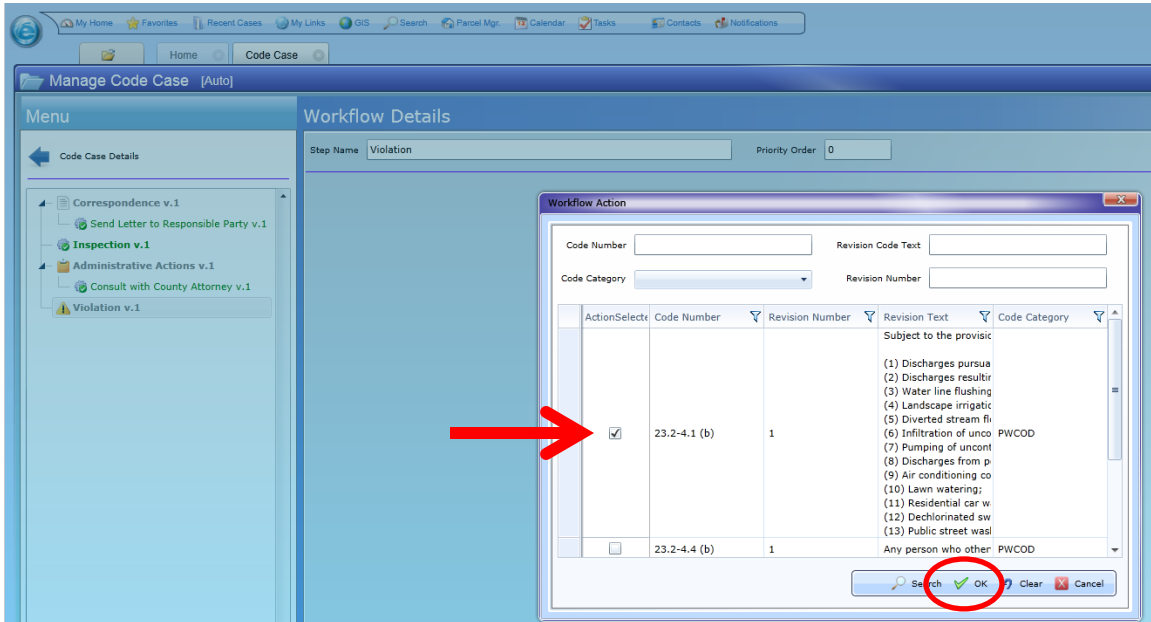
- 8) Next click on the **Workflow Details** tab in the left hand menu. Select **Add Step**, click search at the bottom of the window and add both the **Administrative Actions**, and the **Violation** options. Click **Ok** to advance.



- 9) Since the initial inspection should have already taken place, and the County Attorney and the letter packet sent to the violator should have been completed. To display this in EnerGov, select the appropriate tasks, right click on them, and select to approve them. Once approved they should turn green. If these actions have not been completed, complete the steps and approve them once completed. Right click on the **Violation** task and select **add Violation**.

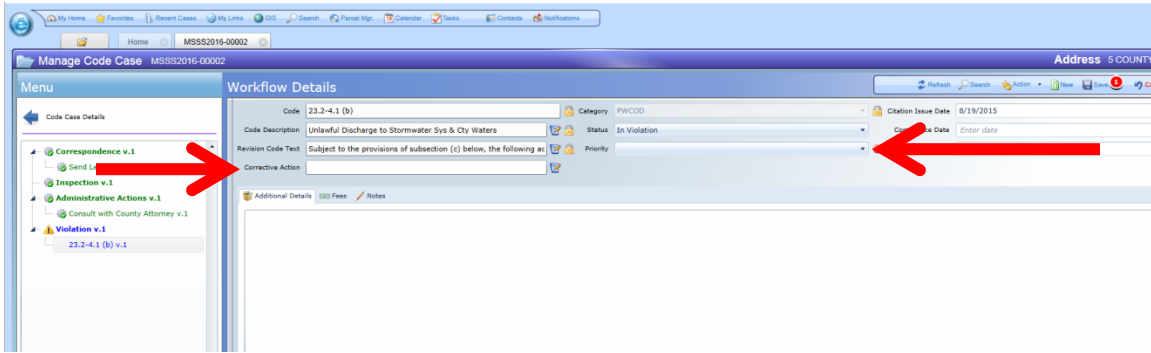


10) Select **Search** in the bottom of the window and select the top option, **23.2-4.1**. Then select **OK**.

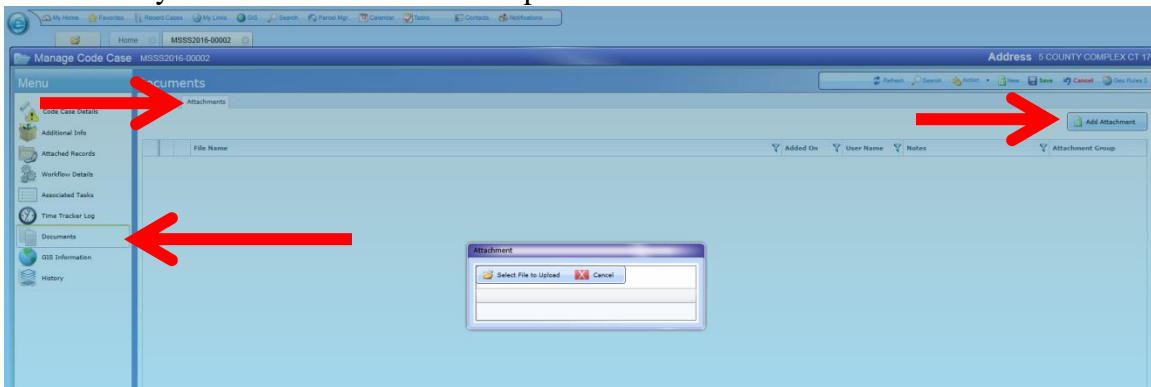


11) Right Click on the violation just created in the left hand menu and assign a corrective action plan and priority. Save the violation and return to the original left hand menu by selecting the left arrow at the top of the left hand menu.

When corrective action plan is met return to this screen, right click on the violation and choose **Resolved**.






- 12) Select the **Documents** tab on the left hand menu, from there select the **Attachments** tab on the main screen, and the **Add Attachments** icon on the top right of the main screen. Upload the Violation Report packet that is included in every Code Case Violation and upload it to EnerGov. Save the Code Case.



- 13) Once the violation corrective action is completed, close the code case with the descriptor that most accurately represents the conditions of the case. Update any documents, inspections, and violations that take place in satisfying the violation as described in this section. For instance, if another inspection and violation are issued, repeat the steps described above to add additional inspections and violations consistent with actions taken on the code case.

- 14) On the Web Application include the code case number on the DWM inspections related to the illicit discharge. This page is available by editing the inspection in the same manner as to add the water quality parameters as described in Section _____. The code case number is seen on the top of the code case module.

Edit Outfall Inspection

<p>Followup Date:</p> <input type="text"/> 	<p>Flow Present:</p> <input type="text" value="No"/> 
<p>Notes:</p> <input type="text" value="Test inspection"/>	<p><input type="checkbox"/> Quantitative Characteristic Entered</p> <p>Sample Number: *</p> <input type="text"/>
<p>Energov Number:</p> <input type="text"/>	<p>Depth (In.): *</p> <input type="text"/> 
<p><input type="checkbox"/> High Risk</p> <p><input type="checkbox"/> Retest</p> <p><input type="checkbox"/> Maintenance Required</p> <p>Headwall Condition:</p> <input type="text" value="No Headwall"/>	<p>Water Temperature (F): *</p> <input type="text"/>
	<p>pH (pH units): *</p> <input type="text"/>

d. Coordination with other Agencies

For the IDDE program to work effectively, it must work with other County, state, and federal agencies. This is especially true in instances when assistance is needed in enforcing County ordinance and environmental regulation when it is difficult/not possible for PWC watershed management to do so. These agencies include the Fire Marshalls office, for the handling and reporting for larger spills and hazmat incidents; Neighborhood Services, for details concerning litter pickup, and enforcement of other County code, when the stormwater ordinance is not applicable; Risk Management, for data concerning training of staff and certifications and issues related to County Owned Facilities; Drainage Crew, for information on the inspection and maintenance of pipe systems, and alternative inspection methods (TV cameras); DEQ, for matters in which the state agency should be involved, including VPDES permitted facilities; and PWCSA, for information pertaining to the sanitary sewer system. It is important to maintain open and effective communication with these agencies in order to meet the County’s MS-4 reporting requirements.

V. Reporting and Program Maintenance

1. Reporting

Reporting is important for internal tracking and data management, as well as providing state and federal agencies information they need on the County’s IDDE program. Reports are generated on both a yearly (MS-4 annual reporting), and monthly (Internal performance measures) basis. Reports also allow for communication between Prince William County agencies for the purpose of conducting maintenance and trash/litter issues.

a. Monthly Reporting

Each month a report including inspections performed, flowing outfalls, outfalls needing maintenance, and illicit discharges should be created. This is performed by Admin staff using the IDDE web application. These reports should be stored in the same excel sheet with the month and the year as the name of the file. These files should be stored on the W: Drive under the Reporting folder (PWC IDDE\FY 2016\DWM\Reporting). Maintenance reports should be distributed to the drainage crew supervisor.

b. Yearly Reporting

Yearly reporting is used to track program activities that occurred during the fiscal year. These reports are used in annual reporting to DEQ as part of the County's MS-4 permit. Yearly reporting is also used to inform supervisors and important staff of the performance of the IDDE program. Data from yearly reporting is incorporated into the following year's assessment of IDDE trends throughout Prince William County, and helps the program focus on problem areas. Yearly reports should be stored on the W: Drive under the Reporting folder (PWC IDDE\FY 2016\DWM\Reporting).

c. Litter, and Maintenance Issues

The IDDE mobile application can output a list of inspected outfalls which are determined to need maintenance or have significant litter issues. These outfalls are indicated for maintenance during the field inspection. The report shows the outfall ID number, latitude and longitude of the outfall, and the last inspection date. This list can then be shared with drainage crew, neighborhood services, and maintenance staff for repair.

2. Program Maintenance

In order for the IDDE program to remain up to date it must be continually maintained. Maintenance activities include; enhancements to the Mobile Application by adding new features to increase reliability, accuracy, and integrity of inspections and follow-up activities; updating of GIS data to include the most recent layers; and incorporating feedback from the program to make sure it runs as efficiently as possible both in the field and in the office.

a. GIS Update

GIS layers from inspections are shared between the mobile app and ArcGIS on a bi-annual basis. This includes the transfer of updates to GIS data layers for outfalls and the stormsewer network. This data will be provided from the County consultant and County GIS staff when needed.

In addition, the Hotspot Analysis Model (see Section IV.1) is updated on an annual basis. This program incorporates changes/additions in GIS layers to update and more accurately represent hotspots throughout PWC. Although this model is updated on a yearly basis, the ADC zones inspected are not re-set until the end of the permit cycle, unless all practical ADC zones have been inspected. This means that an ADC zone is inspected

only once during the 5 year permit cycle. If all ADC zones are inspected (or all ADC zones that include a reasonable MS-4 service area), then the IDDE program will begin again at the top of the ADC zone list.

b. Mobile Application updates

Enhancements to the Mobile application are important to keep the IDDE program relevant, consistent, and efficient. Enhancements will be evaluated by watershed management staff on an as needed basis. Additions such as the incorporation of trackdown reports, addition of data layers, and the ability to send reported discharges to field inspectors will be added in future iterations of the application.

Appendix A: Equipment Manuals



YSI 9300 and 9500 Photometers

User Manual

YSI 9300 and 9500 Direct-Read Photometers User Manual

YSI, Inc.

1725 Brannum Lane Yellow Springs, OH 45387

Tel: 800-897-4151 (+1 937-767-7241) Fax: +1 937-767-1058 E-Mail: environmental@ysi.com

Y-PT 282

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1 INTRODUCTION

The YSI 9300 and 9500 direct-read photometers are designed to give long and trouble-free operation. To ensure the best results, please read this manual carefully and follow the procedures recommended. This manual covers both the 9300 and 9500 photometers. Therefore, some of the information only pertains to the 9500 as is noted in the appropriate sections.

The Photometers feature digital electronics and built-in filters. It is lightweight and portable for field or laboratory use. The instruments are rugged, durable and IP-67 rated. Additionally, the photometers are direct-reading, have automatic blank setting, automatic wavelength selection, and automatic power out-off.

The following pages describe the use of the photometers, and give instructions for the wide range of water tests which can be performed using these instruments.

Keep the photometer clean and in good working order by adhering to the following recommendations:

- Do not pour out samples or prepare the tests directly over the instrument.
- Always cap the test tubes before inserting into the instrument for readings.
- Wipe test tubes with a clean tissue to remove drips or condensation before placing in the photometer.
- Do not leave tubes standing in the photometer test chamber. Remove the tubes immediately after each test.
- Immediately wipe up any drips or spills on the instrument or in the test chamber with a clean tissue.
- Keep the instrument clean. Clean the test chamber regularly using a moistened tissue or cotton ball.
- Keep the instrument away from all chemicals and cleaning materials.
- Keep the instrument in a clean, dry place when it is not in use. Keep it on a clean, dry bench away from chemicals, place it in a storage cupboard or keep it in a carrying case.
- Keep the carrying case in a clean, dry condition. Make sure that the carrying case is dry before the case is closed up and the instrument is put away.

1

YSI Professional Plus Calibration Sheet

Date of Calibration: _____ Technician: _____
 Instrument Serial Number: _____ Software Revision: _____ Cable Model Number: _____
 Temperature Reading _____ Temperature Accurate: Y N
 DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N
 DO membrane changed? Y N Color of Membrane _____ Color notated in Sensor menu? Y N

Record the following calibration values:

	Pre Cal	After Cal	
Conductivity	_____	_____	
ORP	_____	_____	
DO	_____	_____	True Barometric Pressure at time of calibration _____

	Pre Cal		
pH 7	_____	pH mV value _____	Range 0 mV ± 50 mV
pH 4	_____	pH mV value _____	Range +165 to +180 from 7 buffer mV value
pH 10	_____	pH mV value _____	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 177 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
 1st point (1 mg/L) _____ NH4 mV value _____ Range: 0 mV +/- 20 mV (new sensor only)
 2nd point (100 mg/L) _____ NH4 mV value _____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
 1st point (1 mg/L) _____ NO3 mV value _____ Range: 200 mV +/- 20 mV (new sensor only)
 2nd point (100 mg/L) _____ NO3 mV value _____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
 1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)
 2nd point (1000mg/L) _____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable
 DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)
 pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)
 pH Slope % of ideal _____

Appendix B: Mobile Application Definitions

This section describes and further details the terms used in inspection forms for the IDDE Mobile Application. This should allow inspectors to keep consistency from inspection to inspection.

Outfall Information

- Outfall ID – Unique identifier applied to each outfall
- ADC Grid – Equal area grid system that divides County into sections
- Watershed – Major area of drainage within County
- HUC Code – Hydraulic unit code
- MS-4 Operator – MS-4 system the outfall belongs to
- Percent Pervious and Impervious Surface – amount of Imp. and Perv. Surface draining to outfall
- TMDL – Does the outfall discharge to waterway with local TMDL?
- Drainage Area – Area draining to outfall
- Material – Type of material outfall is constructed of
 - o CMP – Corrugated Metal Piping
 - o HDPE – High density polyethylene, plastic piping, thicker than PVC
 - o Other
 - o PVC – Plastic piping, most commonly found as foundation drains
 - o RCP - Reinforced Concrete Pipe
 - o Steel - Metal
 - o Terracotta – Clay pot type material, also used for roofing
- Shape Description – Shape of outfall pipe
- Groping – Number of exit points at the outfall structure
- High Risk – Does outfall drain from high risk type landuse?
- Land Use – Main type of land use contributing to outfall drainage
- Additional land use – other land use types draining to outfall

Outfall Inspection

- Retest of outfall – Has this outfall been inspected previously?
- Rain in the last 24/48 hours – Approximate amount of rain in the past 24/48 hours
- Discharge Location – Description of location outfall discharges to
- Discharge Condition – Condition of the discharge location
- Headwall Condition – Condition of the outfall headwall, if applicable
- Maintenance Required – Is maintenance required on the outfall structure
- Flow Present – Is there flow coming from the outfall
 - o Intermittent – Flow is inconsistent, it flows and stops.
 - o No – No flow is observed at outfall
 - o Stagnant – Water sits at outfall discharge point, may or may not be flowing, outfall may be submerged
 - o Yes – Flow is exiting outfall

Flowing Physical Indicators

- Depth – Depth of flow (inches)
- pH – pH of water sample (if taken) using field instruments
- Specific Conductivity – SC of water sample
- Temperature – Water temperature of sample
- Sample number – Identifier of sample taken (See Section V.b.ii)
- Odor – Is there a smell to the discharge sample?
- Color – Is color visible in the sample?
- Turbidity – Are there suspended debris in the sample?
- Floatables – Are there items floating on top of the sample?

Non-Flowing Physical Indicators

- Deposits/stains – Is staining visible on the outfall pipe?
- Abnormal Vegetation – Is vegetation around outfall pipe affected by discharges?
- Pool Quality – Is the water at the invert of the pipe in poor condition?
- Pipe Algae – is excessive algae present in or around the outfall pipe?

Illicit Discharge Potential

- Discharge Potential – What is the potential the discharge is illicit?
 - o Obvious – Very Clear Illicit Discharge Present
 - o Suspect – Possible illicit discharge, more testing/inspections needed
 - o Unlikely – No illicit discharge present
- Trackdown – Status of flow trackdown
 - o Inconclusive –
 - o Not Necessary –
 - o Successfully Completed –
- Re-inspection – Date scheduled for re-inspection
(automatically assigned)
- Inspection Validation -

Appendix C: Example NOV Packet



COUNTY OF PRINCE WILLIAM
5 County Complex Court, Suite 170
Prince William, Virginia 22192-5308
(703) 792-7070 Metro 631-1703
FAX: (703) 792-6297

DEPARTMENT OF
PUBLIC WORKS

Environmental
Services Division

Thomas Bruun
Director

6/30/2015

RE: County Code Violation –
Unlawful Discharge to the Stormwater System and Waters of the County

To Mr. [REDACTED]

This letter serves as notice of violation for Unlawful Discharge to the Stormwater System and Waters of the County according to the Prince William County Code of Ordinances Chapter 23.2 "Stormwater Management" Article II "Stormwater Pollution" Section 23.2-4.1 "Unlawful discharge to the stormwater system and waters of the county". A Violation Report is attached.

On June 29th 2015, your employees were observed washing sediments and other pollutants from company vehicles into a nearby stormsewer system. In addition, remnants of pollutants such as hydrocarbons and salts were visible as stains from previous discharge events. This letter serves as your notice to immediately cease the washing of vehicles, and pollutants associated with commercial vehicle washing into the County's stormdrain system, and mitigate any effects to the system from washing activities. Failure to comply immediately with this violation will result in a Class 1 misdemeanor that is subject to penalties between \$250 and \$1,000 per day. Continued violations will incur additional responsibilities that may include testing, cleaning, abating, removing, and disposing of any substance unlawfully discharged into the storm sewer system or waters of the County.

The storm drain system flows into Broad Run. There is little to no treatment of this water before it enters our streams, rivers, and eventually the Chesapeake Bay.

If you have any questions, please contact Robert Jocz of the Watershed Management Branch at (703) 792-4797 or by email at rjocz@pwcgov.org.

Sincerely,

Marc Aveni, Division Chief
Environmental Services

Attachment: Notice of Violation, Trackdown report, remediation letter, County Ordinance.
cc: County Attorney's Office

Trackdown Report

Robert Jocz



Tuesday, June 30, 2015

On June 29th, 2015 a complaint was received by Prince William County staff detailing issues with the discharge of pollutants into the stormsewer system at a property on [REDACTED]. Upon arriving on site and meeting with the complainant, it was explained that this issue was ongoing. Video and photos from security cameras was provided to the County displaying previous discharge incidents. Once arriving at the suspected discharge location, an employee was observed washing sediment off of a company vehicle into the curb and gutter, and subsequently a storm drain inlet (See photos). The employee was asked to stop and informed of a violation of County Ordinance. A supervisor was not present and no supervisor information was provided by the employee.



Figure 1: Photo of Discharge.

Trackdown of the discharge was not necessary as the discharge was discovered at its source. The stormsewer travels alongside a commercial/industrial complex before discharging into a sedimentation basin/BMP which is currently on bond.



Figure 2: Map of Trackdown/Discharge Path



Figure 3: Trackdown Photos

According to Vehicle markings, employee observation, and discharge location, [REDACTED] was identified as the responsible party for the discharge. A NOV (#2015-01) was issued (included in this packet). [REDACTED] is responsible to immediately stop the discharging of pollutants to the stormsewer

system, and mitigate any effects from such discharges according to County Ordinance 23.2-41 Unlawful discharge to the stormsewer system. Prince William County holds the right to investigate storm sewer system using closed circuit television in order to assess damages at the discharger's expense. Mitigation should occur within 30 days of receipt of NOV as identified by receipt of Certified mail. Periodic re-inspections of the site will be conducted to confirm compliance.

Mitigation efforts are to include:

Removal of salt and hydrocarbon stains from asphalt and parking area adjacent to building.

Sediment accumulation within stormsewer pipes from washing of sediment laden vehicles.

Included:

NOV and NOV letter

County Ordinance

Mitigation Information

NOV# 2015-01



COUNTY OF PRINCE WILLIAM
5 County Complex Court, Suite 170
Prince William, Virginia 22192-5308
(703) 792-7070 Metro 631-1703
FAX: (703) 792-6297

DEPARTMENT OF
PUBLIC WORKS

Environmental
Services Division

Thomas Bruun
Director

VIOLATION NOTICE

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

NAME OR BUSINESS: [REDACTED] PHONE: [REDACTED]
ADDRESS: [REDACTED] EMAIL: -
DATE OF INSPECTION: 6/29/2015 TIME: 2:30

ADDITIONAL INFO:
Reports of Pollutants discharge, upon arriving employee was spotted washing sediment into stormsewer.

Inspection of the above mentioned site has been made and an illicit discharge was identified. If the identified violations are not voluntarily corrected by the allotted date, this office will issue a summons to appear before the General District Court. You have the right to appeal this violation.

Code Section	Deficiency
23.2-41	Discharge of sediment / Pollutants to stormsewer

CORRECTIVE ACTION PLAN:
Stop discharge to stormsewer, Mitigate effects to storm pipe network, Remove hydrocarbon residue from front of business

These deficiencies must be corrected within 30 days from the receipt of this notice.

I have read, understood and agree to correct all of the above listed deficiencies within the specified time.

SIGNED: _____
Responsible Party
Robert Jozz Radtke
Watershed Compliance Inspector Signature

Refused to Sign/Accept
 Responsible Party not present

Date Mailed to Responsible party

Prince William County Illicit Discharge Mitigation and Cleanup Information

A situation has occurred in which a pollutant has been discharged to the Prince William County MS-4 System, and you have been determined to be a responsible party for the said release/discharge. As the responsible party you will be required to perform or cause to be performed such actions as may be required to correct any damage caused by the discharge/release. You will be advised regarding your responsibilities and informed of the steps to be taken to remediate the effects of the discharge/release of hazardous materials. The objectives for remediation will be to minimize any adverse impacts on personnel, environment, and property. The responsible party is solely responsible to facilitate cleanup and remediation of the site. The information provided in this document is intended to assist you in fulfilling your obligations under County Ordinance as a result of the discharge/release. For additional information you should contact the respective Stormwater Management Engineer/Program Administrator.



A discharge of pollutants has occurred from a product or material in your charge. The information contained in this document is being provided to assist you in following the appropriate reporting and cleanup procedures.

Selecting and engaging a cleanup company is required of the responsible party (You or your organization/company). If you do not have an existing arrangement with a cleanup company a list of local cleanup contractors is contained within the document and is intended to assist you with taking the required steps to properly handle and dispose of the hazardous material(s). The County of Prince William nor any representative of any of the departments or agencies who provides you with this document does not endorse or recommend any of the contractors, vendors, or organizations listed, it is being provided only as a matter of courtesy. You are at your will to select any cleanup contractor or company that has the capability to provide the proper methods for cleanup. The names of additional firms may be found through regular advertising sources. It is recommended that you contact several companies before you enter into a contract.

Atlas Environmental Services
Lorton VA. 703/339-9770*

Hepaco, LLC
Fredericksburg VA. 800/888-7689*

Apex Companies LLC 703/396-6730
Manassas, VA After hours 301/721-3626

ECC
Chantilly, VA 800/322-3477

ENSAT
Culpeper, VA 800/753-6728

A&A Environmental Svcs.
Stafford, VA 540/288-1176

The jurisdiction in which the discharge has occurred will take whatever actions are necessary to protect the public safety and the environment. If you have any questions please contact Mr. Robert Jocz, Prince William County Environmental Engineer at (703) 792 – 4797 or by email at Rjocz@pwcgov.org.

Chapter 23.2 - STORMWATER MANAGEMENT

ARTICLE II. STORMWATER POLLUTION

ARTICLE II. STORMWATER POLLUTION

Sec. 23.2-4.1. Unlawful discharge to the stormwater system and waters of the county

- (a) It shall be a violation of this article for any person to discharge:
 - (1) Any wastes, trash, garbage, or any matter causing or aiding pollution on any property in the County in any manner so as to allow such to be washed into any stormwater system by storm or floodwater.
 - (2) Any grass clippings, mulch, or yard waste, animal carcasses and other wastes into the stormwater system, or do any injury to the stormwater system or in any manner pollute the stormwater system.
 - (3) Any discharge of gasoline, oil waste, antifreeze, or other automotive, motor or equipment fluids into the stormwater system.
 - (4) Any commercial, industrial, or manufacturing entity to discharge process water, wash water, or unpermitted discharge into any stormwater system.
 - (5) Any person to throw, place, or deposit, or cause to be thrown, placed or deposited, in any gutter, ditch, storm drain or other drainage area in the county, anything that impedes or interferes with the free flow of stormwater therein.
 - (6) Chlorinated swimming pool water without dissipating chlorine.
- (b) Subject to the provisions of subsection (c) below, the following activities shall not be unlawful discharges:
 - (1) Discharges pursuant to a VPDES or NPDES permit;
 - (2) Discharges resulting from fire fighting activities;
 - (3) Water line flushing;
 - (4) Landscape irrigation;
 - (5) Diverted stream flows or rising groundwater;
 - (6) Infiltration of uncontaminated groundwater;
 - (7) Pumping of uncontaminated groundwater;
 - (8) Discharges from potable water sources, foundation drains, irrigation water, springs, water from crawl spaces or footing drains;
 - (9) Air conditioning condensation;
 - (10) Lawn watering;
 - (11) Residential car washing;
 - (12) Dechlorinated swimming pool discharges; and
 - (13) Public street washing.

(Ord. 03-87, 9-16-03)

#684: Bull Run, Lowes Parking Lot



- 84" x 54" box culvert
- Contribution from upstream BMP
- ~1" flow during storm (7/18)
- Low visibility, steep slopes







Access: Difficult



#941: Bull Run, Prince Wm. Parkway



- **54" concrete pipe**
- **Signs of recent repair**
- **1/4" water, level with spillway**
- **Debris in spillway**

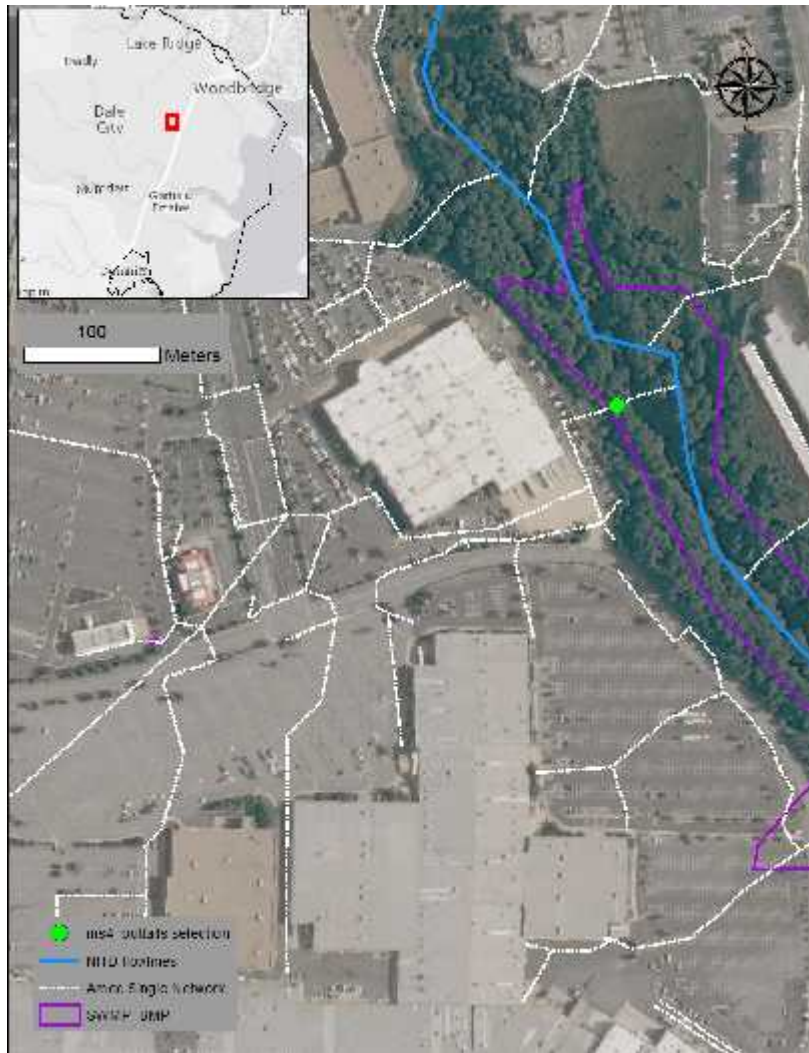




Access: Easy

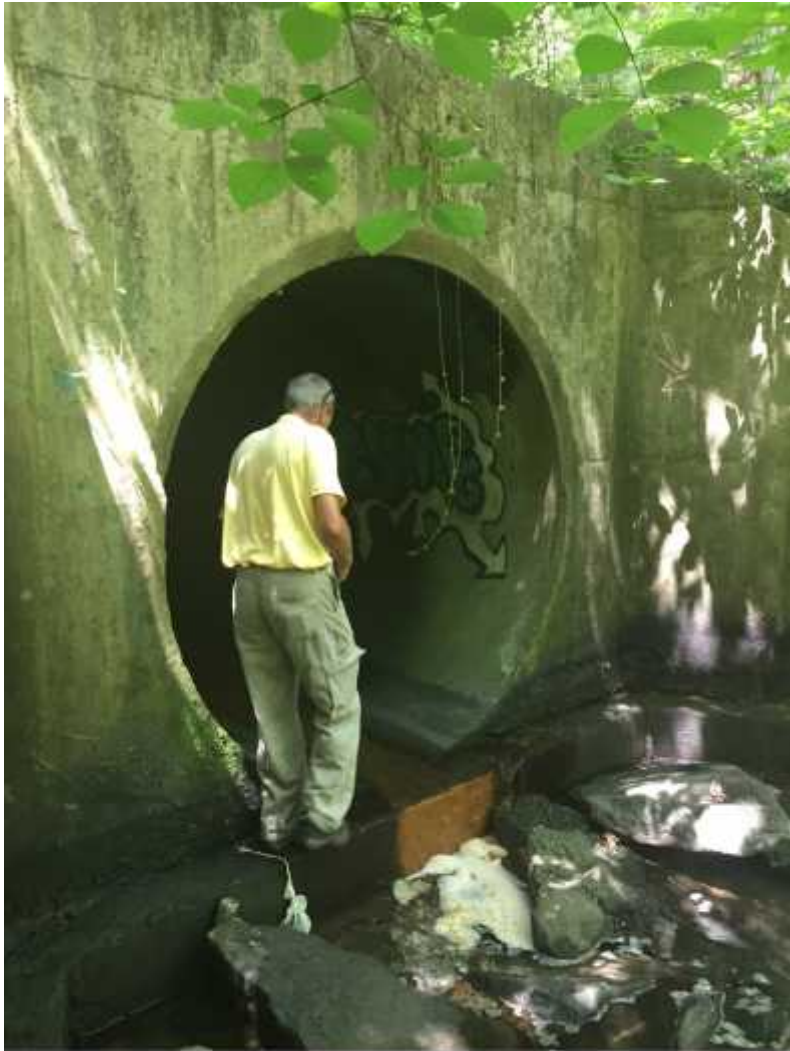


#3471: Woodbridge, Potomac Mills



- 84" concrete pipe
- < 1/4" flow
- Signs of human presence, uncertain frequency

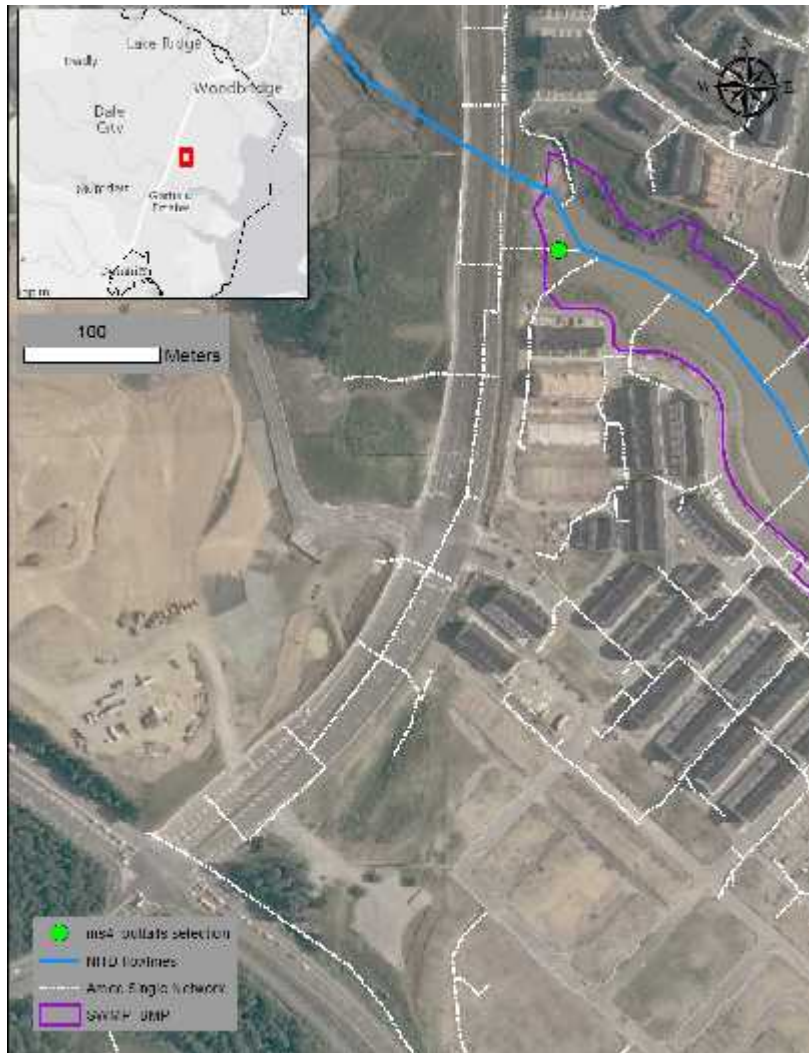




Access: Easy



#4684: Dale City



- **54" concrete pipe**
- **Low flow draining to scour pool**
- **Steep banks surrounding outfall**





Access: Moderate



Additional Slides: Bull Run



Additional Slides: Bull Run



Additional Slides: Pr. Wm. Pkwy



Additional Slides: Pr. Wm. Pkwy



Additional Slides: Pr. Wm. Pkwy



Additional Slides: Potomac Mills



Additional Slides: Potomac Mills



Additional Slides: Potomac Mills



Additional Slides: Dale City



Additional Slides: Dale City



Additional Slides: Dale City



Additional Slides: Dale City





Prince William County

Wet Weather Screening Program

Permit No.
VA0088595

Prince William County Department of Public Works
Watershed Management Branch
5 County Complex Court, Suite 170
Prince William, Virginia 22192

12/1/2015

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I. Introduction

Prince William County is dedicated to providing its citizens with the healthiest environment possible. It is with this goal the County establishes programs aimed at reducing pollutant impacts from heavily urbanized and industrialized areas. Non-point source pollution from urban and industrial areas within the County is a great concern due to its potential to impact water quality. Pollutants are transported from these areas during rain events and often deposited untreated into nearby streams and rivers. To mitigate this issue, the Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (VA-DEQ) have instituted programs aimed at reducing the potential impact of pollutants from urban areas.

Under the Virginia Pollutant Discharge Elimination System Permit Program (VPDS) and Virginia Stormwater Management Program (VSMP) permits are issued aimed at reducing pollution runoff from industrial and urban areas containing Municipal Separate Storm Sewers Systems or MS-4s. These systems transport water from urbanized areas to streams and rivers and are a major concern of point and non-point source pollution. Discharges from MS4s are regulated under the Virginia Stormwater Management Act and Clean Water Act (CWA) through permits issued by DEQ and the EPA. Through this program, Prince William County maintains a Phase 1 VSMP MS-4 permit (Permit No. VA0088595).

Through its VSMP permit, the County is required to monitor pollutants from areas suspected to be contributing excess levels of pollutants to its MS-4 by implementing a Wet Weather Screening Program. Unlike the Dry Weather Monitoring Program, the Wet Weather Screening Program is aimed at assessing pollutant load and composition during rain events. Using information obtained through this program, the County is to then develop strategies to reduce this pollutant load from these areas. The County's MS-4 permit, issued on December 17th, 2014, outlines requirements for the Wet Weather Screening Program as follows:

I.B.1.2) Wet Weather Screening Program: In addition to the monitoring required in Part I.C., the permittee shall continue to investigate, and address areas within their jurisdiction that are suspected to be contributing excessive levels of pollutants to the MS4. No later than 12 months after the effective date of this permit, the permittee shall develop written procedures for a wet weather screening program which shall include standard operating procedures to be used for initial screening and follow-up purposes. The written procedures shall be incorporated as part of the MS4 Program Plan.

The County has identified potential high risk discharge sites through its hotspot analysis GIS model. This model will be used to guide site location through the identification of areas designated for further research during the field screening stage of the program. A qualified laboratory or contractor will be chosen to perform field sampling, and to present results to the County

This program manual describes the methods and procedures for Prince William County's Wet Weather Screening Program. All procedures are subject to modification as program feasibility and applicability are assessed during program implementation. All program modifications will be noted as part of the County's Program Plan.

II. Wet Weather Monitoring Site Selection

Using the IDDE hotspot Identification and Analysis Model as a basis, locations for Wet Weather monitoring are to be assessed and selected by County personnel. Initial screening locations will be selected using the Hotspot Identification tool and additional GIS desktop analysis. Sites selected in initial screening will be investigated further through field screening activities. Final sites for Wet Weather Screening will be identified using results from the field screening process.

i. Initial Site Screening

The IDDE Hotspot Identification and Analysis model is a tool used by the County to determine where to focus Dry Weather Monitoring Activities. The tool uses several metrics to determine where the highest probability of illicit discharges and discharge of pollutants are to occur. The tool breaks down the County into ADC zones and prioritizes those ADC zones with the highest probability for pollutant discharge to occur. These zones are then used to schedule which outfalls to screen during Dry Weather Monitoring activities. The Hotspot Identification and Analysis Modeling process can be viewed in the document located in [Appendix A](#), but is explained in lesser detail in the following section.

a) Hotspot ADC Zone selection

The Hotspot ID model uses various GIS data layers to determine pollutant discharge potential. Layers depicting Land Use, Residential development, VPDES permitted facilities, High Risk Land Use, Sanitary Sewer Cross Points, Impervious Area, Outfall Locations, Waterways, and 303(d) listed Impaired waterways are incorporated in the analysis. Each feature within a layer is assigned a probability of discharge, pollutant discharge, or component score according to a perceived ability to pollute (potential of discharge to occur, and potential for that discharge to cause harm to the environment, or in the case of an outfall, the number of potential pollution discharge locations). These probabilities of discharge are then summed within a defined area, in this case ADC zones, in order to determine where in the County illicit or other pollutant discharges are likely to occur.

Land uses are analyzed according to use code. High risk use codes were determined from parcels throughout Prince William County and assigned a relative probability of discharge from 1-5 according to their perceived discharge potential (1 being low, 5 being high).

Table 1 - Probability of Discharge According to Use Code

Use code	Use description	Use Probability
191	Technology Services	1
229	Other Utilities	1
349	Food Stores	1
140	Research and Testing	2
156	Wholesale Warehousing (Condo)	2
224	Sewage	2

343	Convenience Store	2
831	Golf Course	2
832	Golf Course	2
112	Industrial Conglomeration	3
151	Mini Warehousing	3
216	Auto Parking	3
311	Small Shopping Center	3
312	Shopping Center	3
313	Shopping Center	3
314	Large Mall	3
315	Large Mall	3
317	Shopping Center	3
318	Shopping Center	3
320	Building Materials	3
351	Restaurant	3
352	Restaurant	3
353	Restaurant	3
354	Restaurant	3
361	Motor Vehicle Sales	3
520	Barber/laundry/cleaners/etc	3
590	Barber/laundry/cleaners/etc	3
841	Swimming Pool	3
851	Marina	3
910	Agricultural Resources	3
911	Agricultural Resources	3
930	Agricultural Resources	3
121	Durable Manufacturing	4
126	Durable Manufacturing (Condo)	4
131	NonDurable Manufacturing	4
150	Wholesale Warehousing	4
160	Industrial Service Garage	4
190	Other Industrial	4
211	Railroad	4
212	Rail Rapid Transit	4
213	Bus	4
214	Motor Freight Transportation	4
219	Other Transportation	4
225	Solid Waste Disposal	4
344	Convenience Store with Gas	4
362	Gas and Service Station	4
363	Gas Station	4
369	Other Automotive	4
540	Other Repair	4

973	Storage Yard	4
366	Service Station	5
530	Motor Vehicle Repair	5

Also included in the analysis are parcels for which VPDES permits are associated. Permitted sites were screened for those which discharge into Prince William County's MS-4 and assigned a probability of discharge in the same manner as high risk parcels above. The results of this analysis are displayed below.

Table 2 - Probability of Discharge Scores for VPDES Permitted facilities

NAME	Permit No.	Score
PWCBOCS	VAR051078	0
CHASE DAVID D	VAG830458	1
GENERAL DYNAMICS LAND SYSTEMS INC	VAR051293	1
OVERNITE TRANSPORTATION CO	VAR051030	1
US FOODSERVICE INC	VAR051117	1
OLD DOMINION FREIGHT LINE INC	VAR051476	1
REMODELERS CREDIT CORP	VAR051996	2
PWC	VAR051477	2
FURR FLOYD H AND BARBARA J	VAG750237	2
SUPPORT TERMINALS OPERATING PTNSHP	VAR051039	2
7905 LC	VAR052008	2
W M TINDER INC	VAR052074	2
EVERED INC	VAR052190	3
POTOMAC & RAPPAHANNOCK TRANSPORTATION E	VAR051886	3
LAND VENTURE ONE L C	VAR051295	3
DALRYMPLE REALTY CORPORATION	VAG110100	3
THIRD GENERATION L P	VAR051085	3
KRAUSS RICHARD L TR	VAR050983	3
NEWBILL HOLDINGS LLC	VAR051639	3
ARCHIE HENRY E SR & ANNIE WILLIAMS	VAR052115	3
BURBAGE J E JR E M BURBAGE	VAR051939	3
VENABLE JEAN S	VAR052243	3
HOFFMASTERS MARINA INC	VAR051183	3
SLURRY PAVERS INC	VAR051911	3
DAVIS TEDDY R JR HELEN M ETAL	VAR052014	3
ENNSTONE INC	VAG110111	4
COSNER MEDFORD R	VAR051009	4
VIRGINIA CONCRETE CO INC	VAG110083	4
DALRYMPLE REALTY CORP	VAR051949	4
JULIUS BRANSCOME INC	VAR050908	4
JONES SAMUEL M ESTATE	VAR051298	4
CONCRETE PIPE AND PRODUCTS CO INC OF	VAG110313	4

ARBAN CAROSI INC	VAG110068	4
HARD ROCK CONCRETE LLC	VAG110067	4
SUPERIOR PROPERTIES INC	VAR051992	4
SUPERIOR PAVING CORP	VAR050901	4
POTOMAC LANDFILL INC	VAR051073	5

Additional values scored in the analysis include outfalls, cross connection points, residential development, impervious area, streams, and impaired waterways. These features are scored as described in the table below.

Table 3 - Discharge Probability Scores for other Features

NAME	Score
Outfalls - Standard	10
- VPDES Outfalls	30
- High Risk Outfalls	30
Cross Connection Points	20
Residential Areas	1
Impervious Area	1
Streams and Waterways	1
Impaired Streams and waterways	2

As stated above, scores were then summed within an ADC index area. The ADC index is a mapping tool used by the County for navigation. The ADC index's break the County into equal area blocks which are assigned alpha-numeric values that help identify their location within the County for mapping. These equal area blocks are ideal for use in segmenting the County for stormwater analysis and Dry Weather Monitoring activities. The top 20 ADC indexes are to be selected for further analysis as described below.

b) Field Screening Site Selection

Once the initial 20 ADC zones are selected for potential field screening they will be narrowed down to a final 5 for field screening. The 20 ADC zones selected in the first screening are sufficient for Dry Weather Monitoring activities, but need to be further analyzed for use in the Wet Weather Monitoring program due to different constraints on the program. ADC zones will be scored according to the worksheet in [Appendix B](#). The Desktop analysis worksheet analyzes the following aspects of each ADC zone:

- **Ms-4 service area** – The focus of the Wet Weather Monitoring Program is to assess pollutant discharges within areas covered under its VSMP MS-4 Permit. For this reason ADC zones with drainage areas discharging to the County's MS-4 will be required.
- **Size of drainage system** – Drainage systems in Prince William County can span many acres. It is important to select candidate sites with drainage systems that allow the County to focus on a particular type of land use category. Monitoring larger drainage systems is also complicated due

to the increased probability of MS-4 interconnectivity. Monitoring drainage catchments that include VDOT or other MS-4s can reduce the value of results by convoluting the identification of pollutant sources. Although such data may be valuable in some circumstances, it is not the County's goal for this program.

- **Location of drainage system** – Identifying which land uses drain into candidate sites allows for a better characterization of the pollutant-land use relationship. Selecting candidate sites that involve succinct, identifiable drainage locations is a priority.
- **Land use, VPDES permits** – Areas with a high density of high risk land use and/or VPDES permits will be preferred. These areas have a higher probability of pollutant discharge, and therefore are of particular interest to the County. A more homogeneous mixture of land use is preferred. This gives the County a better understanding of the types of pollutants discharged from a particular land use, and helps develop better strategies for reducing pollutant loadings. For example, a site which drains mostly from commercial land uses will give the County a better understanding of the discharges coming from these areas, as opposed to a mixture of many different land uses (Commercial/industrial/residential), where the pollutants identified during monitoring cannot be as easily attributed to their sources.
- **County Easements** – In order to be able to run the monitoring station, the County must have legal authority to place it within the stormsewer system. Candidate sites must have access through County maintenance and repair easements. Proper permissions must be given by any stakeholders that may be attached to the site. Sites are preferred to be easily and safely accessible to staff and lab officials collecting samples.
- **Potential Monitoring sites** – Due to time constraints to County staff, sites which have more potential monitoring sites will be preferred. A site which contains more potential monitoring sites reduces the amount of travel and assessment time as opposed to visiting ADC zones with only one potential monitoring site. This also gives the County more choices to find an acceptable Wet Weather Monitoring location.

ii. Final Site Selection

The final sites selected will be evaluated further through a field assessment. Potential sites will be evaluated using the scoring matrix provided in [Appendix C](#). This form incorporates all aspects of final site selection protocol in order to quantifiably compare potential monitoring locations. Factors that influence final site selection are as follows:

Evaluate environmental impact of site – Identify and locate areas where aggregate materials are stored, vehicles are permanently parked, the location of dumpsters and grease traps, locations where spills may occur. Identify potential pollutants that could enter the environment for the sampling site.

Evaluate outfall locations for potential sampling – Locate outfalls and further evaluate ability to facilitate sampling equipment. It is difficult for a desktop analysis to fully convey outfall conditions including ease of access and its ability to house sampling equipment. Assess whether the outfall is in good condition, headwalls are intact, and if the outfall is submerged or blocked by sediment. Assess potential security issues for sampling equipment. Identify all potential monitoring sites.

Evaluate Drainage Systems for overall sampling impact – more specifically identify areas from which the monitoring site drains. Confirm land use for businesses/industry contributing to runoff.

The top two scoring sites will be selected for Wet Weather Monitoring. Sites selected will be gauged to determine flow rates, and measured for the retrofit of sampling equipment.

III. Wet Weather Monitoring Field Procedures

i. Sampling Methods

Sampling will be accomplished using an automated sampler. The sampler is an electronic sampling device which collects discrete samples of stormwater runoff at intervals throughout a storm event. Flow rates will be recorded in order to compute flow weighted composite samples. This should provide the County with an idea of how pollutant concentrations change during the length of a storm event.

Samplers will be attached to outfalls of sampling sites as selected in the above protocol. When applicable, grab samples may be utilized in order to gather analyte data such as TPH. The specific model of sampler will be determined by the contractor or contracted laboratory when selected to perform modeling activities.

ii. Analytes

The Wet Weather Monitoring Program will test for a host of analytes commonly found in stormwater runoff. These include various nutrients, metals, hydrocarbons, and sediments. Many of these analytes are also measured as part of the County’s Dry Weather and In-Stream Monitoring programs. A list of these analytes can be seen below.

Table 4 - Wet Weather Program Monitoring Analytes

Analyte
pH
COD
Zinc
Copper
Led
Nickel
Total Phosphorous
Total Kjeldahl Nitrogen
Nitrate and Nitrite
TSS
Ammonia as Nitrogen

This list will be modified during the life of the program. Analytes may be added/removed according to results obtained during monitoring according to the effectiveness of monitoring efforts. Analytes will also be added or removed as recommended by assigned contractor or laboratory responsible for monitoring efforts.

iii. Sampling Schedule

There is no specific sampling schedule or threshold presented in the County's MS-4 Permit. The County would like to assess two Wet Weather Monitoring sites on a biennial basis. This allows the County to assess the concentration of pollutants during the first yearly cycle, install appropriate BMP's designed to reduce pollutants, and finally use the second yearly monitoring cycle to assess the installed BMPs effectiveness. Samples will be taken at the two sites on a quarterly basis. Once the two year monitoring cycle is complete, two additional sites will be selected for Wet Weather Monitoring activities using the protocols described in the preceding sections. During this time, program procedures will be re-evaluated and updated as needed.

IV. Documentation and Reporting

This section will describe the documentation and reporting processes for the County's Wet Weather Monitoring Program.

i. Site Selection

Results of site selection will be presented in the County's Annual Report once complete. This includes procedures for the desktop and field analysis protocols presented in this document. All applicable forms, site plans, photos, diagrams, and calculations will be included in this analysis. All procedures dealing with site selection should be completed by the County's next annual reporting period (June 30TH, 2016). Information detailing the sites location (latitude and longitude), internal ID number,

ii. Monitoring Station Construction

Processes detailing monitoring site installation and construction will be included in the County's Annual Report when completed. Details on the type of automatic sampling hardware, including in depth procedures dealing with the sampling and transportation of samples, as well as analyte processing procedures will be included in the updated manual once determined by contractor or certified laboratory. All maintenance activities on monitoring hardware will be reported as completed.

iii. Annual Reporting

As required by the County's MS-4 permit, each annual report will include a list of locations Wet Weather Screening has occurred and the results of monitoring samples. In addition, the County will include as part of each annual report the weather conditions, date and time, and time of most recent storm event for each discrete sample taken. Meteorological data associated with the most recent storm event to the time of sample taken will be gathered from weatherunderground.com.

iv. Trends and Long Term Analysis and Program Follow-up

As the County is proposing to monitor sites on a biennial basis, each annual report will present monitoring trends. This will include a trends analysis as samples are processed quarterly for the year, as well as an assessment of effectiveness of BMP's installed as part of the biennial monitoring process. Results from year 1 of monitoring efforts will be used to implement BMP's in the monitoring site drainage area aimed at reducing critical pollutants. The effectiveness of those BMP's will be evaluated in year 2 of the Wet Weather Monitoring Program. All results of this analysis will be presented in the County's Annual Report.

Appendix A – Hotspot Identification and Analysis Model



Prince William County

Wet Weather Screening Program

Introduction

As a requirement for meeting guidelines mandated by the USEPA (Part 1.B.2.l)1) of Permit No VA0088595), Prince William County must identify and inventory “areas of concern” or areas predisposed to illicit discharges within its Municipal Separate Storm Sewer system (MS4). These “areas of concern” include: areas such as car washes, car dealerships, pet kennels, and restaurants; sites with previously occurring illicit discharges; areas of older development; areas representing the general land use of the county; sites with a history of citizen complaint; and areas located near environmentally sensitive features. Previously the County identified areas for dry weather monitoring by using a schedule of grids and a subjective assessment of areas of interest. In an attempt to generate a more quantitative assessment of illicit discharge “hot spots” around the County, a GIS based risk assessment was developed.

Variables

GIS layers

- County Municipal boundaries and ADC Index
- Land Use
- Residential Development
- VPDES Permitted Facilities
- High Risk Land Use Facilities
- Sanitary Sewer Cross Points
- Impervious Area
- County Outfall locations (outfalls >15in)
- County Streams
- 303(d) listed Impaired Virginia Waterways
- Raster based County imagery

Data

- Previous discharges according to land use
- History of citizen complaint according to land use

Procedures

Data Collection

Data layers were collected from the County GIS system via database linkage within version 10.3 of ArcGIS, with the exception of the 303(d) listed impaired streams data, which was acquired through the DEQ website.

Initial Layer Synthesis and Input

In order to complete the hotspot analysis, data layers must be modified to yield the information needed. First, use codes were assessed for various land uses of interest and used to select a subset of parcels which could be determined as “high risk” land uses. A “use probability” was applied to each land use, which characterizes a land use’s probability for a discharge to occur, and potential severity of that discharge should it occur. This “use probability” is initially applied subjectively, but will be further defined as more data from the IDDE program is gathered and can be re-input into the model. Figure 1 displays the location of various land uses of interest of Prince William County.

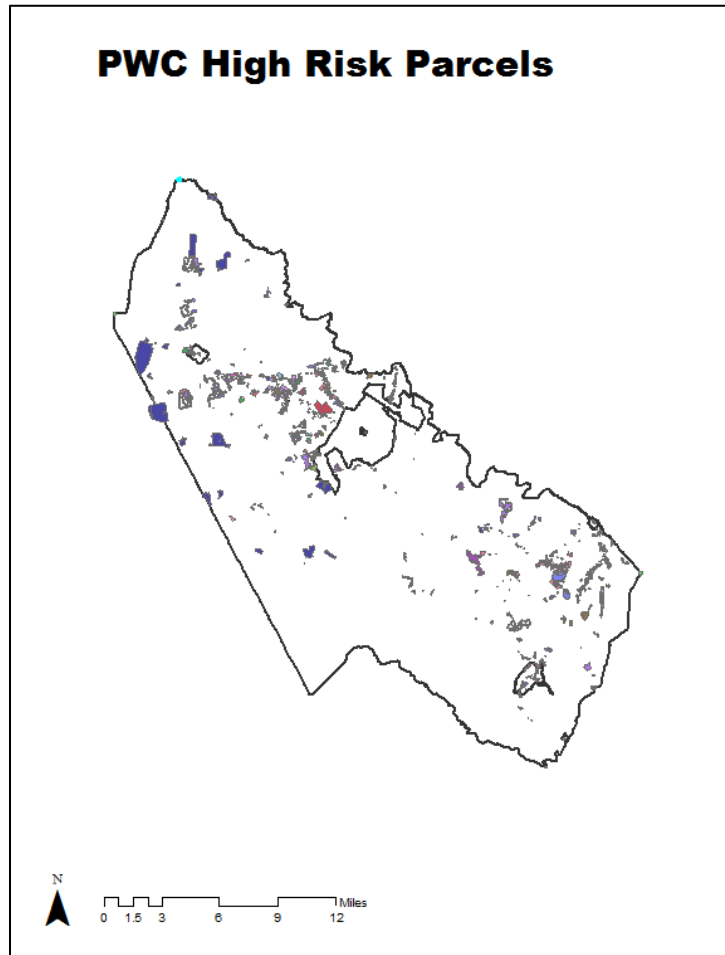


Figure 1: High Risk Parcels hotspot identification map

The impact value is a number from 1 to 5 characterizing each land use according to the potential of illicit discharge occurrence (determined from historical discharge data, low probability denotes low risk) and potential discharge severity (an assumption of the possible damage that may occur from a discharge). A list of land uses, use codes, and the initial scores given to the land uses can be seen below in Table 1.

Table 5: Impact values for Land Use hotspot identification

Use code	Use description	Use Probability
191	Technology Services	1
229	Other Utilities	1
349	Food Stores	1
140	Research and Testing	2
156	Wholesale Warehousing (Condo)	2
224	Sewage	2
343	Convienience Store	2
831	Golf Course	2
832	Golf Course	2
112	Industrial Conglomeration	3
151	Mini Warehousing	3
216	Auto Parking	3
311	Small Shopping Center	3
312	Shopping Center	3
313	Shopping Center	3
314	Large Mall	3
315	Large Mall	3
317	Shopping Center	3
318	Shopping Center	3
320	Building Materials	3
351	Restaurant	3
352	Restaurant	3
353	Restaurant	3
354	Restaurant	3
361	Motor Vehicle Sales	3
520	Barber/laundry/cleaners/etc	3
590	Barber/laundry/cleaners/etc	3
841	Swimming Pool	3
851	Marina	3
910	Agricultural Resources	3
911	Agricultural Resources	3
930	Agricultural Resources	3
121	Durable Manufacturing	4
126	Durable Manufacturing (Condo)	4
131	NonDurable Manufacturing	4
150	Wholesale Warehousing	4
160	Industrial Service Garage	4
190	Other Industrial	4
211	Railroad	4
212	Rail Rapid Transit	4

213	Bus	4
214	Motor Freight Transportation	4
219	Other Transportation	4
225	Solid Waste Disposal	4
344	Convenience Store with Gas	4
362	Gas and Service Station	4
363	Gas Station	4
369	Other Automotive	4
540	Other Repair	4
973	Storage Yard	4
366	Service Station	5
530	Motor Vehicle Repair	5

The same process was used for VPDES general stormwater discharge permit holders within the County. VPDES permitted facilities were identified using data obtained from DEQ. A determination on which VPDES permittees discharged into the County’s MS-4 system was made, and a score (discharge probability) was assigned to each facility according to its assumed probability to discharge pollutants.

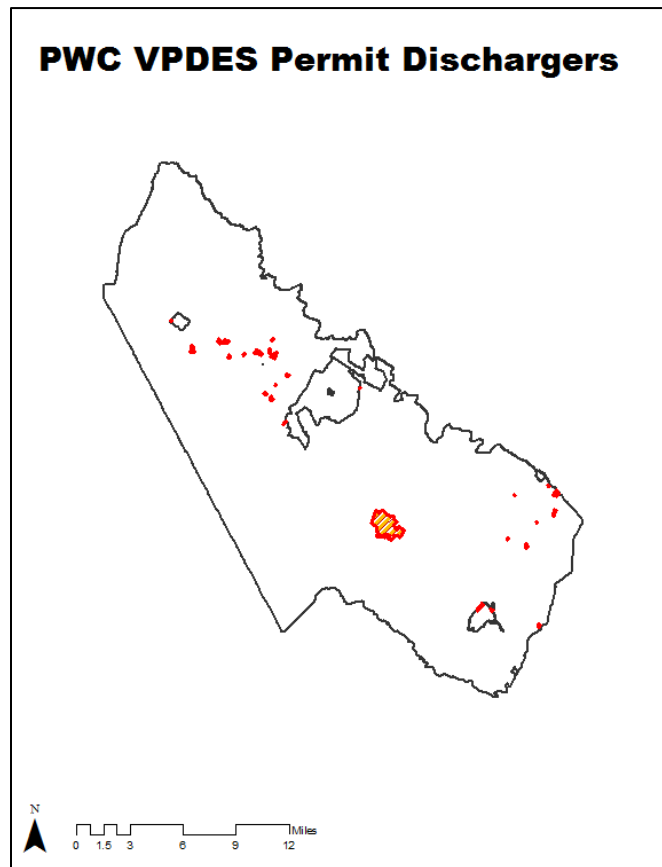


Figure 22: VPDES permitted facilities hotspot identification map

Table 2: Impact values for VPDES hotspot identification

NAME	Permit_No	Score
PWCBOCS	VAR051078	0
CHASE DAVID D	VAG830458	1
GENERAL DYNAMICS LAND SYSTEMS INC	VAR051293	1
OVERNITE TRANSPORTATION CO	VAR051030	1
US FOODSERVICE INC	VAR051117	1
OLD DOMINION FREIGHT LINE INC	VAR051476	1
REMODELERS CREDIT CORP	VAR051996	2
PWC	VAR051477	2
FURR FLOYD H AND BARBARA J	VAG750237	2
SUPPORT TERMINALS OPERATING PTNSHP	VAR051039	2
7905 LC	VAR052008	2
W M TINDER INC	VAR052074	2
EVERED INC	VAR052190	3
POTOMAC & RAPPAHANNOCK TRANSPORTATION E	VAR051886	3
LAND VENTURE ONE L C	VAR051295	3
DALRYMPLE REALTY CORPORATION	VAG110100	3
THIRD GENERATION L P	VAR051085	3
KRAUSS RICHARD L TR	VAR050983	3
NEWBILL HOLDINGS LLC	VAR051639	3
ARCHIE HENRY E SR & ANNIE WILLIAMS	VAR052115	3
BURBAGE J E JR E M BURBAGE	VAR051939	3
VENABLE JEAN S	VAR052243	3
HOFFMASTERS MARINA INC	VAR051183	3
SLURRY PAVERS INC	VAR051911	3
DAVIS TEDDY R JR HELEN M ETAL	VAR052014	3
ENNSTONE INC	VAG110111	4
COSNER MEDFORD R	VAR051009	4
VIRGINIA CONCRETE CO INC	VAG110083	4
DALRYMPLE REALTY CORP	VAR051949	4
JULIUS BRANSCOME INC	VAR050908	4
JONES SAMUEL M ESTATE	VAR051298	4
CONCRETE PIPE AND PRODUCTS CO INC OF	VAG110313	4
ARBAN CAROSI INC	VAG110068	4
HARD ROCK CONCRETE LLC	VAG110067	4
SUPERIOR PROPERTIES INC	VAR051992	4
SUPERIOR PAVING CORP	VAR050901	4
POTOMAC LANDFILL INC	VAR051073	5

Since the point of discharge is the ultimate target of the analysis, outfalls greater than 15 inches were identified through Prince William County. Applicable outfalls were identified and isolated using the feature selection tool and processed into an individual layer. The greater the density of outfalls within

an area the larger the chance of a discharge occurring. Outfalls associated with VPDES and High Risk facilities were also determined by creating a buffer around VPDES and High Risk parcels, and capturing all outfalls within the buffer. Outfalls were given a uniform impact value and factor in during the overall hotspot analysis (Standard outfall = 10, VPDES outfall = 30, High Risk Outfall = 30). Figure 3 displays the location of outfalls within the county.

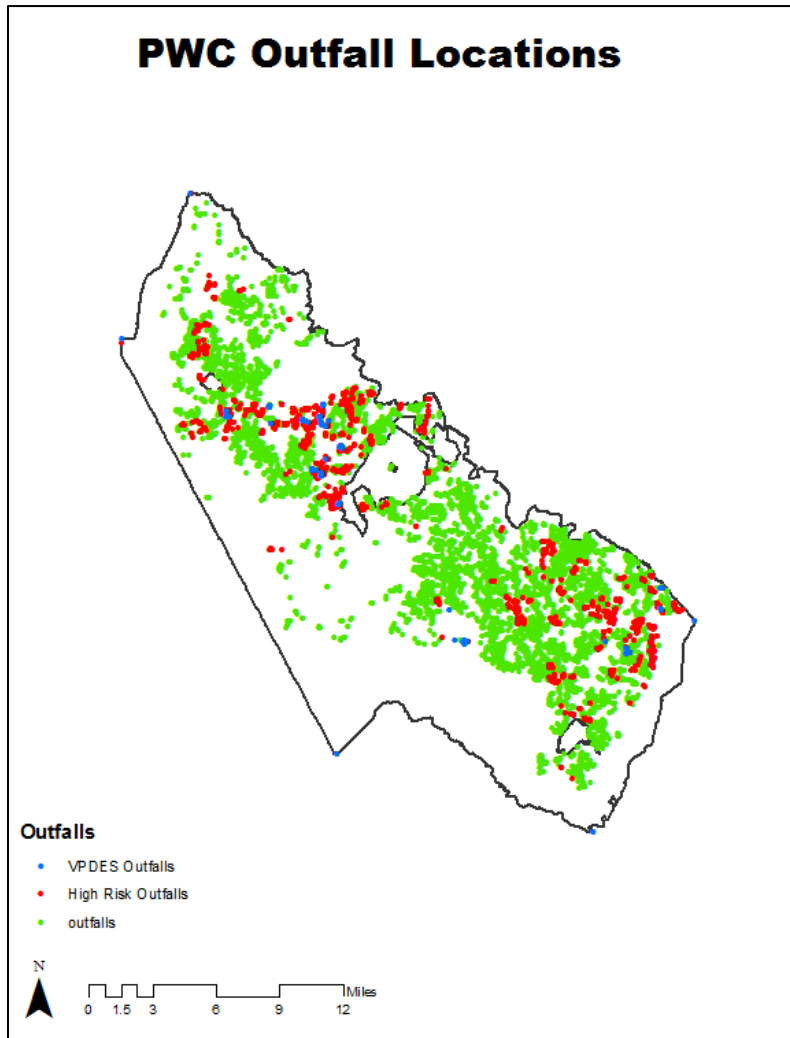


Figure 3: Location of outfalls within Prince William County

To address the potential impact of illicit discharge on environmentally sensitive areas, a streams and water body layer was included in the analysis (Figure 3). Major streams and rivers were isolated from man-made ditches and conveyances within the layer. These streams were given a uniform impact value. The area of stream within a region influences the potential discharge probability score by quantifying the amount of environmentally sensitive features in an area. Streams listed on the EPA 303(d) list of impaired water bodies have a greater potential of impact from illicit discharges and are therefore given an additional weight in model outputs.

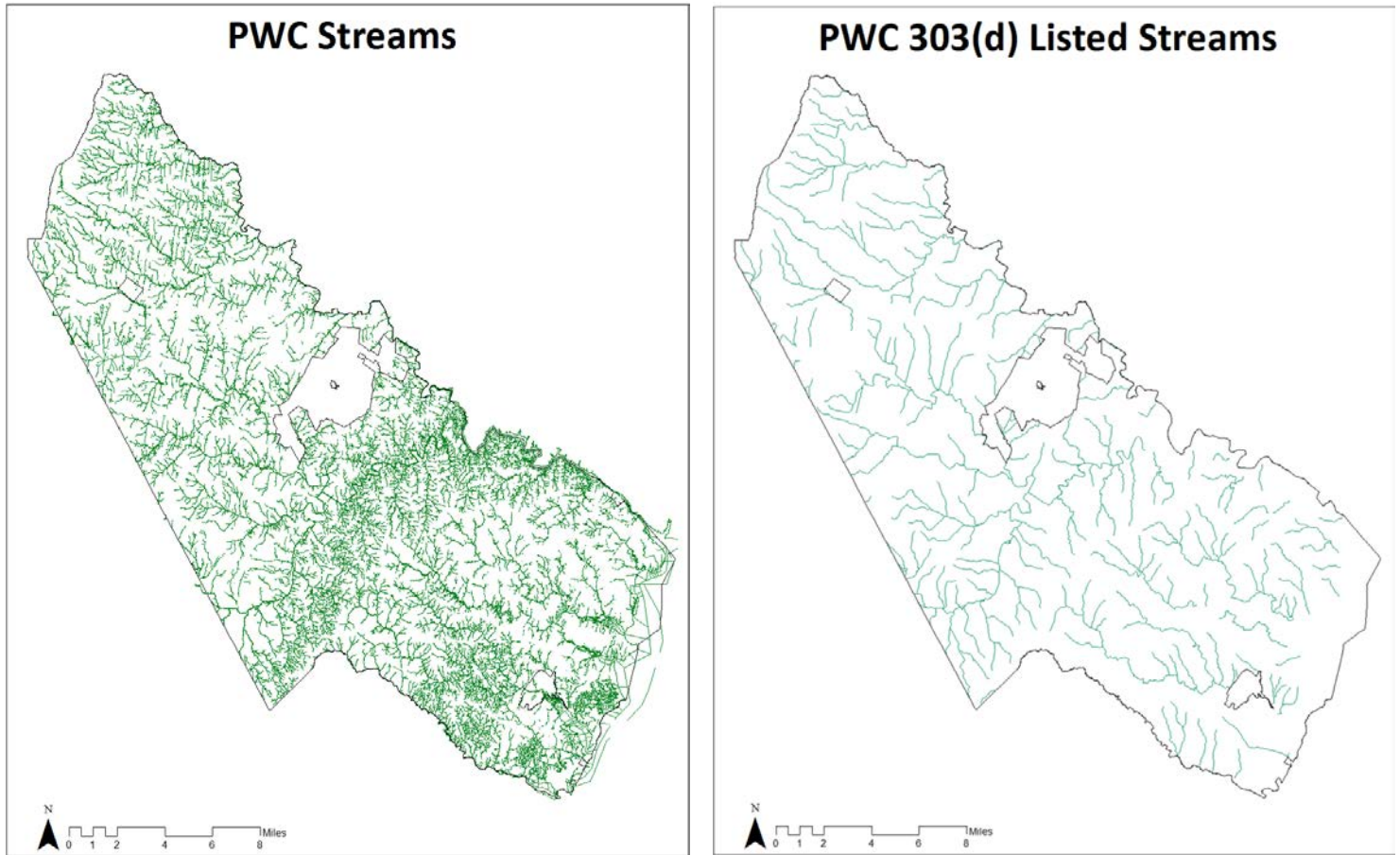


Figure 4: Streams and impaired streams within Prince William County's jurisdictional area

Next an assessment of potential areas for cross connections between the storm sewer and sanitary sewer system was performed. Areas where the storm and sanitary sewer system overlap create potential for cross contamination due to leaking sanitary sewer infrastructure. This analysis was accomplished by overlaying the storm and sanitary sewer layers using GIS, and isolating the locations where they overlap. These locations were turned into point features and assigned a uniform potential discharge probability score (20). This analysis is displayed below in Figure 5.

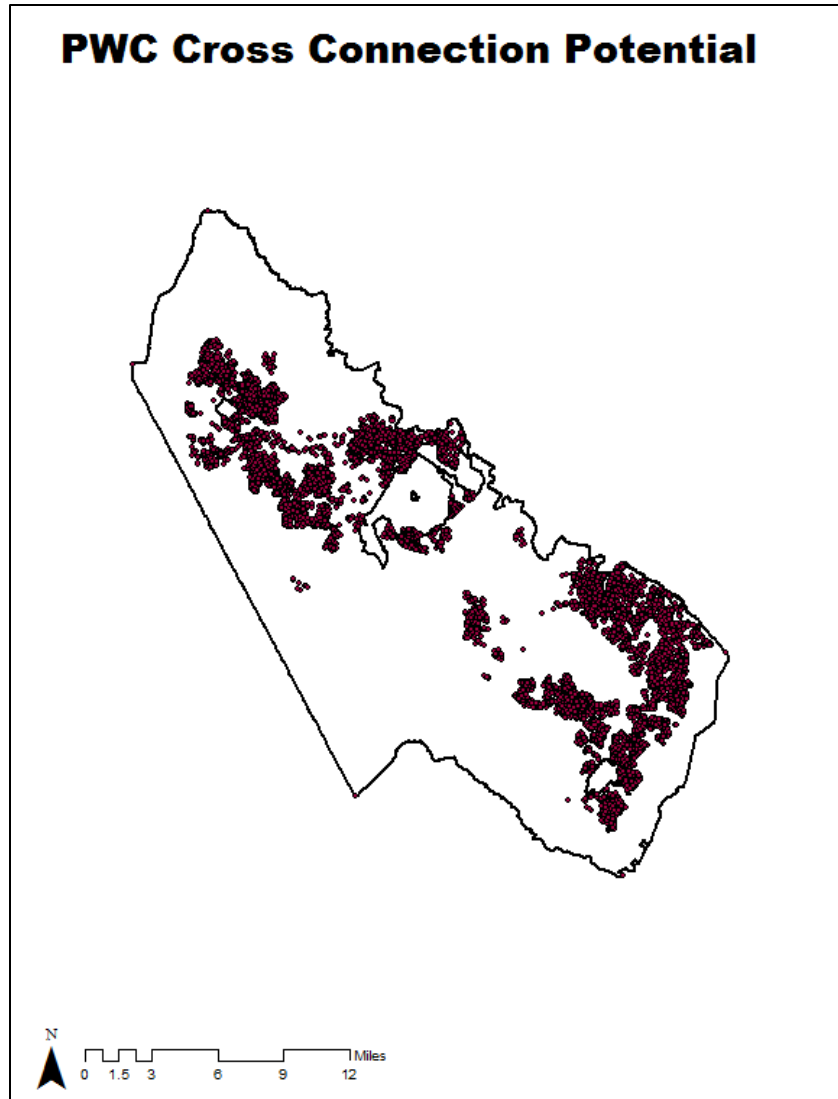


Figure 5: Location of potential cross connection sites within Prince William County

Often, areas with a higher percentage of impervious surfaces tend to contribute greater to pollutant loads. To account for this, a layer depicting impervious surface within the County was incorporated in the model. Impervious surface area is assigned a discharge score of 1. A low score was selected because the large areas covered by impervious surface can cause large impacts to model outputs. A score which balances the impact of impervious surface on pollutant output without weighing too much into model outcomes was desired. Figure 6 below shows impervious area within the County.

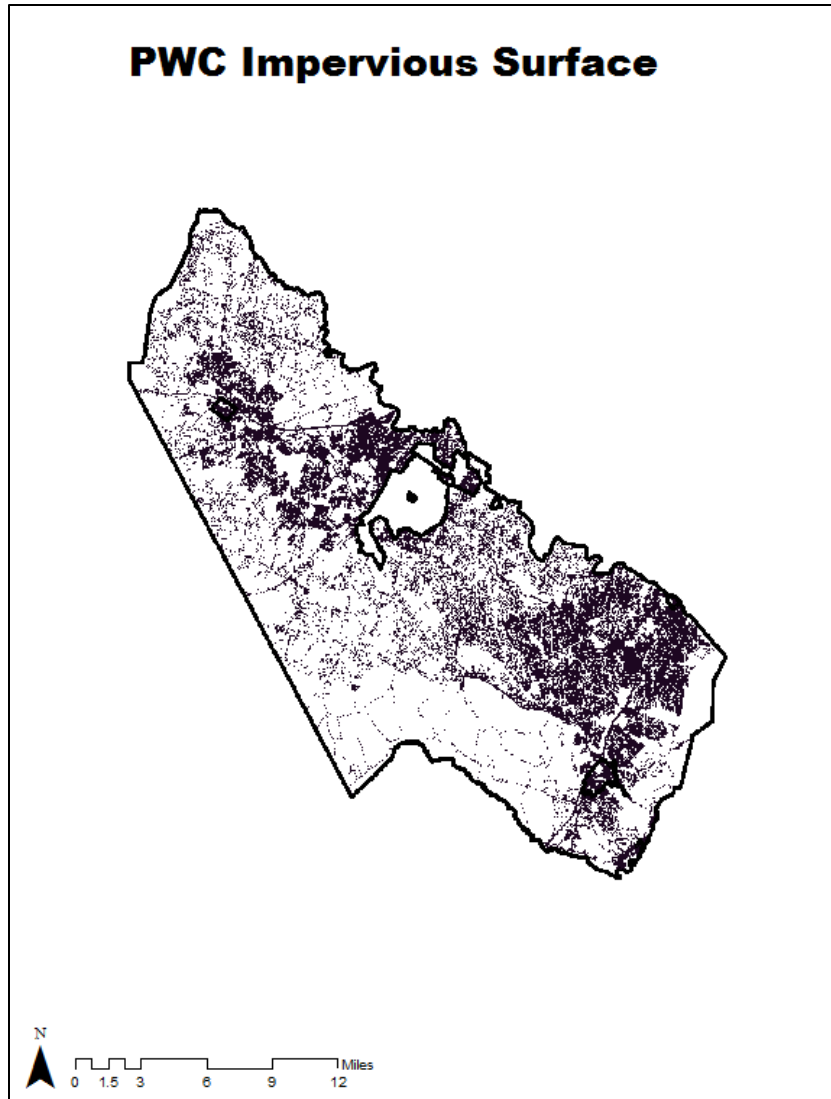


Figure 6: Impervious surface in Prince William County

Lastly, discharges from residential areas had to be accounted for. Although commercial and industrial areas were well represented in the hotspot analysis, residential areas within the County were lacking sufficient input into the model. Using a layer depicting the residential development in the County, these areas were isolated and assigned a discharge score of 1. This gives residential areas a proportioned impact on hotspot scores.

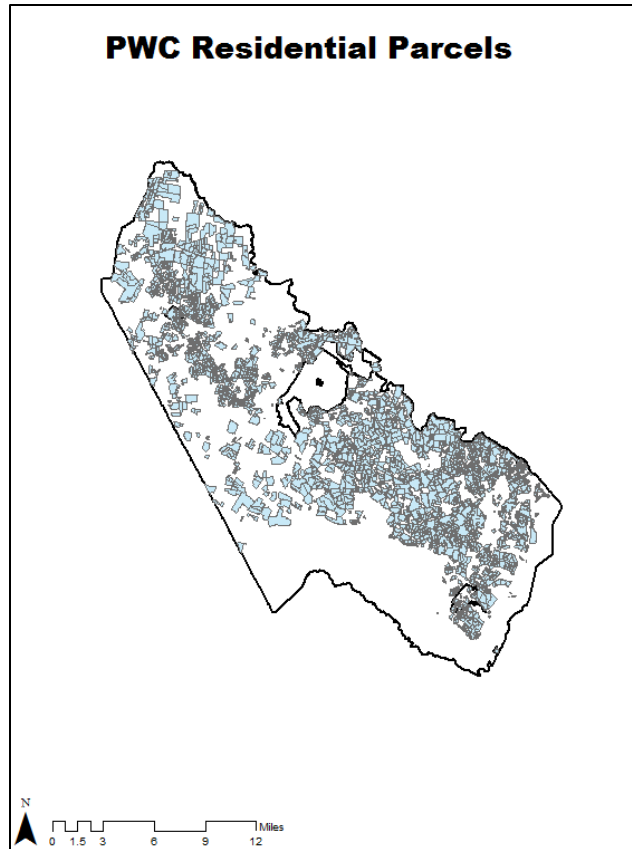


Figure 7: Impervious surface in Prince William County

Hotspot Analysis

Once the layers were manipulated to yield the desired data they had to be combined to produce the final hotspot analysis. Layers were converted from a polygon, line, or point to a raster format to allow for easier compatibility of the various data layers. The Raster format represents data in small cells, allowing for a point by point analysis of each location on the map. It facilitates the ability for data with different layer types (i.e. polygon, line, point) to be combined simply, since they are not compatible otherwise due to differences in shape, size, and location. Areas within a layer where empty space exists cause discontinuity when trying to combine them into the overall analysis. To remedy this, the Reclassify Raster tool was used. This tool removes the “Nodata” classification automatically applied to empty spots in the layer during the raster conversion, allowing a numerical value to be assigned in its place (0). Without this step, only the overlapping areas of data in each layer would be included in the analysis and an incomplete assessment of discharge probability would result.

Each layer was combined for hotspot analysis using the Raster Calculator tool. This tool performs simple mathematical operations at the cellular level, to combine the data into an overall assessment of County hotspots. The tool essentially adds together each included layer combining the discharge probability scores from each cell. Figure 8 below shows a simple representation of this process.

Data is then transposed to the ADC index and watershed maps of the County through simple Spatial Statistics tool. The Spatial Statistics tool performs a basic statistical analysis on raster cells within a specified polygon. For the purpose of this study the mean and sum of probabilities within both the

ADC index areas and sub-watersheds of the County were assessed.

Analysis using Mean vs. Area (Average) Score

There are various ways to interoperate the data output from the model. A score had to be generated for each ADC Index number and watershed in order to effectively assess and utilize model outputs; however, this presented a problem as to what mathematical method of assessment should be

used. The ArcGIS model is generated to output values for the mean, median, minimum, maximum, and sum of each individual ADC index area and watershed. As stated before, for the purpose of this analysis, only the sum and mean probability of discharge are of interest. The sum is the result of all cells within the identified area added together, while the mean is the average cell value within the area. For a watershed scale analysis, the mean probability of discharge must be used. This is because the area of each watershed differs, leaving the sum of the probabilities of each watershed highly dependent on its size. Larger watersheds will accommodate more cells leading to a larger overall probability of discharge. The ADC index, on the other hand has a uniform area removing the effect of size on the output. This allows for the sum of probabilities to be used, which gives a better overall assessment of the characteristics within that area.

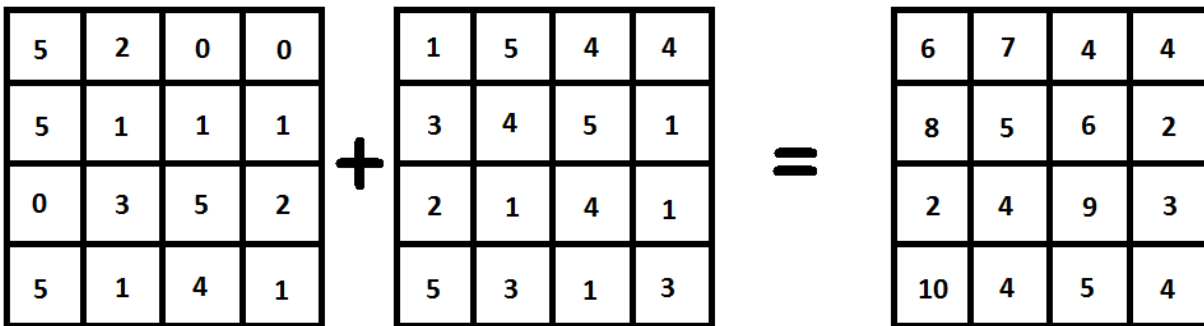


Figure 8: Raster Calculator Example

Isolation of Hotspots and Identification of Outfalls of interest

The first step in using hotspot analysis to identify outfalls for field inspection is to select the ADC index number with the highest probability of discharge is selected from the generated list. The ADC index was chosen as a basis for field analysis for a few reasons: it is easy to navigate to, being the basis for street map navigation; it encompasses a relatively small area, typically containing 8-10 outfalls per Index which is a good size for a day’s field assessment; and, it can be combined easily to into a larger area allowing for an broader perspective on illicit discharge trends. Assessing discharges on a watershed scale would incorporate too large of an area and would not be suitable for a quality comparison

between areas of the County. Once an index number is selected, then an index area map is generated showing all outfalls, storm sewer system, roads, and land uses of interest. Each map is created using ArcGIS tools to zoom to the applicable map location (ADC Index number), and to highlight all applicable features. From this map, a list of all outfalls and their size can be created. This map, with outfall information, can then be used as a field guide for the outfall monitoring.

Model Calibration

Model calibration is an important step in model development. Model outputs must be adjusted to more closely portray actual conditions. Since the raster layers used to sum severities in the model skew the data by giving more weight to larger polygons, point-sized items like outfalls must be given a larger value to compensate and allow ADC areas to more closely reflect the desired weight proportion between inputs. The value given to outfalls was adjusted so that their impact on model outputs was more representative of actual conditions.

Originally, some areas of the map contained a high probability of discharge, despite being located in more rural areas. This was found to be due to an increased proportion of streams meandering throughout the grid. In order to correct this, a balance was struck between the impact value given to streams, and their actual impact on real-world conditions. Similarly, rural areas were triggering high probabilities of discharge due to the age of parcel development despite not having substantial storm sewer systems. To remedy this, the residential and commercial layers were given a larger score to better reflect in-situ conditions.

The model will continue to be adjusted as more data becomes available pertaining to discharges within the County. Data will be used to validate and or adjust assumptions made in this version of the model.

Results and Conclusions

The results of the analysis showed areas with the greatest probability of discharge within Prince William County were consistent with previous field observations and expectations. The Route 1 corridor, Bull Run commercial area, and Potomac Mills Mall all generated high probabilities of discharge. Residential areas had a fairly constant probability of discharge. The highest probability of discharge was located around the specified land uses of interest including shopping centers and auto-related industrial areas. Rural areas with little to no storm sewer system recorded the lowest probability of discharge, as would be expected. A detailed map displaying parcel-based discharge probability was created using the methods described above (see figure 9). The land uses of interest are distinctly represented in red describing the highest discharge potential. Residential areas shown primarily in yellow present a moderate discharge potential. Rural areas are mostly indicated in blue, describing a low discharge potential which are most likely out of the scope for dry weather discharge monitoring. Outfall locations and numbers are not factored in this analysis.

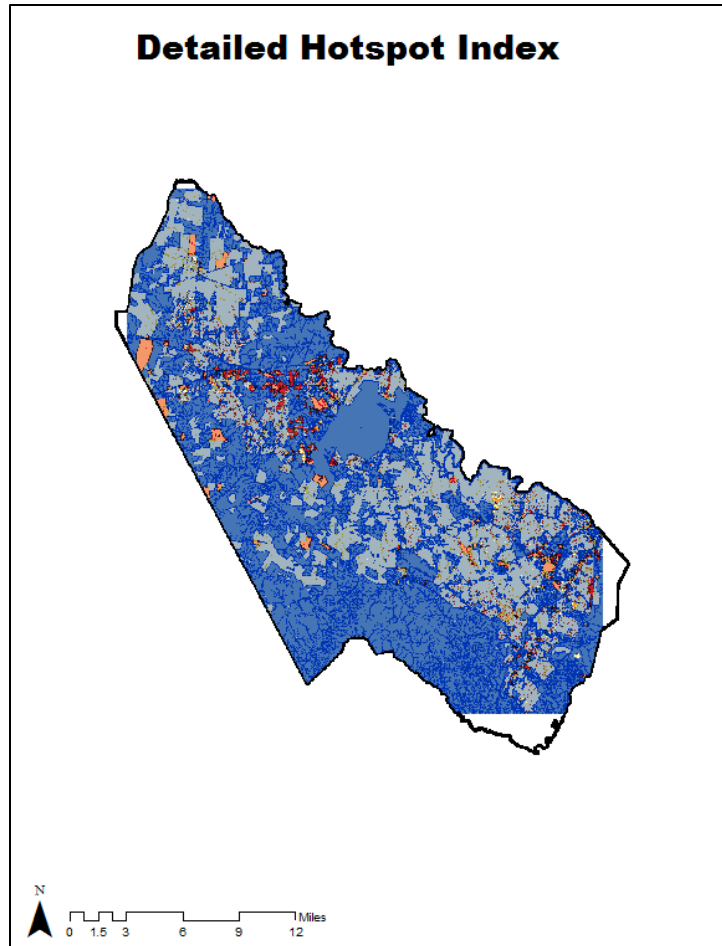


Figure 9: Detailed Discharge Probability

Previously a hotspot analysis was performed on a watershed scale. However, a watershed approach to discharge monitoring tends to skew the data, since discharge probabilities are averaged over the entire watershed making smaller pockets with high discharge; therefore, the ADC index method was determined to be the best.

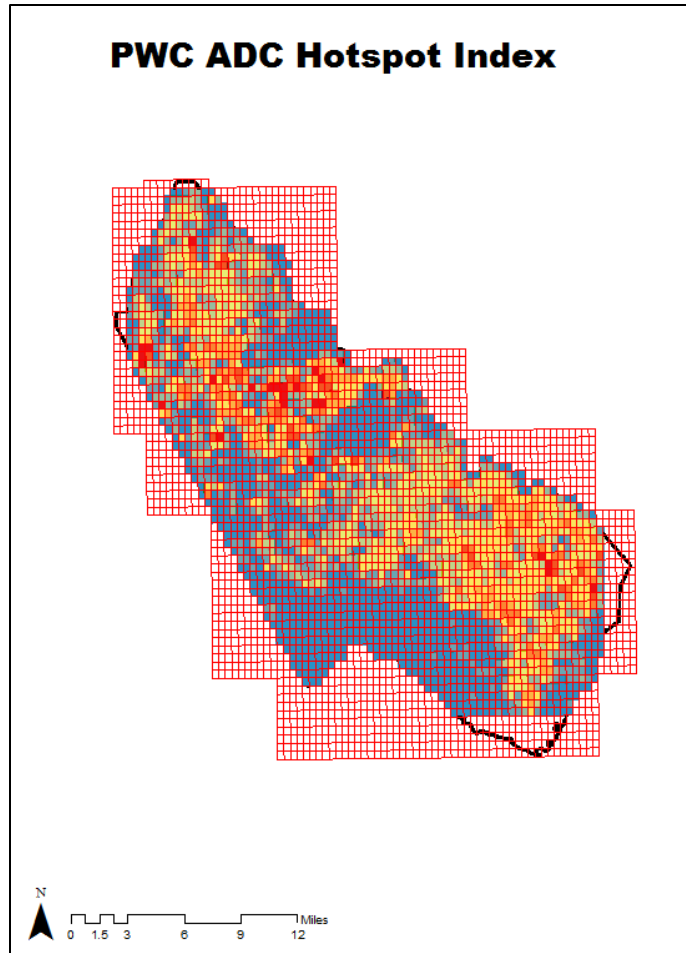


Figure 10: ADC index probability of discharge

The ADC index hotspot map, shown above (figure 10), is used for the inspection scheduling and field analysis of outfalls. As indicated in the parcel and watershed level assessments, County hotspots exist along the Route 1 corridor, Bull Run commercial area, and Town of Haymarket. Unlike the parcel and watershed level assessments, the ADC hotspot map provides a more thorough analysis of where the most probable locations for illicit discharge might actually be present. Table 3, shown below, displays the 50 ADC index areas with the highest probability of discharge. Sorted from highest to lowest, the table serves as the basis for the scheduling of dry weather outfall monitoring in the County.

Table6: Sum and mean probability of discharge scores by ADC index number

ADC_ID	MEAN	SUM
5992-C8	34916	56459172
5990-K5	34175	54919225
5756-G7	31523	51130306
5756-H7	30976	50243072
5991-A6	28771	46896730
5756-G3	27086	43879320
5992-C7	25886	42427154

5992-D7	24576	39641088
6110-G2	24456	39349704
5756-J7	24228	39322044
5757-A2	24170	39227910
5992-A6	23838	39189672
5991-A7	23096	37461712
5992-B6	22846	36782060
5991-A5	22637	36694577
5756-H4	22435	36322265
5992-G9	21579	35605350
5992-H8	21376	35270400
5756-K7	20886	33918864
5874-H7	20478	33542964
5638-G10	20215	33132385
5756-H5	20055	32609430
5756-K6	19838	32097884
5755-C4	19460	31914400
5872-C1	18951	30814326
5992-D8	18811	30624308
5874-J7	18896	30592624
5992-H7	18536	29842960
5756-H8	18295	29839145
5991-G7	18524	29675448
5756-J5	18332	29624512
5992-K10	17877	29211018
5990-C9	17834	29087254
5991-F7	17543	29033665
5992-E10	17820	28921860
5872-H10	17359	28746504
5756-G10	17724	28624260
5756-J6	17357	28222482
5991-B7	17339	28193214
5754-F5	17186	28167854
5756-C10	17250	28031250
5638-H10	17069	27839539
5756-G8	17085	27677700
5992-K6	16869	27597684
5755-E4	16728	27233184
5872-D1	16318	26777838
6110-E3	16210	26762710
5757-H6	16567	26623169
5991-K1	16215	26527740

Future Development of Model

The model will be updated as more detailed discharge information is gathered through the county monitoring program. In addition, updated data layers pertaining to the storm sewer system, outfalls, impaired stream listings, age of development, county land use, and parcel location will continually be introduced to the model. If more specific data on the age of storm sewer infrastructure becomes available, this will also be included in the model. Also, when the extent of the County's MS4 system is identified, model data will be adjusted accordingly. Finally, methods to incorporate the history of complaints and poorly maintained commercial areas will be evaluated and incorporated, if possible, into the assessment. All steps to increase the accuracy of the hotspot analysis will be evaluated for the model on an annual basis, and the model outputs will be re-assessed. An evaluation of the accuracy of the hotspot analysis, as well as verification of model outputs will be conducted on an annual basis.

Appendix B – Desktop Analysis Scoring Worksheet

Appendix C – Field Assessment Scoring Worksheet

PRINCE WILLIAM COUNTY WET WEATHER MONITORING

FIELD DATA COLLECTION FORM

Date:	Time:
Site ID:	Weather:

INSTALLATION SUMMARY:

Analytical Equipment Used:	
Date/Time Installed	Forecast Rainfall:
General Observations/Notes:	

STORM EVENT SUMMARY:

Sampling Successful?	Yes	No	List Details:
Rainfall Data:	Beginning:	End:	Weather Station Reference:
	Total Precipitation:		List Details:
Discharge:	Volume (cubic feet):		List Details:

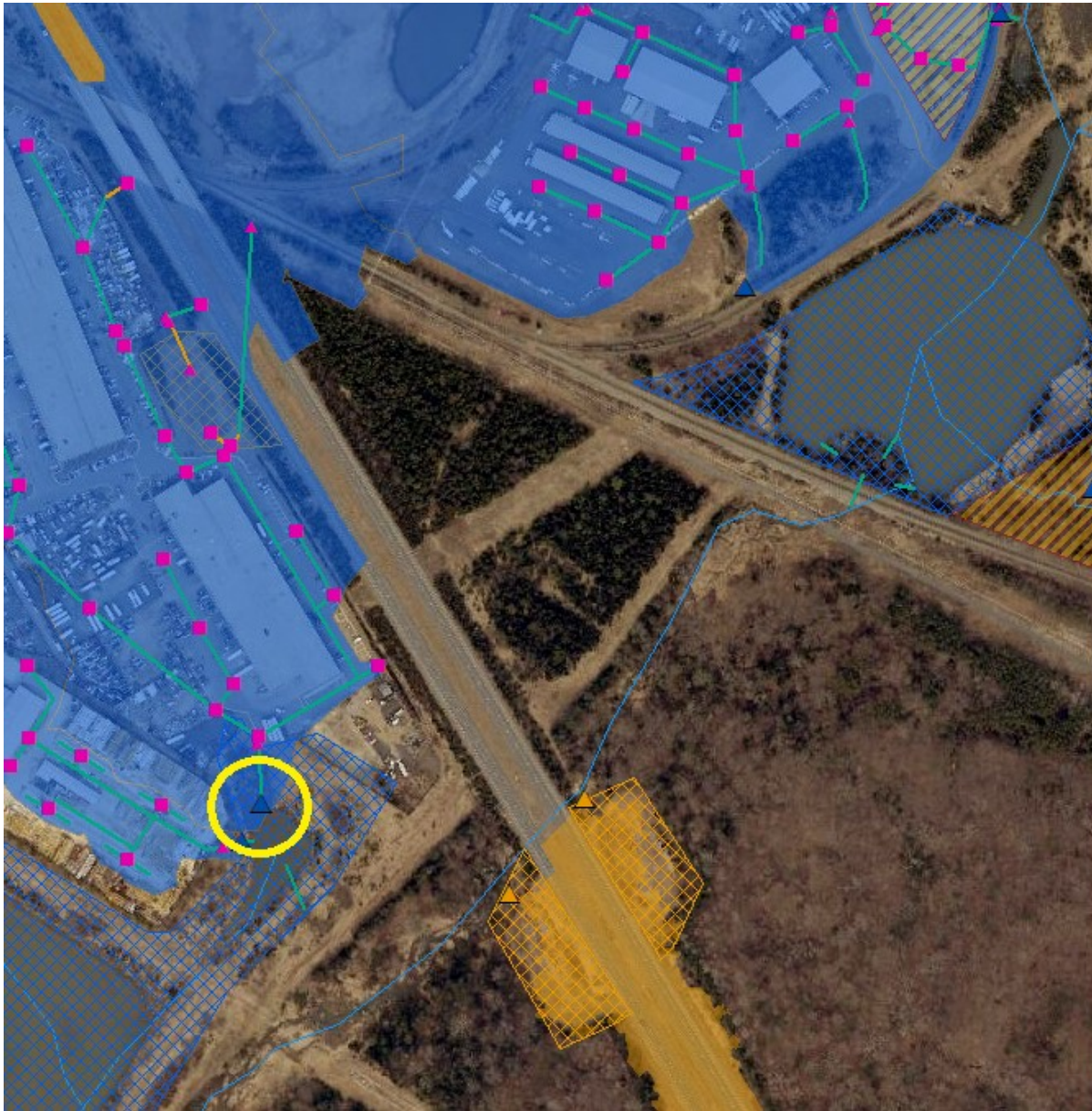
General Observations/Notes:

ADDITIONAL INFORMATION

Other Observations/Comments:

PERSONNEL INFORMATION

Name:	Name:
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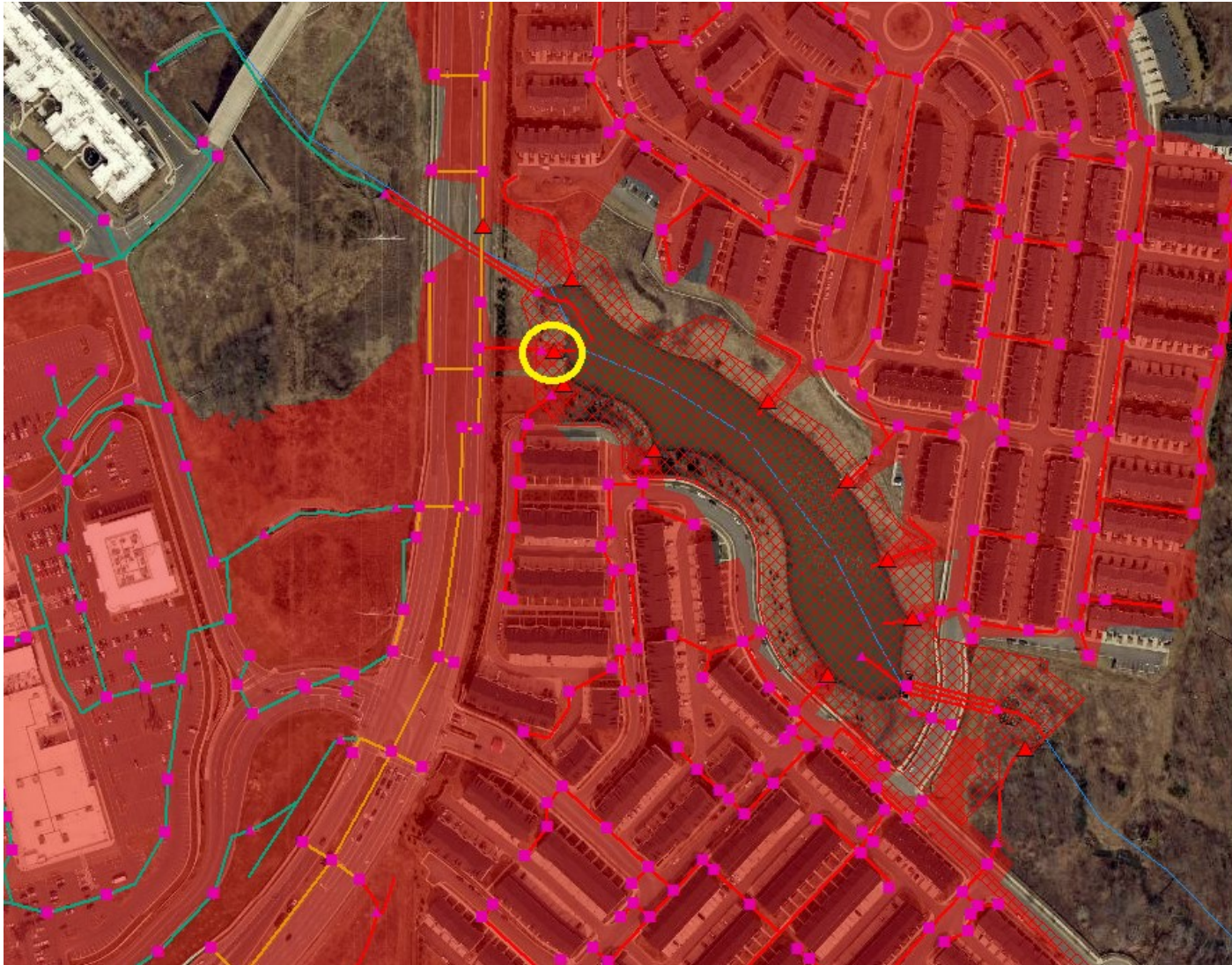


Commercial Outfalls

C

Location: 11,754,329.043 6,968,987.129 Feet

Field	Value
FID	940
Shape	Point
OBJECTID	941
Ownership	C
Origin	RRD
Outfall_ID	941
REACHCODE	02070010002743
VAHU5	PL-L
VAHU6	PL34
HUC_12	020700100504
WTRSHD_ID	262
LONG_DD	-77.5479
LAT_DD	38.7813



Prince William County Outfalls

p

Location: 11,830,482.063 6,914,570.169 Feet

Field	Value
FID	4180
Shape	Point
OBJECTID	4181
Ownership	P
Origin	RRD
Outfall_ID	4181
REACHCODE	02070010000478
VAHU5	PL-O
VAHU6	PL49
HUC_12	020700100804
WTRSHD_ID	845
LONG_DD	-77.2833
LAT_DD	38.6294

Appendix 14: Infrastructure Coordination

Appendix 15: Monitoring Requirements

Sampling Plan Benthic Macroinvertebrate Population and Water Quality Monitoring

Prepared for:



Prince William County Department of Public Works
Virginia

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December 29, 2015

Project No. 151270003.0001

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APPENDICES

Appendix A	Sampling Stations
Appendix B	Field Forms
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LIST OF ACRONYMS

Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc.
BI	Biotic Index
cm	Centimeter
COC	Chain of Custody
CWA	Clean Water Act
CFR	Code of Federal Regulations
DO	Dissolved Oxygen
<i>E. coli</i>	<i>Escherichia coli</i>
EPT	Ephemeroptera/Plecoptera/Tricoptera
GPS	Global Positioning System
m	Meter
µm	Micrometer
MS4	Municipal Separate Storm Sewer System
PMA	Percent Model Affinity
RBP	USEPA Rapid Bioassessment Protocol
TKN	Total Kjeldahl Nitrogen
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VSCI	Virginia Stream Condition Index
VSMP	Virginia Stormwater Management Program

1.0 INTRODUCTION

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) has prepared this sampling plan for compliance with the requirements of the Virginia Stormwater Management Program (VSMP) Permit, Municipal Separate Storm Sewer System (MS4) Permit Number VA0088595, issued by the Virginia Department of Environmental Quality (VDEQ) to Prince William County, Virginia. Section I.C.1 of the permit requires the continued implementation of a biological stream monitoring program that includes an assessment of the habitat and benthic macroinvertebrate community of select Prince William County streams. This sampling plan provides detailed descriptions of the sampling and analytical activities, as well as a technical approach and methods to scientifically evaluate natural conditions in Prince William County streams.

1.1 BACKGROUND

The United States Environmental Protection Agency (USEPA) delegated the authority to implement Section 402 of the Clean Water Act (CWA) to the Commonwealth of Virginia on March 31, 1975. Subsequently, Section 62.1-44.15:25 of the Virginia Stormwater Management Act authorizes VDEQ to issue, deny, amend, revoke, terminate, and enforce permits for the control of stormwater discharges from MS4s. The VSMP Permit Number VA0088595 authorizes point source discharges of stormwater runoff and certain non-stormwater discharges from the MS4 operated or owned by Prince William County. Part I.C of the VSMP permit outlines the monitoring requirements guided by Section 9VAC25-870-380 C.2.c.(4) of the VSMP regulations.

1.2 PURPOSE AND OBJECTIVES

The purpose of this sampling plan is to outline a plan of study that will be used to comply with the biological stream (Part I.C.1) and in-stream monitoring (Part I.C.2) requirements outlined in Prince William County's permit. The specific objectives are to gather sufficient data to evaluate, and subsequently demonstrate, upstream best management practices effectiveness.

2.0 SITE BACKGROUND AND SETTING

A MS4 is a system of conveyances which may include roads with drainage systems, municipal streets, catch basins, ditches, gutters, curbs, man-made channels, or storm drains. It is designed to collect or convey stormwater. The Prince William County MS4 is composed of numerous sites throughout Prince William County and contains over 11,000 miles of stormwater conveyance structures. The Prince William County MS4 discharges stormwater into 24 6th order hydrologic units within 9 major watersheds of the Potomac River Basin.

Prince William County is 338 square miles in area and is bordered by the Potomac River to the east, Fairfax and Loudoun Counties to the north, Fauquier and Stafford Counties to the south, and Fauquier County to the west. The majority of Prince William County is located in the Piedmont Province with the remainder in the Atlantic Coastal Plain province. The Piedmont Province is an eastward sloping plateau characterized by moderate to very steep slopes. The Atlantic Coastal Plain province has primarily flat terrain with elevations ranging from sea level to about 300 feet. The Fall Line is a transitional area where the softer, less consolidated rocks of the Coastal Plain to the east intersect with harder and more resistant metamorphic rocks of the Piedmont to the west, forming an area of ridges, waterfalls and rapids. Land use surrounding the proposed sampling locations includes residential, undeveloped, commercial and recreational areas.

3.0 SAMPLING, ANALYSIS, AND REPORTING

This section describes the activities for the biological stream monitoring and in-stream monitoring required by Part I.C.1 and I.C.2 of VSMP MS4 Permit VA0088595.

3.1 SAMPLING LOCATIONS

Benthic macroinvertebrate and surface water samples will be collected from five locations in Prince William County (Appendix A).

- Little Bull Run, Catharpin Road, Gainesville, Virginia;
- Dawkins Branch, Wellington Road, Manassas, Virginia;
- Purcell Branch, Purcell Road, Manassas, Virginia;
- Neabsco Creek, Delaney Road, Dale City, Virginia;
- Cow Branch, Mellott Road, Woodbridge, Virginia.

Benthic macroinvertebrate sampling reaches will be 100 meters (m) long, ideally located 100 m upstream from road or bridge crossings, and have no major tributaries discharging to the reach. Sample locations will be verified using a handheld global positioning system (GPS) unit. The limits will be marked in the field using survey stakes, pins, or an appropriate alternative for subsequent sampling events. Sample stations and their limits will be re-verified each sampling event using a handheld GPS and will be re-marked, if necessary.

3.2 SAMPLING AND FIELD DATA COLLECTION ACTIVITIES

Sampling and field data collection activities will include physical and chemical data collection, habitat assessment and benthic macroinvertebrate sampling. Sampling will be conducted following the requirements of VSMP MS4 Permit VA0088595 and procedures outlined in the USEPA Rapid Bioassessment Protocol (RBP) (Barbour et al. 1999).

3.2.1 Physical and Chemical Data Collection

Physical and chemical data collection includes collection of in-situ water quality readings, collection of surface water samples, and documentation of stream characteristics. The equipment needed for collection of these data includes a YSI Model 556 water quality meter (or equivalent), Lamotte 2020 turbidity meter (or equivalent), sample collection bottles, gloves, RBP Physical Characterization and Water Quality Field Data Sheets (Appendix B), a camera, a 100-m tape measure, and a flow meter (such as the Marsh-McBirney Flo-Mate). Field activities, measurements and observations will be recorded in indelible ink in a bound field logbook.

3.2.1.1 Water Quality

Water quality readings and surface water samples will be collected prior to disturbance of the sample reach. In-stream monitoring is required to be conducted at 5 stream sites for the following parameters per VSMP MS4 Permit VA0088595:

- pH,
- dissolved oxygen (DO),
- temperature,
- total suspended solids (TSS),
- ammonia as nitrogen,
- nitrate plus nitrite nitrogen,
- total Kjeldahl nitrogen (TKN),
- total nitrogen (calculation),
- dissolved phosphorus,
- total phosphorus, and
- *Escherichia (E.) coli*.

The RBP Physical Characterization and Water Quality Field Data Sheet (Appendix B) requires the measurement of pH, DO, and temperature as well as the following parameters in addition to those required by VSMP MS4 Permit VA0088595:

- conductivity or specific conductance, and
- turbidity.

In-situ water quality data will be collected using a multiprobe water quality meter (YSI Model 556 or equivalent) and a handheld turbidity meter (Lamotte 2020 or equivalent). The multiprobe will be calibrated daily using standard solutions. A calibration form is included in Appendix B.

Multiprobe readings are taken mid-channel and the unit should be allowed to stabilize before recording readings.

Grab surface water samples to be collected for laboratory analysis of TSS, ammonia, nitrate/nitrite, total Kjeldahl nitrogen (TKN), dissolved phosphorus, total phosphorus, and *E. coli* should be collected at mid-channel at the zero mark of the reach in an area with cross-sectional homogeneity, and well mixed water. The samples will be placed in coolers on ice and shipped overnight under chain-of-custody (COC) procedures to a qualified laboratory licensed in the Commonwealth of Virginia. Custody seals will be employed to check for tampering during shipment. Samples will be analyzed in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial

Environmental Laboratories. Methods used for sample analysis will be those approved by Title 40 Code of Federal (CFR) Regulations Part 136 or alternative methods approved by USEPA.

3.2.1.2 Stream Characteristics

Upstream and downstream photographs will be taken at each sampling location to document conditions at the time of sampling. Physical characteristics of the streams will be recorded on the Physical Characterization and Water Quality Field Data Sheet of the RBP (Appendix B). This field sheet includes a description of the sample location, weather conditions, stream characterization, watershed features (surrounding land use, non-point source pollution, erosion), riparian vegetation, instream features (high water mark, width, depth, morphology, velocity, canopy cover, channelization, and dams), large woody debris, aquatic vegetation, water quality, and substrate (odors, oils, deposits, components). The high water mark to be recorded on the form is defined as the vertical distance from the bankfull margin of the stream bank to the peak overflow level, as indicated by debris hanging in riparian or floodplain vegetation and deposition of silt or soil.

An estimate of large woody debris in contact with the stream water is recorded on the Physical Characterization and Water Quality Field Data Sheet (Appendix B). Each woody debris formation with a surface area in the plane of the water surface that is greater than 0.25 square m is recorded on the stream reach drawing with the size of the woody debris estimated to the nearest 0.5 m. Only the portion in contact with the water is measured. Woody debris with a length or width less than 0.5 m is not counted. Root wads and logs/limbs in the water margin that are in contact with the water are arbitrarily given a width of 0.5 m. The length and width of each formation are multiplied and the resulting products are summed to give the aquatic habitat area influenced. This area is divided by the water surface area within the reach to obtain the large woody debris density.

3.2.2 Habitat Assessment

Habitat characteristics will be assessed using the Habitat Assessment Field Data Sheet (Appendix B), as specified in the RBP. The habitat assessment is performed along the 100-m reach from which the biological sampling is to be conducted. Care will be taken not to disturb the benthic macroinvertebrate sampling habitat during the habitat assessment.

The Habitat Assessment Field Data Sheet (Appendix B) of the RBP will be completed at each location. There are high gradient stream and low gradient stream versions of this form. The high gradient form is used for streams located in moderate to high gradient landscapes with coarse substrates. The low gradient form is used for streams that are located in low to moderate

gradient landscapes and have fine substrates. The appropriate data form for each sampling location will be determined during the site reconnaissance.

The habitat assessment incorporates features of the entire sampling reach. The form rates ten parameters as optimal, suboptimal, marginal, or poor. The parameters to be rated include epifaunal substrate, embeddedness or pool substrate characterization, velocity/depth regime or pool variability, sediment deposition, channel flow status, channel alteration, riffle frequency or channel sinuosity, bank stability, bank vegetative protection, and riparian zone. The Habitat Assessment Field Data Sheet should be completed by a team of 2 or more qualified personnel that come to a consensus on determination of quality.

3.2.3 Benthic Macroinvertebrate Sample Collection

Biological stream monitoring will be conducted twice per year, spring and fall, at 5 locations (Appendix B). The collection of wildlife for scientific and/or educational purposes in Virginia requires a scientific collection permit. Permit applications are available from the Virginia Department of Game and Inland Fisheries (VDGIF) and should be submitted at least 1 month prior to benthic macroinvertebrate sample collection. The permit requires annual renewal and submittal of annual catch report. VDGIF requests to be notified seven days in advance of each sampling event.

The multiple habitat sampling method will be used to characterize the benthic macroinvertebrate community, as outlined in USEPA RBP Section 7.2. This method is used to collect benthic macroinvertebrates from various substrate types and micro-habitats available within a 100-m sampling reach. Sampling begins at the downstream end of the reach and proceeds upstream. Habitats will be sampled by using a 0.3-m wide, 500-micrometer (μm) mesh, D-frame dip net. A total of 20 jabs or kicks are taken from all major habitat types in the reach. A jab consists of forcefully thrusting the net into a productive habitat for a linear distance of 0.5 m. A kick is accomplished by positioning the net and disturbing the substrate for a distance of 0.5 m upstream of the net.

Different types of habitat are to be sampled in approximate proportion to their representation of surface area of total macroinvertebrate habitat in the reach. The habitats sampled typically consist of loose cobble, fallen logs and tree limbs (snags), vegetated banks or undercut banks with exposed plant root material, sand and silt bottom materials, and submerged macrophytes. Other habitats that may be sampled include bedrock, large rocks, boards and litter; and detrital pockets of twigs and leaves. The RBP Benthic Macroinvertebrate Field Data Sheet (Appendix B) will be completed for each sample. This form includes a summary of the percent of each

habitat type present, the number of jabs or kicks taken in each habitat type, and field observations of aquatic biota.

The jab or kick method varies with habitat type. Shallow areas with coarse substrates are sampled by holding the bottom of the dip net against the substrate and kicking the substrate upstream of the net. Submerged woody debris can be sampled by kicking while placing a net downstream, jabbing directly into medium-sized woody debris or by rinsing the woody debris directly into the sieve bucket. Sample submerged undercut banks by jabbing into the habitat. Bump or jab the net along the bottom of plants in the stream to sample rooted macrophytes. Sand and soft sediment can be sampled by bumping the net along the surface of the substrate.

The 20 jabs and kicks will be composited into a 0.5- μ m mesh sieve bucket to obtain a single homogenous sample. The net will be thoroughly back-washed into the sieve bucket every few jabs to facilitate collection of benthic macroinvertebrates that are not readily visible. Large debris will be rinsed and removed from the sieve bucket. Observable benthic macroinvertebrates will be collected from the net with forceps and placed in a labeled, sample container. Small debris will be transferred from the sieve bucket to the sample container. An index card indicating the sample identification, date, stream name, sample location, and sampler name will be placed inside each sample container. The index card will be printed in pencil to prevent dissolution of the label by preservative which will be added by the analytical laboratory.

Benthic macroinvertebrate samples will be placed on ice in coolers and shipped overnight under COC procedures to an accredited benthic macroinvertebrate laboratory. Custody seals will be employed to check for tampering during shipment.

3.2.4 Field Duplicates

Duplicates are collected in the field for surface water analytical samples and benthic macroinvertebrate samples at a frequency of 1 per ten samples. Since there are five sample locations, duplicates will be collected every other sampling event at one sample location. Surface water duplicates will be collected by filling extra grab sample bottles for each analysis. The benthic macroinvertebrate duplicates will be collected from a sample location with habitat available for 2 sets of 20 jabs within the sample reach.

3.3 BENTHIC MACROINVERTEBRATE SAMPLE SORTING

The laboratory will sort, mount, identify, enumerate, evaluate, and classify benthic macroinvertebrates. In addition to sorting and identification of benthic macroinvertebrates, the laboratory staff will perform appropriate benthic macroinvertebrate index calculations and will perform and interpret statistical analyses of the benthic macroinvertebrate database. The

laboratory staff will also utilize the habitat descriptions and evaluations and the field physical/chemical water data parameters collected by field sampling personnel in the evaluation of benthic macroinvertebrates in the context of their physical/chemical habitats at the sampling location.

Samples should be logged in on a designated form or logbook such as the RBP Benthic Macroinvertebrate Sample Log-In Sheet (Appendix C). The log-in should contain the information from the sample label and the number of containers. A minimum of 200 ± 20 percent organisms will be sorted from each benthic macroinvertebrate sample, using the Caton subsampler (Caton 1991). This subsampler consists of square metal frame with a gridded mesh bottom (screen), a plastic tray that accommodates the frame, a square metal “cookie cutter” (cutter), and a metal scoop. The sample will be emptied onto the 500- μ m mesh screen and washed to remove fixative and excess detritus. The sample and screen will then be placed into the tray and enough water added to cover the sample contents. The contents will be evenly distributed over the screen, which will then be lifted from the tray of water so the sample contents will settle onto the screen, which is divided into 6 centimeter (cm) by 6 cm portions (grids). After randomly-selecting four grids and locating them using an alphanumeric designation and crosspieces on the top of the screen, the contents of each grid will be removed using a scoop and a brush. A minimum of four grids will be used to obtain the specified number. If the four grids do not contain 200 ± 20 percent organisms, enough grids will be examined to acquire this number. If the four grids contain too many organisms, they will be emptied into a smaller subsampler of similar design, and four grids randomly chosen for sorting.

The contents from each grid will be transferred to a container, and enough water will be added to keep the organisms moist during the sorting process. The selected subsample will then be taken to the sorting station. Small aliquots of sample will be put into a gridded Petri dish, and the organisms removed, counted and placed into patent lip vials containing 70 percent ethanol by major group (e.g., Trichoptera, Ephemeroptera, Bivalvia, etc.). Vials will be labeled with site, date, major group, number of individuals, and size of subsample. The RBP Benthic Macroinvertebrate Laboratory Bench Sheet (Appendix C) should be completed. The sorted and unsorted portions of the sample will be preserved separately using the original fixative.

Organisms will be identified to the generic/specific level, except for groups such as nematodes, and damaged or very small individuals. Organisms, except oligochaetes and chironomid larvae, will be identified using a stereomicroscope. Oligochaetes and chironomid larvae will be mounted on microscope slides using CMC mounting medium prior to identification using a compound microscope.

3.3.1 Quality Assurance/Quality Control Procedures

Subsequent to benthic macroinvertebrate sample sorting, the residue from a minimum of 10 percent of the samples will be rechecked to document that 95 percent of the total number of organisms has been removed. If there is an error of greater than 5 percent, then all of the samples completed by that particular sorter will be re-examined. The results from these checks will be recorded on the laboratory bench sheets (Appendix C) and will be presented with the other data in the report.

A voucher collection for Prince William County dataset, consisting of one to three specimens for each taxon will be prepared in accordance with the RBP. These slides will be labeled, kept separate from the remaining identifications, and noted on the laboratory bench sheets. A taxonomist not responsible from the original identifications should spot check samples according to the identifications on the bench sheet.

Data will be entered into a standardized Excel spreadsheet and double-checked for accuracy.

3.3.2 Benthic Macroinvertebrate Sample Results Evaluation

Metrics are biological attributes that represent elements of the structure and function of the bottom-dwelling macroinvertebrate assemblage. Metrics are specific measures of diversity, composition, and tolerance to pollution, and when combined into a multimetric index can integrate biological community characteristics and measure the overall response of the community to environmental stressors. Biological metrics include:

- **Taxa Richness** – The number of taxa reflects the health of the community through a measurement of the variety of taxa present. This measure generally increases with increasing water quality, habitat diversity, and/or habitat suitability.
- **Abundance** – The number of individual organisms found at each location. This measure can indicate whether an area is supporting a large, and when coupled with taxa richness, diverse community.
- **EPT Index (Ephemeroptera/Plecoptera/Trichoptera [mayflies/stoneflies/caddisflies])** – The EPT Index is the total number of distinct taxa within these three orders. This value summarizes taxa richness within the insect orders that are generally considered to be the most sensitive to pollution.
- **EPT/EPT + Chironomidae (midgeflies) Ratio** – A measure of abundance ratio of these two groupings indicates the balance of the benthic community diversity.

- **Percent Dominant Taxon** – This measure is the percentage occurrence of the most dominant taxon for each location. This measure is based on the assumption that dominance by a single taxon reflects an impaired community.
- **Percent Chironomidae** -- This measure is the ratio of the abundance of Chironomidae to the total number of organisms found in a replicate. The response of this measure is to increase with increased perturbation.
- **Biotic Index (BI)** – The BI assigns tolerance values to individual taxa ranging from 0 to 10, with 0 being intolerant of pollution and 10 being very tolerant of pollution. The tolerance values assigned to the various taxa are taken from a variety of sources that best reflect the area sampled, such as Bode et al. (2002), Klemm et al. (1990), Hilsenhoff (1987), North Carolina Department of Environment, Health, and Natural Resources (2003), and the Tennessee Department of Environment and Conservation (2011). The formula for calculating the BI is:

$$BI = \sum [(tv)_i n_i / N]$$

where:

- (tv)_i = the tolerance value of the ith taxon,
- n_i = the abundance of the ith taxon, and
- N = the total number of individuals in the sample.

- **Percent Model Affinity (PMA)** – The PMA expresses the sample as the percentage composition of seven major organism groups (Chironomidae, Trichoptera, Ephemeroptera, Plecoptera, Coleoptera [beetles], Oligochaeta [aquatic segmented worms], and others) and compares it to an ideal community composition derived from data from unpolluted streams (Bode et al., 2002). The degree of affinity of the sample percentage composition with that of the ideal is used to make a judgment about the water quality of the stream being studied.

Additional biological metrics will be used, if appropriate, such as:

- percentage oligochaetes + chironomids,
- percentage scrapers/scrapers + filterers,
- percentage clingers
- percentage EPT,
- percentage Oligochaeta,
- percentage Hydropsychidae/Trichoptera, and
- number of taxa in each tolerance category.

VDEQ has developed the Virginia Stream Condition Index (VSCI) (TetraTech 2003) that predicts the health of Virginia's non-coastal streams. The VSCI uses biological, physical, and chemical conditions from a least disturbed reference site within the region and has been statistically calibrated by VDEQ data. Eight VSCI metrics are combined in a multimetric approach to identify biological impairment as discussed in the VDEQ 2008 Quality Assurance Project Plan (VDEQ 2008). The eight biological measures used in the VSCI are: total taxa, EPT taxa, percent Ephemeroptera, percent Plecoptera-Trichoptera less Hydropsychidae, percent scrapers, percent Chironomidae, percent top 2 dominant taxa, and biotic index. Prince William County benthic macroinvertebrate samples will be evaluated using the VSCI.

3.3 REPORTING

An annual summary report will be prepared following each year of sampling. This report will summarize the macroinvertebrate and in-stream monitoring results and analyses, and include an interpretation of the data with respect to long-term patterns and trends. Initial or first year results from sampling and analysis will serve as a benchmark at each station for subsequent sampling events, and for comparative analysis performed on a station-by-station basis. Report appendices will include data and documentation from that year of sampling events.

4.0 REFERENCES

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- Bode, R. W., M. A. Novak, L. E. Abele, D. L. Heitzman, and A. J. Smith. 2002. Quality Assurance Work Plan for Biological Stream Monitoring in New York State. NYS Dept. Environ. Conserv., Division of Water Albany. 115 pp.
- Caton, L. W. 1991. Improved Subsampling Methods for the EPA "Rapid Bioassessment" Benthic Protocols. Bull. N. Amer. Benthological Soc. 8: 317-319.
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- Klemm, D. J., P. A. Lewis, F. Fulk, and J. M. Lazorchak, 1990. Macroinvertebrate Field and Laboratory Methods for Evaluating the Biological Integrity of Surface Waters. EPA/600/4-90/030. U.S. Environmental Protection Agency, Cincinnati. 256 pp.
- North Carolina Department of Environment, Health, and Natural Resources. 2003. Standard Operating Procedures for Benthic Invertebrates. NCDENR Biological Assessment Unit.
- Tennessee Department of Environment and Conservation. 2011. Division of Water Pollution Control. Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys.
- TetraTech, 2003. A Stream Condition Index for Virginia Non-Coastal Streams. Owings Mill, MD. September 2003.
- Virginia Department of Environmental Quality, 2008. Biological Monitoring Program Quality Assurance Project Plan for Wadeable Streams and Rivers. Division of Water Quality, Office of Water Quality Monitoring and Assessment Programs, VA. August 2008.

**APPENDIX A
SAMPLING STATIONS**



Little Bull Run - Catharpin Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Little Bull Run - Catharpin Road



1 in = 400 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

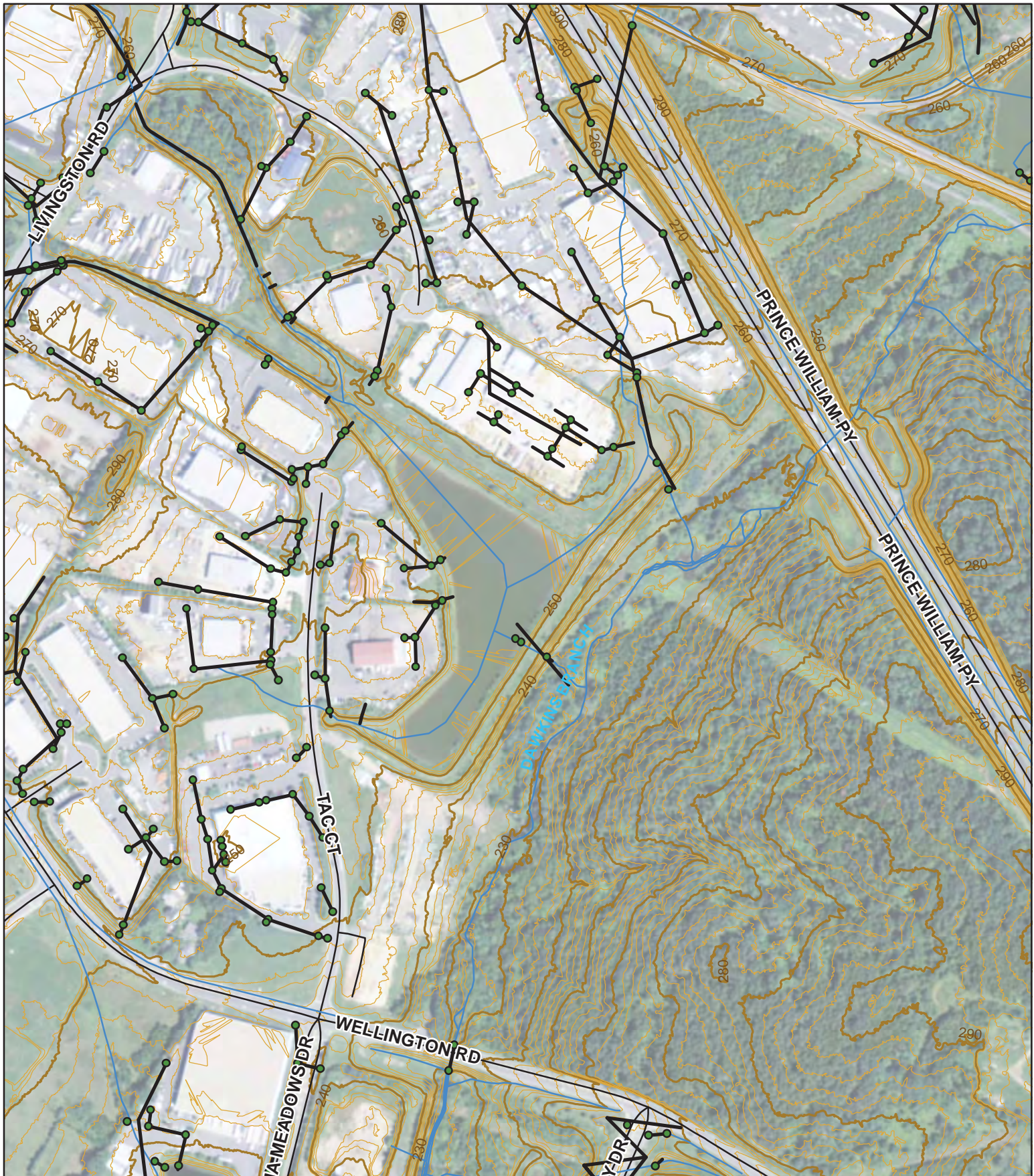


Dawkins Branch - Wellington Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Dawkins Branch - Wellington Road



1 in = 400 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA/USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Purcell Branch - Purcell Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

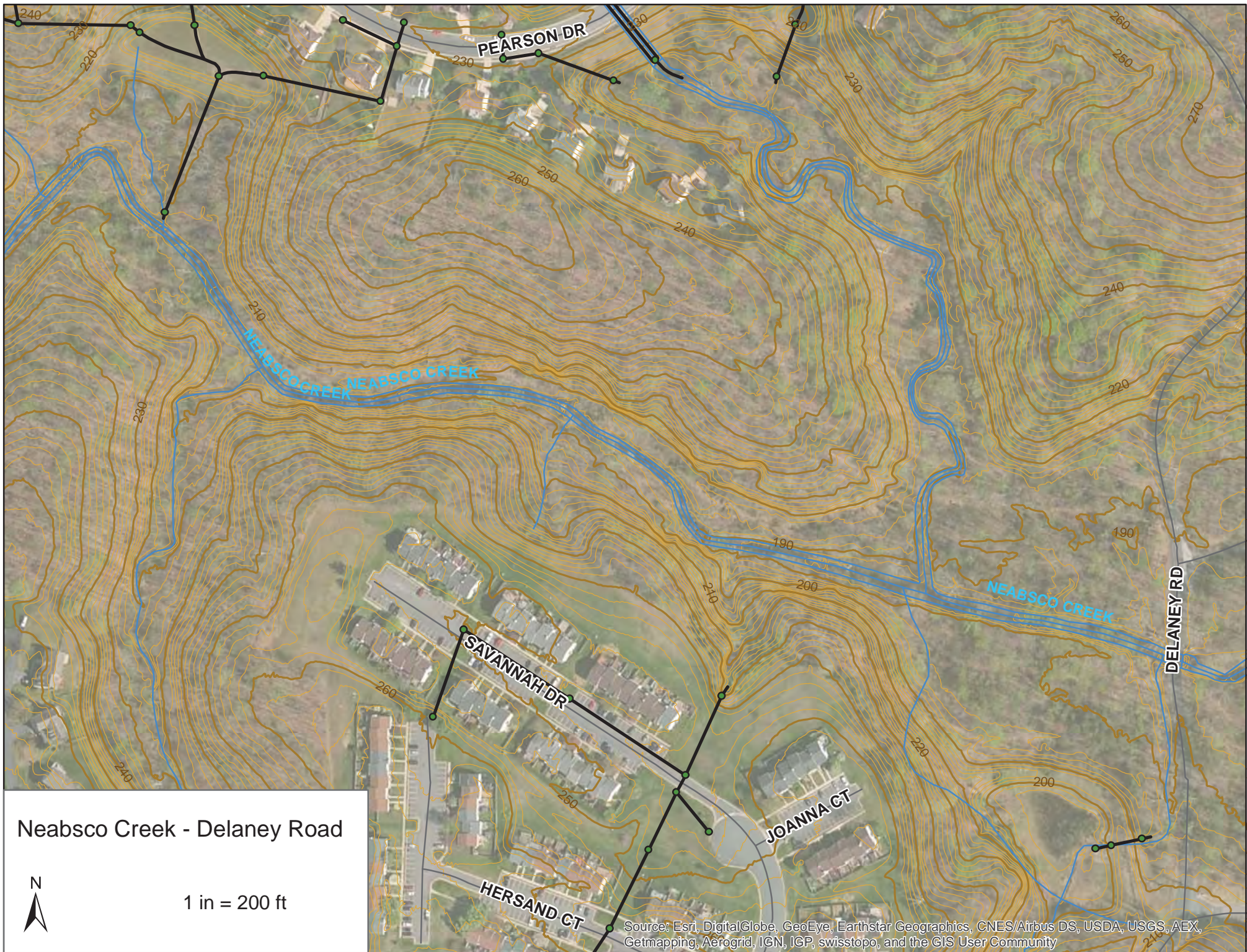


Purcell Branch - Purcell Road



1 in = 400 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Neabsco Creek - Delaney Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Neabsco Creek - Delaney Road



1 in = 400 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Cow Branch - Mellott Road



1 in = 200 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Cow Branch - Mellott Road



1 in = 400 ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar/Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

**APPENDIX B
FIELD FORMS**

**PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(BACK)**

WATERSHED FEATURES	Predominant Surrounding Landuse <input type="checkbox"/> Forest <input type="checkbox"/> Commercial <input type="checkbox"/> Field/Pasture <input type="checkbox"/> Industrial <input type="checkbox"/> Agricultural <input type="checkbox"/> Other _____ <input type="checkbox"/> Residential	Local Watershed NPS Pollution <input type="checkbox"/> No evidence <input type="checkbox"/> Some potential sources <input type="checkbox"/> Obvious sources Local Watershed Erosion <input type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy
RIPARIAN VEGETATION (18 meter buffer)	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Trees <input type="checkbox"/> Shrubs <input type="checkbox"/> Grasses <input type="checkbox"/> Herbaceous dominant species present _____	
INSTREAM FEATURES	Estimated Reach Length _____ m Estimated Stream Width _____ m Sampling Reach Area _____ m ² Area in km ² (m ² x1000) _____ km ² Estimated Stream Depth _____ m Surface Velocity _____ m/sec (at thalweg)	Canopy Cover <input type="checkbox"/> Partly open <input type="checkbox"/> Partly shaded <input type="checkbox"/> Shaded High Water Mark _____ m Proportion of Reach Represented by Stream Morphology Types <input type="checkbox"/> Riffle _____% <input type="checkbox"/> Run _____% <input type="checkbox"/> Pool _____% Channelized <input type="checkbox"/> Yes <input type="checkbox"/> No Dam Present <input type="checkbox"/> Yes <input type="checkbox"/> No
LARGE WOODY DEBRIS	LWD _____ m ² Density of LWD _____ m ² /km ² (LWD/ reach area)	
AQUATIC VEGETATION	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Free floating <input type="checkbox"/> Floating Algae <input type="checkbox"/> Attached Algae dominant species present _____ Portion of the reach with aquatic vegetation _____%	
WATER QUALITY	Temperature _____ °C Specific Conductance _____ Dissolved Oxygen _____ pH _____ Turbidity _____ WQ Instrument Used _____	Water Odors <input type="checkbox"/> Normal/None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other _____ Water Surface Oils <input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globs <input type="checkbox"/> Flecks <input type="checkbox"/> None <input type="checkbox"/> Other _____ Turbidity (if not measured) <input type="checkbox"/> Clear <input type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____
SEDIMENT/SUBSTRATE	Odors <input type="checkbox"/> Normal <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Anaerobic <input type="checkbox"/> None <input type="checkbox"/> Other _____ Oils <input type="checkbox"/> Absent <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Profuse	Deposits <input type="checkbox"/> Sludge <input type="checkbox"/> Sawdust <input type="checkbox"/> Paper fiber <input type="checkbox"/> Sand <input type="checkbox"/> Relict shells <input type="checkbox"/> Other _____ Looking at stones which are not deeply embedded, are the undersides black in color? <input type="checkbox"/> Yes <input type="checkbox"/> No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256 mm (10")				
Cobble	64-256 mm (2.5"-10")		Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")				
Sand	0.06-2mm (gritty)		Marl	grey, shell fragments	
Silt	0.004-0.06 mm				
Clay	< 0.004 mm (slick)				

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME _____		LOCATION _____	
STATION # _____ RIVERMILE _____		STREAM CLASS _____	
LAT _____ LONG _____		RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____			
FORM COMPLETED BY _____		DATE _____ 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 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.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Embeddedness	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.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	3. Velocity/Depth Regime	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).
	SCORE	20 19 18 17 16	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 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.	
SCORE	20 19 18 17 16	15 14 13 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	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

	Habitat Parameter	Condition Category																			
		Optimal				Suboptimal				Marginal				Poor							
Parameters to be evaluated broader than sampling reach	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	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	7. Frequency of Riffles (or bends)	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	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	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.							
	Note: determine left or right side by facing downstream.																				
	SCORE ___ (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
SCORE ___ (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
	9. Vegetative Protection (score each bank)	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 ___ (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	SCORE ___ (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	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 ___ (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	SCORE ___ (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0		

Total Score _____

HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (FRONT)

STREAM NAME _____		LOCATION _____	
STATION # _____ RIVERMILE _____		STREAM CLASS _____	
LAT _____ LONG _____		RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____			
FORM COMPLETED BY _____		DATE _____ 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	20 19 18 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	20 19 18 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	20 19 18 17 16	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	20 19 18 17 16	15 14 13 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	20 19 18 17 16	15 14 13 12 11	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													
Parameters to be evaluated broader than sampling reach	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	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	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	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	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 __ (LB)	Left Bank		10	9	8	7	6	5	4	3	2	1	0	Right Bank		10	9	8	7	6	5	4	3	2	1	0
	SCORE __ (RB)	Right Bank		10	9	8	7	6	5	4	3	2	1	0	Left Bank		10	9	8	7	6	5	4	3	2	1	0
	9. Vegetative Protection (score each bank)	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 __ (LB)	Left Bank		10	9	8	7	6	5	4	3	2	1	0	Right Bank		10	9	8	7	6	5	4	3	2	1	0
	SCORE __ (RB)	Right Bank		10	9	8	7	6	5	4	3	2	1	0	Left Bank		10	9	8	7	6	5	4	3	2	1	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 __ (LB)	Left Bank		10	9	8	7	6	5	4	3	2	1	0	Right Bank		10	9	8	7	6	5	4	3	2	1	0
	SCORE __ (RB)	Right Bank		10	9	8	7	6	5	4	3	2	1	0	Left Bank		10	9	8	7	6	5	4	3	2	1	0

Total Score _____

BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

STREAM NAME _____		LOCATION _____	
STATION # _____	RIVERMILE _____	STREAM CLASS _____	
LAT _____	LONG _____	RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____		LOT NUMBER _____	
FORM COMPLETED BY _____		DATE _____ TIME _____ AM PM	REASON FOR SURVEY _____

HABITAT TYPES	Indicate the percentage of each habitat type present <input type="checkbox"/> Cobble _____% <input type="checkbox"/> Snags _____% <input type="checkbox"/> Vegetated Banks _____% <input type="checkbox"/> Sand _____% <input type="checkbox"/> Submerged Macrophytes _____% <input type="checkbox"/> Other (_____) _____%
SAMPLE COLLECTION	Gear used <input type="checkbox"/> D-frame <input type="checkbox"/> kick-net <input type="checkbox"/> Other _____ How were the samples collected? <input type="checkbox"/> wading <input type="checkbox"/> from bank <input type="checkbox"/> from boat Indicate the number of jabs/kicks taken in each habitat type. <input type="checkbox"/> Cobble _____ <input type="checkbox"/> Snags _____ <input type="checkbox"/> Vegetated Banks _____ <input type="checkbox"/> Sand _____ <input type="checkbox"/> Submerged Macrophytes _____ <input type="checkbox"/> Other (_____) _____
GENERAL COMMENTS	

QUALITATIVE LISTING OF AQUATIC BIOTA

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare, 2 = Common, 3 = Abundant, 4 = Dominant

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

FIELD OBSERVATIONS OF MACROBENTHOS

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare (1-3 organisms), 2 = Common (3-9 organisms), 3 = Abundant (>10 organisms), 4 = Dominant (>50 organisms)

Porifera	0	1	2	3	4	Anisoptera	0	1	2	3	4	Chironomidae	0	1	2	3	4
Hydrozoa	0	1	2	3	4	Zygoptera	0	1	2	3	4	Ephemeroptera	0	1	2	3	4
Platyhelminthes	0	1	2	3	4	Hemiptera	0	1	2	3	4	Trichoptera	0	1	2	3	4
Turbellaria	0	1	2	3	4	Coleoptera	0	1	2	3	4	Other	0	1	2	3	4
Hirudinea	0	1	2	3	4	Lepidoptera	0	1	2	3	4						
Oligochaeta	0	1	2	3	4	Sialidae	0	1	2	3	4						
Isopoda	0	1	2	3	4	Corydalidae	0	1	2	3	4						
Amphipoda	0	1	2	3	4	Tipulidae	0	1	2	3	4						
Decapoda	0	1	2	3	4	Empididae	0	1	2	3	4						
Gastropoda	0	1	2	3	4	Simuliidae	0	1	2	3	4						
Bivalvia	0	1	2	3	4	Tabinidae	0	1	2	3	4						
						Culcidae	0	1	2	3	4						

YSI Calibration Form

Project: _____
 Date: _____
 Pre-Calibration Time (24-hr Clock): _____
 Post-Calibration Time (24-hr Clock): _____

Pine Sonde ID No.: _____
 Pine Handset ID No.: _____
 Battery Voltage (%): _____

Prior to Operation - Check the Following Items:

- Ensure Equipment is Operable Prior to Mobilization - Checked By _____
- Attach Carabiner to Sonde
- Attach Safety Line (Non-Wadeable Conditions) NA (Wadeable Conditions)
- Check Batteries/Back-Up Batteries



User Tips:

Keep the handset and sonde in the shade when not in use (i.e., cooler, bucket, bin).
 Keep the sensors damp between readings, check the sponge to ensure adequate moisture.
 Do not keep the slotted cover on the sonde between readings or sites, or during mobilization.
 If the calibration is "outside of range", call Pine Environmental at (770) 925-2855 or (800) 842-1088 for assistance, or for instructions to reset the default calibration settings.

Pre- Post-
 Calibration Calibration

DISSOLVED OXYGEN (DO)			
Was DO membrane changed? Yes, Time/Date: _____ <input type="checkbox"/> No <input type="checkbox"/> NA (optical sensor)			
Current Air Temperature °C (meter reading):			
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):	<input type="checkbox"/> NA (YSI includes barometer)		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration (or YSI barometer reading if available):	Ex.: 30.02 in. Hg x 25.4 = mm Hg; subtract 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg Elevation: Calvert, AL is 50 ft, and Athens, GA site is 700 ft.		
DO concentration before Calibration (mg/L):			
DO concentration after Calibration (mg/L):			
CONDUCTIVITY [Note: Calibrate before pH]			
Temperature (°C)			
Reading before Calibration (mS/cm ²)			
Reading AFTER Calibration (mS/cm ²)			
pH			
pH 7.0 value before calibration:			
pH 7.0 value after calibration:			
pH 7.0 mV (range is -50 to +50 mV):			
pH 10.0 value before calibration:			
pH 10.0 value after calibration:			
pH 10.0 mV (range is -130 to -230 mV):			
pH 4.0 value before calibration:			
pH 4.0 value after calibration:			
pH 4.0 mV (range is 130 to 230 mV):			
OXIDATION/REDUCTION POTENTIAL (ORP)			
Calibration Temperature (°C):			
Reading before calibration (mV):			
Reading after calibration (mV):			
TURBIDITY			
0 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:
1 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:
10 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:
126 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:

Pre-Calibrated By: _____

Post-Calibrated By: _____

Checked by: _____

**APPENDIX C
LABORATORY FORMS**

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BENTHIC MACROINVERTEBRATE LABORATORY BENCH SHEET (FRONT)

page _____ of _____

STREAM NAME _____	LOCATION _____
STATION # _____ RIVERMILE _____	STREAM CLASS _____
LAT _____ LONG _____	RIVER BASIN _____
STORET # _____	AGENCY _____
COLLECTED BY _____ DATE _____	LOT # _____
TAXONOMIST _____ DATE _____	SUBSAMPLE TARGET <input type="checkbox"/> 100 <input type="checkbox"/> 200 <input type="checkbox"/> 300 <input type="checkbox"/> Other _____

Enter Family and/or Genus and Species name on blank line.

Organisms	No.	LS	TI	TCR	Organisms	No.	LS	TI	TCR
Oligochaeta					Megaloptera				
Hirudinea					Coleoptera				
Isopoda									
Amphipoda					Diptera				
Decapoda									
Ephemeroptera					Gastropoda				
					Pelecypoda				
Plecoptera									
					Other				
Trichoptera									
Hemiptera									

Taxonomic certainty rating (TCR) 1-5: 1=most certain, 5=least certain. If rating is 3-5, give reason (e.g., missing gills). LS= life stage: I = immature; P = pupa; A = adult TI = Taxonomists initials

Total No. Organisms _____

Total No. Taxa _____

BENTHIC MACROINVERTEBRATE LABORATORY BENCH SHEET (BACK)

<p>SUBSAMPLING/SORTING INFORMATION</p> <p>Sorter _____</p> <p>Date _____</p>	<p>Number of grids picked: _____</p> <p>Time expenditure _____ No. of organisms _____</p> <p>Indicate the presence of large or obviously abundant organisms:</p> <p>_____</p> <hr/> <p>QC: <input type="checkbox"/> YES <input type="checkbox"/> NO QC Checker _____</p> <div style="text-align: center;"> <p># organisms originally sorted $\left(\begin{array}{l} \# \text{ organisms recovered by checker} \\ \# \text{ organisms originally sorted} \end{array} \right)$ % sorting efficiency</p> <p> <input type="text"/> \div $\left(\begin{array}{l} \input{type="text"} \\ + \input{type="text"} \end{array} \right) = \input{type="text"}$ </p> </div> <p>$\geq 90\%$, sample passes _____</p> <p>$< 90\%$, sample fails, action taken _____</p> <hr/>
<p>TAXONOMY</p> <p>ID _____</p> <p>Date _____</p>	<p>Explain TCR ratings of 3-5:</p> <p>_____</p> <p>Other Comments (e.g. condition of specimens):</p> <p>_____</p> <hr/> <p>QC: <input type="checkbox"/> YES <input type="checkbox"/> NO QC Checker _____</p> <p>Organism recognition <input type="checkbox"/> pass <input type="checkbox"/> fail Verification complete <input type="checkbox"/> YES <input type="checkbox"/> NO</p>

General Comments (use this space to add additional comments):

**PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET
(BACK)**

WATERSHED FEATURES	Predominant Surrounding Landuse <input type="checkbox"/> Forest <input type="checkbox"/> Commercial <input type="checkbox"/> Field/Pasture <input type="checkbox"/> Industrial <input type="checkbox"/> Agricultural <input type="checkbox"/> Other _____ <input type="checkbox"/> Residential	Local Watershed NPS Pollution <input type="checkbox"/> No evidence <input type="checkbox"/> Some potential sources <input type="checkbox"/> Obvious sources Local Watershed Erosion <input type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy
RIPARIAN VEGETATION (18 meter buffer)	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Trees <input type="checkbox"/> Shrubs <input type="checkbox"/> Grasses <input type="checkbox"/> Herbaceous dominant species present _____	
INSTREAM FEATURES	Estimated Reach Length _____ m Estimated Stream Width _____ m Sampling Reach Area _____ m ² Area in km ² (m ² x1000) _____ km ² Estimated Stream Depth _____ m Surface Velocity _____ m/sec (at thalweg)	Canopy Cover <input type="checkbox"/> Partly open <input type="checkbox"/> Partly shaded <input type="checkbox"/> Shaded High Water Mark _____ m Proportion of Reach Represented by Stream Morphology Types <input type="checkbox"/> Riffle _____% <input type="checkbox"/> Run _____% <input type="checkbox"/> Pool _____% Channelized <input type="checkbox"/> Yes <input type="checkbox"/> No Dam Present <input type="checkbox"/> Yes <input type="checkbox"/> No
LARGE WOODY DEBRIS	LWD _____ m ² Density of LWD _____ m ² /km ² (LWD/ reach area)	
AQUATIC VEGETATION	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Free floating <input type="checkbox"/> Floating Algae <input type="checkbox"/> Attached Algae dominant species present _____ Portion of the reach with aquatic vegetation _____%	
WATER QUALITY	Temperature _____ °C Specific Conductance _____ Dissolved Oxygen _____ pH _____ Turbidity _____ WQ Instrument Used _____	Water Odors <input type="checkbox"/> Normal/None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other _____ Water Surface Oils <input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globs <input type="checkbox"/> Flecks <input type="checkbox"/> None <input type="checkbox"/> Other _____ Turbidity (if not measured) <input type="checkbox"/> Clear <input type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____
SEDIMENT/SUBSTRATE	Odors <input type="checkbox"/> Normal <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Anaerobic <input type="checkbox"/> None <input type="checkbox"/> Other _____ Oils <input type="checkbox"/> Absent <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Profuse	Deposits <input type="checkbox"/> Sludge <input type="checkbox"/> Sawdust <input type="checkbox"/> Paper fiber <input type="checkbox"/> Sand <input type="checkbox"/> Relict shells <input type="checkbox"/> Other _____ Looking at stones which are not deeply embedded, are the undersides black in color? <input type="checkbox"/> Yes <input type="checkbox"/> No

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256 mm (10")				
Cobble	64-256 mm (2.5"-10")		Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")				
Sand	0.06-2mm (gritty)		Marl	grey, shell fragments	
Silt	0.004-0.06 mm				
Clay	< 0.004 mm (slick)				

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (FRONT)

STREAM NAME _____		LOCATION _____	
STATION # _____ RIVERMILE _____		STREAM CLASS _____	
LAT _____ LONG _____		RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____			
FORM COMPLETED BY _____		DATE _____ 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 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.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Embeddedness	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.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	3. Velocity/Depth Regime	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).
	SCORE	20 19 18 17 16	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 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.	
SCORE	20 19 18 17 16	15 14 13 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	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

	Habitat Parameter	Condition Category																			
		Optimal				Suboptimal				Marginal				Poor							
Parameters to be evaluated broader than sampling reach	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	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	7. Frequency of Riffles (or bends)	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	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	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.							
	Note: determine left or right side by facing downstream.																				
	SCORE ___ (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
SCORE ___ (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
	9. Vegetative Protection (score each bank)	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 ___ (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	SCORE ___ (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	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 ___ (LB)	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	SCORE ___ (RB)	Right Bank	10	9			8	7	6			5	4	3			2	1	0		

Total Score _____

HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (FRONT)

STREAM NAME _____		LOCATION _____	
STATION # _____ RIVERMILE _____		STREAM CLASS _____	
LAT _____ LONG _____		RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____			
FORM COMPLETED BY _____		DATE _____ 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	20 19 18 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	20 19 18 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	20 19 18 17 16	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	20 19 18 17 16	15 14 13 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	20 19 18 17 16	15 14 13 12 11	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							
Parameters to be evaluated broader than sampling reach	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	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	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	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	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 __ (LB)	Left Bank		10	9	8	7	6	5	4	3	2		1	0						
	SCORE __ (RB)	Right Bank		10	9	8	7	6	5	4	3	2		1	0						
	9. Vegetative Protection (score each bank)	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 __ (LB)	Left Bank		10	9	8	7	6	5	4	3	2		1	0						
	SCORE __ (RB)	Right Bank		10	9	8	7	6	5	4	3	2		1	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 __ (LB)	Left Bank		10	9	8	7	6	5	4	3	2		1	0						
	SCORE __ (RB)	Right Bank		10	9	8	7	6	5	4	3	2		1	0						

Total Score _____

BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

STREAM NAME _____		LOCATION _____	
STATION # _____	RIVERMILE _____	STREAM CLASS _____	
LAT _____	LONG _____	RIVER BASIN _____	
STORET # _____		AGENCY _____	
INVESTIGATORS _____		LOT NUMBER _____	
FORM COMPLETED BY _____		DATE _____ TIME _____ AM PM	REASON FOR SURVEY _____

HABITAT TYPES	Indicate the percentage of each habitat type present <input type="checkbox"/> Cobble _____% <input type="checkbox"/> Snags _____% <input type="checkbox"/> Vegetated Banks _____% <input type="checkbox"/> Sand _____% <input type="checkbox"/> Submerged Macrophytes _____% <input type="checkbox"/> Other (_____) _____%
SAMPLE COLLECTION	Gear used <input type="checkbox"/> D-frame <input type="checkbox"/> kick-net <input type="checkbox"/> Other _____ How were the samples collected? <input type="checkbox"/> wading <input type="checkbox"/> from bank <input type="checkbox"/> from boat Indicate the number of jabs/kicks taken in each habitat type. <input type="checkbox"/> Cobble _____ <input type="checkbox"/> Snags _____ <input type="checkbox"/> Vegetated Banks _____ <input type="checkbox"/> Sand _____ <input type="checkbox"/> Submerged Macrophytes _____ <input type="checkbox"/> Other (_____) _____
GENERAL COMMENTS	

QUALITATIVE LISTING OF AQUATIC BIOTA

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare, 2 = Common, 3 = Abundant, 4 = Dominant

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

FIELD OBSERVATIONS OF MACROBENTHOS

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare (1-3 organisms), 2 = Common (3-9 organisms), 3 = Abundant (>10 organisms), 4 = Dominant (>50 organisms)

Porifera	0	1	2	3	4	Anisoptera	0	1	2	3	4	Chironomidae	0	1	2	3	4
Hydrozoa	0	1	2	3	4	Zygoptera	0	1	2	3	4	Ephemeroptera	0	1	2	3	4
Platyhelminthes	0	1	2	3	4	Hemiptera	0	1	2	3	4	Trichoptera	0	1	2	3	4
Turbellaria	0	1	2	3	4	Coleoptera	0	1	2	3	4	Other	0	1	2	3	4
Hirudinea	0	1	2	3	4	Lepidoptera	0	1	2	3	4						
Oligochaeta	0	1	2	3	4	Sialidae	0	1	2	3	4						
Isopoda	0	1	2	3	4	Corydalidae	0	1	2	3	4						
Amphipoda	0	1	2	3	4	Tipulidae	0	1	2	3	4						
Decapoda	0	1	2	3	4	Empididae	0	1	2	3	4						
Gastropoda	0	1	2	3	4	Simuliidae	0	1	2	3	4						
Bivalvia	0	1	2	3	4	Tabinidae	0	1	2	3	4						
						Culcidae	0	1	2	3	4						

YSI Calibration Form

Project: _____
 Date: _____
 Pre-Calibration Time (24-hr Clock): _____
 Post-Calibration Time (24-hr Clock): _____

Pine Sonde ID No.: _____
 Pine Handset ID No.: _____
 Battery Voltage (%): _____

Prior to Operation - Check the Following Items:

- Ensure Equipment is Operable Prior to Mobilization - Checked By _____
- Attach Carabiner to Sonde
- Attach Safety Line (Non-Wadeable Conditions) NA (Wadeable Conditions)
- Check Batteries/Back-Up Batteries



User Tips:

Keep the handset and sonde in the shade when not in use (i.e., cooler, bucket, bin).
 Keep the sensors damp between readings, check the sponge to ensure adequate moisture.
 Do not keep the slotted cover on the sonde between readings or sites, or during mobilization.
 If the calibration is "outside of range", call Pine Environmental at (770) 925-2855 or (800) 842-1088 for assistance, or for instructions to reset the default calibration settings.

Pre- Post-
 Calibration Calibration

DISSOLVED OXYGEN (DO)			
Was DO membrane changed? Yes, Time/Date: _____ <input type="checkbox"/> No <input type="checkbox"/> NA (optical sensor)			
Current Air Temperature °C (meter reading):			
Current Barometric Pressure (from Weather Channel or NOAA.gov, which is corrected to sea level):	<input type="checkbox"/> NA (YSI includes barometer)		
Elevation Corrected Barometric Pressure to enter into YSI DO calibration (or YSI barometer reading if available):	Ex.: 30.02 in. Hg x 25.4 = mm Hg; subtract 2.54 mm Hg for every 100 ft. above sea level: 565/100 x 2.54 = 14.4 mm Hg Elevation: Calvert, AL is 50 ft, and Athens, GA site is 700 ft.		
DO concentration before Calibration (mg/L):			
DO concentration after Calibration (mg/L):			
CONDUCTIVITY [Note: Calibrate before pH]			
Temperature (°C)			
Reading before Calibration (mS/cm ²)			
Reading AFTER Calibration (mS/cm ²)			
pH			
pH 7.0 value before calibration:			
pH 7.0 value after calibration:			
pH 7.0 mV (range is -50 to +50 mV):			
pH 10.0 value before calibration:			
pH 10.0 value after calibration:			
pH 10.0 mV (range is -130 to -230 mV):			
pH 4.0 value before calibration:			
pH 4.0 value after calibration:			
pH 4.0 mV (range is 130 to 230 mV):			
OXIDATION/REDUCTION POTENTIAL (ORP)			
Calibration Temperature (°C):			
Reading before calibration (mV):			
Reading after calibration (mV):			
TURBIDITY			
0 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:
1 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:
10 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:
126 NTU Turbidity Standard	<input type="checkbox"/> NA (No Standard)	Before Cal:	After Cal:

Pre-Calibrated By: _____

Post-Calibrated By: _____

Checked by: _____

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BENTHIC MACROINVERTEBRATE LABORATORY BENCH SHEET (FRONT)

page _____ of _____

STREAM NAME _____	LOCATION _____
STATION # _____ RIVERMILE _____	STREAM CLASS _____
LAT _____ LONG _____	RIVER BASIN _____
STORET # _____	AGENCY _____
COLLECTED BY _____ DATE _____	LOT # _____
TAXONOMIST _____ DATE _____	SUBSAMPLE TARGET <input type="checkbox"/> 100 <input type="checkbox"/> 200 <input type="checkbox"/> 300 <input type="checkbox"/> Other _____

Enter Family and/or Genus and Species name on blank line.

Organisms	No.	LS	TI	TCR	Organisms	No.	LS	TI	TCR
Oligochaeta					Megaloptera				
Hirudinea					Coleoptera				
Isopoda									
Amphipoda					Diptera				
Decapoda									
Ephemeroptera					Gastropoda				
					Pelecypoda				
Plecoptera									
					Other				
Trichoptera									
Hemiptera									

Taxonomic certainty rating (TCR) 1-5: 1=most certain, 5=least certain. If rating is 3-5, give reason (e.g., missing gills). LS= life stage: I = immature; P = pupa; A = adult TI = Taxonomists initials

Total No. Organisms _____

Total No. Taxa _____

BENTHIC MACROINVERTEBRATE LABORATORY BENCH SHEET (BACK)

<p>SUBSAMPLING/SORTING INFORMATION</p> <p>Sorter _____</p> <p>Date _____</p>	<p>Number of grids picked: _____</p> <p>Time expenditure _____ No. of organisms _____</p> <p>Indicate the presence of large or obviously abundant organisms:</p> <p>_____</p> <hr/> <p>QC: <input type="checkbox"/> YES <input type="checkbox"/> NO QC Checker _____</p> <p style="text-align: center;"> $\begin{matrix} \# \text{ organisms} \\ \text{originally sorted} \end{matrix} \div \left(\begin{matrix} \# \text{ organisms} \\ \text{recovered by} \\ \text{checker} \end{matrix} + \begin{matrix} \# \text{ organisms} \\ \text{originally sorted} \end{matrix} \right) = \begin{matrix} \% \text{ sorting} \\ \text{efficiency} \end{matrix}$ </p> <p style="text-align: center;"> <input type="text"/> ÷ (<input type="text"/> + <input type="text"/>) = <input type="text"/> </p> <p>≥90%, sample passes _____</p> <p><90%, sample fails, action taken _____</p>
<p>TAXONOMY</p> <p>ID _____</p> <p>Date _____</p>	<p>Explain TCR ratings of 3-5:</p> <p>Other Comments (e.g. condition of specimens):</p> <p>_____</p> <hr/> <p>QC: <input type="checkbox"/> YES <input type="checkbox"/> NO QC Checker _____</p> <p>Organism recognition <input type="checkbox"/> pass <input type="checkbox"/> fail Verification complete <input type="checkbox"/> YES <input type="checkbox"/> NO</p>

General Comments (use this space to add additional comments):



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

September 30, 2015

Via Email (mmohan@pwc.gov)

Mr. Madan Mohan, P.E.
Chief, Watershed Management Branch
Environmental Services Division
Prince William County
5 County Complex Court
Prince William, VA 22192

Re: Virginia Pollutant Discharge Elimination System (VPDES) Permit No. VA0088595
Municipal Separate Storm Sewer System (MS4) Permit - Prince William County

Dear Mr. Mohan:

We are in receipt of your email correspondence dated September 22, 2015, providing supplemental information with respect to the proposed in-stream monitoring stations required in Part I.C.2 of the aforementioned permit. The supplemental information included rationale for selection as well as drainage area and land use maps.

The Virginia Department of Environmental Quality has reviewed Prince William County's submittal and has no comments or objections related to the proposed monitoring stations.

Should you have any questions about this correspondence, please contact me at (703) 583-3853 or by email at susan.mackert@deq.virginia.gov.

Sincerely,

A handwritten signature in cursive script that reads "Susan Mackert".

Susan Mackert
Environmental Specialist II, Senior II

cc: VA0088595 – File

SCOPE OF WORK FOR

**The Operation of MS-4 Stations for Prince William County, Virginia
A Proposal Submitted to the Prince William County Department of Public Works
by the
Occoquan Watershed Monitoring Lab
Virginia Tech
Manassas, VA**

January, 2016 to December, 2016

A. INTRODUCTION

Prince William County's MS-4 permit calls for the measurement of a series of parameters, including flow, nutrients, oxygen demand, and bacterial samples during six storms per year.

In the fall of 2005, the Rocky Branch at Worthington Dr. site was installed and began operation. The Little Bull Run near Catharpin Rd. began operation in October, 2007. The Neabsco Creek at Delaney Road site is one of the original sites that the OWML has operated for Prince William County, and continues in operation.

For Calendar Year 2016, the County has requested that the Occoquan Watershed Monitoring Lab (OWML), of the Civil Engineering Department of Virginia Tech, operate the five stations and collect storm samples for a period of twelve months. Except as listed below, sample analyses for this work will also be performed by the OWML. Sample analyses for TKN will be subcontracted to another laboratory.

In calendar year 2016, one station will be discontinued, and three new stations will be installed and operated. The Rocky Branch at Worthington Drive will be discontinued. New stations will be installed at:

Dawkins Branch near Wellington Rd.
Purcell Branch at Purcell Rd.
Cow Branch near Mellott Rd.

Staff gages have been installed at these new sites, and the development of the stream rating curves has begun.

B. SCOPE OF WORK

MS-4 Stream Sampling

The scope of work includes the following:

1. Installation of stream gaging and sampling stations at the three new sites listed above.
Removal of the station on Rocky Branch.

2. Collect a total of six (6) water quality samples per year, at least one in each quarter, at each of the stations in operation. The flashiness of the streams and the short holding time for the grab samples, often mean that many summer storms cannot be sampled. Given these scheduling difficulties, it is not possible to reduce the cost of the project for storms that are missed due to schedule constraints.
3. Collect water quality samples at Little Bull Run at Catharpin Road, Dawkins Branch near Wellington Rd., Purcell Branch at Purcell Rd., Cow Branch near Mellott Rd., and at Neabsco Creek at Delaney Rd. All water quality samples collected will be delivered to the Occoquan Watershed Monitoring Lab for analysis.
4. OWML shall visit the monitoring stations prior to expected storms, to assure their readiness to gage and sample the required storms. During the station visits, equipment will be checked and maintained to assure that it is in operating order for storm sampling.
5. A total of eighteen (18) water quality storm samples collected per year will be sampled for the following parameters:

Flow	Total Stormflow Volume
pH*	TDS
TSS	COD
BOD ₅	Total Phosphorus
Nitrate as N	Nitrite as N
TKN ⁺	Total Ammonia
Fecal Coliform*	E. Coli*

*Grab samples.

⁺Analysis of these parameters will be contracted to Environmental Systems Service in Culpeper, VA.

pH-Field measurement

All parameters not otherwise indicated will be measured from flow-weighted composite samples collected in 15 liter carboys.

6. Data forms, chain of custody forms, etc. shall be provided as requested by the County. The data format will be in the electronic form or paper copy as requested by the County.

C. PERIOD OF PERFORMANCE

The period of performance for this work shall be from January 1, 2016 through December 31, 2016. All work/services provided under this Task Order and Purchase Order unless modified by the County shall be completed within 12 months following the receipt of the Purchase Order.

To: Robert Jocz, Environmental Engineer, Prince William County
From: Lynne Mowery, Amec Foster Wheeler
Cc:
Date: 2/5/16
Re: Site Reconnaissance Technical Memorandum

Prince William County (County) is required to conduct biological stream monitoring through Section I.C.1 of its MS4 permit, dated December 17, 2014. The permit requires the County to monitor five stream sites twice per year using an approach based on ‘USEPA’s Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers’ (RBP). The monitoring shall include an assessment of the benthic macroinvertebrate community and habitat assessment.

The County has selected five sites for biological monitoring that correspond to the locations of its stream monitoring program:

- A. Cow Branch at Mellot Road
- B. Neabsco Creek at Delaney Road
- C. Purcell Branch at Purcell Road
- D. Dawkins Branch at Wellington Road
- E. Little Bull Run at Catharpin Road

Amec Foster Wheeler staff conducted site reconnaissance visits during the week of 12/14/15, and selected five sampling locations pending County approval. Prior to conducting site visits, Amec Foster Wheeler developed a site evaluation protocol based on the RBP. This protocol incorporates three components used to characterize water quality within a watershed: (1) physical and chemical data, (2) habitat assessment, and (3) benthic macroinvertebrate collection. These initial reconnaissance visits focused on the first two components since they are indicative of a stream reach’s suitability for supporting a diverse aquatic community.

Amec Foster Wheeler completed a desktop analysis of the five proposed sites prior to conducting site reconnaissance. This included delineating total catchment area draining to each stream branch, characterizing the surrounding land use, and identifying potential ‘problem areas’ along each stream reach that could be the result of tributaries and stormwater outfalls.

Before conducting a habitat evaluation at each site, site investigators identified a stream reach located greater than 100 meters upstream from road crossings or major tributaries that contained a variety of habitat types. Site evaluations involved recording representative measurements of physical channel characteristics (width, depth, velocity) and completing a ‘baseline’ habitat assessment *according to RBP Appendix A-1: Habitat Assessment and Physicochemical Characterization Field Data Sheets*. These habitat assessments are designed to allow an assessor to objectively score each stream on a number of parameters (e.g. bank stability, velocity/depth regime, channel alteration, etc.) which evaluate the stream’s suitability to support a diverse aquatic community representative of water quality throughout its contributing catchment. These baseline analyses were compiled within Amec Foster Wheeler’s database and will inform future water quality investigations at these monitoring sites.

Suitable monitoring reaches spanning greater than 100 meters were identified at each of the County-recommended sites, though Amec Foster Wheeler has offered alternative initial sampling points due to field observations of contributing features surrounding the stream within the upstream, downstream, or riparian areas.

Appendix A: Site Recommendations

Location	Little Bull Run; Gainesville (sampled 12/14)
Accessibility	Via roadway, wide shoulder at crossing.
Surrounding Landscape	High density development and golf courses immediately surrounding site. Upstream representative reach is heavily forested.
Instream Conditions	Sanitary sewer crossing immediately upstream of bridge creates a backwater effect. Upstream reach has good mix of riffles and runs.
Recommended Site	Upstream from bridge and sewer crossing backwater.
Other	Potential illicit discharge – foamy deposit observed.

Location	Dawkins Branch; Manassas (sampled 12/14)
Accessibility	Via roadway, pull off point to gated entry. Site has been used for illegal dumping (TV and refuse observed).
Surrounding Landscape	Surrounding industrial/commercial land use. Construction contractor storage site downstream of representative reach where silt fence appears to be only partially effective.
Instream Conditions	Beaver dam upstream of representative reach which acts as additional in-line detention. Dam is susceptible to overtopping and breaching during larger storm events. Downstream reach is starved of sediment during periods of lower flow due to the trapping efficiency of the beaver dam. Additional flow impediments downstream such as LWD in channel.
Recommended Site	Downstream from beaver dam. May be subject to influence from large sediment slug flows following dam rupture.
Other	Unmapped outfall discovered downstream from representative reach, unknown contribution from surrounding development.

Location	Purcell Branch; Manassas (sampled 12/16)
Accessibility	Via roadway, wide shoulder after bridge.
Surrounding Landscape	Old agricultural fencing is evidence of previous land usage as pasture. Surrounding watershed contains low density development and forested areas.
Instream Conditions	Banks are severely incised (>2m) at first bend, apparently resulting from stormwater drainage from residential development outfall. Old silt fencing visible along bank. Long, deep run lies upstream, containing significant leaf pack and numerous fish. Suitable stretch identified upstream from deeper run, with mixture of riffles, runs, and pools.
Recommended Site	Representative reach lies ~1/4 mile upstream from county-recommended site, but other reaches do not capture habitat diversity.
Other	Some stormwater outfalls downstream of recommended site, but site is >100m from potential mixing points.

Location	Neabsco Creek; Dale City / Woodbridge (sampled 12/16)
Accessibility	Accessed via trail at end of Savannah Drive, limited public parking available.
Surrounding Landscape	Watershed contains highest proportion of forested to developed area.
Instream Conditions	Well forested riparian border provides ideal bank conditions, and best-observed habitat variability. Furthest downstream reach has a sanitary sewer crossing creating a backwater area, also fed by heavily incised urban stream and the accompanying sediment. Little to no fish observed in reach despite habitat variability, likely due to presence of sewer crossing acting as migration barrier
Recommended Site	Upstream from backwater area.
Other	Insignificant contributions from outfalls running down into stream valley.

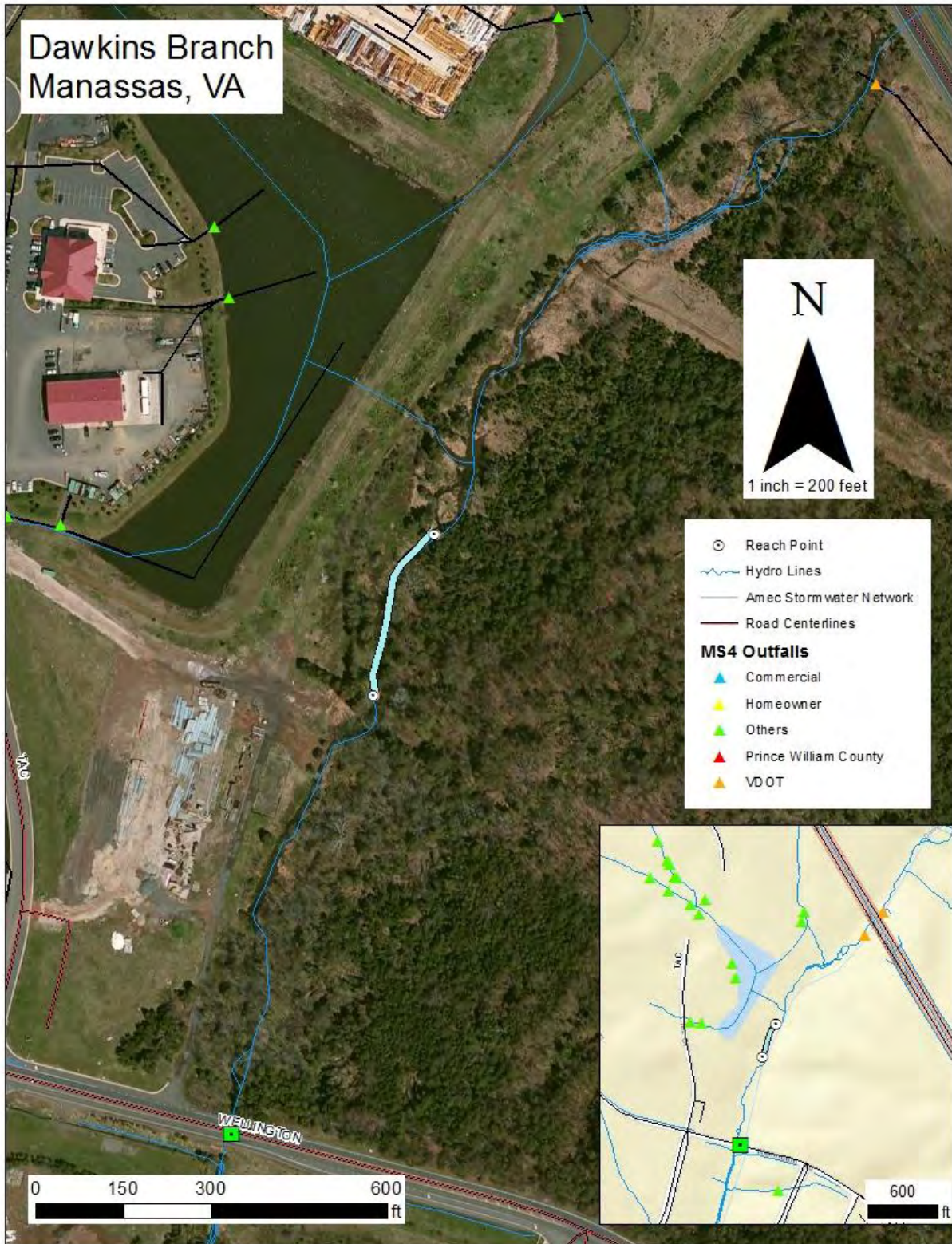
Location	Cow Branch; Woodbridge (sampled 12/16)
Accessibility	Mellot Road is private drive, but property owner indicated we had permission. Future notification is recommended.
Surrounding Landscape	Rapidly developed high-density housing contributes high volume and intensity of stormwater runoff.
Instream Conditions	Evidence of heavy bank armoring using VDOT CLASS I & II riprap along majority of branch between Opitz Blvd. and Jefferson Davis Hwy. Heavily armored banks, denuded riparian area upstream from bridge at Mellot Rd. Stormwater outfall proximity is unfavorable to benthic macroinvertebrate sampling. Habitat downstream of bridge is more suitable, with a mature forested riparian area.
Recommended Site	~200m downstream from bridge provides adequate habitat variety, although macroinvertebrate population likely to be smaller due to recent restoration efforts.
Other	Has any benthic monitoring of the recommended reach been conducted before or after recent stream restoration?

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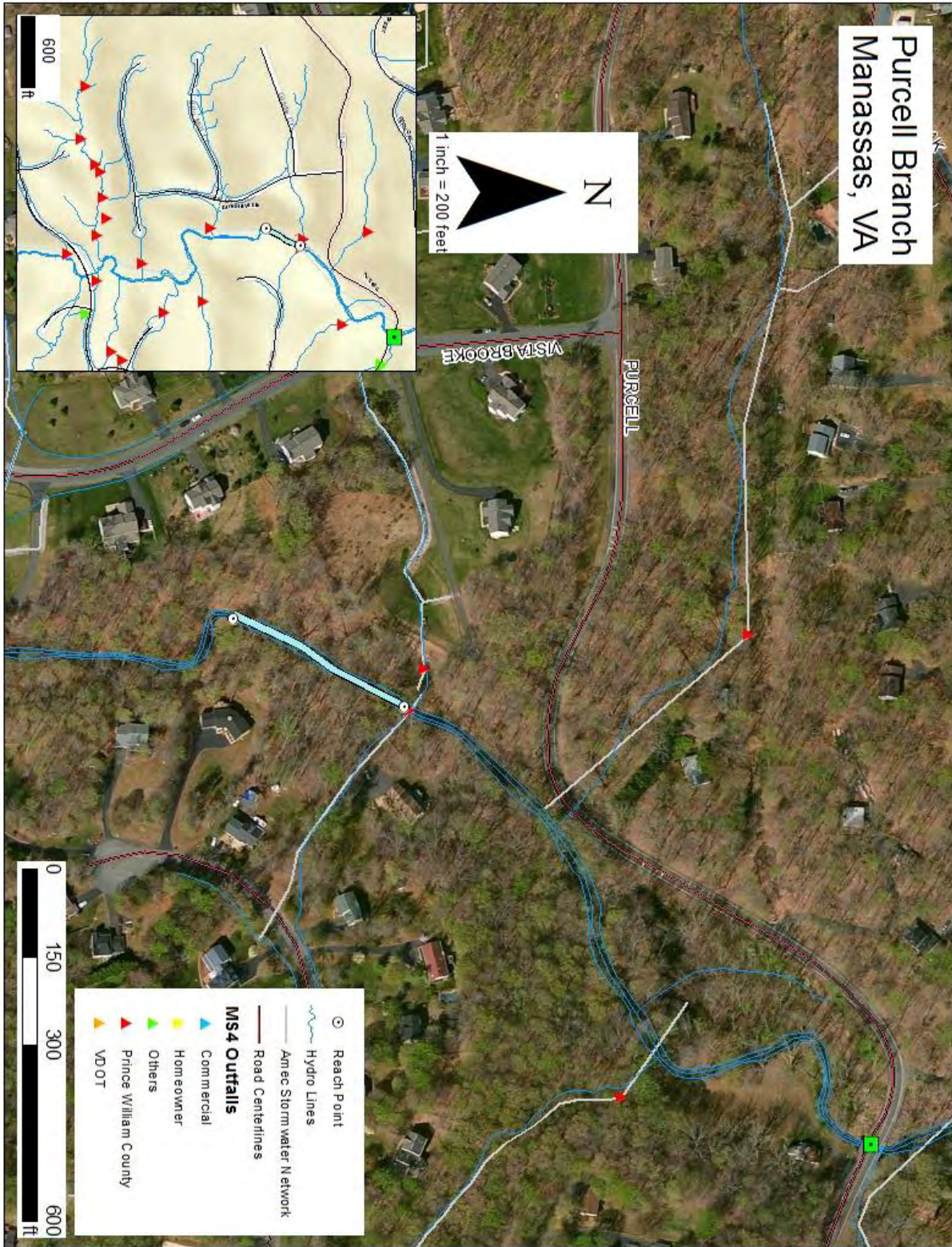
Appendix B: Site Maps



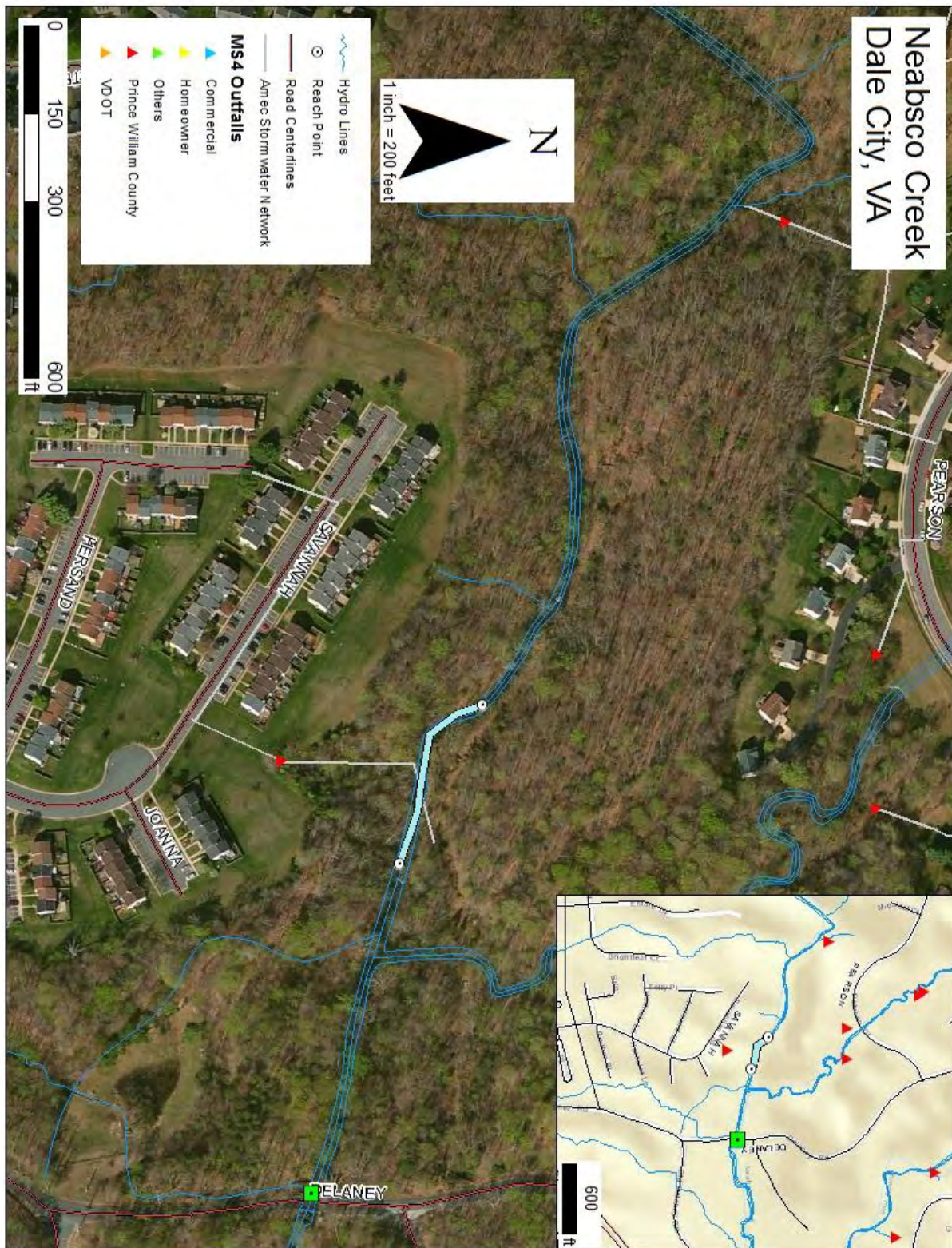
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Appendix C: Site Photos

Little Bull Run



Figure 1: Backwater area created by sanitary sewer crossing. Sampling reach lies upstream.



Figure 2: Looking upstream at beginning of sampling reach along the riffle consisting of larger gravel, cobble, and bedrock.



Figure 3: Looking downstream near beginning of sampling reach along the riffle containing large gravel, cobble, and bedrock.

Dawkins Branch



Figure 4: Large woody debris downstream from sampling reach.



Figure 5: Looking upstream near beginning of sampling reach.



Figure 6: Upstream from initial sampling point.



Figure 7: Looking downstream towards Figure 6.



Figure 8: Construction contractor storage site adjacent to stream reach. Site was contributing noticeable amount of silt to stream.

Purcell Branch



Figure 9: Stream bank incision >6 feet (vertical instability) from bed. Photo was taken downstream from sampling reach.



Figure 10: Upstream view of large pool filled with leaf pack. Photo was taken downstream of sampling reach.



Figure 11: Past leaf-packed pool, looking upstream towards initial sampling point.



Figure 12: Bank incision upstream of sampling reach. Suspected cause of incision is boulder creating flow redirection and backwater eddies, located behind photographer, impeding flow during high energy events.



Figure 13: Upstream view about 75 meters from initial sampling point.



Figure 14: Looking downstream through sampling reach from approx. same location as Figure 13.

Cow Branch



Figure 15: Looking downstream from most recent bed and bank armoring. Sampling reach lies downstream from where photo location.



Figure 16: Technician standing at initial sampling point. Jefferson Davis Hwy. lies in the background.



Figure 17: Brief inspection of benthic macroinvertebrate habitat upstream from initial sampling point.



Prince William County

Floatables Monitoring Program

Permit No.
VA0088595

Prince William County Department of Public Works
Watershed Management Branch
5 County Complex Court, Suite 170
Prince William, Virginia 22192

5/1/2016

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I. Introduction

Prince William County is dedicated to Program providing its citizens with the healthiest environment possible. It is with this goal the County establishes programs aimed at reducing pollutant impacts from heavily urbanized and industrialized areas. Non-point source pollution from urban and industrial areas within the County is a great concern due to its potential to impact water quality. Pollutants are transported from these areas during rain events and often deposited untreated into nearby streams and rivers. To mitigate this issue, the Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (VA-DEQ) have instituted programs aimed at reducing the potential impact of pollutants from urban areas. Goes into

Under the Virginia Pollutant Discharge Elimination System Permit Program (VPDS) and Virginia Stormwater Management Program (VSMP) permits are issued aimed at reducing pollution runoff from industrial and urban areas containing Municipal Separate Storm Sewers Systems or MS-4s. These systems transport water from urbanized areas to streams and rivers and are a major concern of point and non-point source pollution. Discharges from MS4s are regulated under the Virginia Stormwater Management Act and Clean Water Act (CWA) through permits issued by DEQ and the EPA. Through this program, Prince William County maintains a Phase 1 VSMP MS-4 permit (Permit No. VA0088595).

Through its VSMP permit, the County is required to monitor floatables from areas suspected to be contributing excess levels of trash and refuse to its MS-4 by implementing a Floatables Monitoring Program. Unlike the Dry Weather Monitoring Program and Wet Weather Screening Program, the Floatables Monitoring Program is aimed at assessing trash loadings to streams. Using information obtained through this program, the County is to then develop strategies to reduce refuse load from these areas. The County's MS-4 permit, issued on December 17th, 2014, outlines requirements for the Floatables Monitoring Program as follows:

3. Floatables Solids Monitoring

No later than 24 months after the effective date of the permit, the permittee shall develop and implement a floatables monitoring program. The intent of the monitoring program is to determine the loading of floatables from the MS4 to streams within the county. The permittee will implement the floatables monitoring program as follows:

- a) Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.
- b) Monitoring shall be conducted once per quarter after program implementation.
- c) The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.

This program manual describes the methods and procedures for Prince William County's Floatables Monitoring Program. All procedures are subject to modification as program feasibility and applicability are assessed during program implementation. All program modifications will be noted as part of the County's Program Plan.

II. Site Selection

a. Initial Locations and Site Screening

i. Methods and Results

Initial site locations were provided by the Prince William County Soil and Water Conservation District (PWCSWCD) from a list of sites currently monitored under its stream stewards program. These nine sites were selected as the starting point during site screening since the PWCSWCD currently visits these sites on a quarterly basis, and Floatables monitoring could straightforwardly be incorporated with the stream stewards program.

Three additional sites were identified using GIS in the need to incorporate a more diverse set of land uses in the floatables analysis, as the sites monitored by PWCSWCD were located in mostly residential areas. These sites were located by making an overall observation of the County's service area and the location of its regulated outfalls in relation to areas with diverse land uses. The first supplementary site was located off of Liberia Avenue, near the intersection of Liberia and route 294. This site includes discharge from an upstream commercial area. The second additional site is located on flat branch near the intersection of Sudley Road and Goodwin Drive. This site incorporates an area with a high degree of impervious surfaces and includes drainage from commercial and industrial land uses. Finally the third additional site is located on Cornice Place off of Old Bridge Road. This area drains from a smaller shopping center, and would be a good opportunity to see how BMPs applied in that shopping center can effect floatables numbers downstream.

b. Selection of final sampling sites

i. Methods

Sites identified during initial site screening were visited and scored according to a set of metrics. These metrics were adopted in order to identify optimal locations for floatables monitoring. Metrics incorporated elements analyzing the quality of upstream conditions, land uses, safety and access of the site, size of contributing drainage systems, and opportunity to reduce floatable sources. Each metric was scored on a scale of 1-5 with a score of 5 being the most desirable, and 1 being the least. The total score for each site was calculated by averaging the scores from each metric for the site. Sites with the highest average score were the most desirable for use in the floatables monitoring program.

Within each site, a sampling area will be selected. This sampling area will outline where volunteers or staff are to assess floatables. This sampling site will be selected during the first sampling period, and will encompass the area where the most floatables are identified.

ii. Results

All 12 sites were analyzed for use in the program. The score results from each site are located in Table 1 below.

Table 1: Site Assessment Scores

Site	Score
Site 7: Neabsco Creek, Andrew Leitch Park	3.6
Site 10: Liberia and 294	3.6
Site 3: Dawkins Branch, Victory Elementary	3.4

Site 11: Flat Branch	3.4
Site 12: Cornice Place and Old Bridge Road	3.2
Site 4: Dewey's Creek, Wayside Drive	3.2
Site 9: Powell's Creek, Monclair	3.0
Site 6: Hooe's Run, Springwood Drive	2.6
Site 5: Hooe's Run, Castile Court	2.6
Site 2: Catharpin Creek, James Long Park	2.6
Site 8: Neabsco Creek, Cloverdale Park	2.4
Site 1: Bull Run, Ben Lomond Park	0

Site scores varied from 3.6 to 0. Site 1 was disqualified due to a lack of MS-4 outfalls discharging into the stream segment. Sites that ranked the highest typically had a mix of contributing land uses and highly accessible, countable, and identifiable sources of floatables within the stream segment. Sites typically had one to three regulated outfalls discharging to the stream, and had medium to small contributing drainage areas. The top 5 sites are selected for the program, with the top 2 sites used for the pilot study. Completed site assessment sheets are available in Appendix A.

c. Site Rotation

Sites will be rotated from monitoring cycle if it is determined that the site does not perform as expected. This can occur for several reasons such as, if the site does not receive sufficient trash counts, if access to the site becomes too dangerous for staff to safely perform monitoring, or if activities occur on site that render monitoring impractical such as a stream restoration or redevelopment projects. Sites must remain in the program for at least one year before being replaced by another site, unless circumstances arise that prevent monitoring from occurring.

Replacement sites will be selected in the same method as described above in section b. New candidate sites will be selected from the list of sites that were not selected in the initial site selection procedure and from suggestions from County Staff.

III. Field Procedures

a. Pilot Program

i. Methods

To test and refine monitoring program procedures as well as assess staff effectiveness in monitoring efforts, the Floatables Monitoring Program will first operate under a pilot program. The pilot program will conduct monitoring at two sites for four sampling periods. In order to proceed with main sampling program in a reasonable timeframe, the pilot monitoring will take place at an accelerated schedule. Instead of sampling once per quarter, monitoring will be conducted once per month. Factors such as sampling procedures, sampling site characteristics, safety measures, and monitoring forms will be evaluated during this time. The pilot program will last a total of 4 months before the main monitoring program begins.

ii. Results

Pilot Program results will be included at the end of the pilot study for the program.

b. Training

Sampling will be performed with a mix of paid staff and volunteers. In order to maintain consistency in the program in the event that different groups of people sample different sites, or different groups of people sample from each sampling period to the next, training must take place. Staff will be responsible for reading and understanding the methods presented in this manual, and relaying that information to volunteers. Staff will be directed to either be present during all sampling events, or at the very least be present for the first sampling event a volunteer participates in. Important concepts to place emphasis on when training volunteers are bankfull depth, the location of site markers, and the layout of the sampling form. A sampling manual shall be provided to each volunteer performing monitoring and each inspection sheet will include instructions and a detailed list of site locations. Volunteers can be directed to contact PWC staff if needed.

c. Sampling Methods

Sampling will be consistent across all sites. As referenced in section II.b, a sampling area will be selected within each monitoring site. The sampling area will be identified on site with simple wooden stakes. The stakes will be labeled to indicate the direction to follow when sampling and also indicate the bankfull height of the stream. If a distinct sampling direction is not indicated, it will be assumed sampling will take place in the direction of stream flow. The distance between stakes will be approximately 100 ft. Floatables monitoring staff will walk the length of the sampling area counting the type and amount of each floatable type. Refuse will be considered a floatable eligible to be counted if it is above the water line, within the confines of the stream, and below the bankfull mark of the channel, as described in figure 1 below. Observations will be recorded on the form presented in section IV.a. Data sheets will be provided to the County at the end of each monitoring year and kept within the County's Floatables monitoring manual in Appendix B.

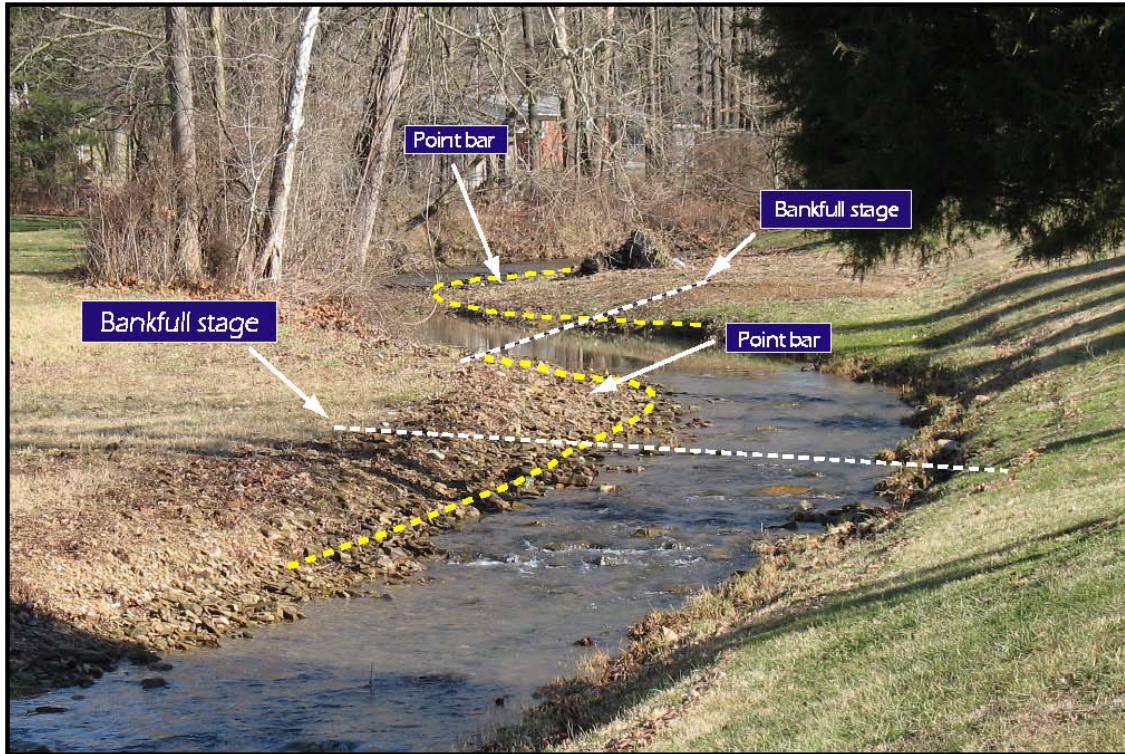


Figure 1. Bankfull Diagram, Credit Indiana FDH

d. Safety

Safety an important goal of the floatables monitoring program. When performing monitoring, staff should be equipped with proper footwear and clothing. This includes at a minimum closed toed shoes. Staff are recommended to also wear long sleeved shirts and pants, as well as waterproof gaiters or shoes in the event entering the stream is necessary. Staff should avoid accessing areas with high slopes and steep drop-offs.

The accessibility and safety of monitoring sites are incorporated in the site analysis used to determine sampling sites. Within sampling sites, sampling areas are identified that incorporate safe access and easy visibility for monitoring. Health and safety responsibility and accountability involves every employee. Some additional measures that should be followed or noticed includes:

- 1) Bring cell phone on all field site visits.
- 2) Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
- 3) Use common sense during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
- 4) Storm sewers contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

i. DANGEROUS FLORA AND FAUNA

During the course of field activities, employees may come in contact with a wide range of dangerous or toxic animals and plants. Dangerous animals may include: black widow and brown recluse spiders; fire ants; mosquitoes and biting flies; bees, wasps and hornets; ticks and chiggers; microbial organisms (e.g., found in water, soil, and air and on carrier/host organisms); rabid mammals; and poisonous snakes. Dangerous plants may include: thorny plants; poison ivy, oak, and sumac; and molds, mildews, and fungi (which may cause allergic reactions). Contact with these organisms can cause effects from simple discomfort (such as from thorny bush scratches) to severe allergic reactions and possibly death. If interactions do occur, take appropriate actions related to specific interaction and individual response to interaction.

ii. WEATHER-RELATED HAZARDS

Weather-related hazards include the potential for heat or cold stress, electrical storms, treacherous weather-related working conditions, high winds, and limited visibility. These hazards correlate with the season in which site activities occur. In the event of adverse weather conditions, the Field Team Leader will determine if work can continue without endangering the health and safety of site personnel.

iii. HEAT STRESS

Heat stress is a significant potential hazard during the warmer months. Heat stress manifests itself as one of three conditions: heat cramps, heat exhaustion, or heat stroke. Heat cramps are brought about by a prolonged exposure to heat. As an individual sweats, water and salts are lost by the body, triggering painful muscle cramps.

iv. COLD STRESS

Cold stress is a danger at low temperatures and when the wind chill factor is low. Cold stress is generally described as a local cooling (frost nip, frost bite, and freezing) or a general cooling (hypothermia). Personnel working outdoors in temperatures at or below freezing may be subject to local cooling. Areas of the body that have a high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. General cooling (hypothermia) occurs when exposure to cold reduces body temperature. With prolonged exposure, the body becomes unable to maintain its proper internal temperature. Without treatment, hypothermia will lead to stupor, collapse, and death. Prevention of cold stress is a function of whole body protection. Adequate insulated clothing will be worn when the air temperature drops below 50 °F. Reduced work periods may be necessary in extreme conditions to allow adequate periods in a warm area.

IV. Documentation
a. Forms

There are two types of data acquisition forms used in the program, the site identification/evaluation form, and the field inspection form. The site identification/evaluation form is used during the site selection process to evaluate potential sampling sites. It will also be used whenever new potential sites are evaluated for inclusion into the program. This form uses a set of metrics to score and average to generate a quantitative comparison between candidate sites. An example of the Site identification form can be seen in figure 2 below:

Site #: Site Description

Site Map

Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Figure 2: Site Identification Form

Field inspection forms are completed during each inspection. They incorporate information on the date, time, weather conditions, and site number of the inspection, Information on the person/group performing the inspection, and information on the floatables found on site. Each inspection from includes the basic sampling methods, and breaks down each floatable type typically observed in the field. An example of the field inspection form can be seen in figure 3 below:

Prince William County Floatables Monitoring Field Inspection Form

Location:	Date:	Time:
Name:		Weather Conditions:

The sampling area will be identified on site with simple wooden stakes. The stakes will be labeled to indicate the direction to follow when sampling and also indicate the bankfull height of the stream. If a distinct sampling direction is not indicated, it will be assumed sampling will take place in the direction of stream flow. The distance between stakes will be approximately 100 ft. Floatables monitoring staff will walk the length of the sampling area counting the type and amount of each floatable type observed. Refuse will be considered a floatable eligible to be counted if it is above the water line, within the confines of the stream, and below the bankfull mark of the channel.

Plastic Bags:	
Plastic Bottles:	
Snack bags or wrappers:	
Aluminum Cans:	
Oil containers:	
Cardboard:	
Styrofoam:	
Other:	

Signature: _____ Date: _____

Figure 3: Field Inspection Form

b. Documentation and trends analysis

Data gathered in the field will be organized using an excel database provided by Prince William County. This database incorporates all site characteristics and inspections and allows for the easy identification of continued trends within each sampling site.

Each site has its own sheet within the database. Each sheet contains easily identifiable areas to enter data gathered from the field. Each site is identified at the top of the sheet along with a description of the site location. This database will be the main form of data transfer between monitoring staff and PWC.

V. Future Program Goals

a. Trash Mitigation plans

As data is gathered at sampling sites, an effort to help reduce the amount of floatables entering the streams will be developed. Using data gathered on floatables entering the stream segments, a determination of their source will be made. Efforts will then be undertaken in the surrounding drainage areas to reduce the amount of the floatables identified in the stream reaches.

These mitigation plans will focus on efforts such as ensuring recycling and trash bins have lids, enhancing trash storage, enforcing and promoting current recycling standards, promoting trash pickup events, encouraging street sweeping efforts in commercial areas, and other methods. An assessment on the effectiveness of these efforts can then be made, with the possibility of expanding mitigation plans to other parts of the County.

b. Adapting to changing MS-4 Regulations

As the program continues throughout the length of the County's current MS-4 permit, the County will monitor trends related to future requirements within the MS-4 program. This could lead to changes in the floatables monitoring program. Since the permit requirements can only be changed during permit issuance, current program goals and methods will remain constant throughout each permit period (5 years). As the timeline advances towards the County receiving a new MS-4 permit, potential changes to the program will be observed and incorporated into the next monitoring period.

APPENDIX A – Site Identification Forms

Site 1: Bull Run, Ben Lomond Park



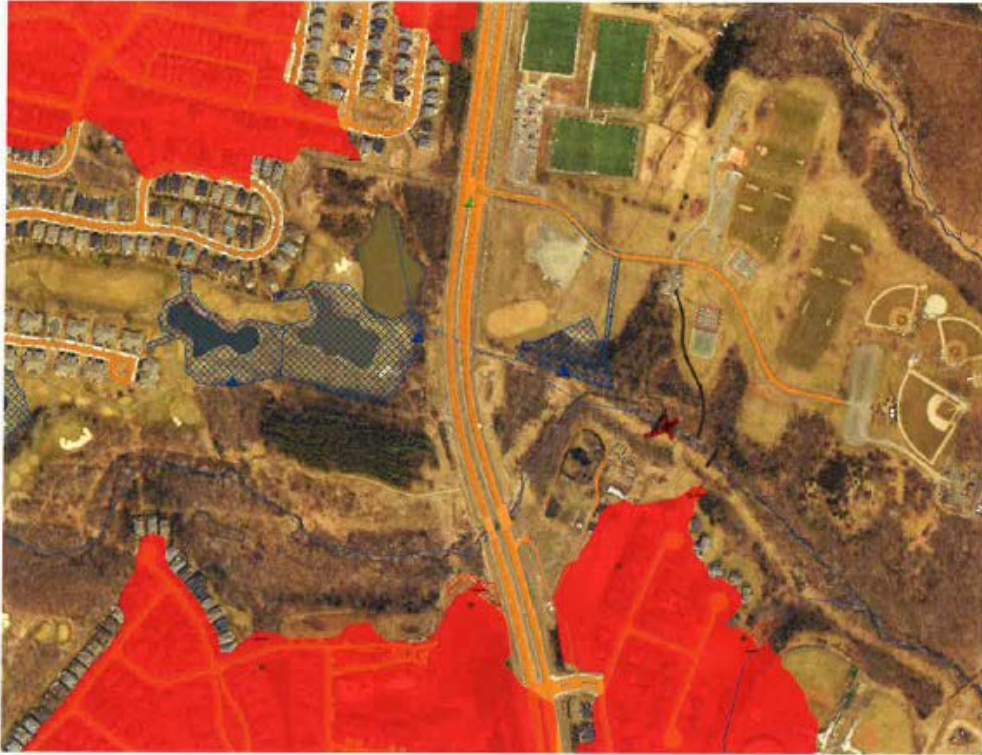
Quality of upstream MS-4 outfalls: No quality upstream outfalls [0]
Upstream land uses: Residential, some commercial [2]
Opportunity to reduce floatables sources: _____ []
Access and feasibility: _____ []
Size of contributing drainage area(s): Large >10ac [3]

Notes:

No MS-4 outfalls eliminates this site from the floatables monitoring program.

Site Score: 0

Site 2: Catharpin Creek, James Long Park



Quality of upstream MS-4 outfalls: Mostly Nonpoint, one MS-4 outfall (1)

Upstream land uses: Residential, Large lot, Sports Complex (2)

Opportunity to reduce floatables sources: Not much trash present (1)

Access and feasibility: Very easy access, ~~little~~ easy mobility lot(s), #5

Size of contributing drainage area(s): Small-Med (4)

Notes:

Access easily available from library parking lot. Site is deranked by
lack of floatables input, Not many MS-4 outfalls nearby, Little Nonpoint
Sources. Site good for monitoring, Bad for trend analysis

Site Score: 2.6

Site 3: Dawkins Branch, Victory Elementary School



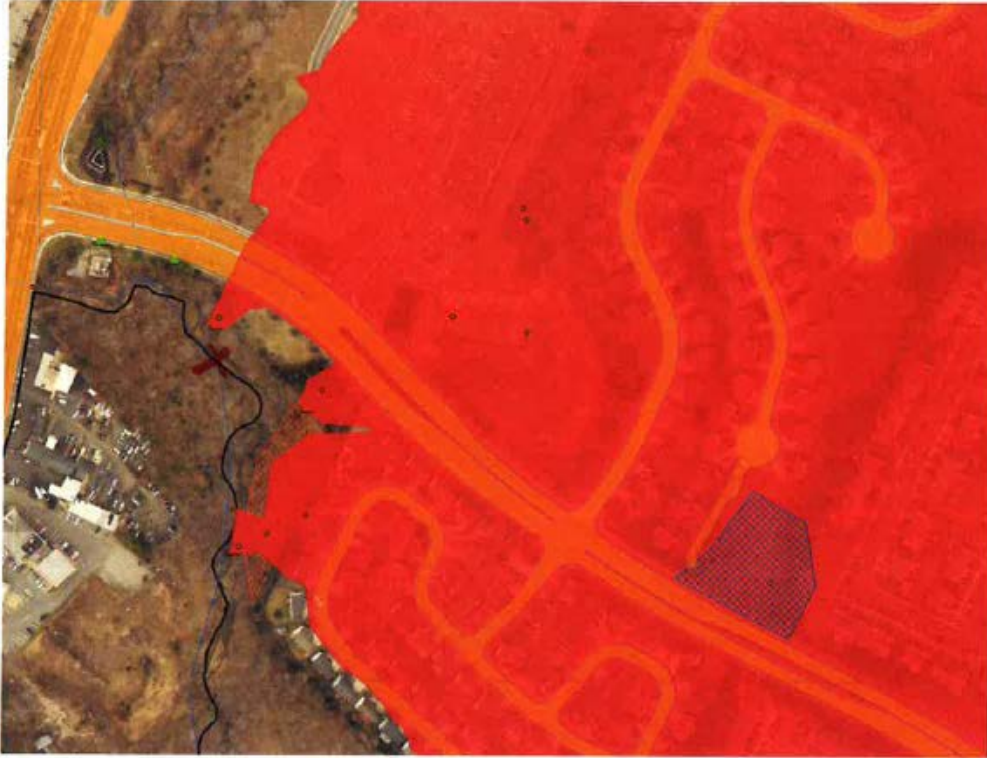
Quality of upstream MS-4 outfalls:	<u>2 quality outfalls</u>	<u>[3]</u>
Upstream land uses:	<u>Residential, Schools, Roadway</u>	<u>[3]</u>
Opportunity to reduce floatables sources:	<u>Some floatables, limited But excessive sources</u>	<u>[4]</u>
Access and feasibility:	<u>Path allows easy access, Lot access good</u>	<u>[5]</u>
Size of contributing drainage area(s):	<u>Med. large</u>	<u>[3]</u>

Notes:

Good open area for monitoring. Outreach can be isolated to single residential area. Not many floatables present when site inspection occurred

Site Score: 3.4

Site 4: Dewey's Creek, Wayside Drive



Quality of upstream MS-4 outfalls: One gravity outfall, [3]

Upstream land uses: Residential, Commercial, Roadway [4]

Opportunity to reduce floatables sources: Large amount of trash [3]

Access and feasibility: Available parking, easy access [3]

Size of contributing drainage area(s): Large [3]

Trash Source from Streambank

Notes:

Stream will undergo Restoration project in coming years. May Complicate Monitoring efforts [fall 2016]. Could be good pilot site

Site Score: ~~4.0~~ 3.2

Site 5: Hooes Run, Castile Court



Quality of upstream MS-4 outfalls: 2-3 quality outfalls [3]
Upstream land uses: Residential, [2]
Opportunity to reduce floatables sources: good amount of trash identifiable sources [4]
Access and feasibility: Neighborhood w/ little parking, hill difficult [2]
Size of contributing drainage area(s): Medium [2]

Notes:

good opportunity to reduce floatables, Access may be difficult, Steep Slope Down to Stream, and Stream has high steep banks.

Site Score: 7.6

Site 6: Hooes Run, Springwood Drive



- Quality of upstream MS-4 outfalls: 3 quality outfalls [3]
Upstream land uses: Residential [2]
Opportunity to reduce floatables sources: little to no trash [2]
Access and feasibility: hilly area to descend, path helps access [3]
Size of contributing drainage area(s): med-large [3]

Notes:

larger stream, access good, but roads may vary according to
where along reach sampling occurs. very little trash in stream.

Site Score: 7.6

Site 7: Neabsco Creek, Andrew Leitch Park



Quality of upstream MS-4 outfalls: 2 quality outfalls [2]
 Upstream land uses: Residential Small lot [3]
 Opportunity to reduce floatables sources: Low numbers of floatables [4]
 Access and feasibility: good access, Too few inputs good isolated inputs [5]
 Size of contributing drainage area(s): Small - Mid [4]

Notes:

Many potential sampling sites, but must first find in stream access is good. Stream size is good. fairly simple area to reduce floatables.

Site Score: 3.6

Site 8: Neabsco Creek, Cloverdale Park



Quality of upstream MS-4 outfalls: 2-3 quality [3]
Upstream land uses: Residential [2]
Opportunity to reduce floatables sources: would be difficult to ID sources, [2] little amount
of trash [2]
Access and feasibility: long way from parking, wide deep channel [2]
Size of contributing drainage area(s): Med-Large [3]

Notes:

wide stream makes it difficult for monitoring efforts.

Site Score: 2.4

Site 9: Powells Creek, Monclair



Quality of upstream MS-4 outfalls: 1-2 quality outfalls [2]
 Upstream land uses: Residential [2]
 Opportunity to reduce floatables sources: ~~Some trash, difficult to determine~~ [2] *Identifiably sources (3)*
 Access and feasibility: ~~large distance from parking, access through lots~~ *Some trash easy access (4)*
 Size of contributing drainage area(s): Small - not [4]

Notes:

Trash present as part of Prior Stream Restoration project which must be removed from analysis. wide but shallow stream that receives high flows.

Site Score: 3.0

Site 10:



- Quality of upstream MS-4 outfalls: Many upstream outfalls [4]
- Upstream land uses: Commercial/residential [4]
- Opportunity to reduce floatables sources: Some [3]
- Access and feasibility: Fence impedes Access, Litter - before stream area [3]
- Size of contributing drainage area(s): Small-med [4]

Notes:

No current sampling site. Inaccessible through private property
Mostly Residential, need access to BML, but site can be located before fenced off area
leaves identifiable input drainage areas. Floatables are few, but have potential for more.

Site Score: 3.6

Site 11: Flat Branch

2



Quality of upstream MS-4 outfalls:	<u>Many</u>	[4]
Upstream land uses:	<u>Commercial/Residential</u>	[4]
Opportunity to reduce floatables sources:	<u>Sufficient floatables</u>	[4]
Access and feasibility:	<u>Ingress/Egress through private property</u>	[3] Lateral access good
Size of contributing drainage area(s):	<u>Large</u>	[2]

Notes:

No current sampling site. Ingress/Egress through private property. Sufficient floatables exist, but may not be attributed to MS-4 outfalls. Transported from upstream

Site Score: 3.4

Site 12:



Quality of upstream MS-4 outfalls: Many [4]
Upstream land uses: Commercial / Residential [4]
Opportunity to reduce floatables sources: Good amount of floatables [4]
Access and feasibility: Small stream, easy access from Roadway [3]
Size of contributing drainage area(s): Very Large [1]

Notes:

No current sampling site. Small stream with good floatable #'s. easy access
May be able to discern source of floatables for Res/Com sources

Site Score: 3.2

APPENDIX B – Field Inspection Forms

Forms will be added to this section upon completion

Floatables Monitoring Schedule					
		Month	Soil and Water Monitoring Session	Site	Type
Pilot Study	Q1	July	Summer	Andrew Leich	Floatables and Water Quality
		August		Dawkins Branch	Floatables and Water Quality
				Flat Branch	Floatables and Water Quality
		September	Out	Liberia Ave.	Floatables only
				Cornice Place	Floatables only
Floatables Monitoring Main Program Year 1	Q2	October	Fall	Andrew Leich	Floatables and Water Quality
		November		Dawkins Branch	Floatables only
				Flat Branch	Floatables only
		December	Out	Liberia Ave.	Floatables only
		Cornice Place		Floatables only	
	Q3	January	Winter	Andrew Leich	Floatables and Water Quality
		February		Dawkins Branch	Floatables only
				Flat Branch	Floatables only
				Cornice Place	Floatables only
	Q4	March	Spring	Liberia Ave.	Floatables only
				Andrew Leich	Floatables only
				Dawkins Branch	Floatables only
		April	Flat Branch	Floatables only	
		May	Out	Liberia Ave.	Floatables only
June	Cornice Place	Floatables only			
ring Main Program Year 2	Q1	July	Summer	Andrew Leich	Floatables and Water Quality
		August		Dawkins Branch	Floatables and Water Quality
				Flat Branch	Floatables and Water Quality
		September	Out	Liberia Ave.	Floatables only
		Cornice Place		Floatables only	
	Q2	October	Fall	Andrew Leich	Floatables and Water Quality
		November		Dawkins Branch	Floatables only
				Flat Branch	Floatables only
		December	Out	Liberia Ave.	Floatables only
		Cornice Place		Floatables only	
	January		Andrew Leich	Floatables and Water Quality	

Floatables Monitor	Q3	February	Winter	Dawkins Branch	Floatables only
				Flat Branch	Floatables only
				Cornice Place	Floatables only
		Q4	March	Spring	Liberia Ave.
	April		Andrew Leich		Floatables only
		May June	Out		Dawkins Branch
	Flat Branch				Floatables only
	Liberia Ave.	Floatables only			
				Cornice Place	Floatables only

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Floatables Monitoring Site Selection Data Sheets

The initial candidate Floatables Monitoring Program site locations were provided by PWCSWCD as part of their stream stewards program. These sites were first screened to include those who receive discharges from MS-4 Regulated Outfalls. Potential alternative sites are included as suggestions from PWC as additional sampling locations. These sites allow for a wider range of land uses to be included in the Floatables program analysis. Other sites will be considered upon discussion with stakeholders and County Staff if needed. These sites will be added at the end of this analysis document.

Maps are to be marked with important locations such as:

- Estimated Stream Stewards sampling location
- Ingress-egress for monitoring staff
- Potential sampling locations
- Trash hotspots
- Regulated outfall Locations
- Any dangerous or suspicious areas
- Other areas of interest

Scoring is determined by averaging the score from each individual scoring category. The score in each scoring category is selected from a scale of 1 to 5, with a score of 1 representing a least favored outcome, and a score of 5 representing a most desired outcome. If any qualifications are not met (i.e. a score of 0 is recorded for a site) then the site is disqualified from being used as a final site. The top 5 sites will be selected for the Floatables Monitoring Program.

Site 1: Bull Run, Ben Lomond Park



Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

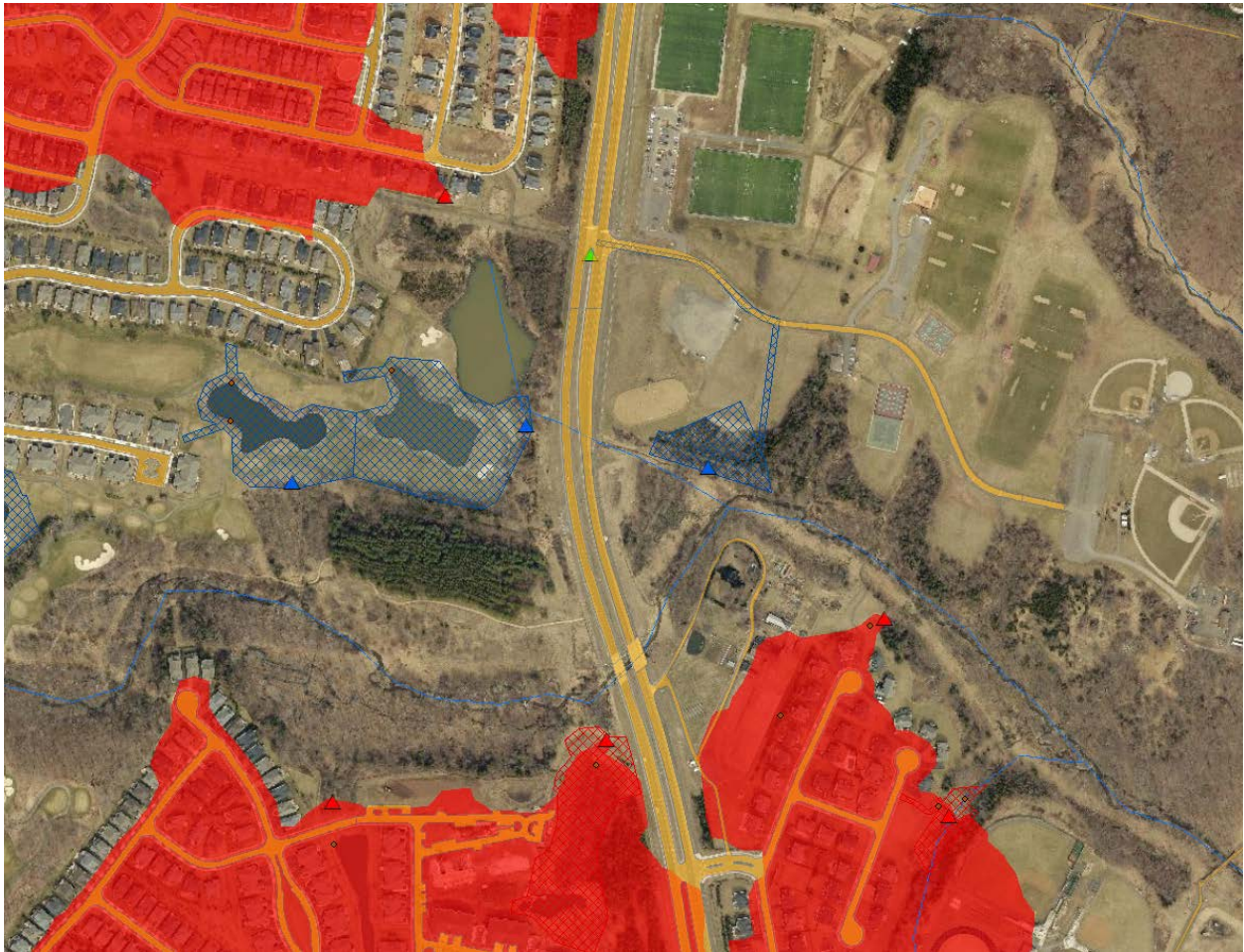
Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 2: Catharpin Creek, James Long Park



Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

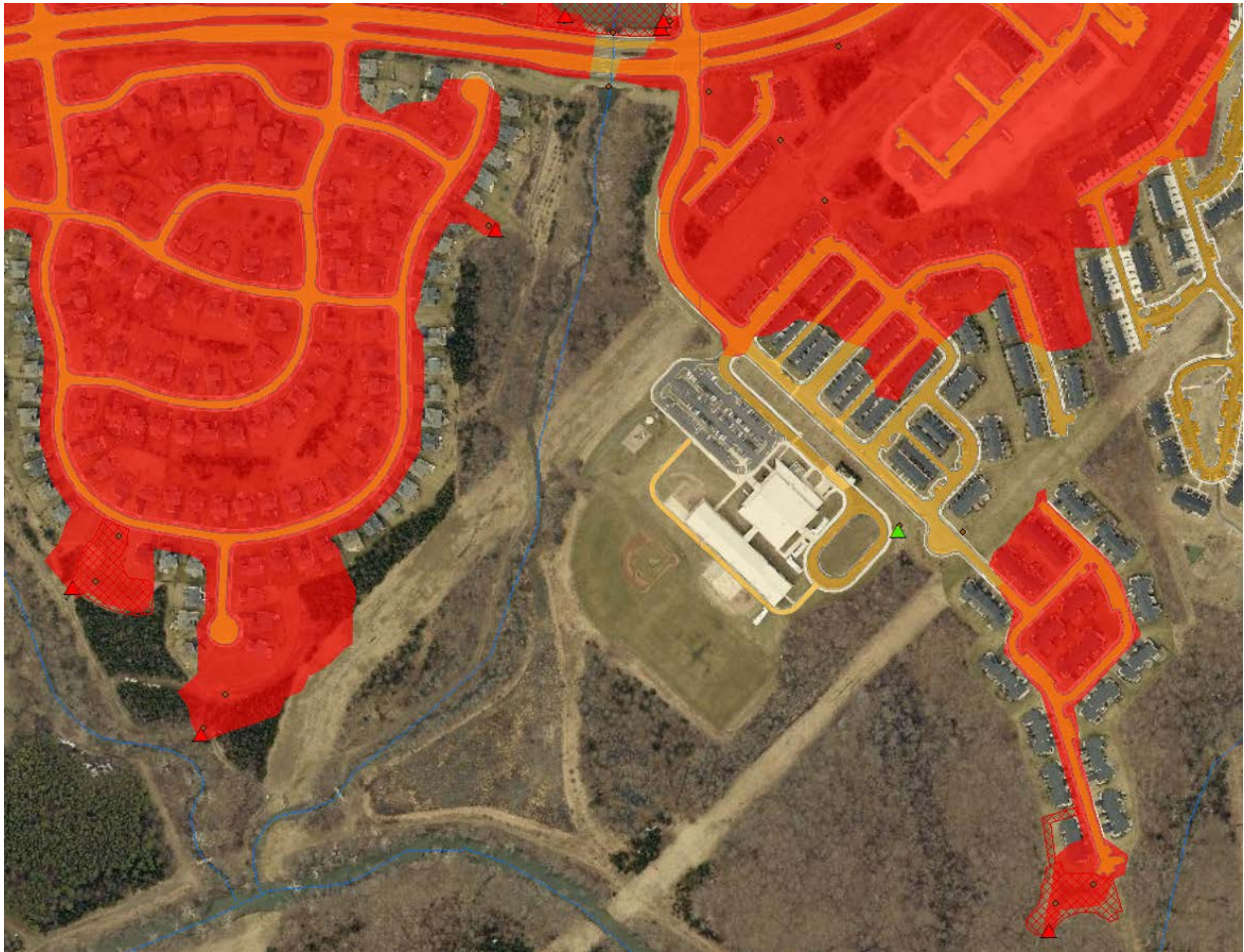
Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 3: Dawkins Branch, Victory Elementary School



- Quality of upstream MS-4 outfalls: _____ []
- Upstream land uses: _____ []
- Opportunity to reduce floatables sources: _____ []
- Access and feasibility: _____ []
- Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 4: Dewey's Creek, Wayside Drive



Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 5: Hooes Run, Castile Court

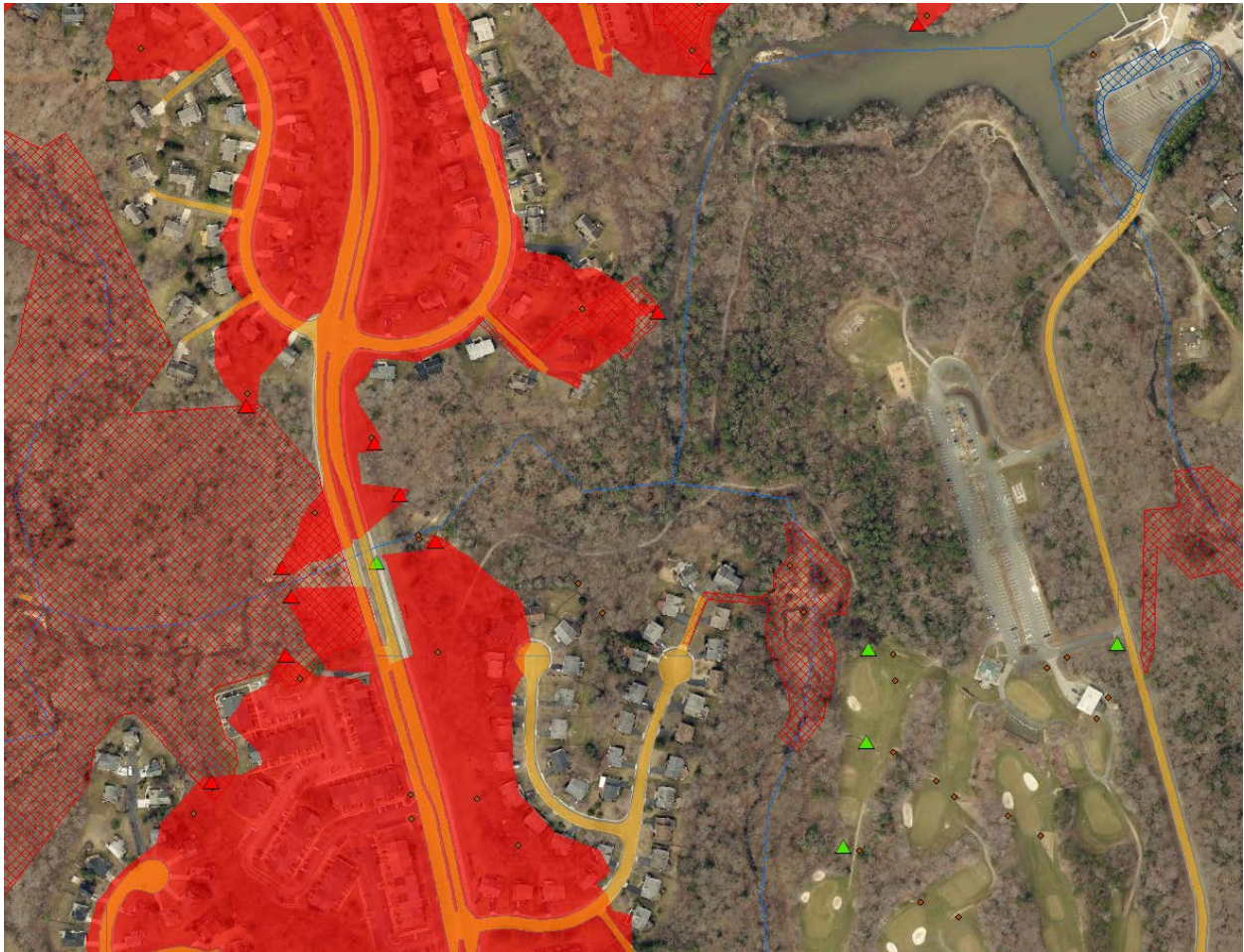


- Quality of upstream MS-4 outfalls: _____ []
- Upstream land uses: _____ []
- Opportunity to reduce floatables sources: _____ []
- Access and feasibility: _____ []
- Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 6: Hooes Run, Springwood Drive

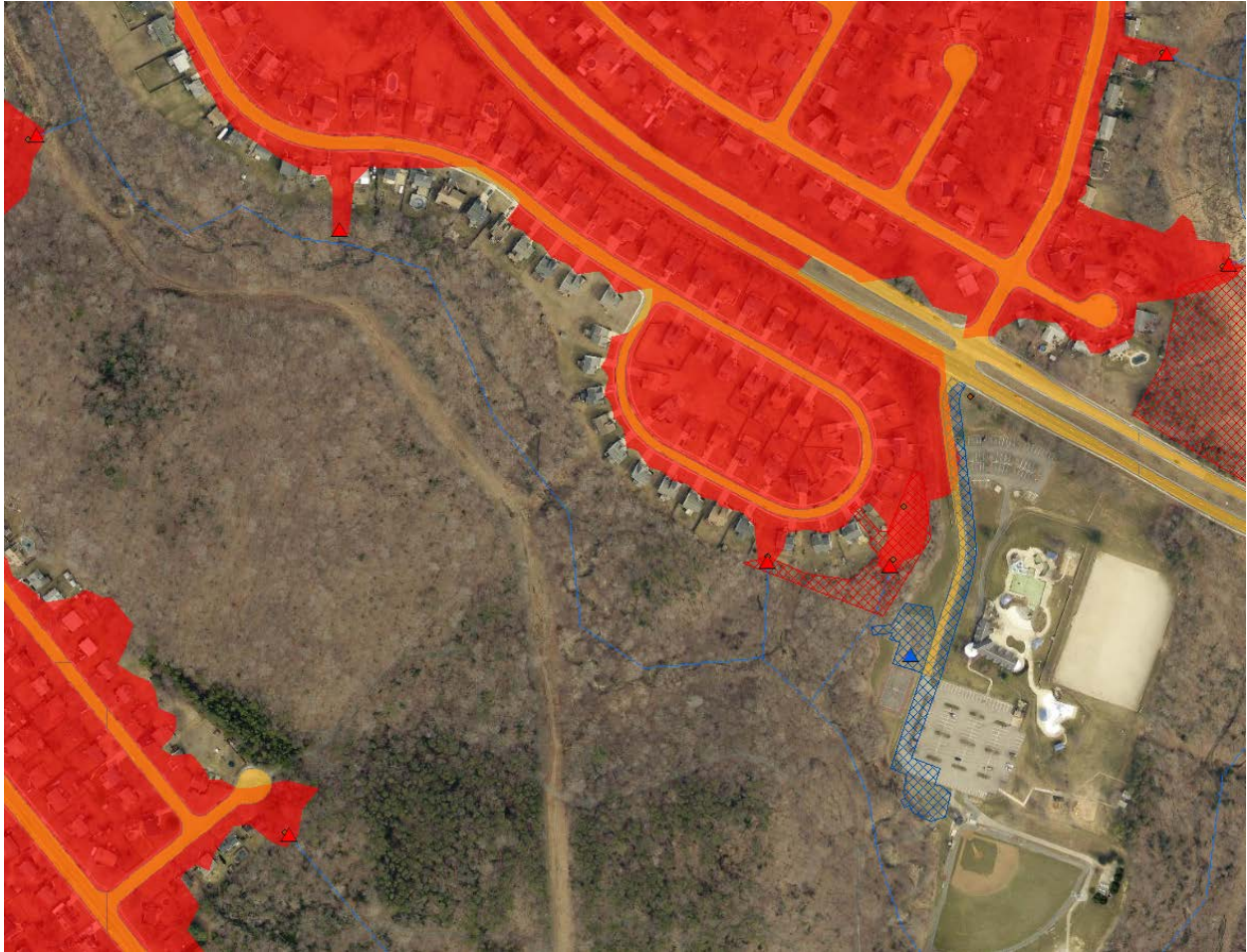


- Quality of upstream MS-4 outfalls: _____ []
- Upstream land uses: _____ []
- Opportunity to reduce floatables sources: _____ []
- Access and feasibility: _____ []
- Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 7: Neabsco Creek, Andrew Leitch Park



- Quality of upstream MS-4 outfalls: _____ []
- Upstream land uses: _____ []
- Opportunity to reduce floatables sources: _____ []
- Access and feasibility: _____ []
- Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 8: Neabsco Creek, Cloverdale Park



Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 9: Powells Creek, Monclair



Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

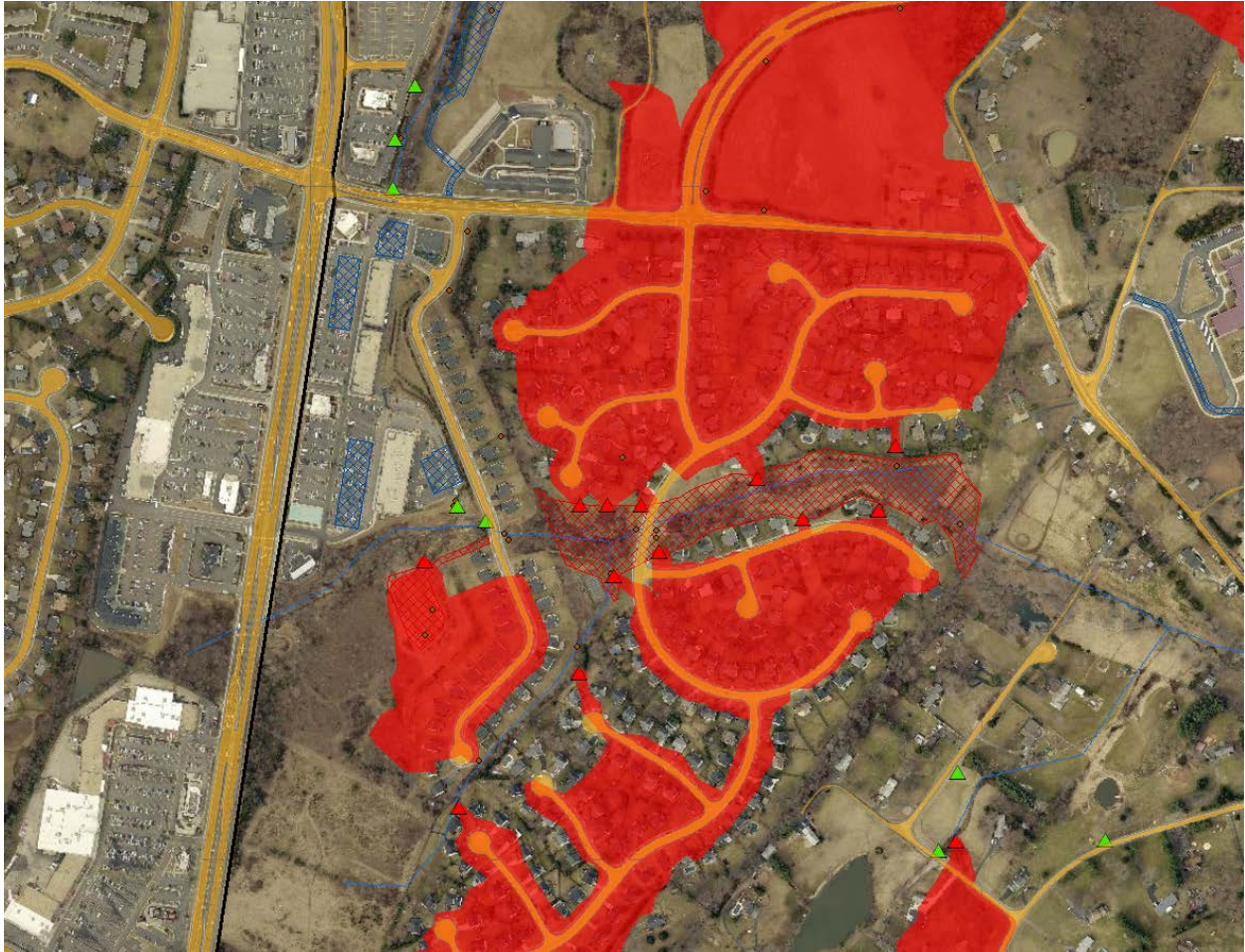
Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 10:



Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

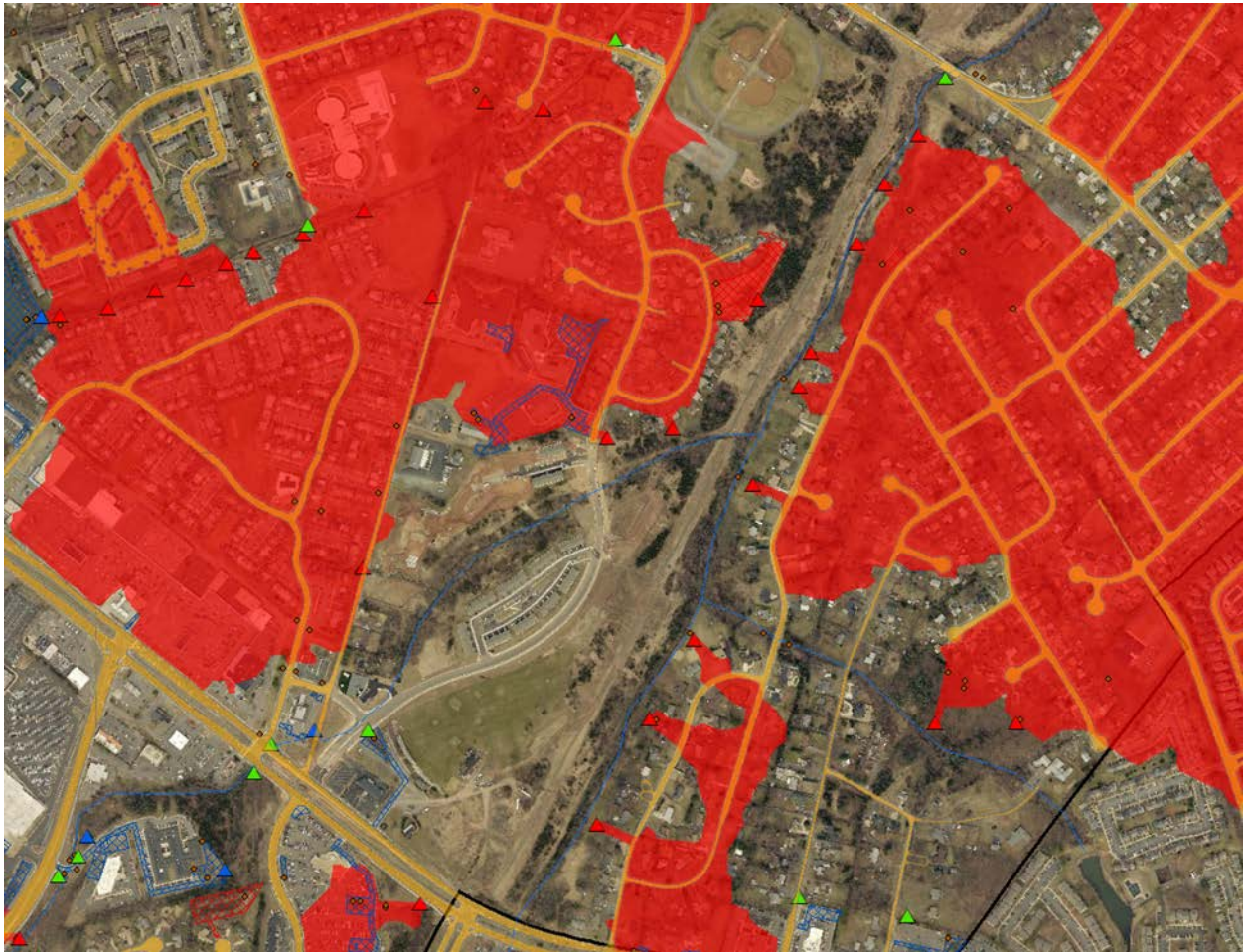
Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 11:



Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

Site 12:



Quality of upstream MS-4 outfalls: _____ []

Upstream land uses: _____ []

Opportunity to reduce floatables sources: _____ []

Access and feasibility: _____ []

Size of contributing drainage area(s): _____ []

Notes:

Site Score: _____

1) The SWM facility type, address, and latitude and longitude (in decimal degrees)			2) The total pervious and impervious areas treated			3) The date brought online (MM/YYYY)		4) The hydraulic unit code (HUC) in which the SWM facility is located		5) The name of any impaired water segments with each HUC listed on the most recent 2020/2021 Water Quality Assessment Integrated Report to which the SWM facility is located		6) Whether the SWM facility is permitted or privately maintained		7) Whether the SWM facility discharges into the receiving water body		8) Whether a maintenance agreement exists with the permittee's MSB		9) The date of last inspection by permittee						
Facility ID	Facility Type	Facility Description	ADDRESS	Subdivision	Longitude	Latitude	Total Drains Area	Pervious Drains Area (Acres)	Impervious Drains Area (Acres)	Date Installed	VAHUC1	VAHUC2	VAHUC3	VAHUC3 Name	IGSSS	Water Name Facility Discharge To?	2020/2021 Water Quality Assessment Category	2020/2021 Water Quality Assessment Impairment Cause?	MAINT	Maintenance Agreement	STATUS	Discharge to MSB?	SWM_AGEEMENT	INSPEC
1	SWAMP	D	6611 ELCARIB COURT	MINNEVILLE MANOR SECTION 24	-77.3961	38.6243	28.49	25.53	2.96	10/2/2006	P-P	P531	P531	Powells Creek	VAH-A22A_P09M0242	Powells Creek	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
2	SWAMP	D	15140 ELSPIRE DRIVE	MINNEVILLE MANOR SECTION 9	-77.396	38.6226	10.94	9.76	1.18	10/2/2006	P-P	P531	P531	Powells Creek	VAH-A22A_P09M0242	Powells Creek	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
4	SWAMP	D	63398 ELSWERT COURT	MINNEVILLE MANOR SECTION 9	-77.396	38.622	10.94	9.76	1.18	10/2/2006	P-P	P531	P531	Powells Creek	VAH-A22A_P09M0242	Powells Creek	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
5	SWAMP	D	4760 ELSWERT DRIVE	BEACON HILL SECTION 2	-77.393	38.6227	17.42	16.72	0.70	10/2/2002	P-O	P541	P541	stream River-Oceanous River	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
6	SWAMP	D	4760 ELSWERT DRIVE	BEACON HILL SECTION 2	-77.393	38.6227	17.42	16.72	0.70	10/2/2002	P-O	P541	P541	stream River-Oceanous River	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
7	SWAMP	D	847 RAPPOLD COURT	WALTON SECTION 3	-77.423	38.6422	61.05	62.87	0.82	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
8	SWAMP	D	847 RAPPOLD COURT	WALTON SECTION 3	-77.423	38.6422	61.05	62.87	0.82	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
9	SWAMP	W	12720 ADRIAN DRIVE	BRENTWOOD ACRES	-77.571	38.6751	74.89	70.96	3.93	10/2/2002	P-M	P406	P406	Center Run-Slate Run	VAH-A22A_P09M0242	Slate Run	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
10	SWAMP	D	8209 WARD DRIVE	DECEMBER SECTION 4	-77.405	38.6233	10.28	10.28	0.00	10/2/2006	P-P	P531	P531	Powells Creek	VAH-A22A_P09M0242	Powells Creek	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
11	SWAMP	D	1885 ANTONIO DRIVE	DECEMBER SECTION 4	-77.396	38.61	108.18	89.79	18.39	10/2/2006	P-P	P531	P531	Powells Creek	VAH-A22A_P09M0242	Powells Creek	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
12	SWAMP	D	1885 ANTONIO DRIVE	DECEMBER SECTION 4	-77.396	38.61	108.18	89.79	18.39	10/2/2006	P-P	P531	P531	Powells Creek	VAH-A22A_P09M0242	Powells Creek	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
13	SWAMP	D	11893 BILGERS COURT	CLOVERHILL ESTATES	-77.527	38.6594	7.08	6.38	0.70	10/2/2000	P-L	P333	P333	Kettle Run	VAH-A12A_M01M040	Kettle Run	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
14	SWAMP	D	11893 BILGERS COURT	CLOVERHILL ESTATES	-77.527	38.6594	7.08	6.38	0.70	10/2/2000	P-L	P333	P333	Kettle Run	VAH-A12A_M01M040	Kettle Run	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
15	SWAMP	D	13333 BULLY DRIVE	WOODCROFT SECTION 7	-77.529	38.6731	76.45	65.29	11.16	10/2/2004	P-O	P541	P541	stream River-Oceanous River	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
16	SWAMP	D	1639 ANN MARIE LANE	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
17	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
18	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
19	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
20	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
21	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
22	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
23	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
24	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
25	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
26	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
27	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
28	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
29	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
30	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
31	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
32	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
33	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
34	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
35	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
36	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
37	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
38	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
39	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
40	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
41	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
42	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
43	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
44	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
45	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
46	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
47	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
48	SWAMP	D	12933 ANNE COURT	KIMBERLY ESTATES	-77.491	38.6762	7.20	6.91	0.29	10/2/2004	P-O	P541	P541	Oceanous River-Lake Jackson	VAH-A22A_P09M0242	Oceanous River	4A	Exhaurition col.	P	Public	Yes	Yes	Yes	YES
49	SWAMP	D	12933 ANNE COURT																					

Activity ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inventory	VARIUS	VARIUS	VARIUS ID Name	GISID	Water Name Facility Discharge To?	300A/300G/300H Assessment Category	300A/300G/300H Water Quality Assessment Category	300A/300G/300H Water Quality Assessment Improvement Cause?	MSBT	Maintenance Agreement Type	STATUS	Discharge to MSB?	300A/300G/300H	RSPT
131	SWAMP	D 1987 DARTMOUTH LOOP	77.2794	38.8221	24.21	0.01	0.01	0.01	0.01	12/1/2004	P, D	P, D	Nashua Creek		4A	Exterrestrial only			P	Public	Yes	Yes	Y123	
132	SWAMP	D 6075 SCENE POINTE PLACE	77.4503	38.8991	4.69	1.01	0.78	1.01	0.78	12/21/2004	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
133	SWAMP	D 4981 SCENE POINTE PLACE	77.4503	38.8992	4.67	1.01	0.67	1.01	0.67	12/1/2004	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
134	SWAMP	D 1465 WOODBURY DRIVE	77.2794	38.8221	24.21	0.01	0.01	0.01	0.01	12/21/2004	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
135	SWAMP	W 13000 FERRISBURGH DRIVE	77.3246	38.8787	31.51	24.82	24.82	24.82	24.82	12/1/2004	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
136	SWAMP	W 2646 WILLIAM PARKWAY	77.3246	38.8626	36.06	36.06	36.06	36.06	36.06	12/1/2004	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
137	SWAMP	D 187 WESTMORHART WAY	77.2748	38.8403	3.29	2.28	1.11	2.28	1.11	12/1/2005	P, D	P, D	Potomac River-Occoquan Bay	VAN-A206_POTOMAC	Maryland Creek	5A	Exterrestrial only			P	Public	Yes	Yes	Y123
138	SWAMP	D 10384 CARRIDGE DRIVE	77.4602	38.7134	5.67	5.22	1.25	5.22	1.25	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
139	SWAMP	D 4541 BANBURY DRIVE	77.6027	38.8905	71.07	62.42	8.65	62.42	8.65	10/21/2006	P, D	P, D	Little Bull Run	VAN-A214_BULL1008	Bull Run	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
140	SWAMP	D 4541 BANBURY DRIVE	77.6027	38.8905	71.07	62.42	8.65	62.42	8.65	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
141	SWAMP	D 12005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
142	SWAMP	D 8040 WOODBURY DRIVE	77.3246	38.8787	31.51	24.82	24.82	24.82	24.82	12/1/2004	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
143	SWAMP	D 1731 ROCKVILLE COURT	77.3275	38.8658	15.69	12.01	3.68	12.01	3.68	10/21/2006	P, D	P, D	Occoquan River-Beltway Run	VAN-A206_OCCOQUAN	Bull Run	5A	PCB in Fish Tissue			P	Public	Yes	Yes	Y123
144	SWAMP	D 20005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
145	SWAMP	D 13836 DELAWARE ROAD	77.3253	38.8511	139.34	24.83	24.83	24.83	24.83	10/21/2006	P, D	P, D	Nashua Creek	VAN-A206_NASHUA	50	Biogenic Macroinvertebrates Measurements, PCB in Fish Tissue			P	Public	Yes	Yes	Y123	
146	SWAMP	D 1817 LANTIER HILL DRIVE	77.3253	38.8511	139.34	24.83	24.83	24.83	24.83	10/21/2006	P, D	P, D	Nashua Creek	VAN-A206_NASHUA	4A	Exterrestrial only			P	Public	Yes	Yes	Y123	
147	SWAMP	D 1402 BARNBELL SECTION 1	77.3253	38.8511	139.34	24.83	24.83	24.83	24.83	10/21/2006	P, D	P, D	Nashua Creek	VAN-A206_NASHUA	4A	Exterrestrial only			P	Public	Yes	Yes	Y123	
148	SWAMP	D 4000 ROWLEY COURT	77.3253	38.8511	139.34	24.83	24.83	24.83	24.83	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
149	SWAMP	D 10000 ROWLEY COURT	77.3253	38.8511	139.34	24.83	24.83	24.83	24.83	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
150	SWAMP	D 8741 VANNURE PLACE	77.4602	38.7234	21.36	18.39	2.97	18.39	2.97	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
151	SWAMP	D 10384 CARRIDGE DRIVE	77.4602	38.7134	5.67	5.22	1.25	5.22	1.25	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
152	SWAMP	D 14740 BURNHAM COURT	77.4643	38.6146	64.80	39.20	5.59	39.20	5.59	10/21/2006	P, D	P, D	Quantico Creek	VAN-A206_QUANTICO	South Fork Quantico Creek	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
153	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
154	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
155	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
156	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
157	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
158	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
159	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
160	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
161	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
162	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
163	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
164	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
165	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
166	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
167	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
168	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
169	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
170	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
171	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
172	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
173	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
174	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
175	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
176	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
177	SWAMP	D 10005 SPRINGWOOD DRIVE	77.3259	38.8591	139.18	139.13	23.21	139.20	23.21	10/21/2006	P, D	P, D	Occoquan River-Lake Junction	VAN-A206_OCCOQUAN	Occoquan River	4A	Exterrestrial only			P	Public	Yes	Yes	Y123
17																								

Activity ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inspected	VARIABLES	WATER	VARIABLES Name	STATUS	Water Name Facility	300A/300B/300C Assessment Category	300A/300B/300C Water Quality	300A/300B/300C Water Quality Assessment Improvement Cause?	MSBT	Maintenance Agreement Type	STATUS	Discharge to MS4?	300A/300B/300C	NOTES	
812	SWAMP	D	1300 BARKHILL DRIVE	DORNING CREST SWAMP/POWERS DAM	-77.044	38.891	8.55	8.55	0.0	2/27/2008	P,R	P,LS	Little Bull Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
813	SWAMP	D	4135 MARION COURT	DORNING CREST SWAMP/POWERS DAM	-77.056	38.842	38.81	27.49	9.32	2/26/2008	P,P	P,LS	Quantico Creek	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
814	SWAMP	D	15862 CANTONIA FARM LANE	EFFINGHAM PARK	-77.520	38.926	11.30	12.31	0.77	2/27/2008	P,M	P,LS	Cedar Run-Side Run	VNR-A228_CFR0208	Cedar Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
815	SWAMP	D	14020 ERM COURT	EFFINGHAM PARK	-77.527	38.911	0.41	0.41	0.08	2/27/2008	P,LS	P,LS	Cedar Run-Side Run	VNR-A228_CFR0208	Cedar Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
816	SWAMP	W	6151 MOUNTAIN DRIVE	MANFREDI TRACT SECTION 1	-77.489	38.710	12.27	7.41	4.86	3/20/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
817	SWAMP	D	14020 ERM COURT	MANFREDI TRACT SECTION 1	-77.489	38.710	12.27	7.41	4.86	3/20/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
818	SWAMP	W	8724 TAYLOR COURT	MANFREDI TRACT SECTION 1	-77.504	38.701	21.83	13.35	12.77	4/17/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
819	SWAMP	D	14020 ERM COURT	MANFREDI TRACT SECTION 1	-77.489	38.710	12.27	7.41	4.86	3/20/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
820	SWAMP	D	14800 TROTTER RIDGE ROAD	EFFINGHAM PARK	-77.521	38.876	8.62	8.28	0.34	2/27/2008	P,M	P,LS	Cedar Run-Side Run	VNR-A228_CFR0208	Cedar Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
821	SWAMP	D	14020 ERM COURT	MANFREDI TRACT SECTION 1	-77.489	38.710	12.27	7.41	4.86	3/20/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
822	SWAMP	D	5523 BARKHILL DRIVE	EFFINGHAM PARK	-77.521	38.876	8.62	8.28	0.34	2/27/2008	P,M	P,LS	Cedar Run-Side Run	VNR-A228_CFR0208	Cedar Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
823	SWAMP	D	14020 ERM COURT	MANFREDI TRACT SECTION 1	-77.489	38.710	12.27	7.41	4.86	3/20/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
824	SWAMP	D	6737 ELMANOR DRIVE	CATHERWOOD SECTION 18	-77.439	38.234	27.87	29.11	5.14	6/28/2008	P,R	P,LS	Little Bull Run	VNR-A228_CAH0208	Cathartes Creek	5D	Beneficial Macroinvertebrates Assessments, Exhorted call		P	Public	Yes	Yes	N	F128	
825	SWAMP	D	14020 ERM COURT	CATHERWOOD SECTION 18	-77.439	38.234	27.87	29.11	5.14	6/28/2008	P,R	P,LS	Little Bull Run	VNR-A228_CAH0208	Cathartes Creek	5D	Beneficial Macroinvertebrates Assessments, Exhorted call		P	Public	Yes	Yes	N	F128	
826	SWAMP	D	14020 ERM COURT	CATHERWOOD SECTION 18	-77.439	38.234	27.87	29.11	5.14	6/28/2008	P,R	P,LS	Little Bull Run	VNR-A228_CAH0208	Cathartes Creek	5D	Beneficial Macroinvertebrates Assessments, Exhorted call		P	Public	Yes	Yes	N	F128	
827	SWAMP	D	11804 JUSTICE DRIVE COURT	JUSTICE DRIVE	-77.493	38.697	23.61	19.28	3.88	8/25/2008	P,LS	P,LS	Occoquan River Lake Jackson	VNR-A228_OC0208	Occoquan River	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
828	SWAMP	D	15805 ANTONIO TRAIL WAY	CAROLINA TRACE	-77.607	38.817	16.84	16.81	0.23	8/26/2008	P,LS	P,LS	Powells Creek	VNR-A228_POW0208	Powells Creek	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
829	SWAMP	D	14020 ERM COURT	MANFREDI TRACT SECTION 1	-77.489	38.710	12.27	7.41	4.86	3/20/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
830	SWAMP	D	7009 NORTHINGTON DRIVE	MANFREDI TRACT SECTION 22	-77.502	38.793	11.95	9.47	2.48	9/26/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
831	SWAMP	D	14020 ERM COURT	MANFREDI TRACT SECTION 22	-77.502	38.793	11.95	9.47	2.48	9/26/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
832	SWAMP	D	14201 INVERWOOD DRIVE	MANFREDI TRACT SECTION 22	-77.486	38.814	38.05	24.18	13.88	9/28/2008	P,R	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
833	SWAMP	D	12908 PINEVAL ROAD	OMEGA TRACTS	-77.373	38.675	32.64	29.78	6.88	9/28/2008	P,LS	P,LS	Occoquan River Lake Jackson	VNR-A228_OC0208	Occoquan River	5A	Exhorted call		P	Public	Yes	Yes	N	F128	
834	SWAMP	D	12908 PINEVAL ROAD	OMEGA TRACTS	-77.373	38.675	32.64	29.78	6.88	9/28/2008	P,LS	P,LS	Occoquan River Lake Jackson	VNR-A228_OC0208	Occoquan River	5A	Exhorted call		P	Public	Yes	Yes	N	F128	
835	SWAMP	D	5005 EVERHART COURT	MALDEN CHASE	-77.571	38.692	11.23	11.58	1.88	9/30/2008	P,LS	P,LS	Occoquan River Lake Jackson	VNR-A228_OC0208	Occoquan River	5A	Exhorted call		P	Public	Yes	Yes	N	F128	
836	SWAMP	D	4012 CHERRYWOOD COURT	AGLE SUBDIVISION	-77.384	38.791	8.61	7.56	2.27	3/31/2008	P,LS	P,LS	Occoquan River Lake Jackson	VNR-A228_OC0208	Occoquan River	5A	Exhorted call		P	Public	Yes	Yes	N	F128	
837	SWAMP	D	5514 CARROLLAN COURT	WESTMOUNT LANDMARK 1	-77.511	38.831	14.05	9.21	4.82	10/6/2008	P,R	P,LS	Little Bull Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
838	SWAMP	D	5015 BRYAN PLACE	WESTMOUNT LANDMARK 1	-77.511	38.831	14.05	9.21	4.82	10/6/2008	P,R	P,LS	Little Bull Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
839	SWAMP	D	5905 WATERBURY BRIDGE CIRCLE	DOMINION VALLEY COUNTRY CLUB SECTION 24	-77.557	38.842	291.71	289.58	14.52	10/15/2008	P,R	P,LS	Little Bull Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
840	SWAMP	W	1710 RAIN SLICER PACE	ASLEY ROAD	-77.568	38.789	71.91	55.89	15.02	10/17/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
841	SWAMP	D	10200 MARSH TRAIL COURT	CROSSBARK TRACT	-77.527	38.764	27.66	19.88	6.78	10/20/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
842	SWAMP	W	13016 CEDAR CREEK DRIVE	COURTNEY ROAD SEPARATION AREA SECTION 1	-77.608	38.726	6.53	3.30	3.23	10/20/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
843	SWAMP	D	10005 BURNING BUSH DRIVE	CONTRACTORS STORAGE LANE	-77.598	38.895	18.98	18.95	0.03	11/21/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
844	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
845	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
846	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
847	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
848	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
849	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
850	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
851	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
852	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
853	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
854	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
855	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
856	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
857	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public	Yes	Yes	N	F128	
858	SWAMP	D	10015 TAYLOR CREEK DRIVE	BULLMANTH TAYLOR CREEK EXT SWAMP B	-77.540	38.791	165.71	204.43	105.29	11/27/2008	P,LS	P,LS	Branch Run-Side Run	VNR-A228_BH02008	Branch Run	4A	Exhorted call		P	Public					

Facility ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inventory	VARIABLE	VARIABLE	VARIABLE Name	COUSE	Water Name Facility	300A/300B/300C Assessment Category	300A/300B/300C Water Quality Assessment	300A/300B/300C Water Quality Assessment Improvement Cause?	MSBT	Maintenance Agreement Type	STATUS	Discharge to MSBT	300A/300B/300C	MSBT	
1081	CWWP/BWP	3910 OLD BRIDGE ROAD	THE BRIDGE ELEMENTARY SCHOOL	77.307	38.811	0.76	0.76	0.0	0.0	4/21/2006	P.O.	P.O.	BRIDGE	BRIDGE	BRIDGE	4A	Exhorted only		C	Private	NR	Yes			
1082	CMBP	8122 BETHLEHEM ROAD	DATA LABORATORY SERVICE	77.595	38.735	0.49	0.32	0.18	0.25	2/2/2005	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes		6/12/2009	
1083	CWWP/BWP	8002 CENTRE ROAD	DIRECTECH HOME NURSING CENTER	77.620	38.710	26.77	22.26	0.0	0.0	3/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes		12/12/2017	
1084	CWWP/BWP	8002 CENTRE ROAD	DIRECTECH HOME NURSING CENTER	77.620	38.710	26.77	22.26	0.0	0.0	3/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes		12/12/2017	
1085	CWWP/BWP	141 WESTMORLAND DRIVE	PER BOYS WOODCROFT	77.261	38.465	1.87	1.31	2.66	4/21/2006	P.O.	P.O.	Potomac River-Occoquan River	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			7/15	
1086	CWWP/BWP	2733A BELLEVUE ROAD	GRANT CAREY NURSERY & LANDSCAPE SVCS	77.548	38.721	0.35	0.22	0.13	2/2/2005	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			6/12/2009	
1087	CWWP/BWP	8122 BETHLEHEM ROAD	DATA LABORATORY SERVICE	77.595	38.735	0.49	0.32	0.18	0.25	2/2/2005	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			6/12/2009
1088	CWWP/BWP	VERMONT CREEK DRIVE	VERMONT CREEK DRIVE GRASSING PLAN	77.625	38.726	54.95	38.8	0.0	0.0	10/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			6/12/2009
1089	CWWP/BWP	7754 VERMONT CREEK DRIVE	VERMONT CREEK DRIVE GRASSING PLAN	77.625	38.726	54.95	38.8	0.0	0.0	10/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			6/12/2009
1090	CWWP/BWP	7754 VERMONT CREEK DRIVE	VERMONT CREEK DRIVE GRASSING PLAN	77.625	38.726	54.95	38.8	0.0	0.0	10/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			6/12/2009
1091	CWWP/BWP	7754 VERMONT CREEK DRIVE	VERMONT CREEK DRIVE GRASSING PLAN	77.625	38.726	54.95	38.8	0.0	0.0	10/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			6/12/2009
1092	CWWP/BWP	13300 VERMONT CREEK DRIVE	VERMONT CREEK DRIVE GRASSING PLAN	77.625	38.726	54.95	38.8	0.0	0.0	10/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			6/12/2009
1093	CWWP/BWP	7800 CELIUS DRIVE	CELIVUS DRIVE PAVILION	77.583	38.783	0.15	0.15	0.0	0.0	6/13/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			4/24/2013
1094	CWWP/BWP	7754 VERMONT CREEK DRIVE	VERMONT CREEK DRIVE GRASSING PLAN	77.625	38.726	54.95	38.8	0.0	0.0	10/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			6/12/2009
1095	CWWP/BWP	7800 CELIUS DRIVE	CELIVUS DRIVE PAVILION	77.583	38.783	0.15	0.15	0.0	0.0	6/13/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			4/24/2013
1096	CWWP/BWP	7800 CELIUS DRIVE	CELIVUS DRIVE PAVILION	77.583	38.783	0.15	0.15	0.0	0.0	6/13/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			4/24/2013
1097	CWWP/BWP	8000 MARPOSS WOOD DRIVE	MARPOSS WOOD DRIVE	77.625	38.726	4.40	1.81	0.0	0.0	6/13/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			6/12/2009
1098	CWWP/BWP	8000 MARPOSS WOOD DRIVE	MARPOSS WOOD DRIVE	77.625	38.726	4.40	1.81	0.0	0.0	6/13/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			6/12/2009
1099	CWWP/BWP	13313 TOUCHSTONE CIRCLE	THE GLEN SECTION C	77.538	38.671	0.36	0.12	0.0	0.0	2/2/2005	P.O.	P.O.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			12/12/2017
1100	CWWP/BWP	14400 BELLEVUE ROAD	POWELL FOOD SERVICE WAREHOUSE	77.261	38.465	21.00	18.0	0.0	0.0	3/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			6/12/2009
1101	CWWP/BWP	5000 MICHIGAN STREET	LIGHTNING ROAD ELEMENTARY SCHOOL	77.683	38.841	16.88	12.09	0.79	0.79	7/21/2007	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			4/24/2013
1102	CWWP/BWP	14400 BELLEVUE ROAD	POWELL FOOD SERVICE WAREHOUSE	77.261	38.465	21.00	18.0	0.0	0.0	3/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			6/12/2009
1103	CWWP/BWP	7700 PROGRESS COURT	PROGRESS BUSINESS CENTER 101 BA	77.504	38.718	2.78	0.77	0.0	0.0	2/2/2005	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	4A	Exhorted only		C	Private	NR	Yes			6/12/2009
1104	CWWP/BWP	14400 BELLEVUE ROAD	POTOMAC MALL AUTO WASH AND CAR CENTER	77.261	38.465	21.00	18.0	0.0	0.0	3/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			6/12/2009
1105	CWWP/BWP	14400 BELLEVUE ROAD	POTOMAC MALL AUTO WASH AND CAR CENTER	77.261	38.465	21.00	18.0	0.0	0.0	3/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			6/12/2009
1106	CWWP/BWP	14400 BELLEVUE ROAD	POTOMAC MALL AUTO WASH AND CAR CENTER	77.261	38.465	21.00	18.0	0.0	0.0	3/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			6/12/2009
1107	CWWP/BWP	14400 BELLEVUE ROAD	POTOMAC MALL AUTO WASH AND CAR CENTER	77.261	38.465	21.00	18.0	0.0	0.0	3/21/2006	P.L.	P.L.	BRIDGE RUN ROCKY BRANCH	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			6/12/2009
1108	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1109	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1110	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1111	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1112	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1113	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1114	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1115	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1116	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1117	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1118	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1119	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1120	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1121	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1122	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1123	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1124	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1125	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE RUN	50	Beneficial Macroinvertebrates Assessments, PCB in Fall Trace		C	Private	NR	Yes			5/23/2009	
1126	CWWP/BWP	4701 LOCKER SHADE DRIVE	LOCKER SHADE GOLF FACILITY	77.587	38.549	31.81	30.2	1.59	10/21/2006	P.F.P.	P.F.P.	Quantico Creek	VMA-A228_BM02402	BRIDGE											

Facility ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inspected	VARIABLES	WQMS	VARIABLES Name	SDMS	Water Name Facility	300A/300B/300C Water Quality Assessment Category	300A/300B/300C Water Quality Assessment Impairment Cause?	MSBT	Maintenance Agreement Type	STATUS	Discharge to MSW	SDMS AGREEMENT	SDMS
1235	CBMP	15401 CAROLINA DRIVE	POTOMAC CREST BAPTIST CHURCH	77.8487	38.8347	0.00	0.00	0.00	0.00	11/2/2005	P-F	P15	Potomac Creek	VMS-A236_POW00402	Power Creek	4A	Exhaustion only	C	Private	NR	Yes	5/20/2018	
1236	CBMP	14875 ICH Highway	EXHIBITS STATION AT GAINESVILLE 2007	77.8485	38.7938	0.97	0.23	0.74	0.23	11/2/2005	P-L	P15	North Fork Broad Run	VMS-A236_NF001410	North Fork Broad Run	4A	Exhaustion only	C	Private	NR	Yes	5/21/2018	
1237	CBMP/EMP	14875 ICH Highway	EXHIBITS STATION AT GAINESVILLE 2007	77.8485	38.7938	1.77	0.65	1.12	0.65	11/2/2005	P-L	P15	North Fork Broad Run	VMS-A236_NF001410	North Fork Broad Run	4A	Exhaustion only	C	Private	NR	Yes	5/21/2018	
1238	CBMP/EMP	14875 ICH Highway	EXHIBITS STATION AT GAINESVILLE 2007	77.8485	38.7938	1.77	0.65	1.12	0.65	11/2/2005	P-L	P15	North Fork Broad Run	VMS-A236_NF001410	North Fork Broad Run	4A	Exhaustion only	C	Private	NR	Yes	5/21/2018	
1239	CBMP/EMP	14875 ICH Highway	EXHIBITS STATION AT GAINESVILLE 2007	77.8485	38.7938	1.77	0.65	1.12	0.65	11/2/2005	P-L	P15	North Fork Broad Run	VMS-A236_NF001410	North Fork Broad Run	4A	Exhaustion only	C	Private	NR	Yes	5/21/2018	
1240	CBMP	7 S 1300 23RD AND BALLBOURNS ROADS	ROBERT LOUIS STEVENSON PARTNERSHIP	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1241	CBMP	14817 ICH Highway	VERMONT AREA MAINTENANCE FACILITY	77.6211	38.7926	0.06	0.05	0.05	0.05	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1242	CBMP/EMP	3000 BURNING ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1243	CBMP/EMP	3000 BURNING ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1244	CBMP/EMP	3000 BURNING ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1245	CBMP/EMP	3000 BURNING ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1246	CBMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1247	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1248	CBMP	15004 FARM CREEK HIGHWAY	FEATHERSTONE WINDMILLS BUILDINGS 1 AND 2	77.2232	38.6231	11.57	4.06	3.51	4.06	10/12/2005	P-L	P15	Potomac River-Occoquan Bay	VMS-A236_PO001400	Potomac River	4A	Exhaustion only	C	Private	NR	Yes	10/12/2005	
1249	CBMP/EMP	15004 FARM CREEK HIGHWAY	FEATHERSTONE WINDMILLS BUILDINGS 1 AND 2	77.2232	38.6231	11.57	4.06	3.51	4.06	10/12/2005	P-L	P15	Potomac River-Occoquan Bay	VMS-A236_PO001400	Potomac River	4A	Exhaustion only	C	Private	NR	Yes	10/12/2005	
1250	CBMP/EMP	15004 FARM CREEK HIGHWAY	FEATHERSTONE WINDMILLS BUILDINGS 1 AND 2	77.2232	38.6231	11.57	4.06	3.51	4.06	10/12/2005	P-L	P15	Potomac River-Occoquan Bay	VMS-A236_PO001400	Potomac River	4A	Exhaustion only	C	Private	NR	Yes	10/12/2005	
1251	CBMP	14700 BURNING ROAD	MAN OF STEEL COMPLEX INDUSTRIAL HILL	77.6667	38.8137	69.77	49.79	25.98	49.79	10/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	
1252	CBMP/EMP	4398 DELAWARE DRIVE	CVS PHARMACY AREA GREENHILL PLAZA	77.9332	38.8679	3.20	0.22	0.36	0.22	10/12/2005	P-L	P15	North Fork Broad Run	VMS-A236_NF001410	North Fork Broad Run	4A	Exhaustion only	C	Private	NR	Yes	10/12/2005	
1253	CBMP/EMP	3000 BURNING ROAD	PARKWAY CENTER	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1254	CBMP/EMP	3000 BURNING ROAD	PARKWAY CENTER	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1255	CBMP/EMP	3000 BURNING ROAD	PARKWAY CENTER	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1256	CBMP/EMP	3000 BURNING ROAD	PARKWAY CENTER	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1257	CBMP/EMP	3000 BURNING ROAD	PARKWAY CENTER	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1258	CBMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1259	CBMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1260	CBMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1261	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1262	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1263	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1264	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1265	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1266	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1267	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1268	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1269	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1270	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1271	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1272	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1273	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1274	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1275	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1276	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1277	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1278	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1279	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Quantic Branch	VMS-A236_BM002400	Broad Run	4A	Exhaustion only	C	Private	NR	Yes	6/12/2005	Y
1280	CBMP/EMP	11212 BALL FORD ROAD	7 S 1300 23RD AND BALLBOURNS ROADS	77.5909	38.7711	2.75	1.36	1.39	1.36	6/12/2005	P-L	P15	Broad Run-Qu										

Activity ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inspected	VARIUS	VARIUS	VARIUS ID Name	GISID	Water Name Facility	300A/300B/300C Assessment Category	300A/300B/300C Water Quality	300A/300B/300C Water Quality Assessment Improvement Cause?	MSBT	Maintenance Agreement Type	STATUS	Discharge to MSBT	300A/300B/300C	MSBT		
1738	CRMP	1198 HORNET ROAD	ADDITION TO TOWN & COUNTY BACK BAY AREA		-77.2441	38.8897	0.00	0.00	0.00	9/7/2014	P.O.	P.O.	Deacons Run-Deacons Run		Deacons Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes		
1739	CRMP/BMP	U 8656 VIRGINIA MEADOWS DRIVE	VIRGINIA MEADOWS HOE LOT 4A N TO N		-77.5339	38.8977	4.92	0.82	4.10	10/23/2011	P.L.	P.L.	Braden Run-Roddy Branch	VAN-A226	BRM0240	Braden Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	6/22/2019	
1740	CRMP/BMP	D 4841 BEL AIR ROAD	WILSONVILLE PARKS		-77.5626	38.8435	114.84	72.84	80.54	10/22/2011	P.O.	P.O.	Palmeter River-Deacons Run		Palmeter River	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	4/28/2019	
1741	CRMP/BMP	D 15344 FERRISFIELD ROAD	WILSONVILLE FOREST PHASE 2 APARTMENTS		-77.5234	38.8435	0.00	0.00	0.00	10/22/2011	P.O.	P.O.	Palmeter River-Deacons Run		Palmeter River	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	Yes	4/28/2019
1742	CRMP/BMP	D 12900 BULLDOG FORD DRIVE	WILSONVILLE PARKING LOT EXPANSION		-77.5756	38.8796	6.73	1.31	5.42	10/22/2011	P.L.	P.L.	Braden Run-Roddy Branch	VAN-A226	BRM0240	Braden Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/22/2019
1743	CRMP/BMP	U 1705 WILSON PARKWAY	WILSON PARKWAY PARKING LOT EXPANSION		-77.5626	38.8796	0.00	0.00	0.00	10/22/2011	P.O.	P.O.	Palmeter River-Deacons Run		Palmeter River	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	Yes	4/28/2019
1744	CRMP	U 8000 SUGAR ROAD	WILSONVILLE STORE #2025-01 AT MANANIAS MALL		-77.5209	38.8771	0.00	0.00	0.00	1/27/2012	P.L.	P.L.	Middle Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	8/27/2017
1745	CRMP	U 8000 SUGAR ROAD	WILSONVILLE STORE #2025-01 AT MANANIAS MALL		-77.5209	38.8771	0.00	0.00	0.00	1/27/2012	P.L.	P.L.	Middle Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	8/27/2017
1746	CRMP	U 8000 SUGAR ROAD	WILSONVILLE STORE #2025-01 AT MANANIAS MALL		-77.5206	38.8779	3.89	0.11	3.78	1/27/2012	P.L.	P.L.	Middle Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	8/27/2017
1747	CRMP	U 8000 SUGAR ROAD	WILSONVILLE STORE #2025-01 AT MANANIAS MALL		-77.5209	38.8779	0.00	0.00	0.00	1/27/2012	P.L.	P.L.	Middle Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	8/27/2017
1748	CRMP/BMP	U 8000 SUGAR ROAD	WILSONVILLE STORE #2025-01 AT MANANIAS MALL		-77.5206	38.8779	0.46	0.02	0.45	1/27/2012	P.L.	P.L.	Middle Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	8/27/2017
1749	CRMP/BMP	U 8000 SUGAR ROAD	WILSONVILLE STORE #2025-01 AT MANANIAS MALL		-77.5209	38.8779	0.00	0.00	0.00	1/27/2012	P.L.	P.L.	Middle Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	8/27/2017
1750	CRMP/BMP	U 8000 SUGAR ROAD	WILSONVILLE STORE #2025-01 AT MANANIAS MALL		-77.5209	38.8779	0.49	0.04	0.45	1/27/2012	P.L.	P.L.	Middle Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	8/27/2017
1751	CRMP/BMP	U 8000 SUGAR ROAD	WILSONVILLE STORE #2025-01 AT MANANIAS MALL		-77.5206	38.8779	0.46	0.02	0.45	1/27/2012	P.L.	P.L.	Middle Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	8/27/2017
1752	CRMP/BMP	U 8000 SUGAR ROAD	WILSONVILLE STORE #2025-01 AT MANANIAS MALL		-77.5209	38.8779	0.49	0.04	0.45	1/27/2012	P.L.	P.L.	Middle Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	8/27/2017
1753	CRMP/BMP	W 15461 FOREST DRIVE	THE VILLAGES AT BRIMLEY LANE BLACKBURN POINT		-77.38	38.6117	23.17	11.37	10.00	2/10/2012	P.O.	P.O.	Nashua Creek		Nashua Creek	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/23/2019	
1754	CRMP/BMP	D 4009 BURNETT FARM DRIVE	PALE VALLEY COUNTRY		-77.8899	38.699	7.18	4.52	2.66	4/10/2012	P.L.	P.L.	Little Bull Run	VAN-A226	BRM0240	Cathlamet Creek	5D	Bartholomew/Macrometropolitan Assessments, Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	3/28/2019
1755	CRMP/BMP	U 3431 WOODBURN PLACE	REGENCY AT FERRISFIELD CENTER		-77.5234	38.8435	0.00	0.00	0.00	10/22/2011	P.O.	P.O.	Deacons Run		Deacons Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	4/28/2019	
1756	CRMP	U 14310 CROOKING PLACE	SPRINGHILL SUITES INDUSTRIAL MALLS		-77.8286	38.6547	0.40	0.77	0.63	6/14/2012	P.O.	P.O.	Palmeter River-Deacons Run	VAN-A226	BRM0240	Mannum Creek	5A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1757	CRMP	U 14310 CROOKING PLACE	SPRINGHILL SUITES INDUSTRIAL MALLS		-77.8286	38.6547	0.00	0.00	0.00	6/14/2012	P.O.	P.O.	Palmeter River-Deacons Run	VAN-A226	BRM0240	Mannum Creek	5A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1758	CRMP/BMP	W 10610 PLYMOUTH PLACE	ALEXANDRIA TECHNOLOGY CENTER PHASE WILLIAM		-77.5353	38.7941	24.28	19.22	3.06	6/22/2012	P.L.	P.L.	Braden Run-Roddy Branch	VAN-A226	BRM0240	Braden Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/22/2019
1759	CRMP/BMP	U 12601 SMOCKTOWN ROAD	OLD BRIDGE COMMERCIAL CENTER		-77.3209	38.8977	0.11	0.00	0.11	6/22/2012	P.O.	P.O.	Deacons Run		Deacons Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/22/2019	
1760	CRMP	U 12601 SMOCKTOWN ROAD	OLD BRIDGE COMMERCIAL CENTER		-77.3206	38.8981	0.40	0.27	0.13	6/22/2012	P.O.	P.O.	Deacons Run		Deacons Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/22/2019	
1761	CRMP	U 12601 SMOCKTOWN ROAD	OLD BRIDGE COMMERCIAL CENTER		-77.3209	38.8981	0.26	0.11	0.15	6/22/2012	P.O.	P.O.	Deacons Run		Deacons Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/22/2019	
1762	CRMP/BMP	U 12601 SMOCKTOWN ROAD	OLD BRIDGE COMMERCIAL CENTER		-77.3206	38.8981	0.26	0.11	0.15	6/22/2012	P.O.	P.O.	Deacons Run		Deacons Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	Yes	6/22/2019
1763	CRMP/BMP	U 12601 SMOCKTOWN ROAD	OLD BRIDGE COMMERCIAL CENTER		-77.3206	38.8981	0.26	0.11	0.15	6/22/2012	P.O.	P.O.	Deacons Run		Deacons Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	Yes	6/22/2019
1764	CRMP/BMP	U 14227 EPPERSON DAVIS HIGHWAY	LUTHERNE TOWNSHIP REVISIONS		-77.3942	38.6436	5.29	0.86	4.42	7/24/2012	P.O.	P.O.	Palmeter River-Deacons Run	VAN-A226	BRM0240	Deacons Run	5A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/23/2019
1765	CRMP/BMP	U 14227 EPPERSON DAVIS HIGHWAY	LUTHERNE TOWNSHIP REVISIONS		-77.3942	38.6436	0.86	0.46	0.40	7/24/2012	P.O.	P.O.	Palmeter River-Deacons Run	VAN-A226	BRM0240	Deacons Run	5A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/23/2019
1766	CRMP/BMP	U 14227 EPPERSON DAVIS HIGHWAY	LUTHERNE TOWNSHIP REVISIONS		-77.3942	38.6436	2.87	1.52	1.35	7/24/2012	P.O.	P.O.	Palmeter River-Deacons Run	VAN-A226	BRM0240	Deacons Run	5A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/23/2019
1767	CRMP/BMP	D 14227 EPPERSON DAVIS HIGHWAY	LUTHERNE TOWNSHIP REVISIONS		-77.3942	38.6436	1.59	0.22	1.36	7/24/2012	P.O.	P.O.	Palmeter River-Deacons Run	VAN-A226	BRM0240	Deacons Run	5A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/23/2019
1768	CRMP/BMP	D 10221 DOWNEY PARKWAY BOULEVARD	ARISTOCRAT BUSINESS CENTER PHASE B-4		-77.8595	38.7271	11.57	6.56	4.92	6/22/2012	P.L.	P.L.	Braden Run-Roddy Branch	VAN-A226	BRM0240	Braden Run	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	6/23/2019
1769	CRMP/BMP	D 14811 SLOTTON DRIVE	ALL SAINTS CHURCH		-77.2983	38.8243	30.81	20.08	9.73	8/29/2012	P.O.	P.O.	Nashua Creek		Nashua Creek	4A	Exhaurished	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15	
1770	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.9048	38.7948	0.75	0.24	0.51	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1771	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1772	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1773	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1774	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1775	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1776	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1777	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1778	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1779	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1780	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1781	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes	Yes	Yes	Yes	Yes	7/15
1782	CRMP/BMP	U 8701 LEBLANC AVENUE	EVANGELIST TRAIL		-77.4461	38.7948	1.84	0.83	1.00	9/13/2012	P.L.	P.L.	Lower Bull Run	VAN-A226	BRM0240	Bull Run	5A	PCB in Fall Tissue	Yes	C	Yes</					

Activity ID	Facility Type	Facility Description	ADDRESS	Substation	Longitude	Latitude	Total Drainage Area (Acres)	Previous Drainage Area (Acres)	Impervious Drainage Area (Acres)	Date Inspected	VARIUS	VARIUS	VARIUS ID Name	GISID	Water Name Facility	300A/300B/300C Assessment Category	300A/300B/300C Water Quality Assessment Category	300A/300B/300C Water Quality Assessment Improvement Cause?	MSBT	Maintenance Agreement Type	STATUS	Discharge to MSBT	300A/300B/300C	300C	
1885	CRMP	17861 ESTATE MANOR DRIVE	17861	GIENERS ESTATES COMMERCIAL CENTER	-77.861	38.770	0.07	0.07	0.07	1/17/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1886	CRMP	17862 ESTATE MANOR DRIVE	17862	GIENERS ESTATES COMMERCIAL CENTER	-77.865	38.769	1.44	0.45	0.59	1/18/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1885	CRMP	17863 ESTATE MANOR DRIVE	17863	GIENERS ESTATES COMMERCIAL CENTER	-77.865	38.768	0.22	0.02	0.20	1/18/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1886	CRMP	17864 ESTATE MANOR DRIVE	17864	GIENERS ESTATES COMMERCIAL CENTER	-77.864	38.768	0.44	0.04	0.40	1/18/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1887	CRMP	17865 ESTATE MANOR DRIVE	17865	GIENERS ESTATES COMMERCIAL CENTER	-77.863	38.768	0.05	0.02	0.04	1/18/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1886	CRMP	17866 LAMAR PARK DRIVE	17866	POWER QUALITY SERVICES ELECTRIC, LLC	-77.824	38.746	0.00	0.00	0.00	6/14/2014	P.F.	P.18	Quantico River	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y			
1889	CRMP	D 1480 OLD BRIDGE ROAD	1480	MCCONNELL'S RESTAURANT (COCOA)	-77.823	38.751	10.12	1.76	3.56	1/28/2014	P.O.	P.18	Occoquan River-DePot Run	VNN-A139_BM0240	Occoquan River	4A	Exterrestrial	C	Private	NR	Yes	Y	5/12/2019		
1887	CRMP/BMP	D 1100 NEW LIFE WAY	1100	MORGAN'S RESTAURANT OF GOOD FARM	-77.887	38.674	7.80	3.44	3.55	2/10/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y	7/19/2016		
1887	CRMP	D 3000 WOODS DRIVE	3000	WINDY HILLS RESTAURANT & MARKET GARDENS RESTAURANT	-77.885	38.844	0.00	0.00	0.00	6/18/2014	P.F.	P.18	Quantico River	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y			
1873	CRMP	T 3220 OLD BRIDGE ROAD	3220	MORRIS DELI RESTAURANT	-77.328	38.854	0.46	0.13	0.26	1/6/2014	P.O.	P.17	stream River-Occoquan River	VNN-A139_BM0240	Stream	5D	Best/No	Macrometamorphic Basins, PCB in Fish Tissue	C	Private	NR	Yes	Y		
1874	CRMP	U 8451 MARWOOD DRIVE	8451	MR. BEEF RESTAURANT/GRILLERY & BAR/BBQ	-77.428	38.777	0.06	0.00	0.06	1/12/2014	P.L.	P.18	Lower Bull Run	VNN-A139_BM0240	Bull Run	5D	Best/No	Macrometamorphic Basins, PCB in Fish Tissue	C	Private	NR	Yes	Y		
1875	CRMP	U 8451 MARWOOD DRIVE	8451	MR. BEEF RESTAURANT/GRILLERY & BAR/BBQ	-77.428	38.777	0.38	0.04	0.34	1/12/2014	P.L.	P.18	Lower Bull Run	VNN-A139_BM0240	Bull Run	5D	Best/No	Macrometamorphic Basins, PCB in Fish Tissue	C	Private	NR	Yes	Y		
1876	CRMP	U 8451 MARWOOD DRIVE	8451	MR. BEEF RESTAURANT/GRILLERY & BAR/BBQ	-77.428	38.777	0.11	0.01	0.10	1/12/2014	P.L.	P.18	Lower Bull Run	VNN-A139_BM0240	Bull Run	5D	Best/No	Macrometamorphic Basins, PCB in Fish Tissue	C	Private	NR	Yes	Y		
1877	CRMP/BMP	D 15140 ADESS ROAD	15140	NEWFIELD COMMUNITY PARK PHASE 2	-77.157	38.686	41.31	41.06	2.28	5/19/2014	P.M.	P.16	Center Run-Slate Run	VNN-A139_BM0240	Slate Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1878	CRMP	U 1999 OLD BRIDGE ROAD	1999	NETTER HOME CARE	-77.826	38.746	0.36	0.00	0.31	5/22/2014	P.L.	P.18	Occoquan River-DePot Run	VNN-A139_BM0240	Occoquan River	4A	Exterrestrial	C	Private	NR	Yes	Y			
1879	CRMP	U 1882 BUCKLEBUSH DRIVE	1882	NETTER HOME CARE	-77.273	38.851	1.36	0.00	1.36	5/22/2014	P.L.	P.18	Netter Run	VNN-A139_BM0240	Netter Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1880	CRMP	T 8738 VISCAN LANE	8738	NETHERLANDS PRODUCTS CORPORATION	-77.556	38.772	0.95	0.31	0.61	6/18/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1881	CRMP	T 8738 VISCAN LANE	8738	NETHERLANDS PRODUCTS CORPORATION	-77.553	38.768	0.95	0.31	0.61	6/18/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1882	CRMP	U 8738 VISCAN LANE	8738	NETHERLANDS PRODUCTS CORPORATION	-77.553	38.768	0.06	0.00	0.06	6/18/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1883	CRMP	U 8738 VISCAN LANE	8738	NETHERLANDS PRODUCTS CORPORATION	-77.552	38.768	0.05	0.00	0.05	6/18/2014	P.L.	P.18	Broad Run Rocky Branch	VNN-A139_BM0240	Broad Run	4A	Exterrestrial	C	Private	NR	Yes	Y			
1884	CRMP	W 2048 CANTON HILL ROAD	2048	NETHERLANDS PRODUCTS CORPORATION	-77.205	38.677	41.08	21.71	13.37	6/20/2014	P.O.	P.19	Netter Run	VNN-A139_BM0240	Netter Run	5A	PCB in Fish Tissue	C	Private	NR	Yes	Y	5/12/2019		
1885	CRMP	D 4901 DASH BOULEVARD	4901	NETHERLANDS PRODUCTS CORPORATION	-77.995	38.677	14.33	7.48	6.89	9/25/2014	P.O.	P.19	Netter Run	VNN-A139_BM0240	Netter Run	5A	PCB in Fish Tissue	C	Private	NR	Yes	Y			
1886	CRMP	D 4901 DASH BOULEVARD	4901	NETHERLANDS PRODUCTS CORPORATION	-77.995	38.677	14.33	7.48	6.89	9/25/2014	P.O.	P.19	Netter Run	VNN-A139_BM0240	Netter Run	5A	PCB in Fish Tissue	C	Private	NR	Yes	Y			
1887	CRMP	D 4901 DASH BOULEVARD	4901	NETHERLANDS PRODUCTS CORPORATION	-77.995	38.677	14.33	7.48	6.89	9/25/2014	P.O.	P.19	Netter Run	VNN-A139_BM0240	Netter Run	5A	PCB in Fish Tissue	C	Private	NR	Yes	Y			
1888	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1889	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1890	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1891	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1892	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1893	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1894	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1895	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1896	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1897	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1898	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1899	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1900	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1901	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1902	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1903	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1904	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1905	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1906	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1907	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1908	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1909	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1910	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52	7/15/2014	P.L.	P.18	Middle Bull Run	VNN-A139_BM0240	Quantico Creek	4A	Exterrestrial	C	Private	NR	Yes	Y	4/28/2017		
1911	CRMP	U 7809 SUGAR ROAD	7809	NETHERLANDS PRODUCTS CORPORATION	-77.508	38.628	0.73	0.21	0.52</																

**Drainage Areas
Cow Branch Locations**

**Cow Branch - Mellot Road
DA=400.74 ac**

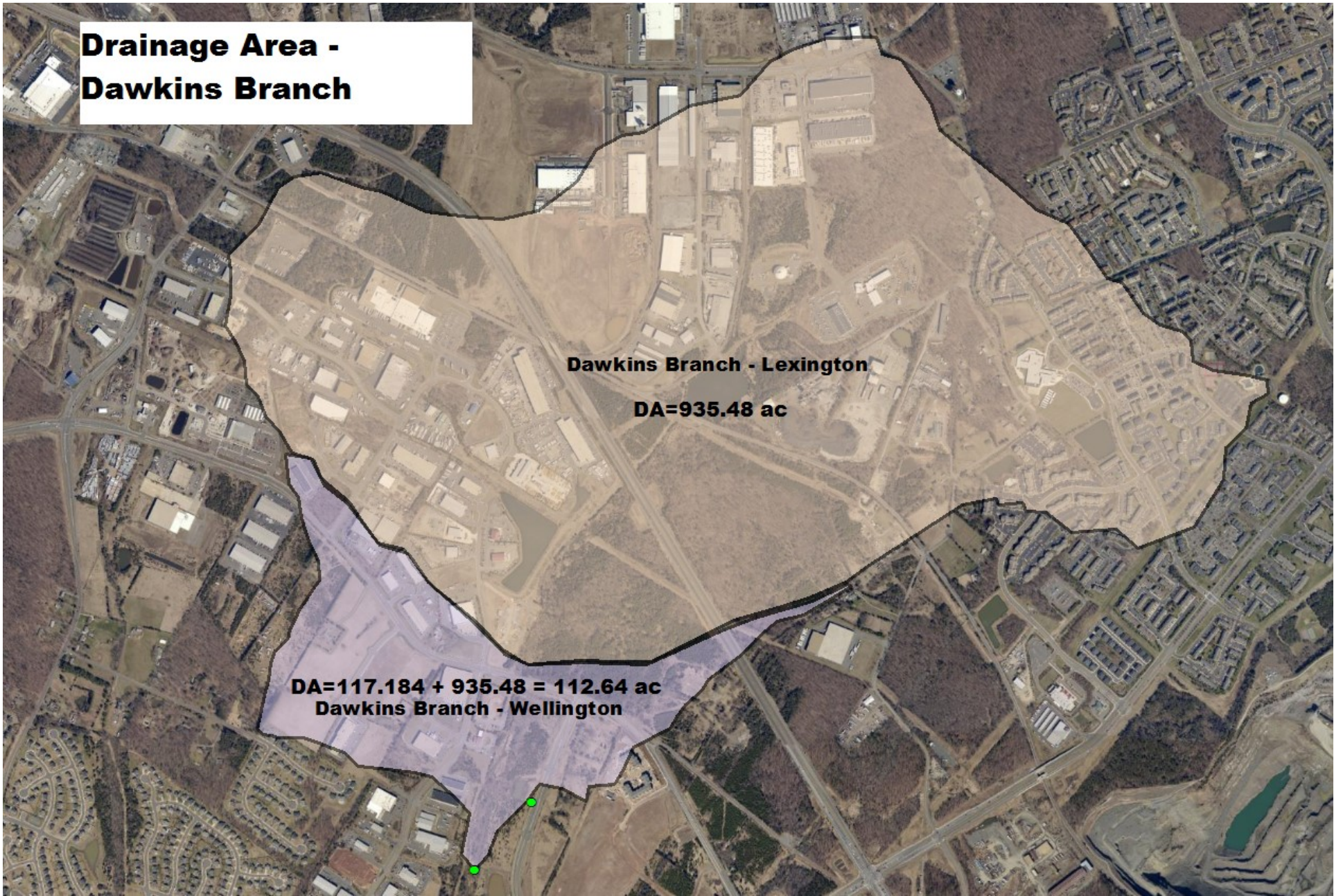
**Cow Branch - Montgomery Av
DA=39.79 ac**



**Drainage Area -
Dawkins Branch**

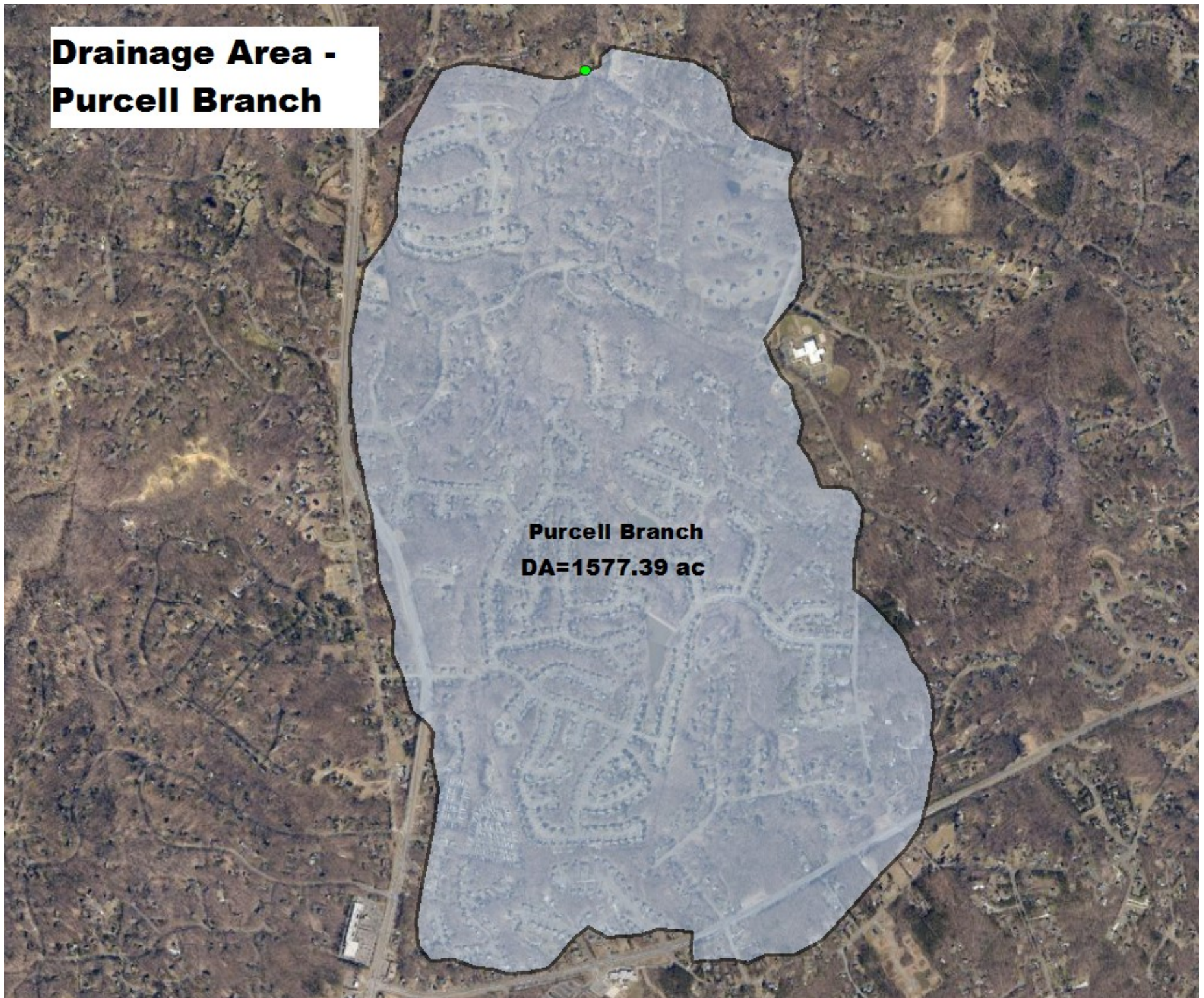
**Dawkins Branch - Lexington
DA=935.48 ac**

**DA=117.184 + 935.48 = 112.64 ac
Dawkins Branch - Wellington**



**Drainage Area -
Purcell Branch**

**Purcell Branch
DA=1577.39 ac**



Appendix 16: TMDL Action Plan Implementation